Appendix L, Shasta Coldwater Pool Management

Attachment L.1 Sacramento River Water Temperature Analysis

L.1.1 Model Overview

This analysis enumerates the frequency at which mean monthly HEC-5Q simulated water temperatures exceed water temperature index values or occur outside index ranges for multiple fish species in the Sacramento River upstream of the Delta. Index values and ranges were obtained from the scientific literature and agency reports for each species and life stage at multiple locations within the river. Frequencies were calculated for the baseline and each alternative at one or more locations of life stage presence in the river by month of presence and water year type and the incremental change between the baseline and each alternative was then calculated.

L.1.2 Model Development

Water temperature was simulated in HEC-5Q for water years 1923 through 2021 for the Sacramento River. Outputs from HEC-5Q were used as inputs to the analysis.

Water temperature index values were compiled for the life stages present in the Sacramento River upstream of the Delta for following listed species: winter-run and spring-run Chinook salmon, steelhead, and green sturgeon (Table L.1-1). These index values were primarily taken from Appendix C and D of the Biological Assessment. Water temperature index values and ranges were compiled for the life stages present in the Sacramento River for following non-listed species: fall-/late fall-run Chinook salmon, white sturgeon, Pacific lamprey, river lamprey, hardhead, Sacramento hitch, Sacramento splittail, Striped Bass, American shad, and largemouth bass (Table L.1-2). These values and ranges were primarily taken from the 2017 Sites Reservoir Project Draft EIR/EIS (Sites Project Authority and Bureau of Reclamation 2017), Appendix 12D, Water Temperature Index Value Selection Rationale, with supplemental information taken from the scientific literature as necessary. Index values and index ranges used in this analysis typically characterize the suitable, optimal, acceptable, and observed temperature range needed for survival, growth, or presence.

The analysis calculates the frequency that modeled water temperatures under the baseline and each alternative would either exceed the temperature index value or occur outside the index range for a given species and life stage. The analysis uses a monthly time step, and the percent of months exceeding the index value or occurring outside the index range is computed over the entire 98-water year simulation period for each month and water year type. Frequencies of exceedance for each alternative are compared to baseline conditions, in keeping with guidance on the proper use of model outputs, to calculate the incremental effect of the alternative. To best characterize potential differences, the analysis evaluates frequencies by water year type for each month of life stage presence and within the reach of river where the life stage is present.

For the EIS, pairwise comparisons of results were made between the No Action Alternative (NAA) and each alternative.

Table L.1-1. Water Temperature Index Values for Listed Fish Species in the Sacramento River.

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
Winter-run Chinook salmon	Adult Migration	Jan-Jun	Sacramento River at Keswick, RBDD, Hamilton City	37.9-68	Successful migration range (Reiser and Bjornn 1979, Goniea et al. 2006)
Winter-run Chinook salmon	Adult Migration	Jan-Jun	Sacramento River at Keswick, RBDD, Hamilton City	59.9	Pathogen virulence threshold (McCullough 1999)
Winter-run Chinook salmon	Adult Holding and Spawning	Jan-Jul	Sacramento River at Keswick, below Clear Creek	42.1-55	Spawning initiation range (McCullough 1999)
Winter-run Chinook salmon	Adult Holding and Spawning	Jan-Jul	Sacramento River at Keswick, below Clear Creek	59.9	Pathogen virulence threshold (McCullough 1999)
Winter-run Chinook salmon	Egg Incubation and Fry Emergence	May-Nov	Sacramento River at Keswick, below Clear Creek	42.8-56[1]	Slater 1963, USFWS 1999, Myrick and Cech 2004, Bratovich et al. 2012, Martin et al. 2017
Winter-run Chinook salmon	Juvenile Rearing and Outmigration	Jul-Dec	Sacramento River at Keswick, RBDD, Hamilton City	55.4-68	Optimum temperature for growth, smoltification, and predation vulnerability (Myrick and Cech 2002, Marine and Cech 2004)
Winter-run Chinook salmon	Juvenile Rearing and Outmigration	Jul-Dec	Sacramento River at Keswick, RBDD, Hamilton City	75.2	UILT (Brett 1952, Brett et al. 1982, Myrick and Cech 2004)
Spring-run Chinook salmon	Adult Migration	Mar-Sep	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	37.9-68	Successful migration range (Reiser and Bjornn 1979, Goniea et al. 2006)
Spring-run Chinook salmon	Adult Holding and Spawning	Apr-Oct	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	42.1-55	Spawning initiation range (McCullough 1999)

[1] Exact endpoints fall somewhere between 53.6°F and 56°F, with recommended upper thermal optimum of 53.6°F to 55.9°F (Myrick and Cech 2004, Martin et al. 2017)

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
Spring-run Chinook salmon	Adult Holding and Spawning	Apr-Oct	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Spring-run Chinook salmon	Egg Incubation and Fry Emergence	Sep-Mar	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	42.8-56[2]	Slater 1963, USFWS 1999, Myrick and Cech 2004, Bratovich et al. 2012, Martin et al. 2017
Spring-run Chinook salmon	Juvenile Rearing and Outmigration	Nov-Jun	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	55.4-68	Optimum temperature for growth, smoltification, and predation vulnerability (Myrick and Cech 2002, Marine and Cech 2004)
Spring-run Chinook salmon	Juvenile Rearing and Outmigration	Nov-Jun	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	75.2	UILT (Brett 1952, Brett et al. 1982, Myrick and Cech 2004)
Spring-run Chinook salmon	Yearling Rearing	Apr-Dec	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	55.4-68	Optimum temperature without food limitation (Myrick and Cech 2002, Marine and Cech 2004)
Spring-run Chinook salmon	Yearling Rearing	Apr-Dec	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	75.2	UILT (Brett 1952, Brett et al. 1982, Myrick and Cech 2004)
Spring-run Chinook salmon	Yearling Outmigration	Oct-Dec	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	55.4-68	Optimum temperature without food limitation (Myrick and Cech 2002, Marine and Cech 2004)
Spring-run Chinook salmon	Yearling Outmigration	Oct-Dec	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	75.2	UILT (Brett 1952, Brett et al. 1982, Myrick and Cech 2004)

[2] Exact endpoints fall somewhere between 53.6°F and 56°F, with recommended upper thermal optimum of 53.6°F to 55.9°F (Myrick and Cech 2004, Martin et al. 2017)

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
Steelhead	Adult Migration and Holding	Jul-Mar	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	41-66.2	Migration impairment (Keefer et al. 2009)
Steelhead	Adult Migration and Holding	Jul-Mar	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	69.8	Lethal limit to adult migrants (Coutant 1970)
Steelhead	Adult Migration and Holding	Jul-Mar	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Steelhead	Spawning	Dec-May	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	45-55	Successful spawning range (Bell 1991, FERC 1993, Richter and Kolmes 2005)
Steelhead	Spawning	Dec-May	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Steelhead	Kelt Emigration	Feb-Jun	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	66.2	Migration impairment (Keefer et al. 2009)
Steelhead	Kelt Emigration	Feb-Jun	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	69.8	Lethal to adult migrating steelhead (Coutant 1970)
Steelhead	Kelt Emigration	Feb-Jun	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Steelhead	Egg Incubation and Fry Emergence	Dec-Jun	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	42–52	Optimal incubation temperature (McCullough et al. 2001)
Steelhead	Egg Incubation and Fry Emergence	Dec-Jun	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	59.9	Fry pathogen virulence threshold (McCullough 1999)

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
Steelhead	Juvenile Rearing	Year-round	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	66.2	Upper limit of optimum temperatures for juvenile steelhead growth, assuming maximum ration levels (Myrick 1998; Myrick and Cech 2001)
Steelhead	Juvenile Rearing and Outmigration	Year-round	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Steelhead	Juvenile Outmigration	Jan-May	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	55	Upper limit of successful smoltification (Zaugg & Wagner 1973; Wedemeyer et al. 1980; U.S. Environmental Protection Agency 2003)
Green Sturgeon	Adult Migration	Apr-May	Sacramento River at Bend Bridge, Hamilton City	52-69.4	Range of observed migration (Kelly et al. 2007; Colborne et al. 2022)
Green Sturgeon	Spawning	Apr-Jul	Sacramento River at Bend Bridge, Hamilton City	49.3-63.7	Range of observed spawning (Poytress et al. 2015)
Green Sturgeon	Adult Holding	Year-round	Sacramento River at Bend Bridge, Hamilton City	59-73.4	Range of observed holding (Erickson et al. 2002)
Green Sturgeon	Egg Incubation	Apr-Jul	Sacramento River at Bend Bridge, Hamilton City	52.3-60.8	Range supporting egg incubation (Van Eenennaam et al. 2005; Brown 2007; Rodgers et al. 2019)
Green Sturgeon	Larvae	May-Aug	Sacramento River at Bend Bridge, Hamilton City	64.4	Upper limit for newly hatched larvae (Linares-Casenave et al. 2013; Rodgers et al. 2019)
Green Sturgeon	Juveniles	Jun-Aug	Sacramento River at Bend Bridge, Hamilton City	59-66.2	Range of optimal bioenergetic performance (Mayfield and Cech 2004; Poletto et al. 2018)

Table L.1-2. Water Temperature Index Values and Index Ranges for Non-Listed Fish Species in the Sacramento River.

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
Fall-run Chinook salmon	Adult Migration	Jul-Dec	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	37.9-68	Successful migration range (Reiser and Bjornn 1979, Goniea et al. 2006)
Fall-run Chinook salmon	Adult Migration	Jul-Dec	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Fall-run Chinook salmon	Adult Holding and Spawning	Oct-Jan	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	42.1-55	Spawning initiation range (McCullough 1999)
Fall-run Chinook salmon	Adult Holding and Spawning	Oct-Jan	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Fall-run Chinook salmon	Egg Incubation and Fry Emergence	Dec-Mar	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	42.8-56[3]	Slater 1963, USFWS 1999, Myrick and Cech 2004, Bratovich et al. 2012, Martin et al. 2017
Fall-run Chinook salmon	Egg Incubation and Fry Emergence	Dec-Mar	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Fall-run Chinook salmon	Juvenile Rearing and Outmigration	Mar-Jun	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	55.4-68	Optimum temperature for growth, smoltification, and predation vulnerability (Myrick and Cech 2002, Marine and Cech 2004)

[3] Exact endpoints fall somewhere between 53.6°F and 56°F, with recommended upper thermal optimum of 53.6°F to 55.9°F (Myrick and Cech 2004, Martin et al. 2017)

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
Fall-run Chinook salmon	Juvenile Rearing and Outmigration	Mar-Jun	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	75.2	UILT (Brett 1952, Brett et al. 1982, Myrick and Cech 2004)
Fall-run Chinook salmon	Juvenile Rearing and Outmigration	Mar-Jun	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Late fall-run Chinook salmon	Adult Migration	Aug-Mar	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	37.9-68	Successful migration range (Reiser and Bjornn 1979, Goniea et al. 2006)
Late fall-run Chinook salmon	Adult Migration	Aug-Mar	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Late fall-run Chinook salmon	Adult Holding and Spawning	Jan-Apr	Sacramento River at Keswick, below Clear Creek; Clear Creek below Whiskeytown	42.1-55	Spawning initiation range (McCullough 1999)
Late fall-run Chinook salmon	Adult Holding and Spawning	Jan-Apr	Sacramento River at Keswick, below Clear Creek; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
Late fall-run Chinook salmon	Egg Incubation and Fry Emergence	Mar-Jun	Sacramento River at Keswick, below Clear Creek; Clear Creek below Whiskeytown	42.8-56[4]	Slater 1963, USFWS 1999, Myrick and Cech 2004, Bratovich et al. 2012, Martin et al. 2017
Late fall-run Chinook salmon	Egg Incubation and Fry Emergence	Mar-Jun	Sacramento River at Keswick, below Clear Creek; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)

[4] Exact endpoints fall somewhere between 53.6°F and 56°F, with recommended upper thermal optimum of 53.6°F to 55.9°F (Myrick and Cech 2004, Martin et al. 2017)

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
Late fall-run Chinook salmon	Juvenile Rearing and Outmigration	Apr-Feb	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	55.4-68	Optimum temperature for growth, smoltification, and predation vulnerability (Myrick and Cech 2002, Marine and Cech 2004)
Late fall-run Chinook salmon	Juvenile Rearing and Outmigration	Apr-Feb	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	75.2	UILT (Brett 1952, Brett et al. 1982, Myrick and Cech 2004)
Late fall-run Chinook salmon	Juvenile Rearing and Outmigration	Apr-Feb	Sacramento River at Keswick, RBDD, Hamilton City; Clear Creek below Whiskeytown	59.9	Pathogen virulence threshold (McCullough 1999)
White Sturgeon	Spawning and Embryo Incubation	Feb-May	Sacramento River at Hamilton City	61	Optimal egg incubation range upper limit (Israel et al. 2009)
White Sturgeon	Spawning and Embryo Incubation	Feb-May	Sacramento River at Hamilton City	68	Embryo hatching upper limit (Israel et al. 2009)
White Sturgeon	Juvenile Rearing and Emigration	Year-round	Sacramento River at Hamilton City	66	Stress observed in juvenile white sturgeon above this temperature (Israel et al. 2009)
White Sturgeon	Adult Immigration and Holding	Nov-May	Sacramento River at Hamilton City	77	Upper limit of suitable water temperatures for adult white sturgeon (Israel et al. 2009)
Pacific Lamprey	Spawning and Egg Incubation	April - August	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	50-64	Observed range of high survival and low occurrence of embryonic developmental abnormalities (Meeuwig et al. 2003, 2005)
Pacific Lamprey	Ammocoete Rearing and Emigration	Year-round	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	72	Upper limit for high survival and low occurrence of

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
					developmental abnormalities (Meeuwig et al. 2003, 2005)
Western River Lamprey	Spawning and Egg Incubation	February - July	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	50-64	Observed range of high survival and low occurrence of embryonic developmental abnormalities (Meeuwig et al. 2003, 2005)
Western River Lamprey	Ammocoete Rearing and Emigration	Year-round	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown Keswick	72	Upper limit for high survival and low developmental abnormalities (Meeuwig et al. 2003, 2005)
Sacramento Splittail	Spawning	Feb-May	Sacramento River at Hamilton City	45-75	Observed range of suitable water temperatures (CDWR 2004)
Sacramento Hitch	Non-spawning Adults	Year-round	Sacramento River at Keswick, RBDD, Hamilton City	77-84.2	Preferred temperatures in lab and field observations (Moyle 2002, May and Brown 2002, Moyle et al. 2015).
Hardhead	Spawning	Apr- Jun	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	59-64	Optimal range (Wang 1986)
Hardhead	Non-spawning Adults	Year-round	Sacramento River at Keswick, RBDD; Clear Creek below Whiskeytown	57.2-78.8	Commonly observed range (Thompson et al. 2012)
Striped Bass	Spawning, Embryo Incubation, and Initial Rearing	Apr- Jun	Sacramento River at Butte City	59-68	Optimal range (Moyle 2002)
Striped Bass	Larvae, Fry, and Juvenile Rearing and Emigration	Year-round	Sacramento River at Butte City	61-71	Optimal range (Fay et al. 1983)

Species	Life Stage	Months of Presence	Model Output Locations	Temperature Index Value/Range (°F)	Temperature Index References
American Shad	Spawning and Larval Rearing	Apr- Jun	Sacramento River at Butte City	62-75	Optimal range (Moyle 2002)
American Shad	Juvenile Rearing and Emigration	Jul-Nov	Sacramento River at Butte City	63-77	Optimal range (Moyle 2002)
Threadfin Shad	Spawning	Apr– Aug	Sacramento River at Butte City	63-77	Optimal range (Moyle 2002)
Threadfin Shad	Non-Spawning Adult	Year-round	Sacramento River at Butte City	63-77	Optimal range (Moyle 2002)
Largemouth Bass	Spawning	Apr-Jun	Sacramento River at Butte City	52.7-84.2	Observed range (Stuber et al. 1982)
Largemouth Bass	Non-Spawning Adult	Year-round	Sacramento River at Butte City	77-86	Optimal range for growth (Moyle 2002)
Smallmouth Bass	Spawning	May-Jul	Sacramento River at Hamilton City; Clear Creek below Whiskeytown	55-70	Optimal range (Brown et al. 2009)
Smallmouth Bass	Non-Spawning Adult	Jun-Aug	Sacramento River at Hamilton City; Clear Creek below Whiskeytown	>66	Lower end of observed summer-time range (Moyle 2002)
Smallmouth Bass	Non-Spawning Adult	Year-round	Sacramento River at Hamilton City; Clear Creek below Whiskeytown	77-80	Optimal range for growth (Moyle 2002)
Spotted Bass	Spawning	Apr-Jun	Sacramento River at Butte City	58.1-73.4	Observed range (Aasen and Henry 1981)
Spotted Bass	Non-Spawning Adult	Jun-Aug	Sacramento River at Butte City	75-87	Preferred summer-time range (Moyle 2002)

L.1.2.1 Assumptions / Uncertainty

A limitation of the analysis is that, due to model limitations, a monthly mean time step was the shortest time step available for water temperature model outputs. As a result, the intra-month variation around the monthly mean cannot be evaluated, which introduces uncertainty in the results.

Another limitation of the analysis is that it treats all exceedances above the temperature index value or occurrences outside the index range as equal because no magnitude of exceedance was calculated. A 0.1°F mean magnitude of exceedance could be very different to a steelhead than a 10°F mean magnitude of exceedance.

An assumption of this analysis is that all fish at and around the model output locations experience the same temperature as the model output. Small-scall differences in water temperature related to depth, shade, water movement, and a large number of other factors are common in streams (Poole et al. 2001), but this was not accounted for in the analysis. This introduced uncertainty in the results.

L.1.2.2 Code and Data Repository

Code and analysis outputs are available upon request.

L.1.3 Results

L.1.3.1 HEC 5Q Water Temperature Model Outputs

HEC 5Q water temperature model outputs for BA model scenarios are provided in this attachment to aid the reader in visually interpreting the results of the analysis. By drawing or imagining a horizontal line that intersects the y-axis at each water temperature value listed in Table L.1-1 and Table L.1-2, the reader can determine the frequency above or below the value by viewing the resulting probability of exceedance along the x-axis for each model scenario.

Model outputs are presented by month for five locations in the Sacramento River: below Keswick, below Clear Creek, Bend Bridge, Red Bluff Diversion Dam, and Hamilton City; and in Clear Creek below Whiskeytown Reservoir.

L.1.3.1.1 Sacramento River below Keswick

Figure L.1-1 presents exceedance curves of modeled monthly water temperatures in the Sacramento River at Keswick for all months and water year types combined for each model scenario. Figure L.1-2 through Figure L.1-13 present exceedance curves of modeled monthly water temperatures at Keswick for all water year types combined by month.

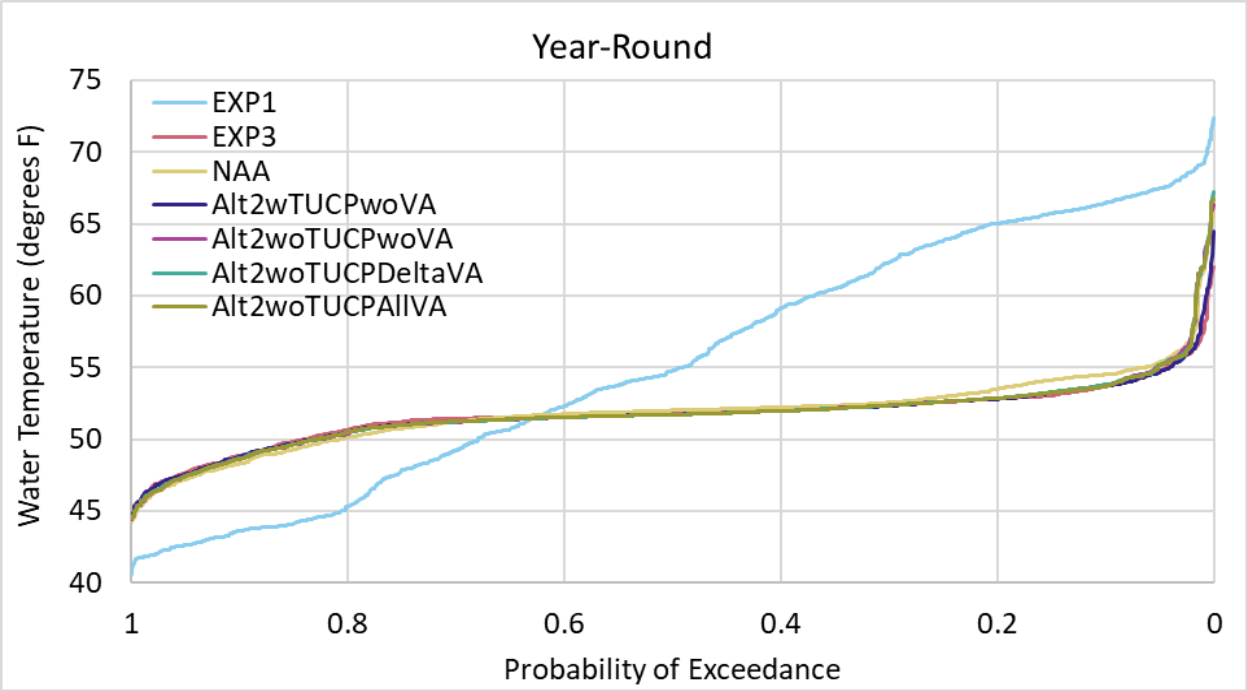

Figure L.1-1. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, year-round.

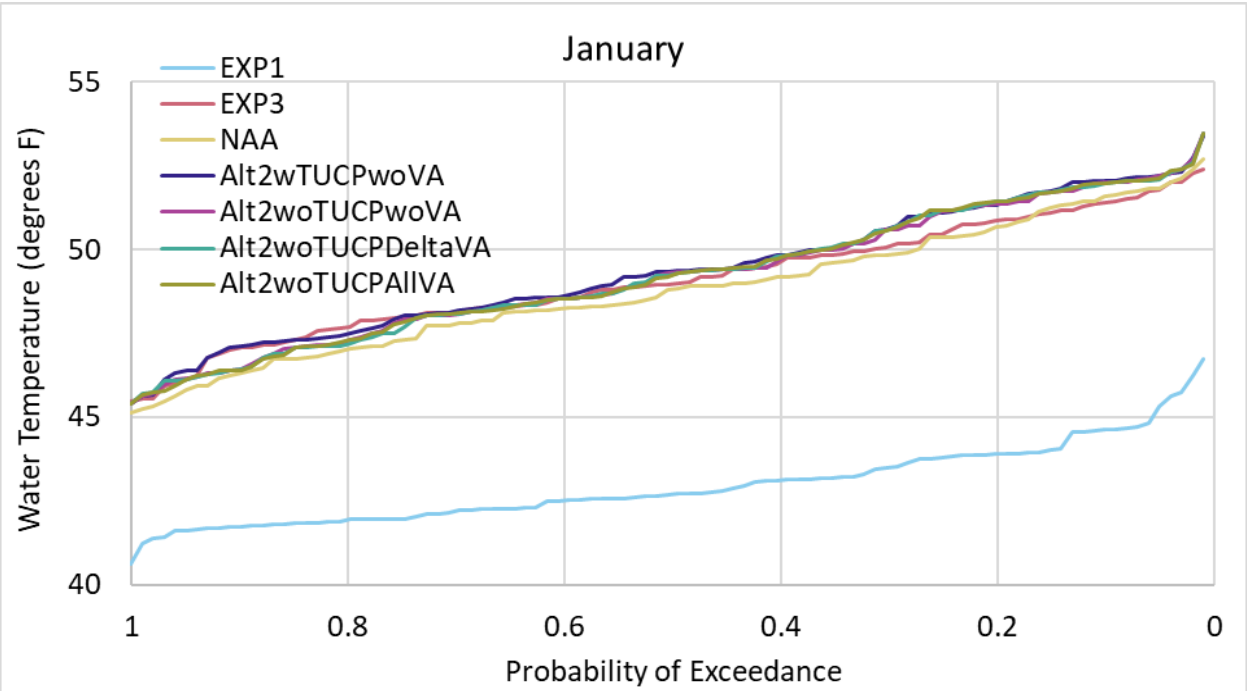

Figure L.1-2. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, January.

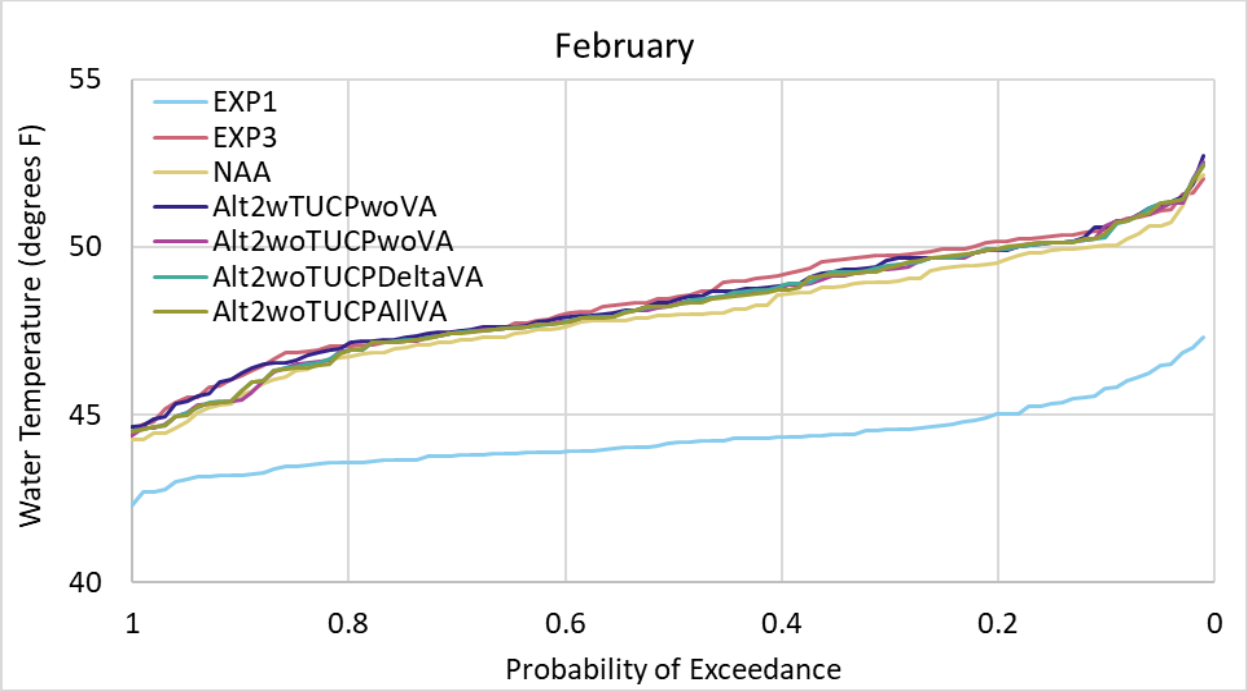

Figure L.1-3. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, February.

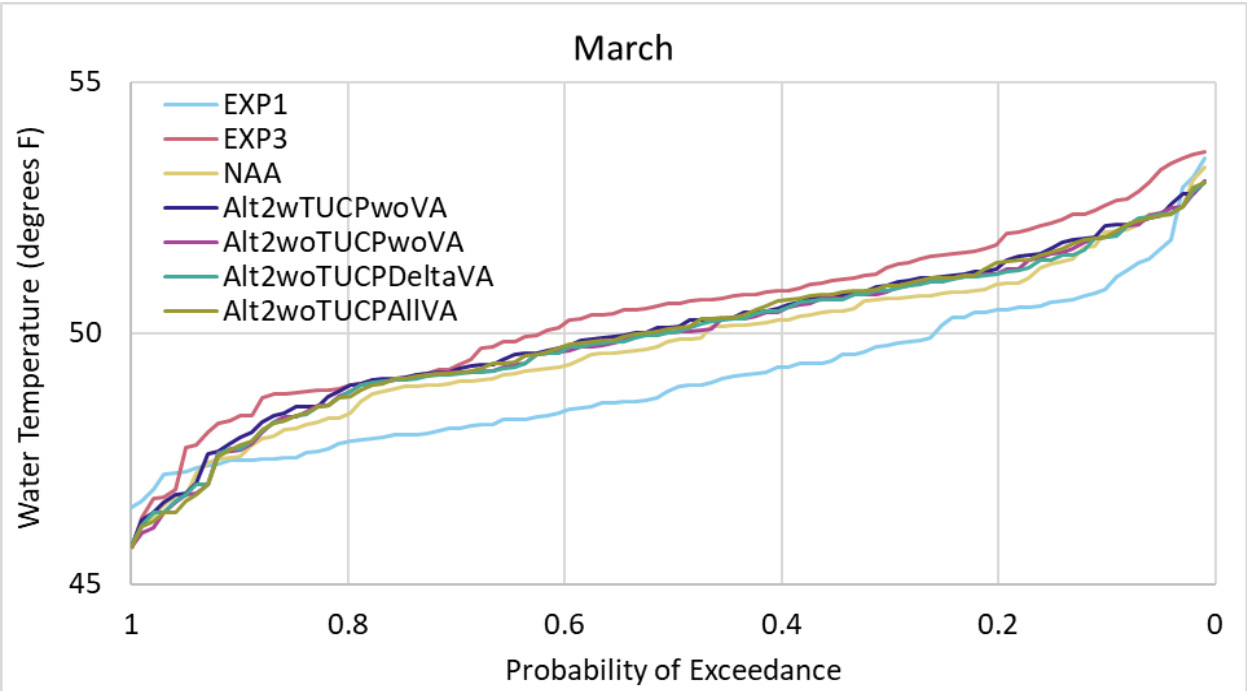

Figure L.1-4. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, March.

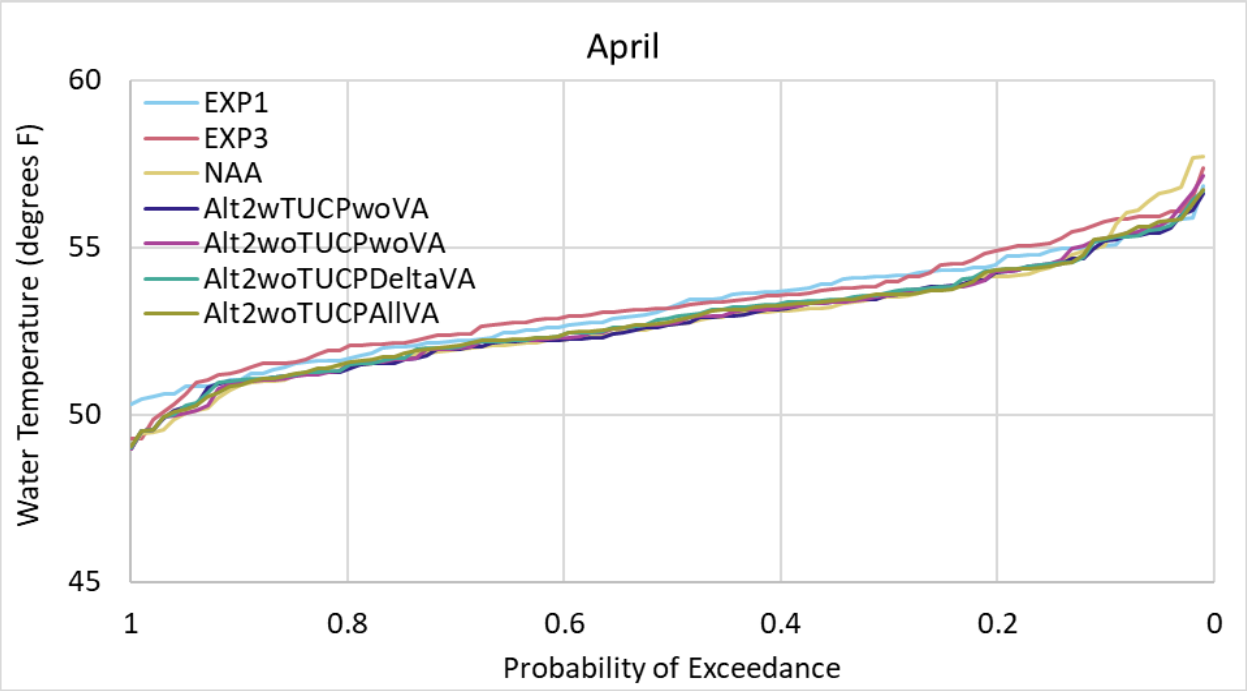

Figure L.1-5. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, April.

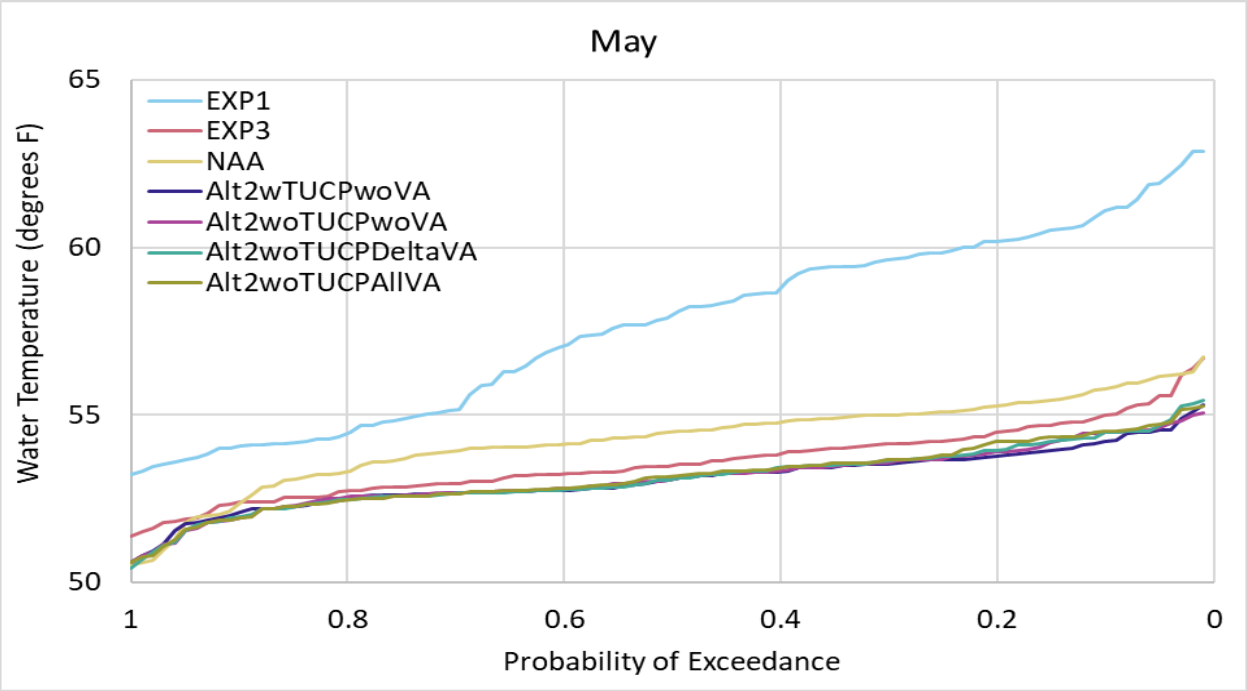

Figure L.1-6. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, May.

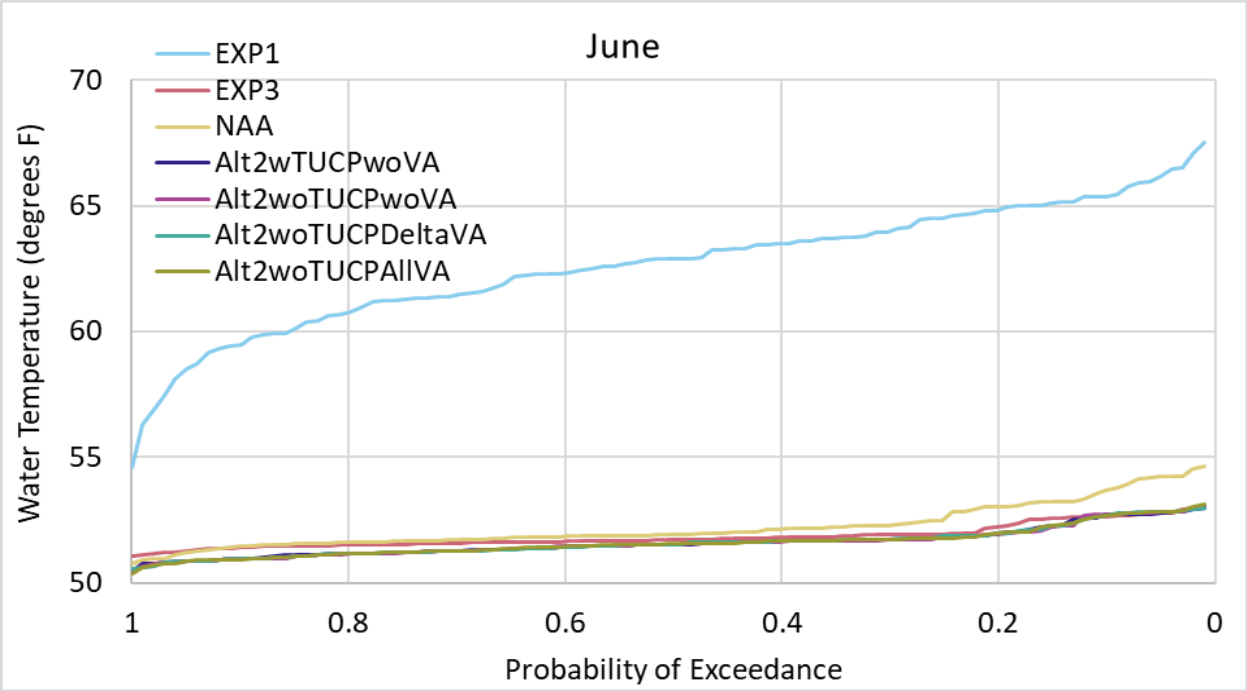

Figure L.1-7. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, June.

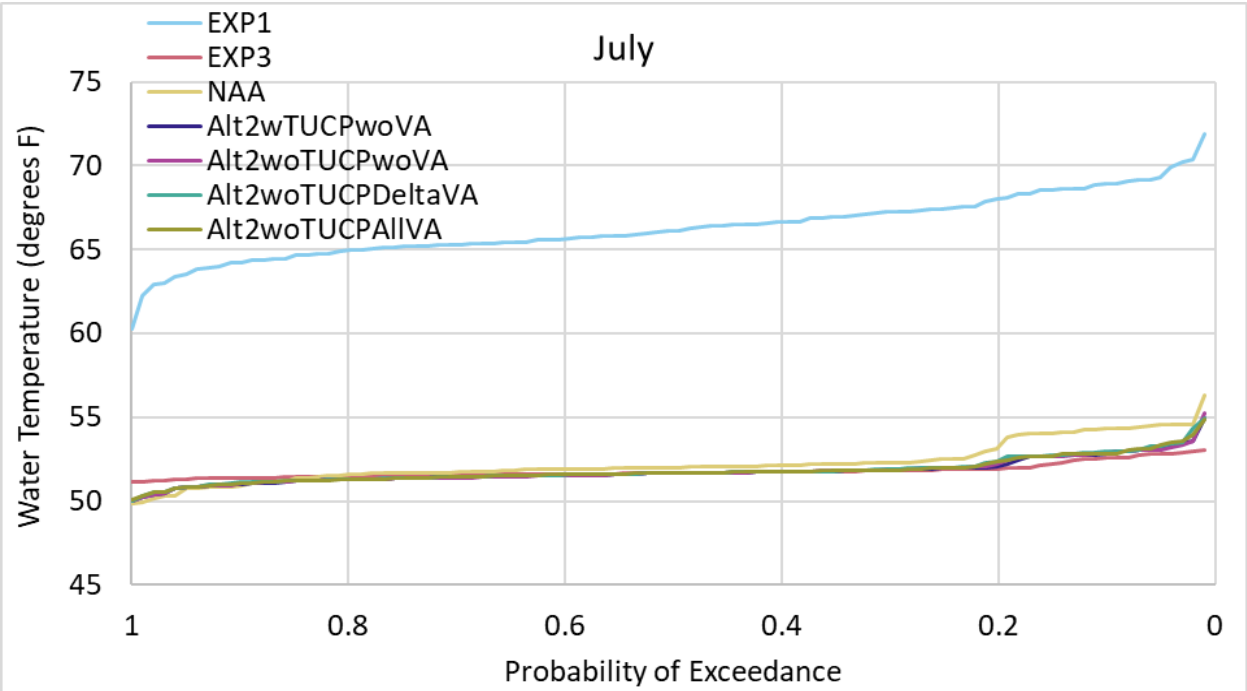

Figure L.1-8. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, July.

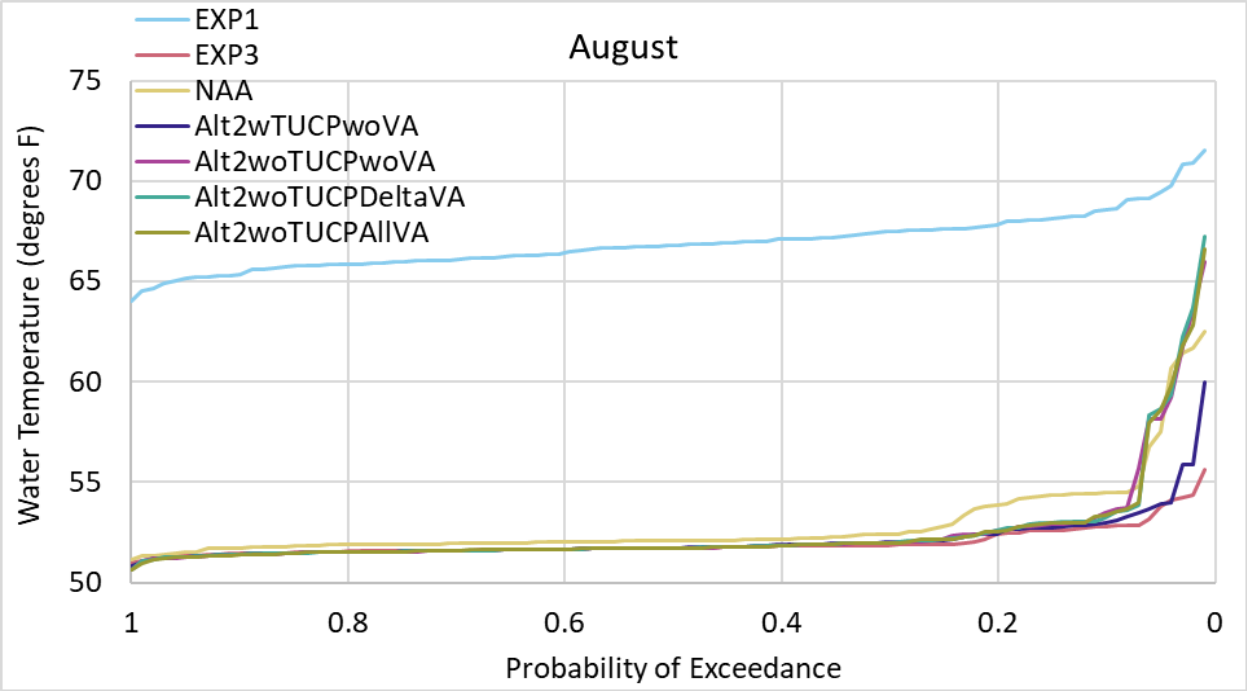

Figure L.1-9. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, August.

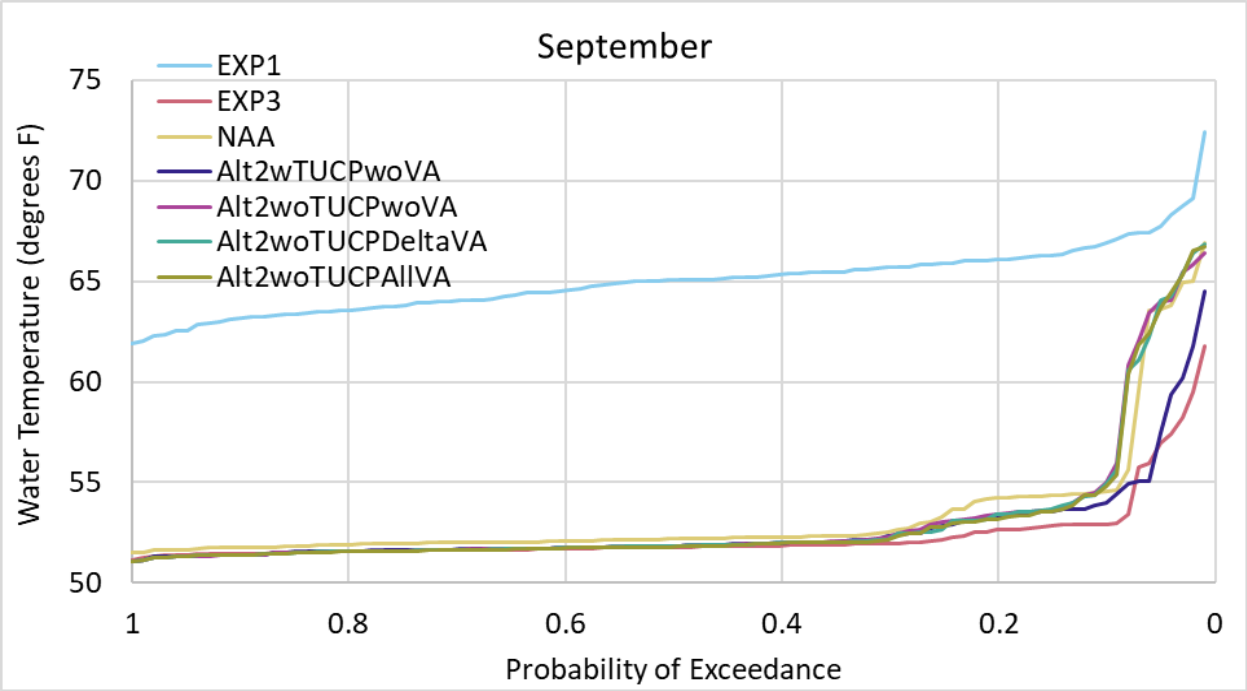

Figure L.1-10. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, September.

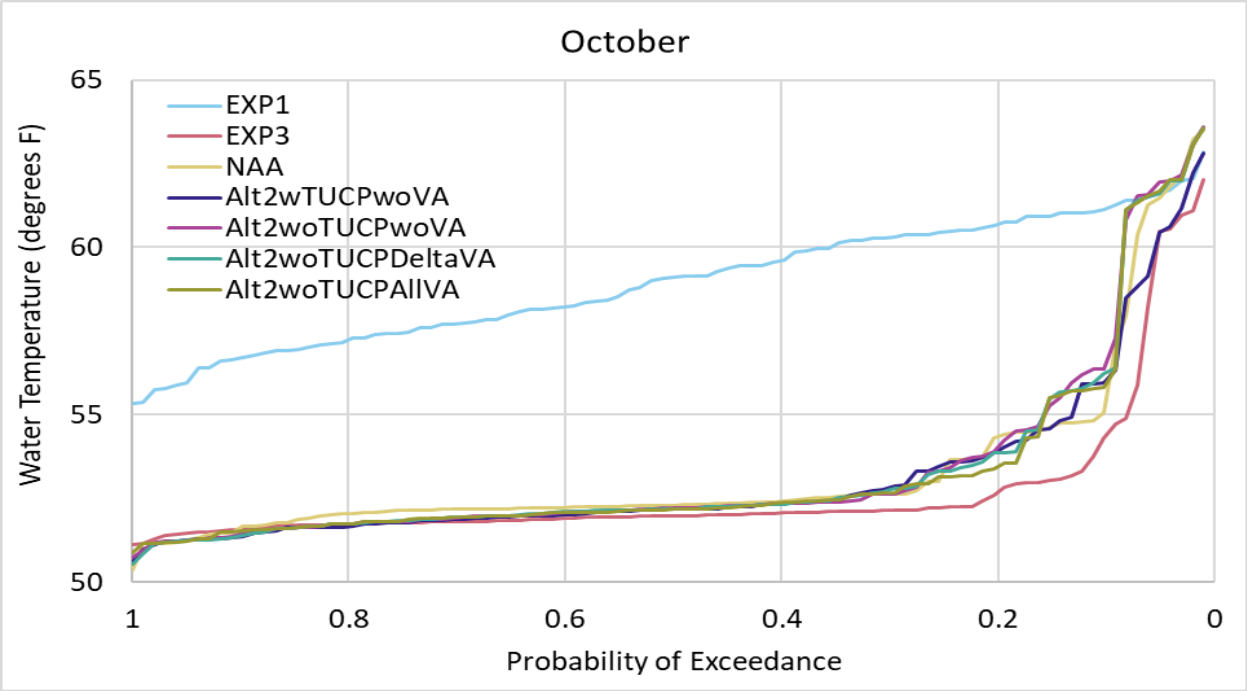

Figure L.1-11. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, October.

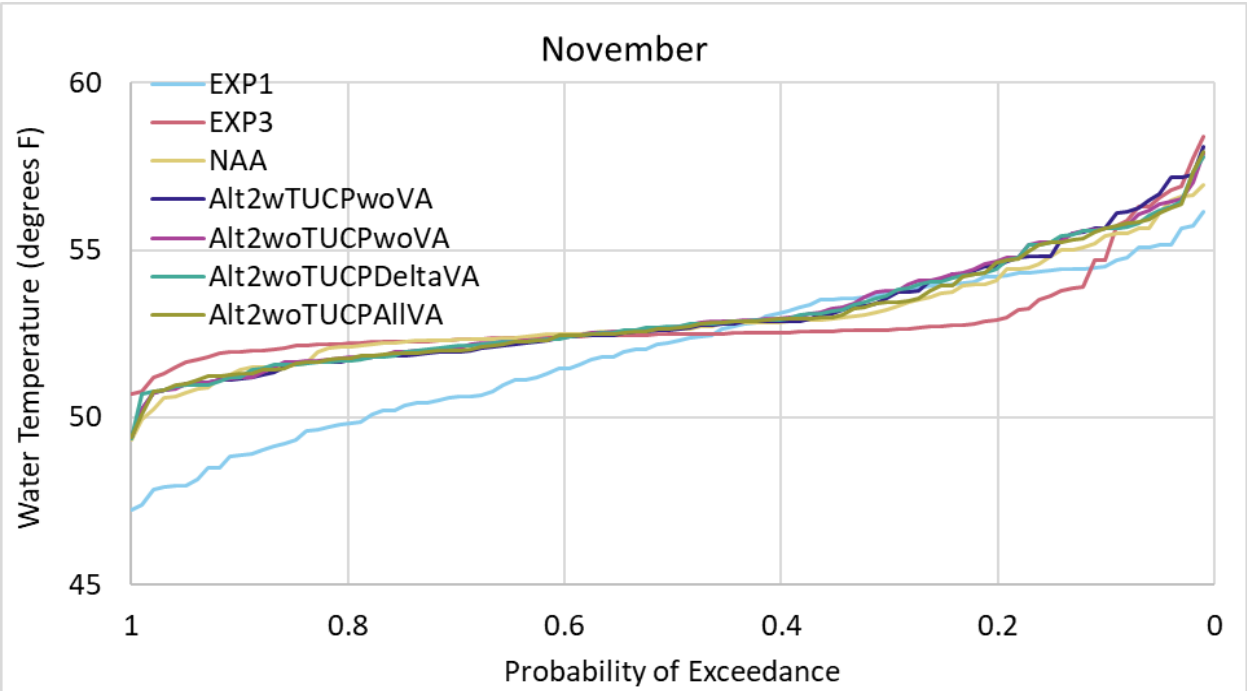

Figure L.1-12. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, November.

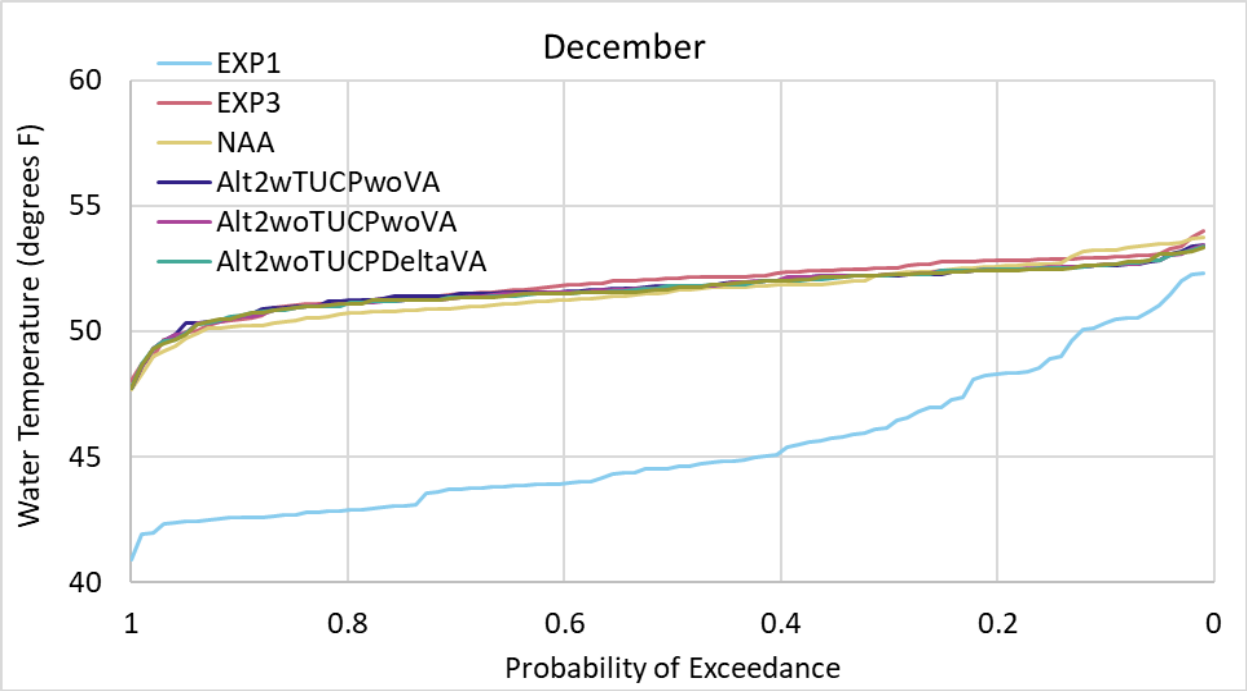

Figure L.1-13. Exceedance plot of modeled water temperatures, Sacramento River below Keswick, December.

L.1.3.1.2 Sacramento River below Clear Creek

Figure L.1-14 presents exceedance curves of modeled monthly water temperatures in the Sacramento River below Clear Creek for all months combined for each model scenario. Figure L.1-15 through Figure L.1-26 present exceedance curves of modeled monthly water temperatures in the Sacramento River below Clear Creek for each month separately.

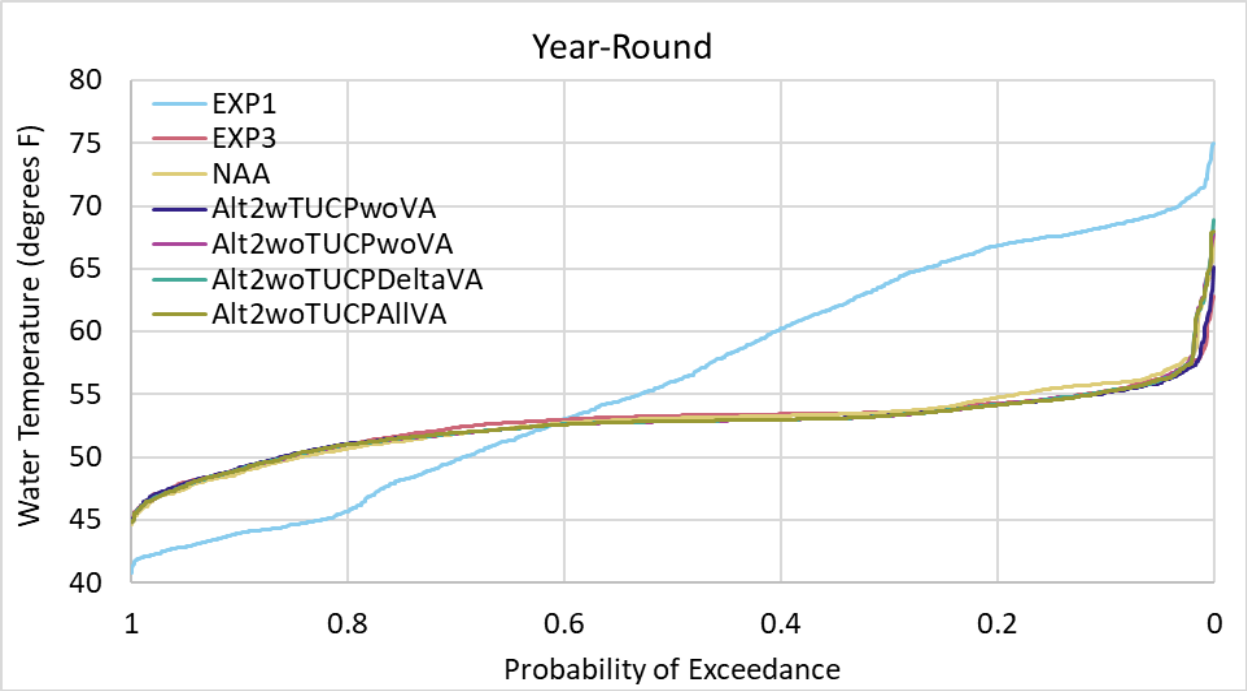

Figure L.1-14. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, year-round.

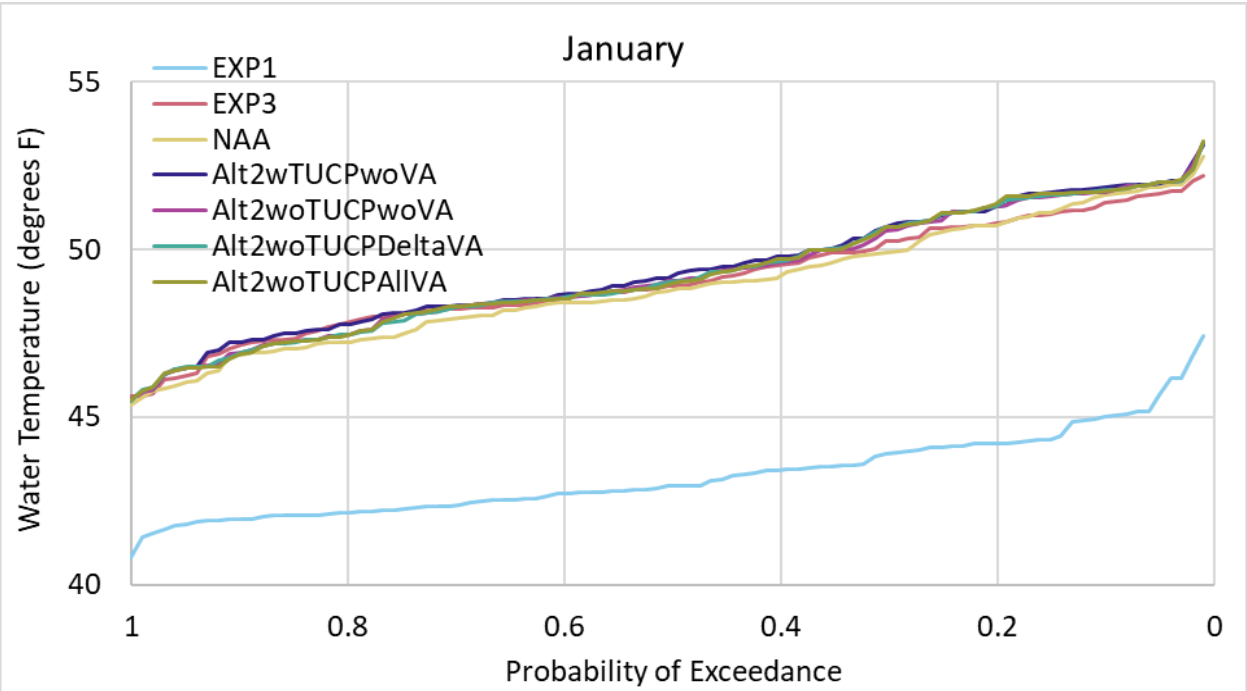

Figure L.1-15. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, January.

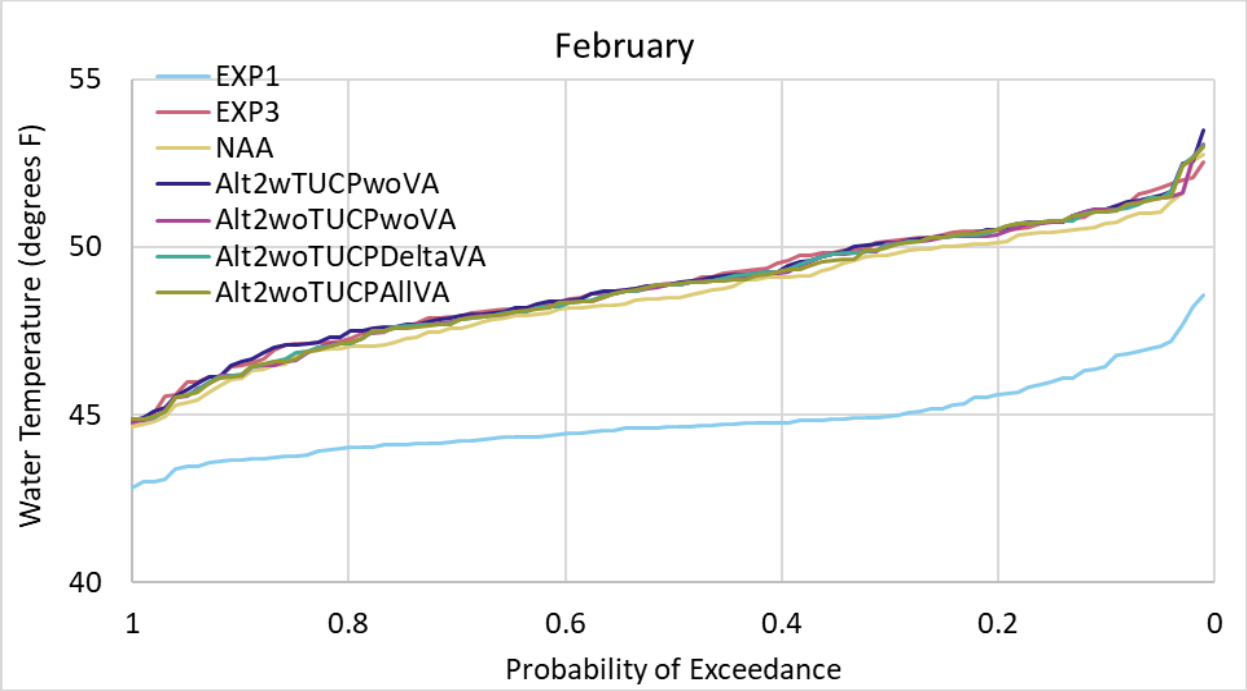

Figure L.1-16. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, February.

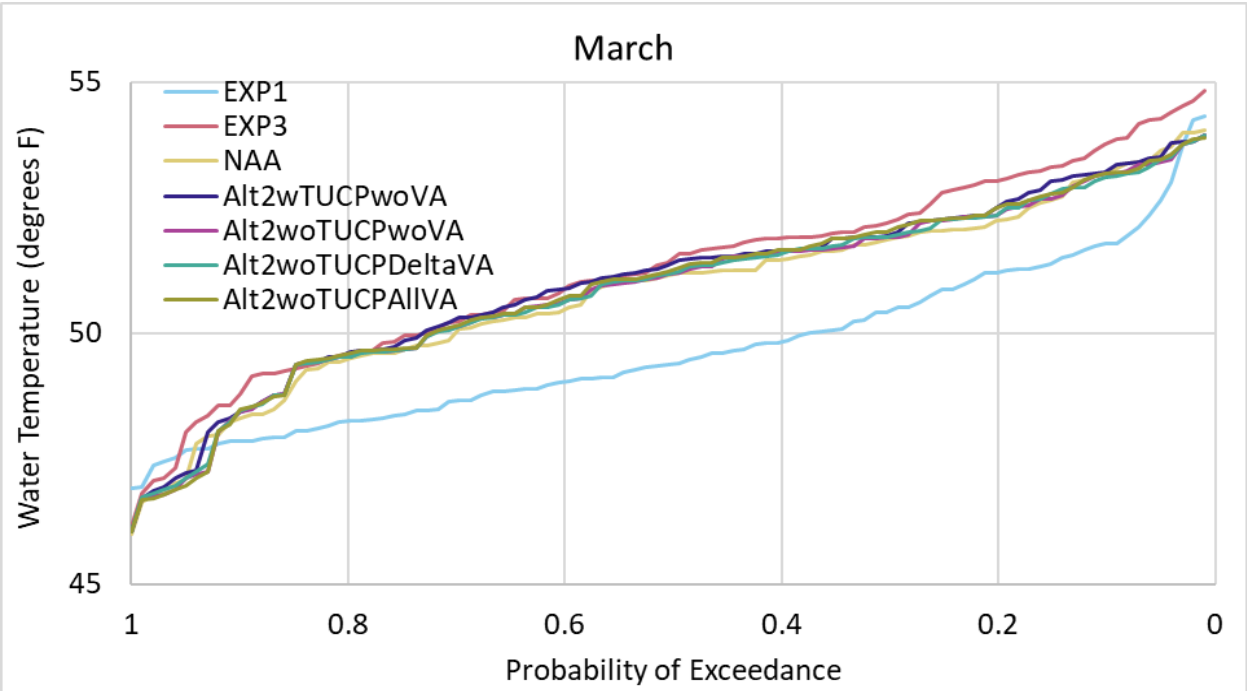

Figure L.1-17. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, March.

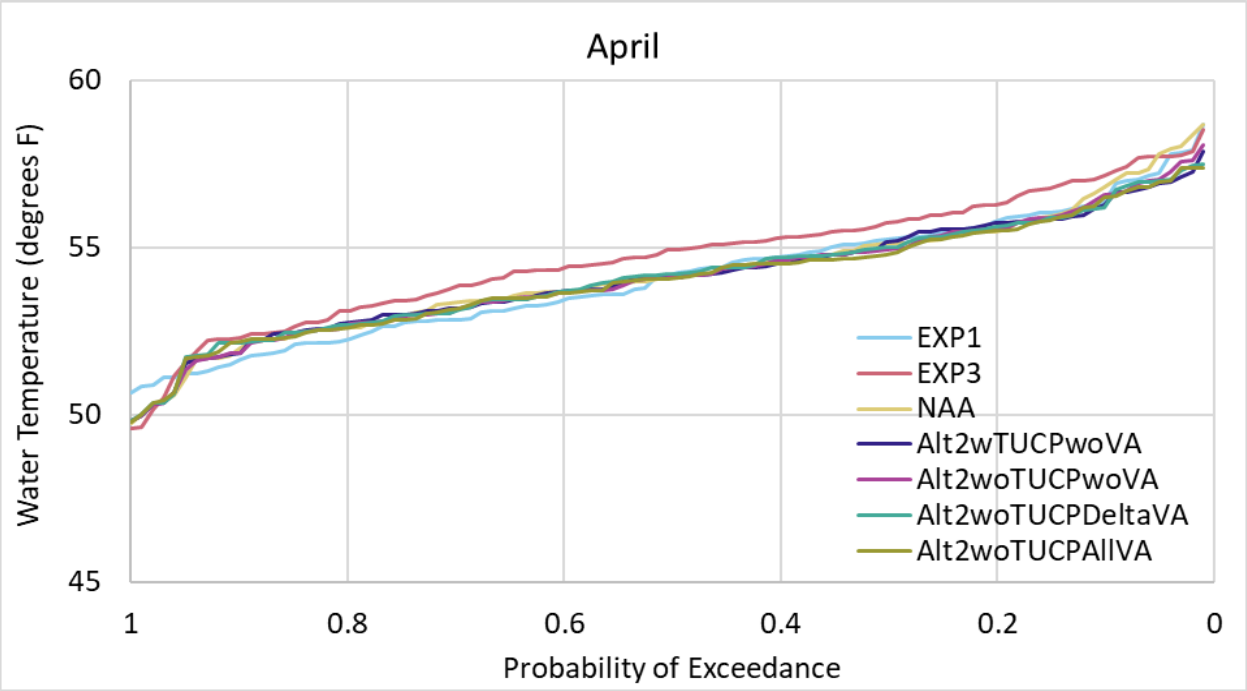

Figure L.1-18. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, April.

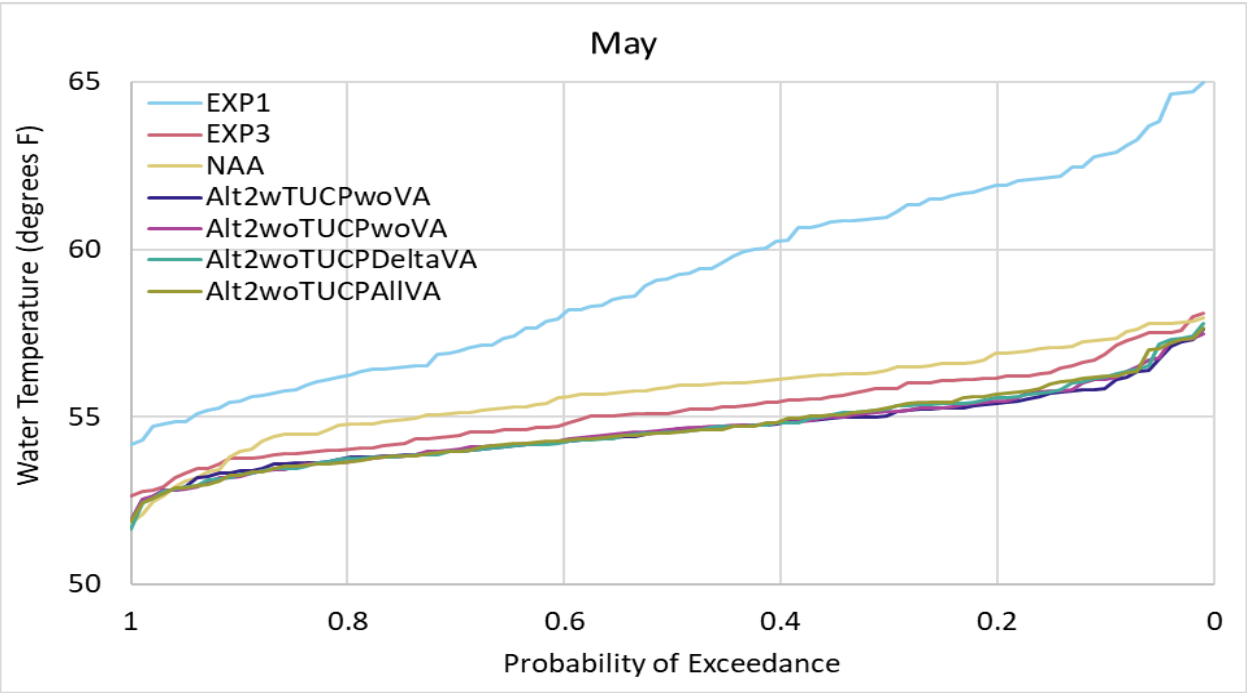

Figure L.1-19. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, May.

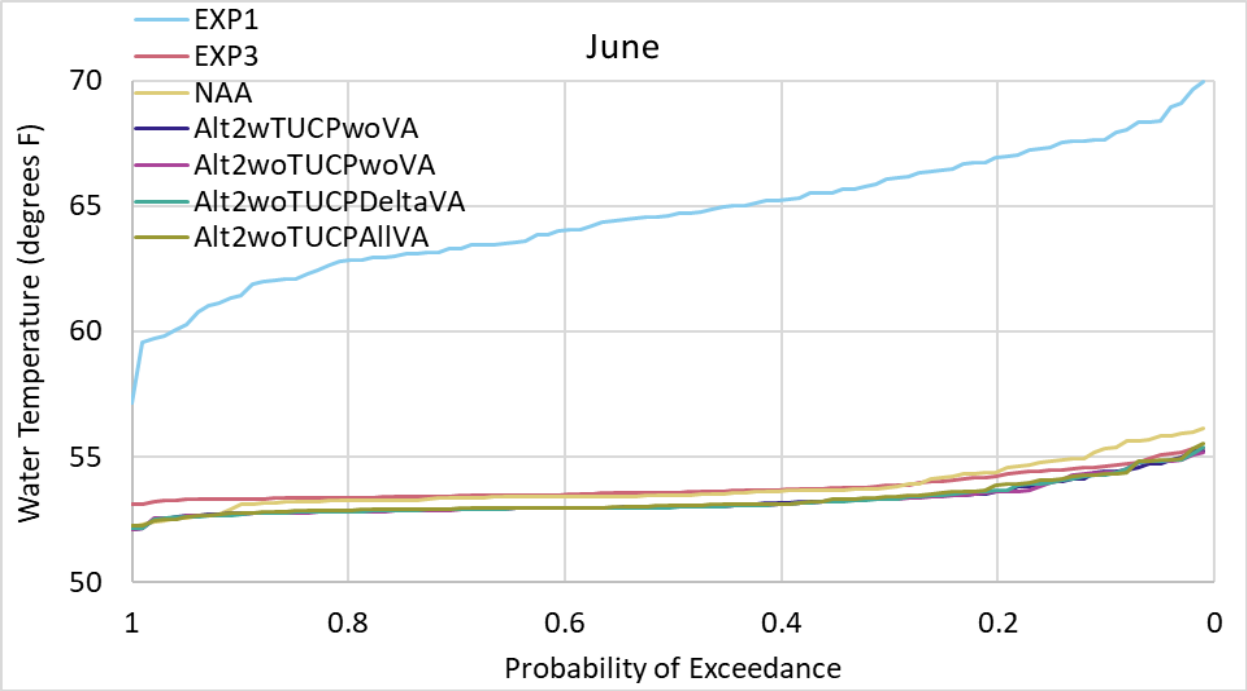

Figure L.1-20. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, June.

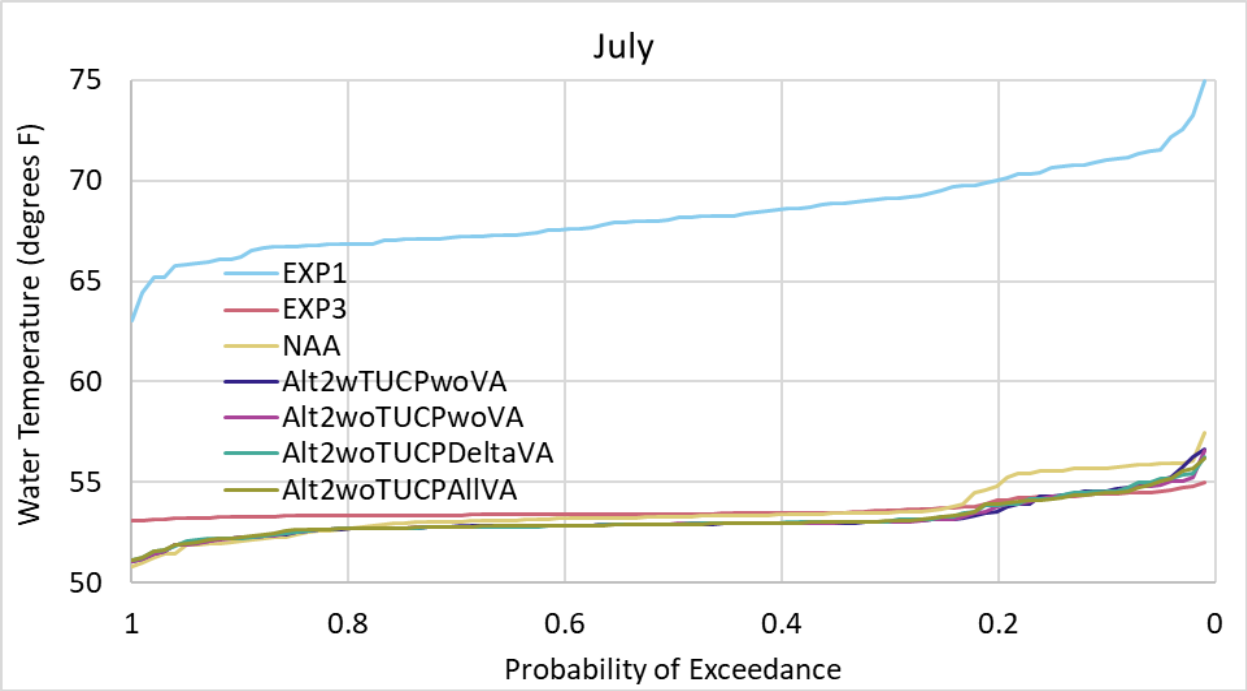

Figure L.1-21. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, July.

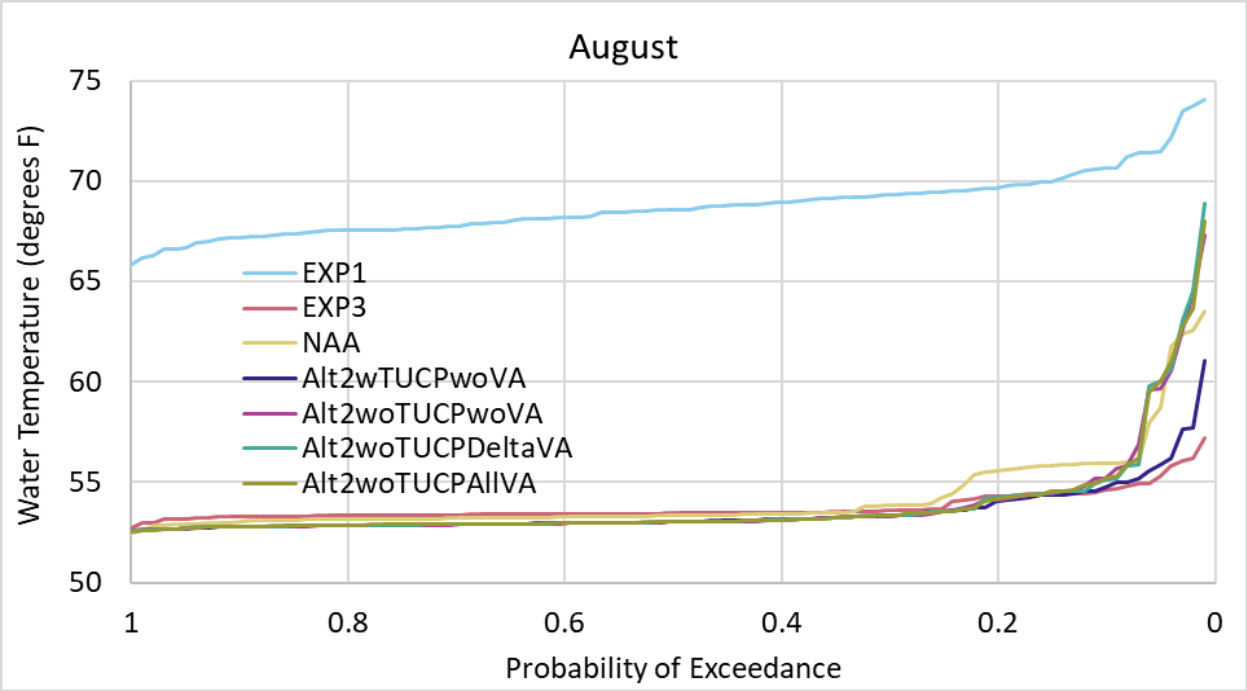

Figure L.1-22. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, August.

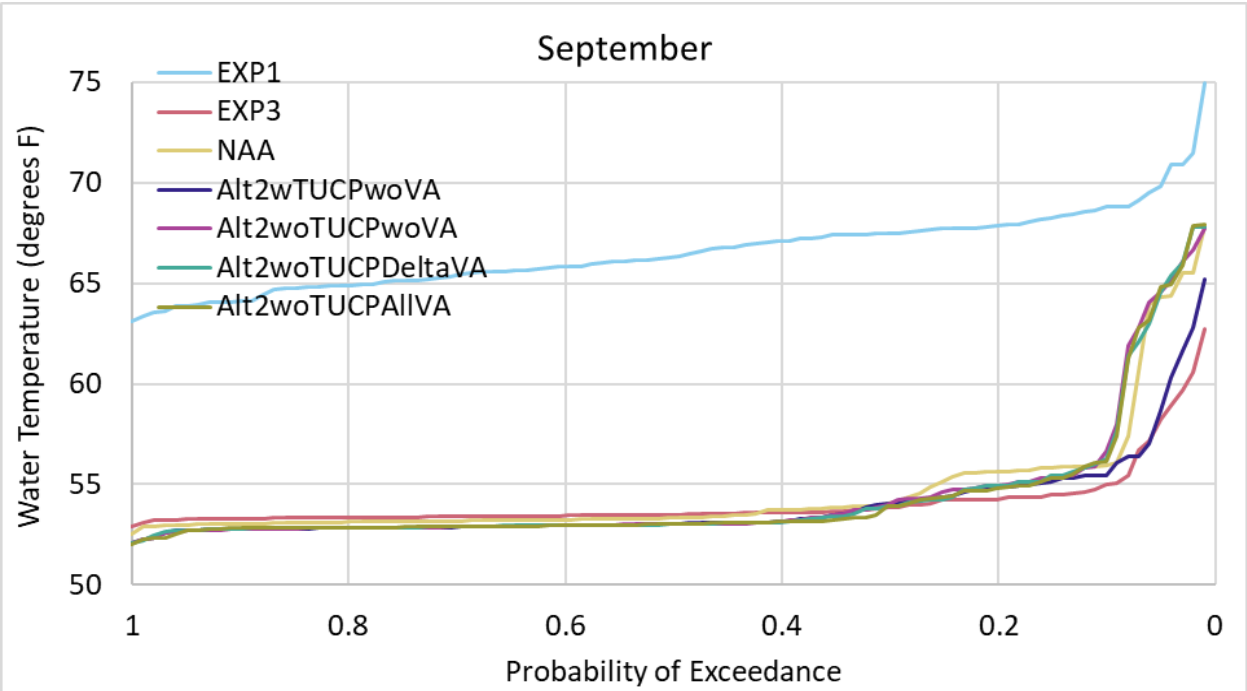

Figure L.1-23. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, September.

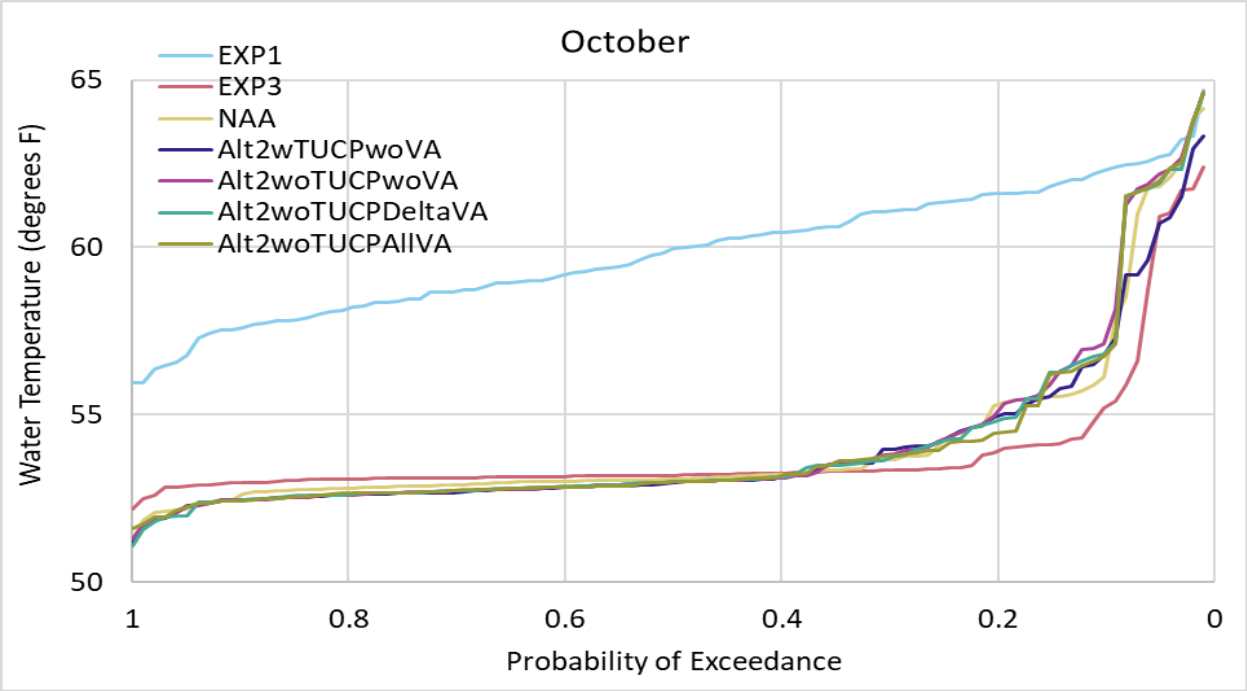

Figure L.1-24. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, October.

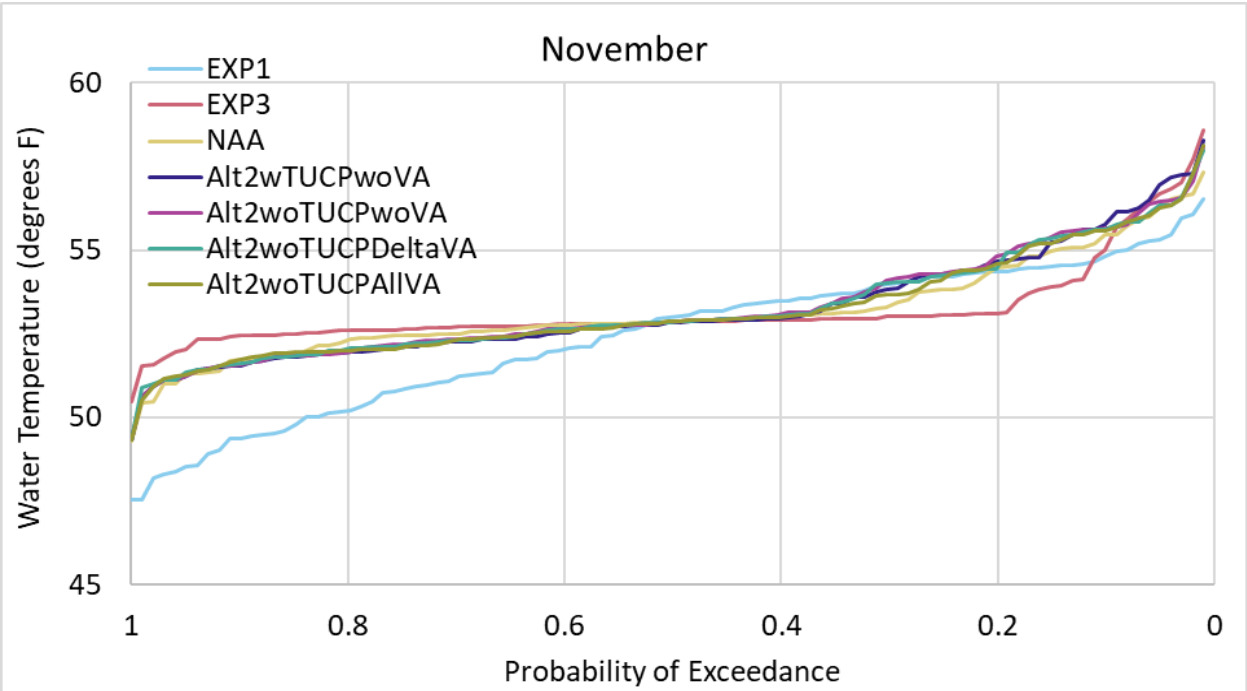

Figure L.1-25. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, November.

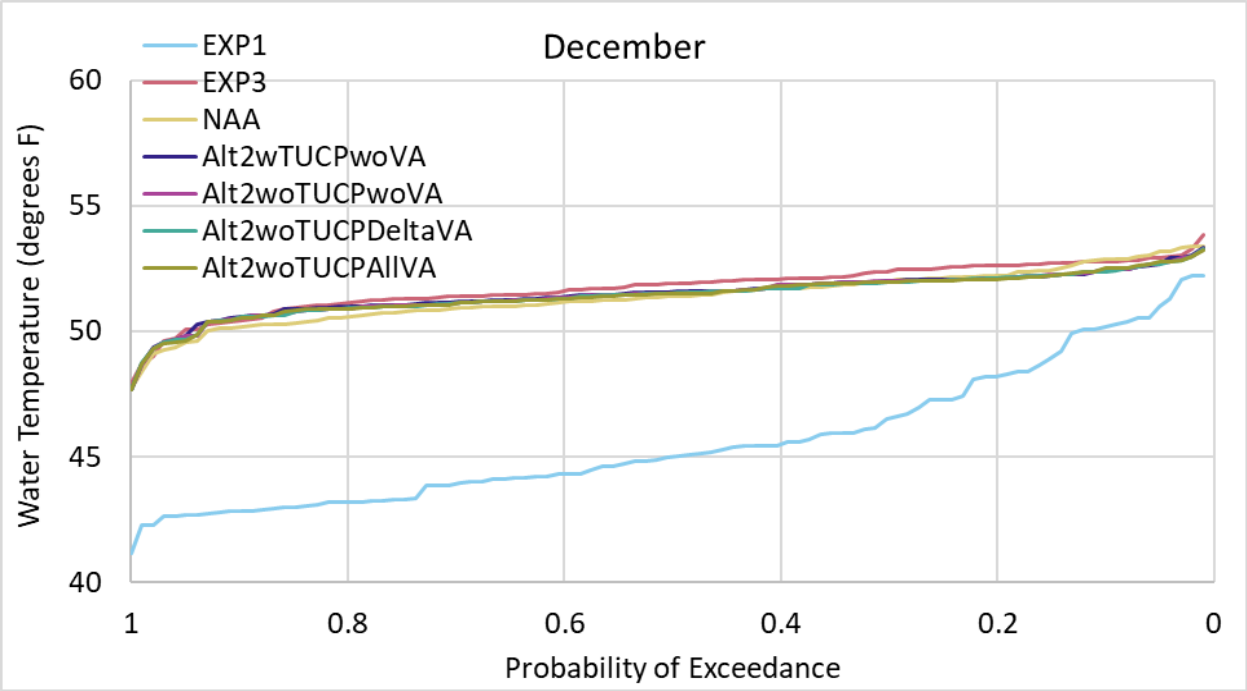

Figure L.1-26. Exceedance plot of modeled water temperatures, Sacramento River below Clear Creek, December.

L.1.3.1.3 Sacramento River at Bend Bridge

Figure L.1-27 presents exceedance curves of modeled monthly water temperatures in the Sacramento River at Bend Bridge for all months combined for each model scenario. Figure L.1-28 through Figure L.1-39 present exceedance curves of modeled monthly water temperatures in the Sacramento River at Bend Bridge for each month separately.

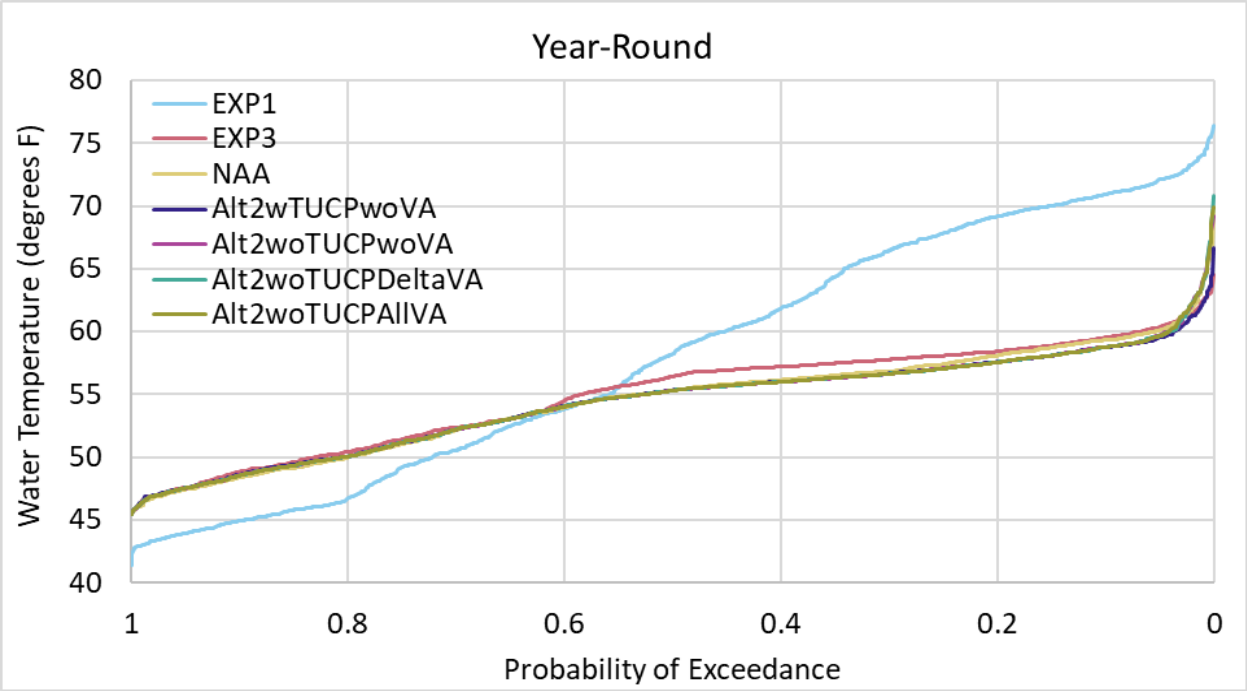

Figure L.1-27. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, year-round.

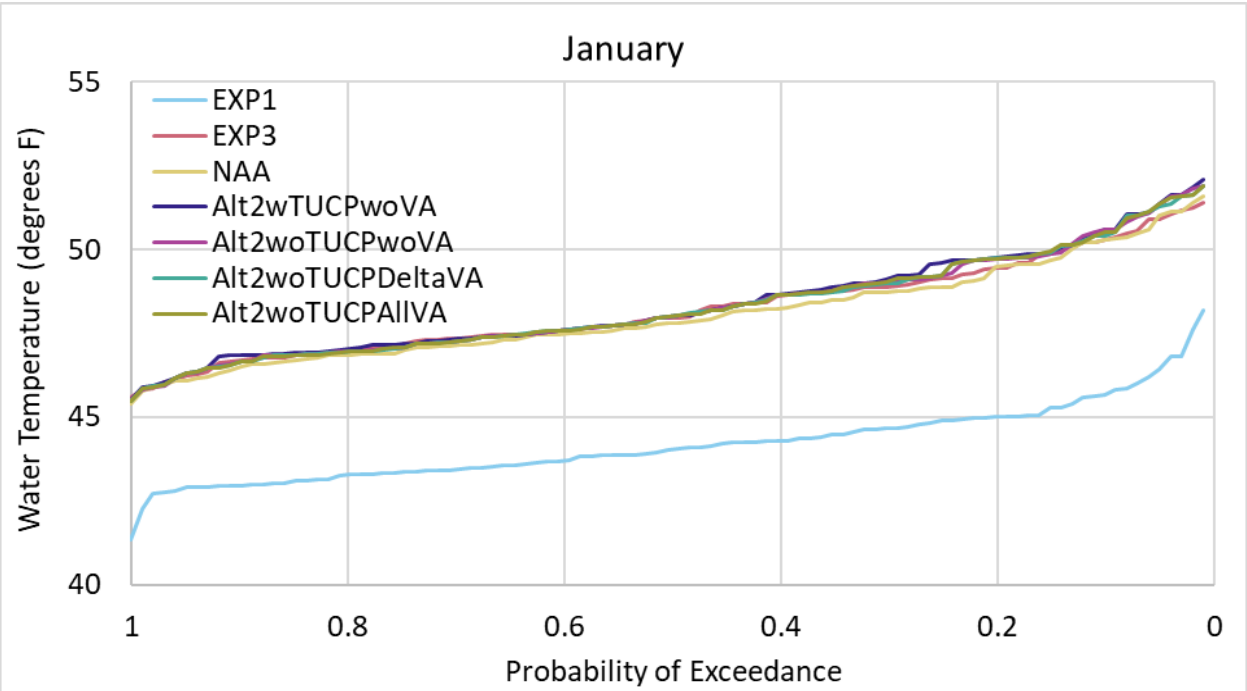

Figure L.1-28. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, January.

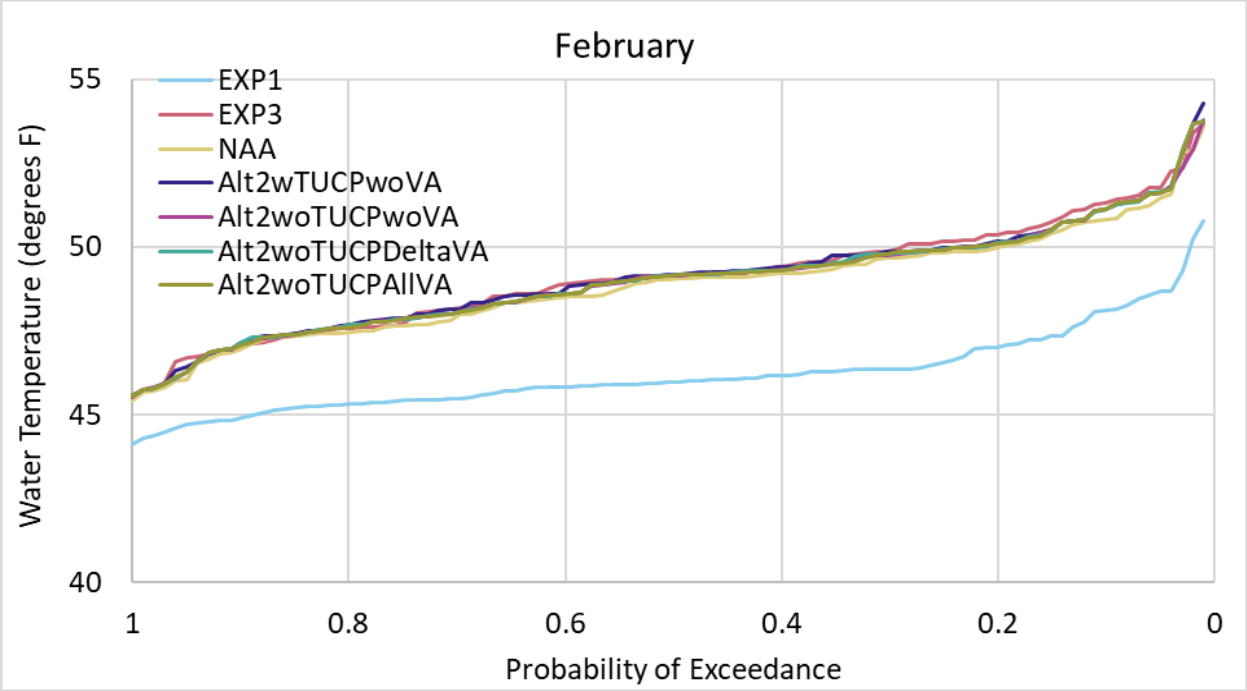

Figure L.1-29. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, February.

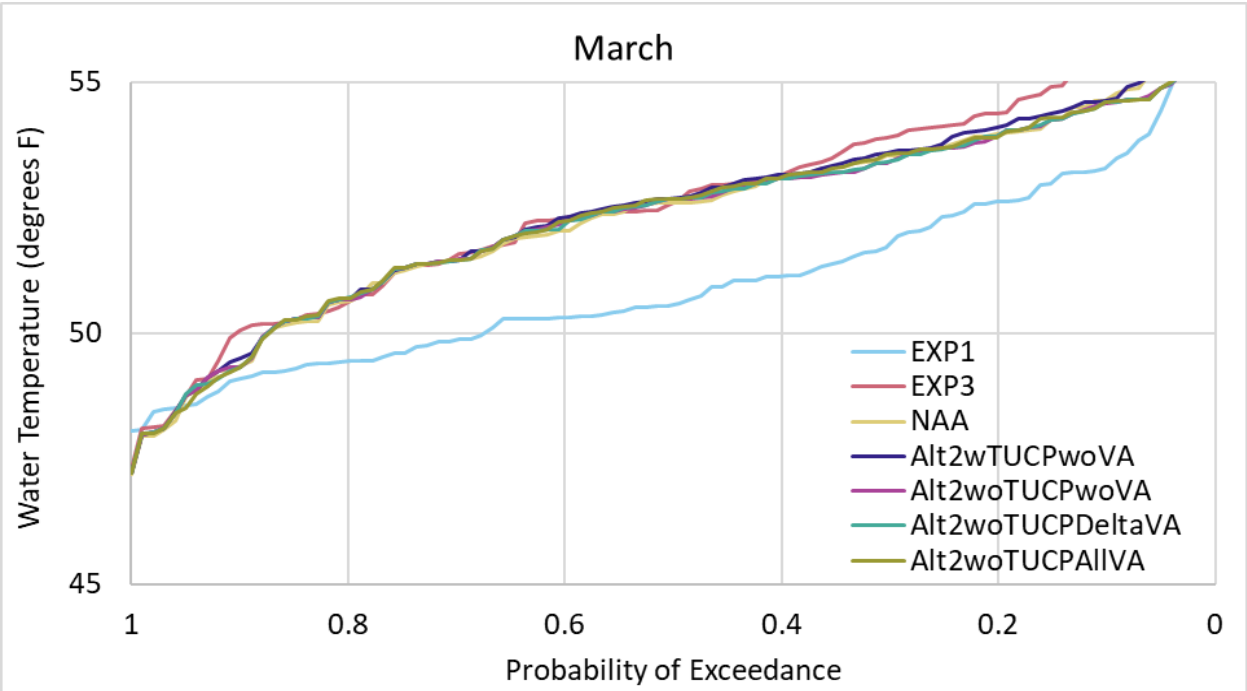

Figure L.1-30. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, March.

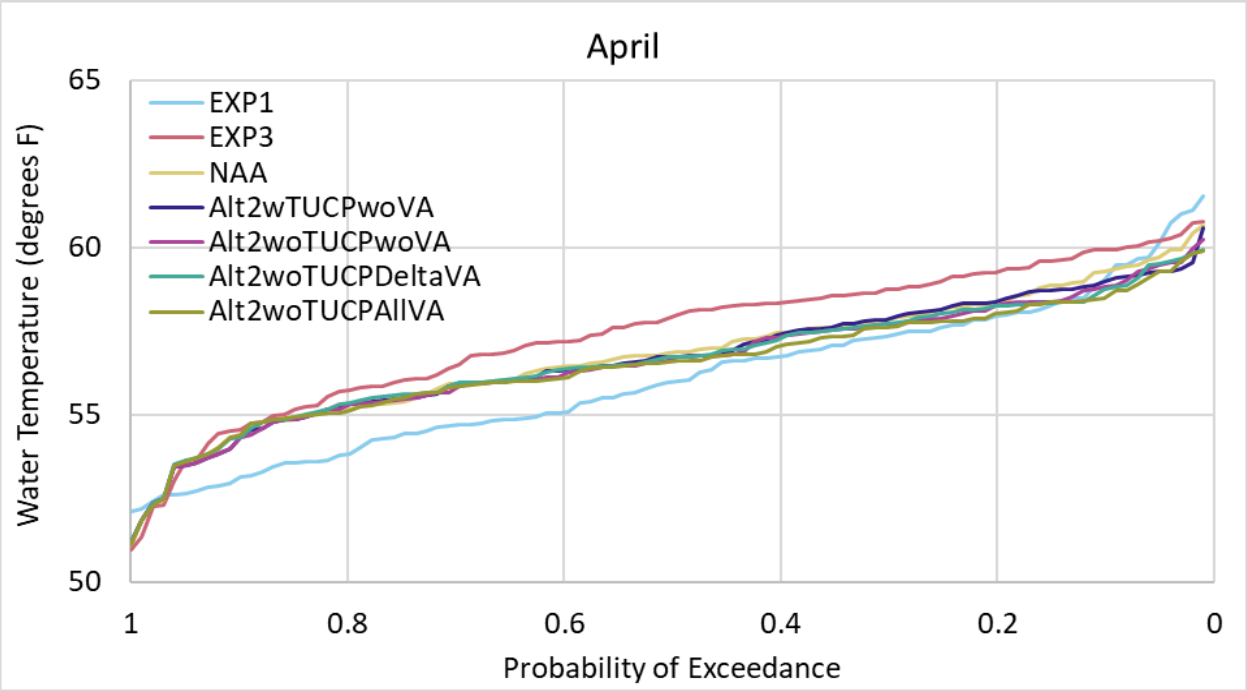

Figure L.1-31. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, April.

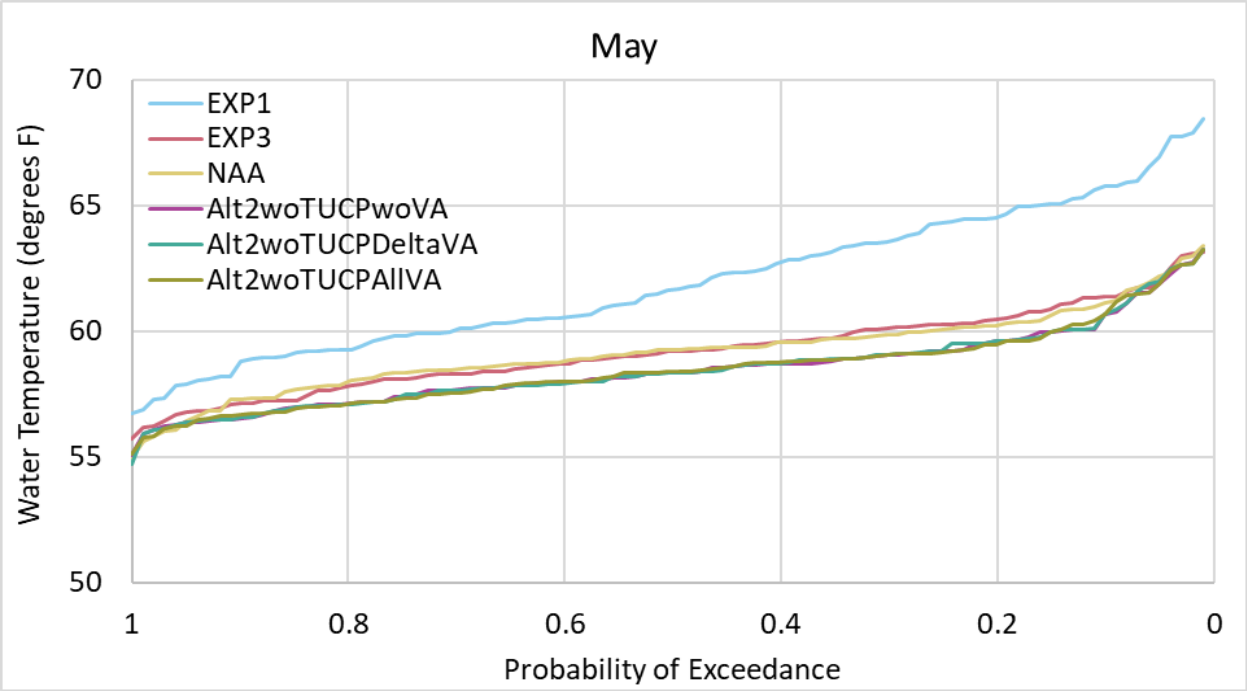

Figure L.1-32. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, May.

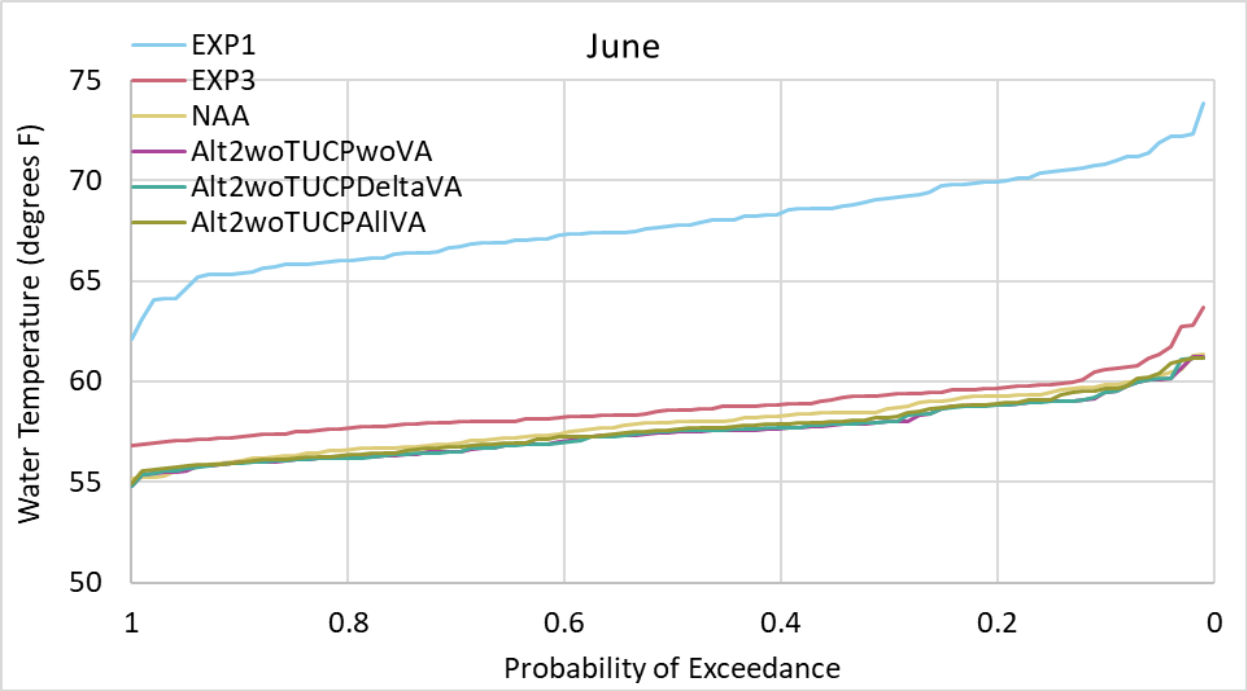

Figure L.1-33. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, June.

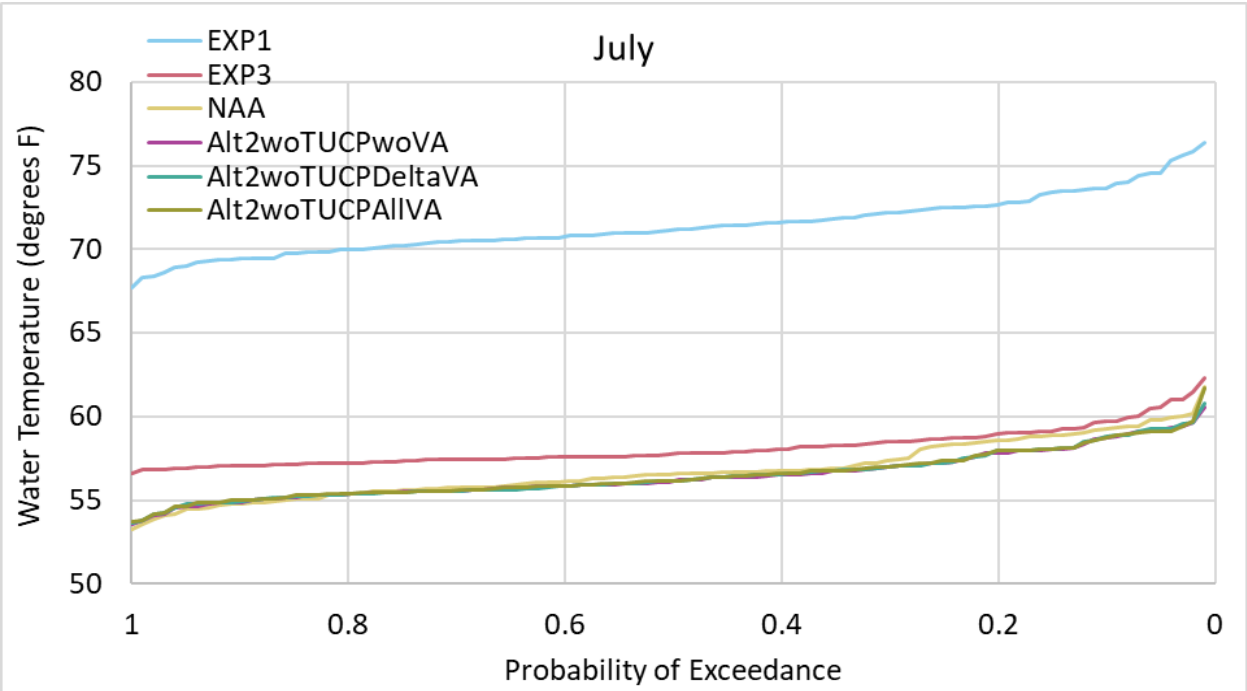

Figure L.1-34. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, July.

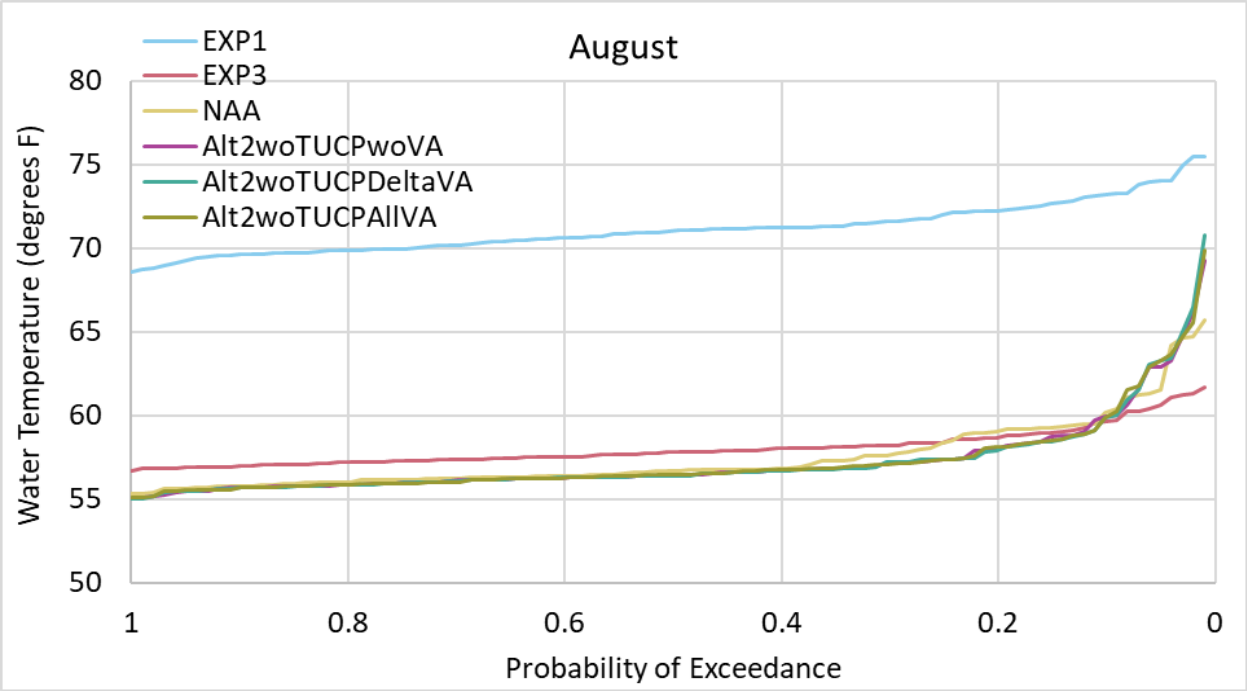

Figure L.1-35. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, August.

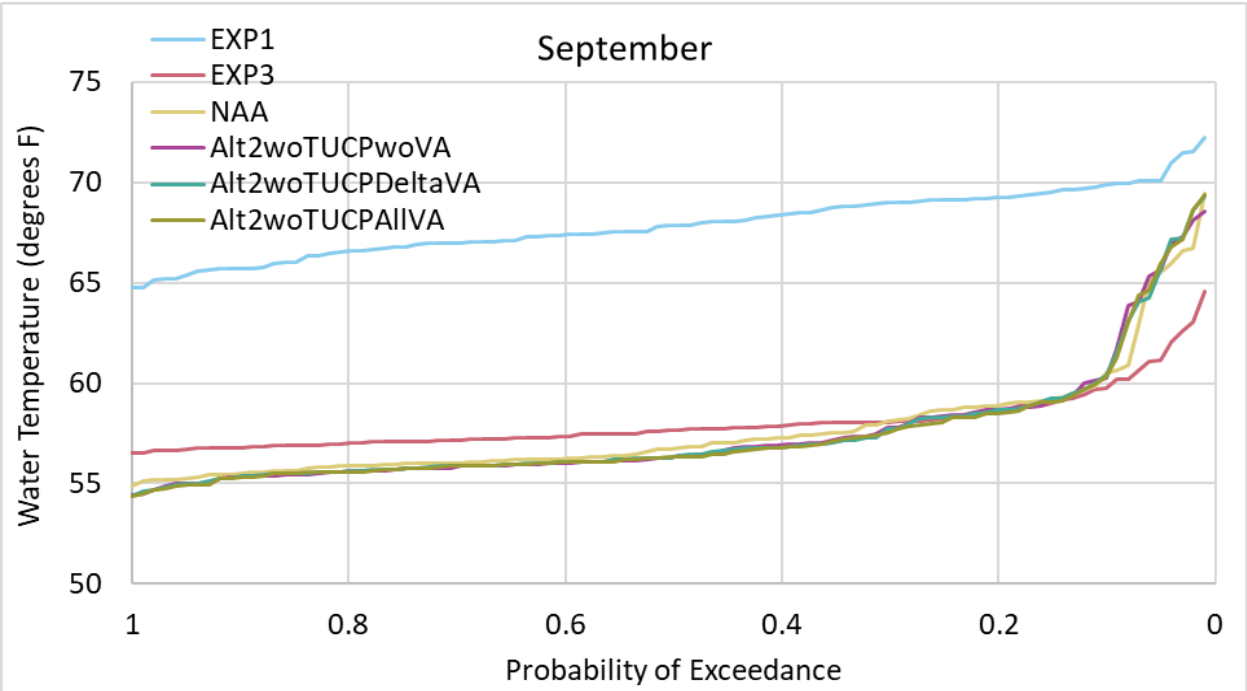

Figure L.1-36. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, September.

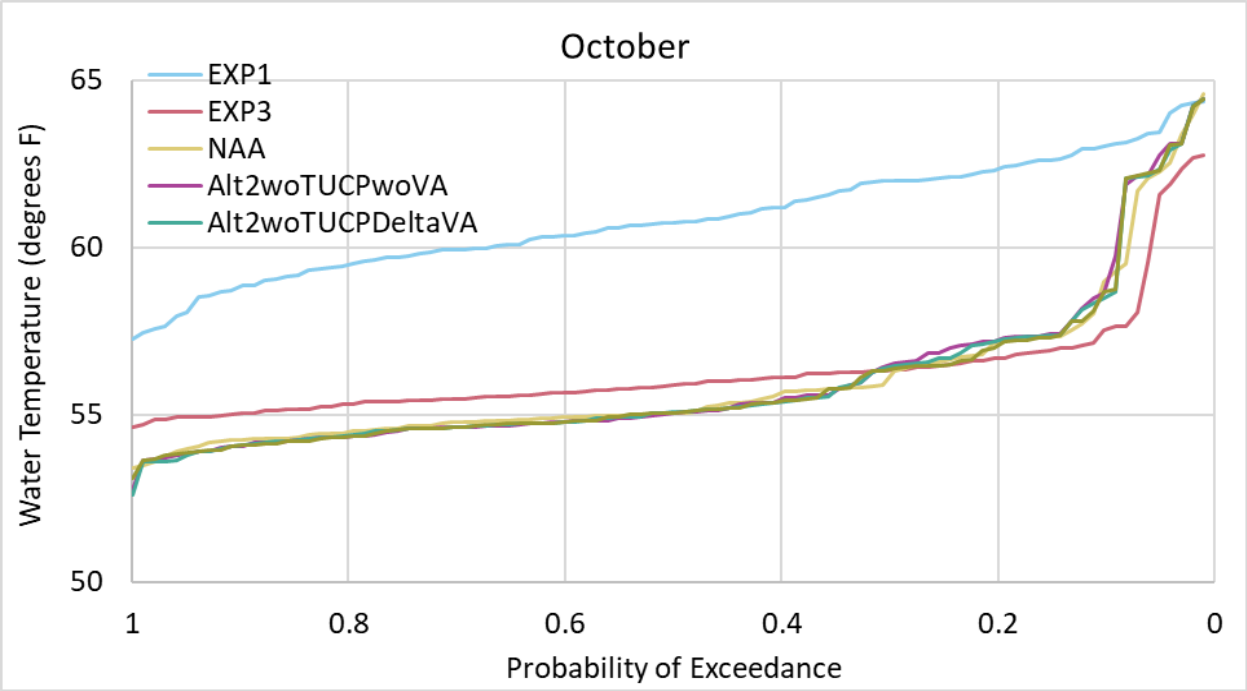

Figure L.1-37. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, October.

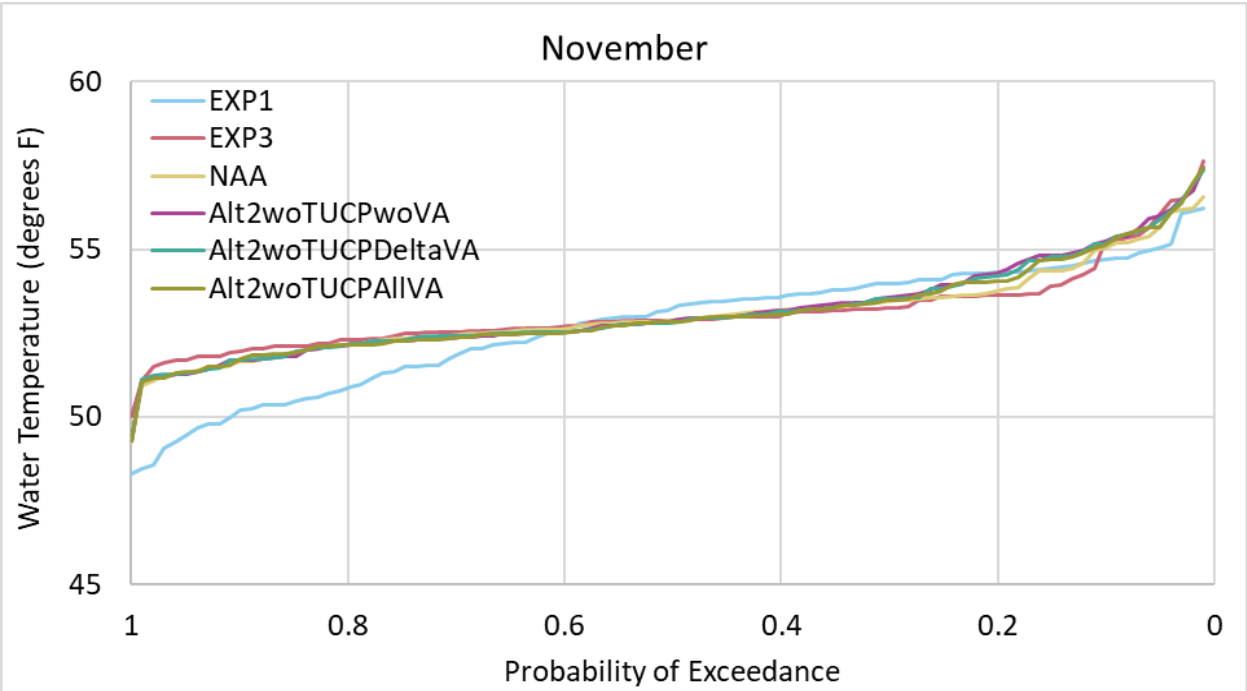

Figure L.1-38. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, November.

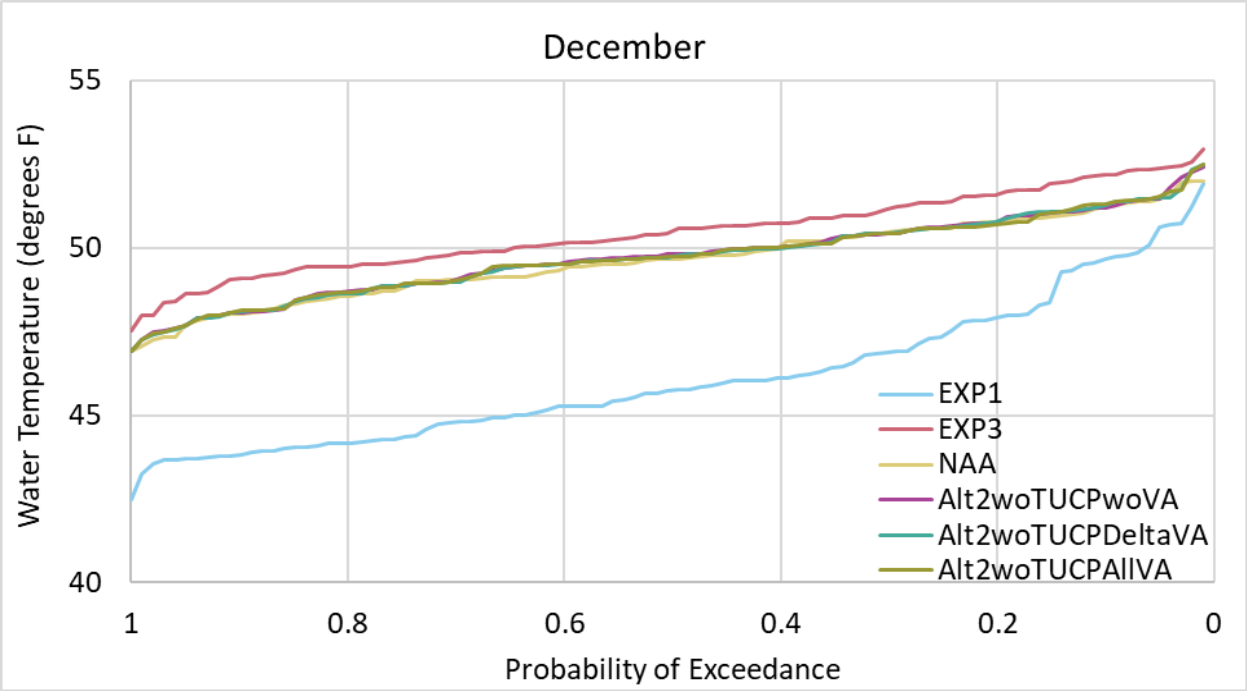

Figure L.1-39. Exceedance plot of modeled water temperatures, Sacramento River at Bend Bridge, December.

L.1.3.1.4 Sacramento River at Red Bluff Diversion Dam

Figure L.1-40 presents exceedance curves of modeled monthly water temperatures in the Sacramento River at Red Bluff Diversion Dam for all months combined for each model scenario. Figure L.1-41 through Figure L.1-52 present exceedance curves of modeled monthly water temperatures in the Sacramento River at Red Bluff Diversion Dam for each month separately.

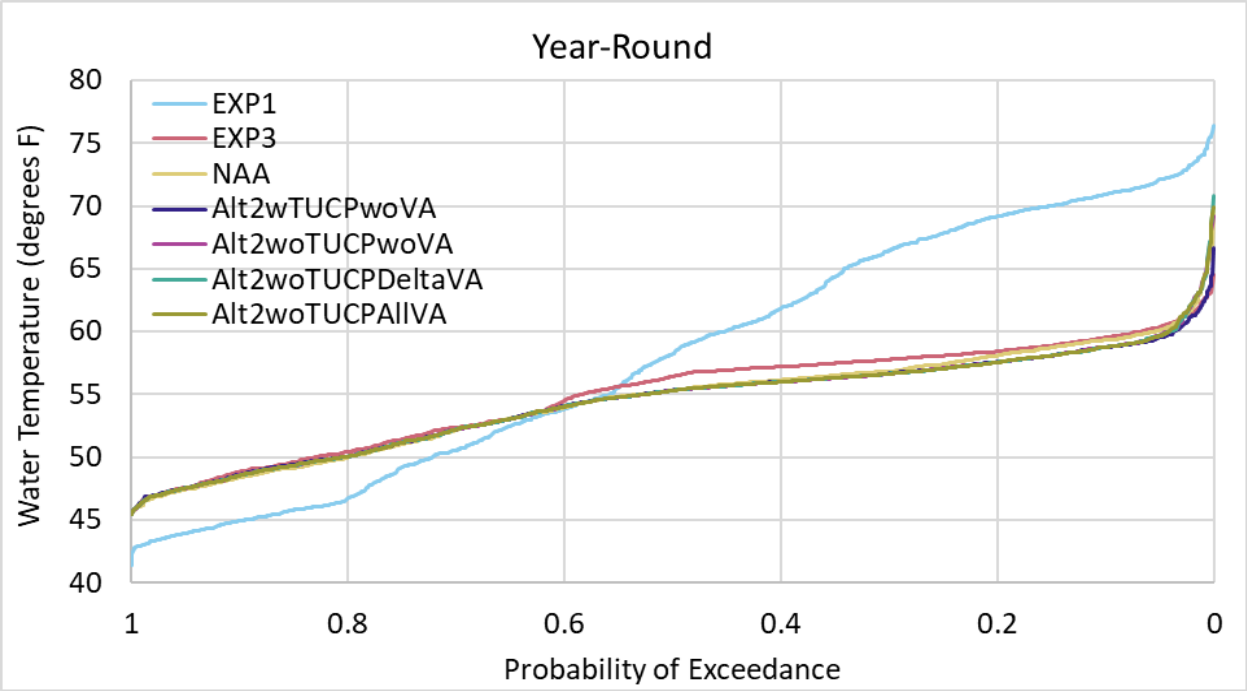

Figure L.1-40. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, year-round.

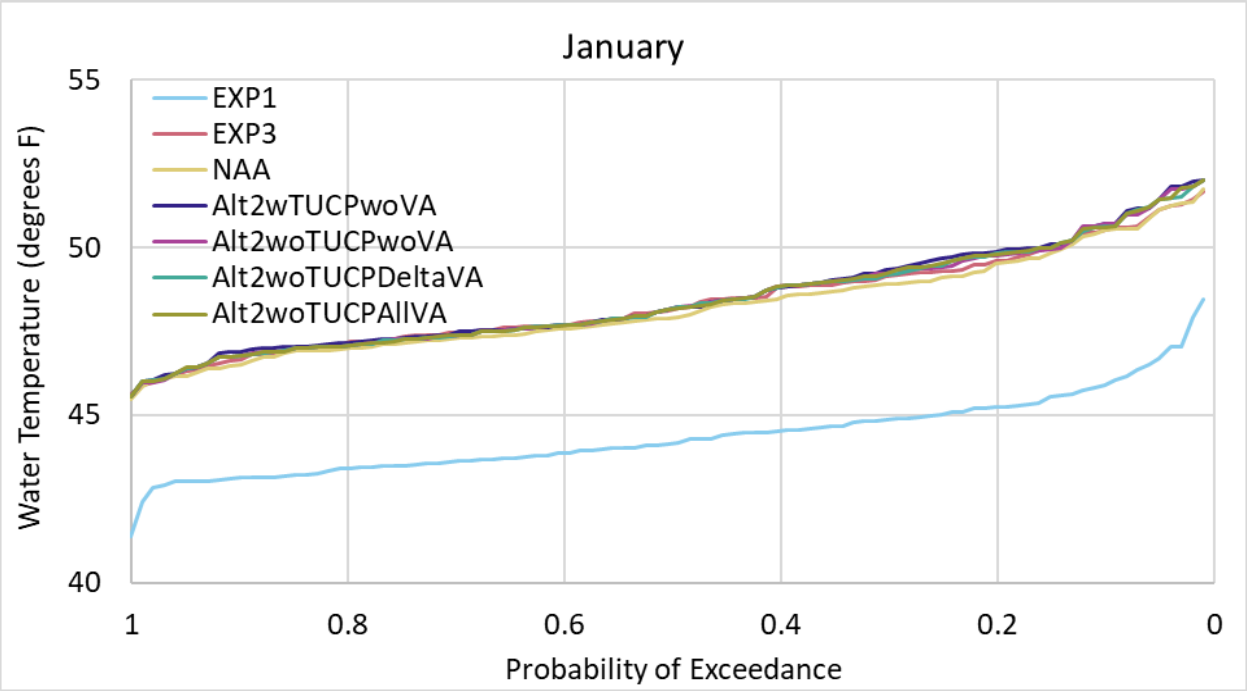

Figure L.1-41. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, January.

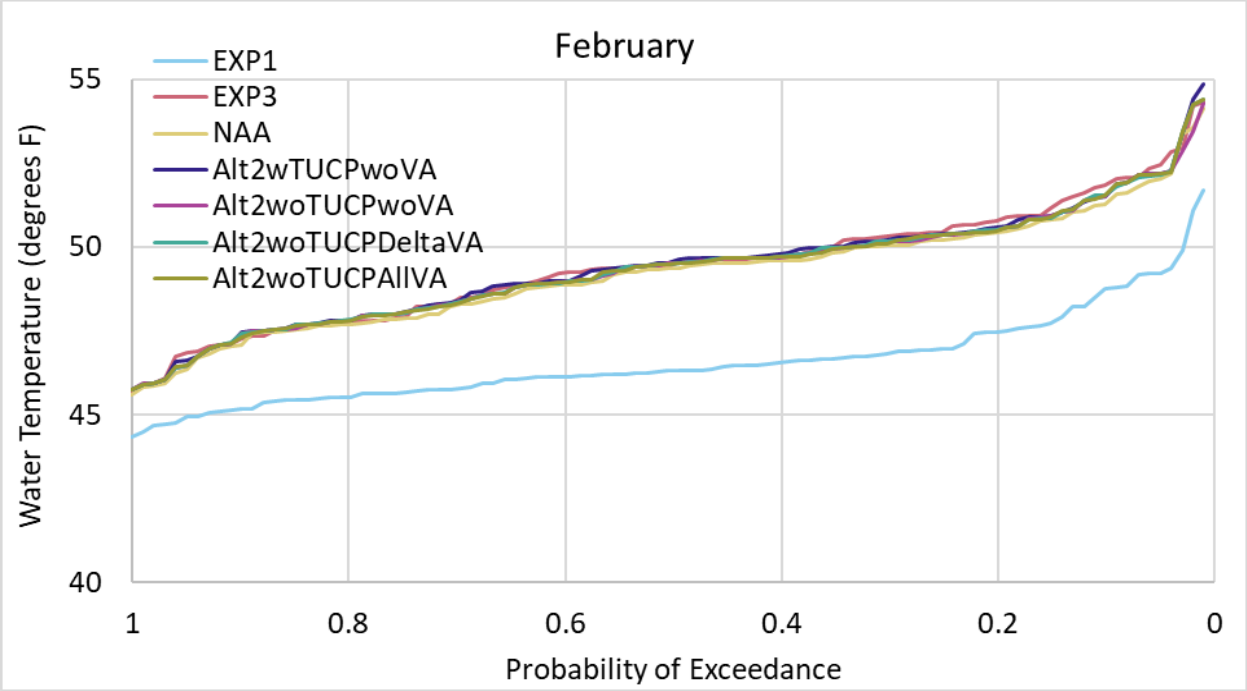

Figure L.1-42. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, February.

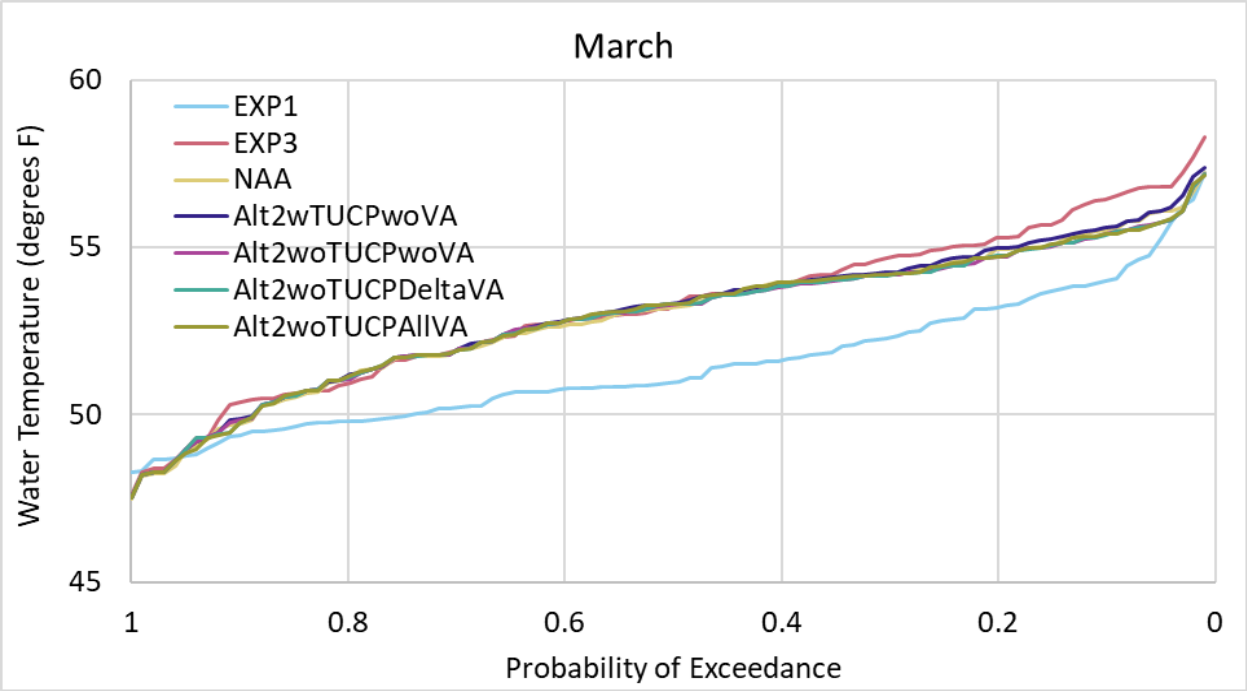

Figure L.1-43. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, March.

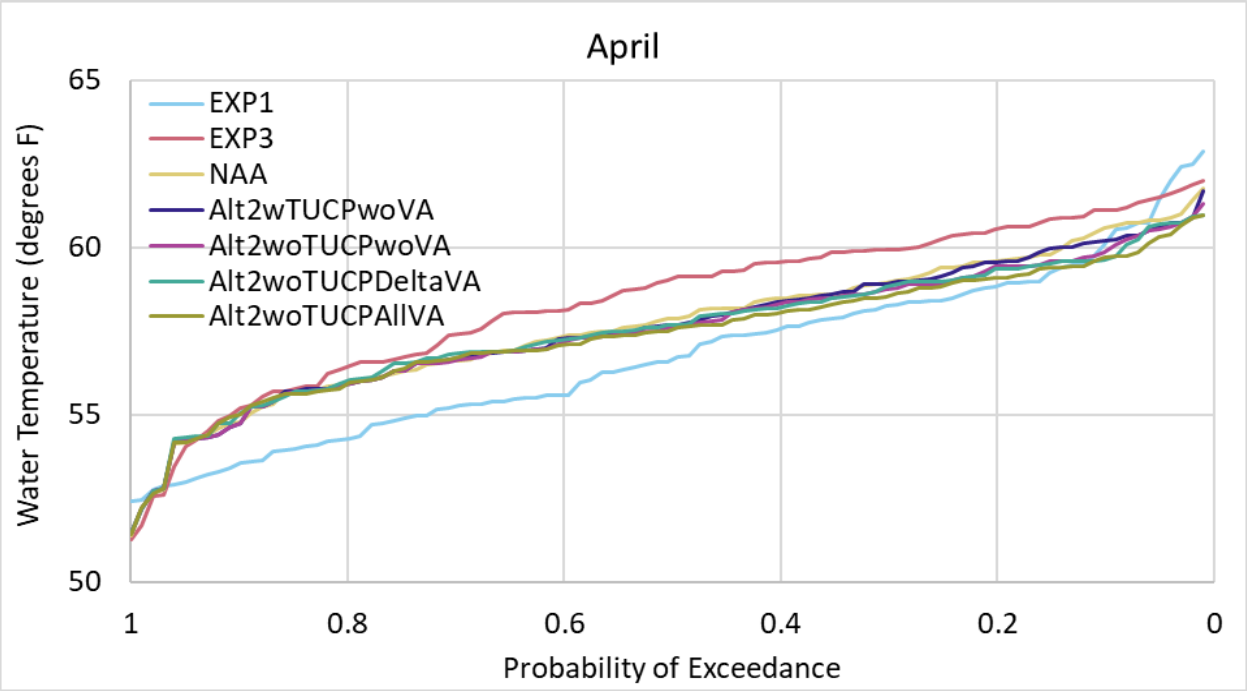

Figure L.1-44. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, April.

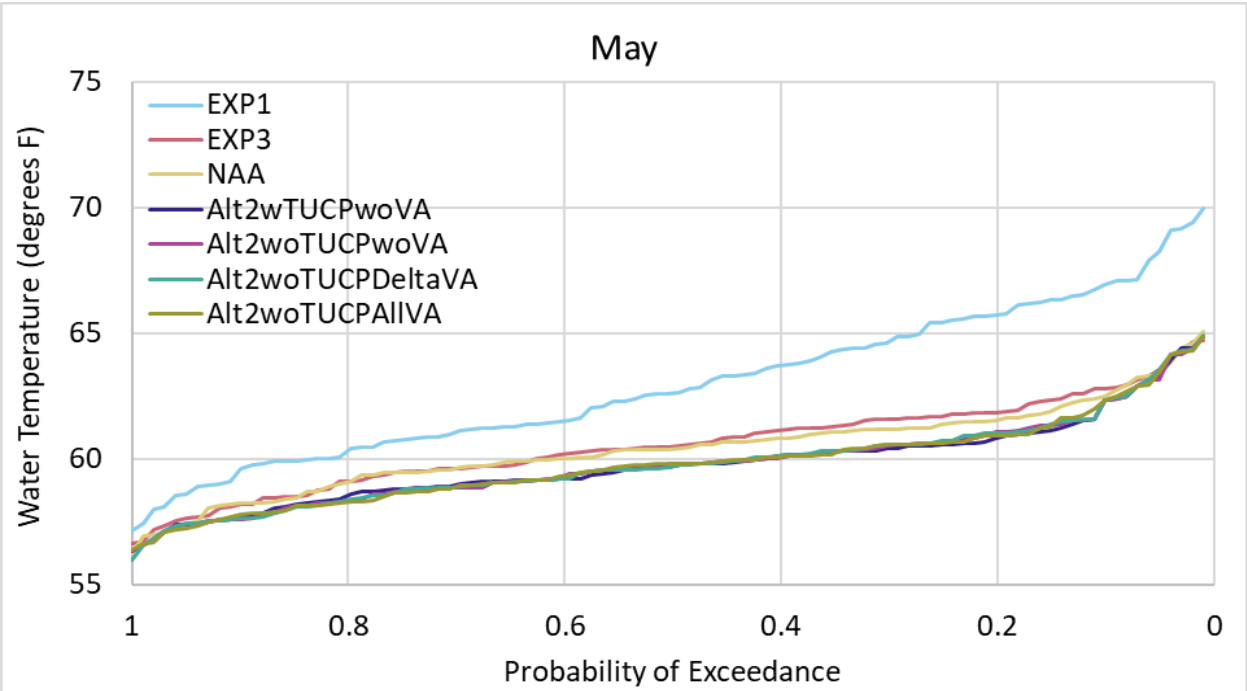

Figure L.1-45. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, May.

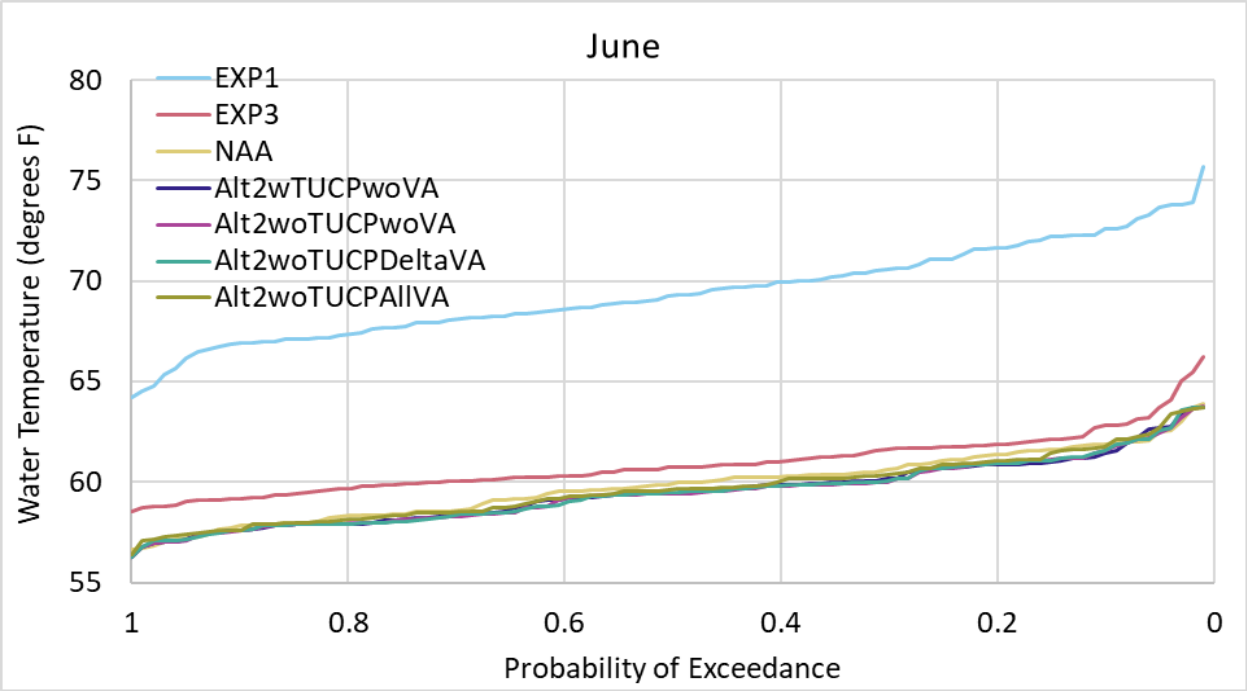

Figure L.1-46. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, June.

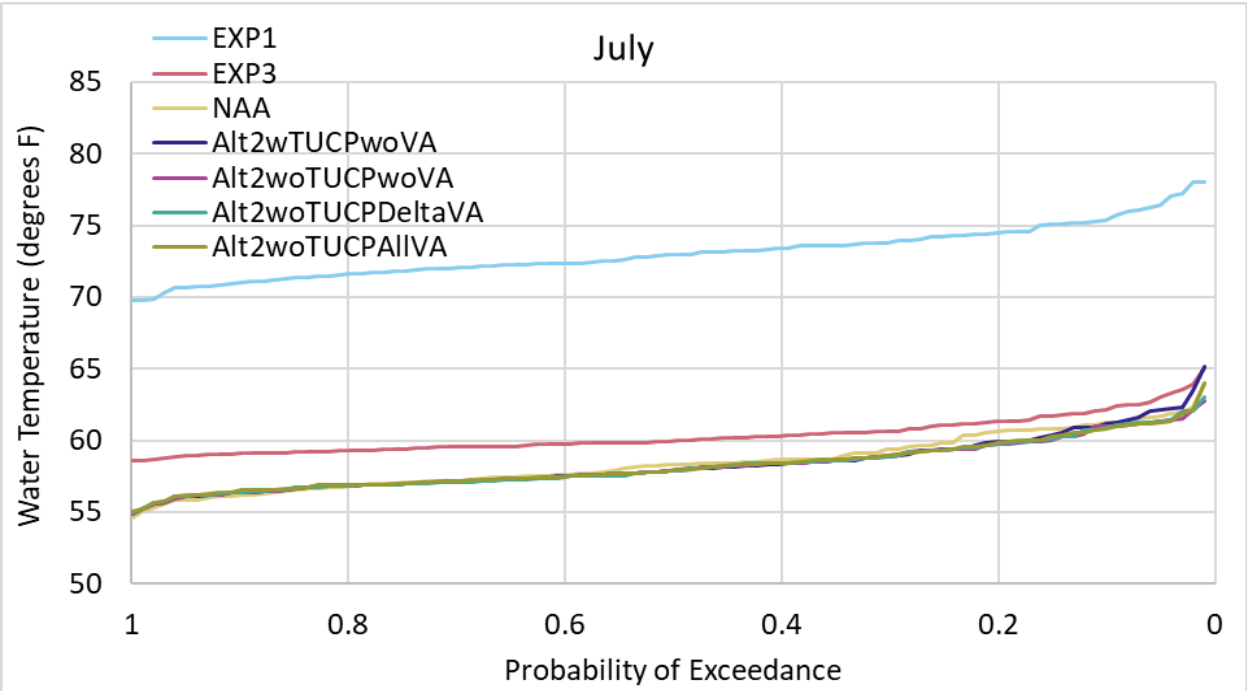

Figure L.1-47. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, July.

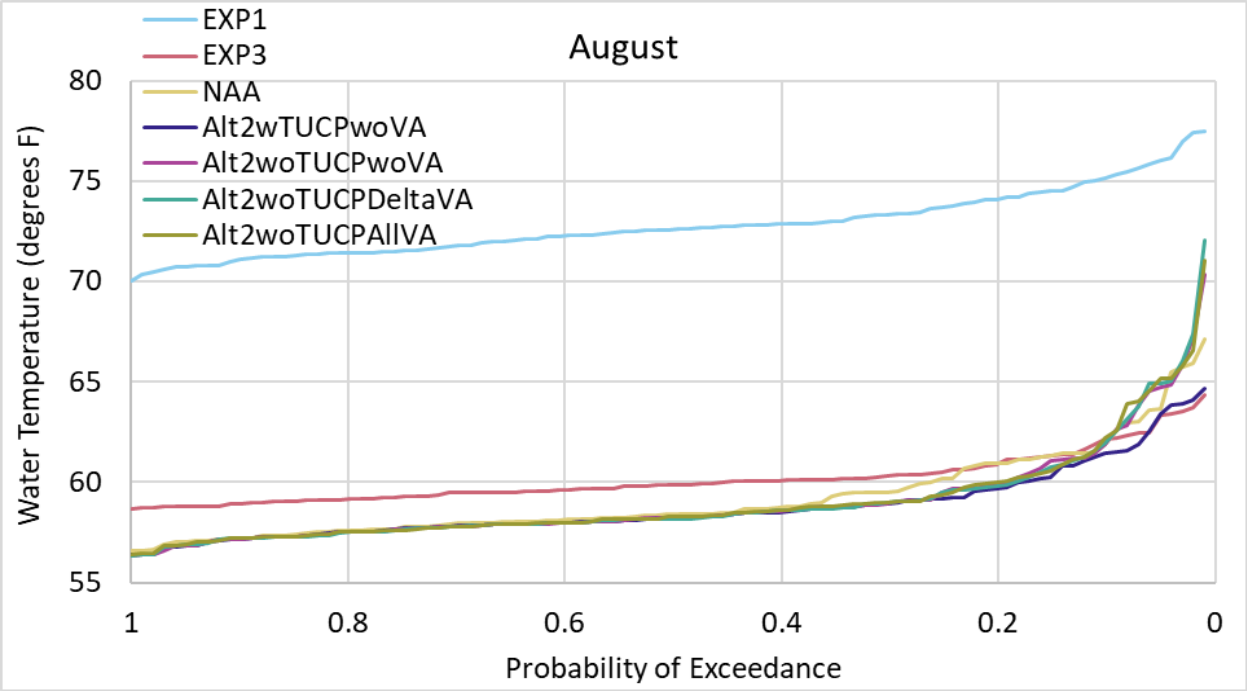

Figure L.1-48. Exceedance plot of modeled water temperatures, Sacramento River at Be Red Bluff Diversion Dam, August.

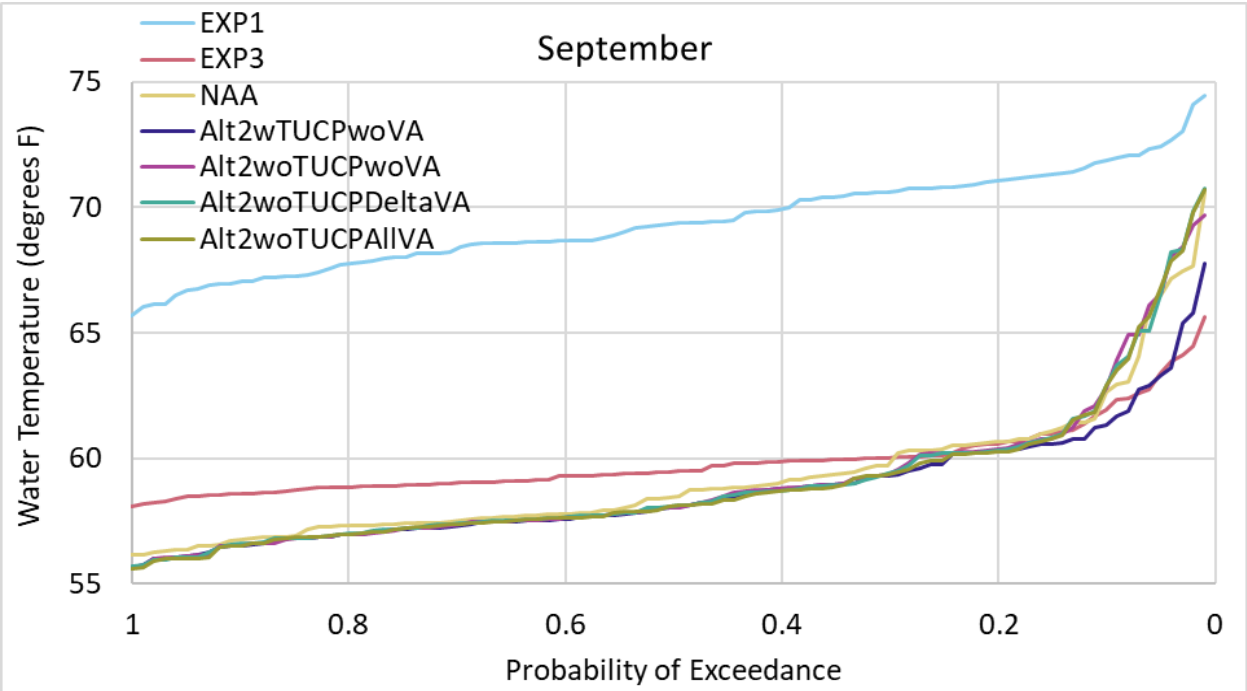

Figure L.1-49. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, September.

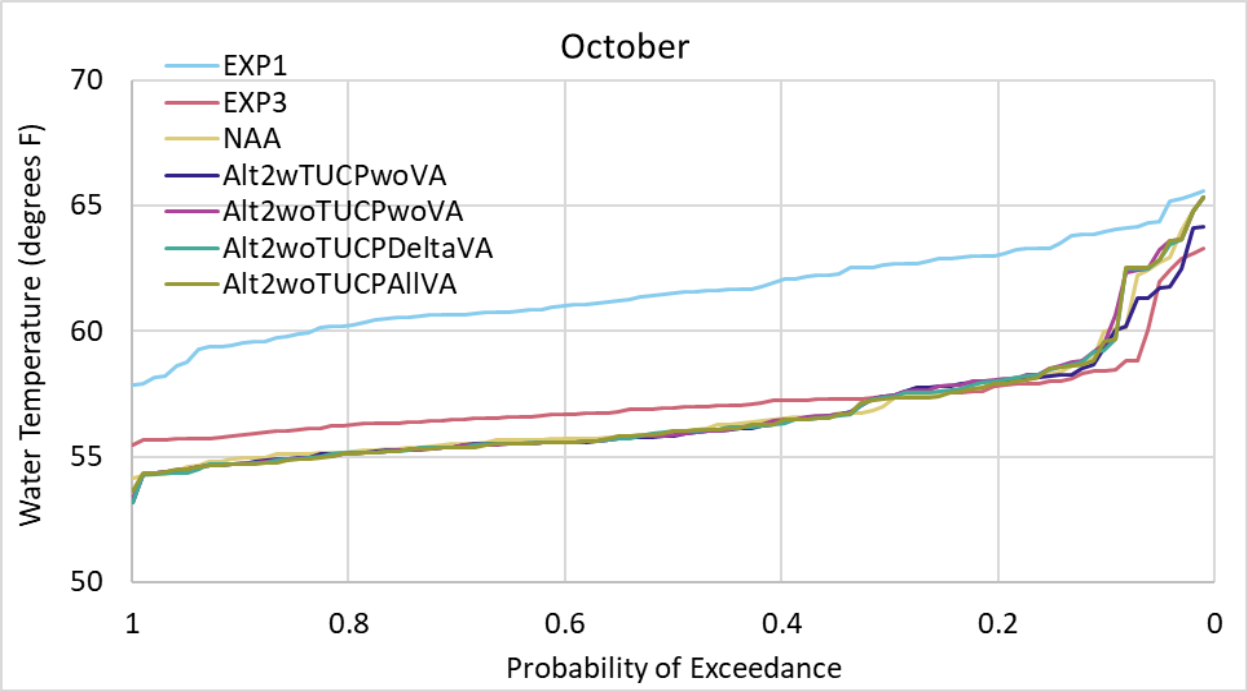

Figure L.1-50. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, October.

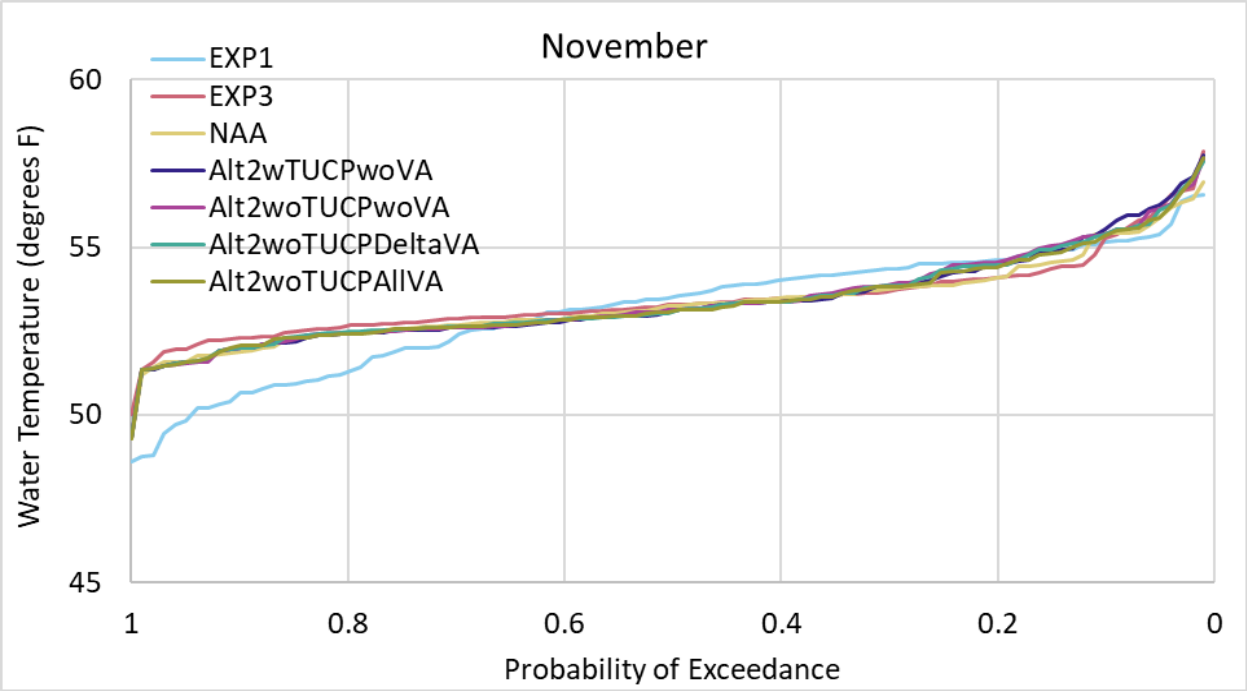

Figure L.1-51. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, November.

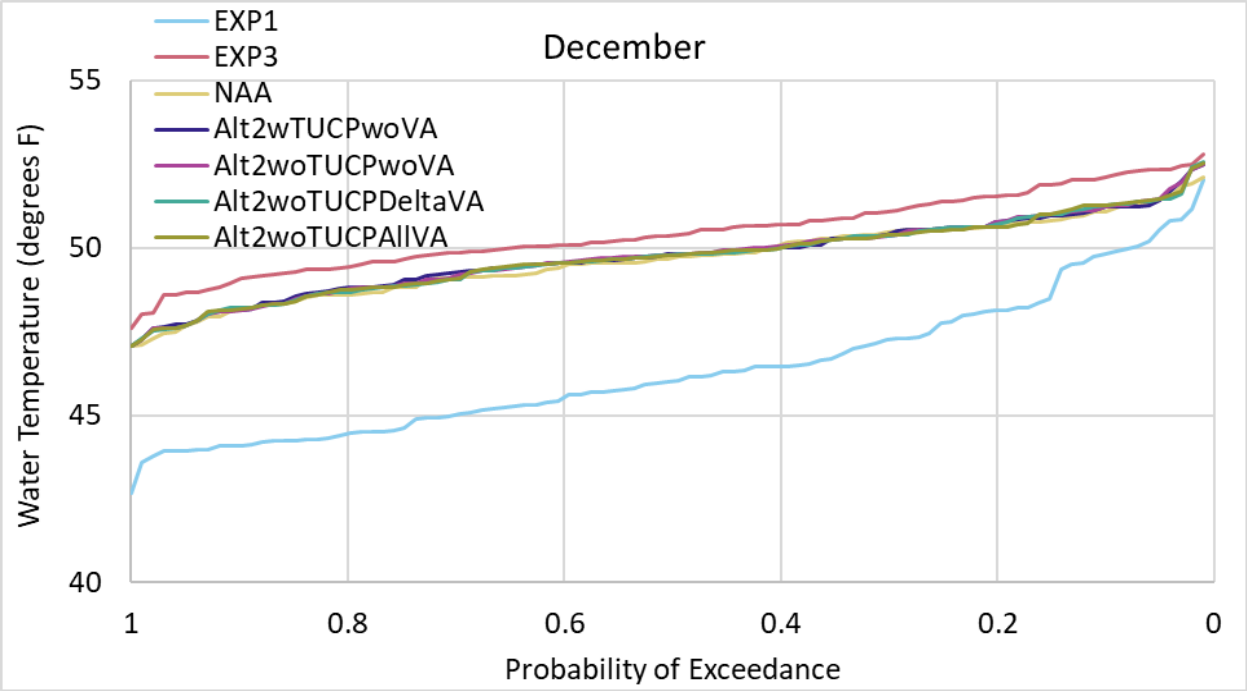

Figure L.1-52. Exceedance plot of modeled water temperatures, Sacramento River at Red Bluff Diversion Dam, December.

L.1.3.1.5 Sacramento River at Hamilton City

Figure L.1-53 presents exceedance curves of modeled monthly water temperatures in the Sacramento River at Hamilton City for all months combined for each model scenario. Figure L.1-54 through Figure L.1-65 present exceedance curves of modeled monthly water temperatures in the Sacramento River at Hamilton City for each month separately.

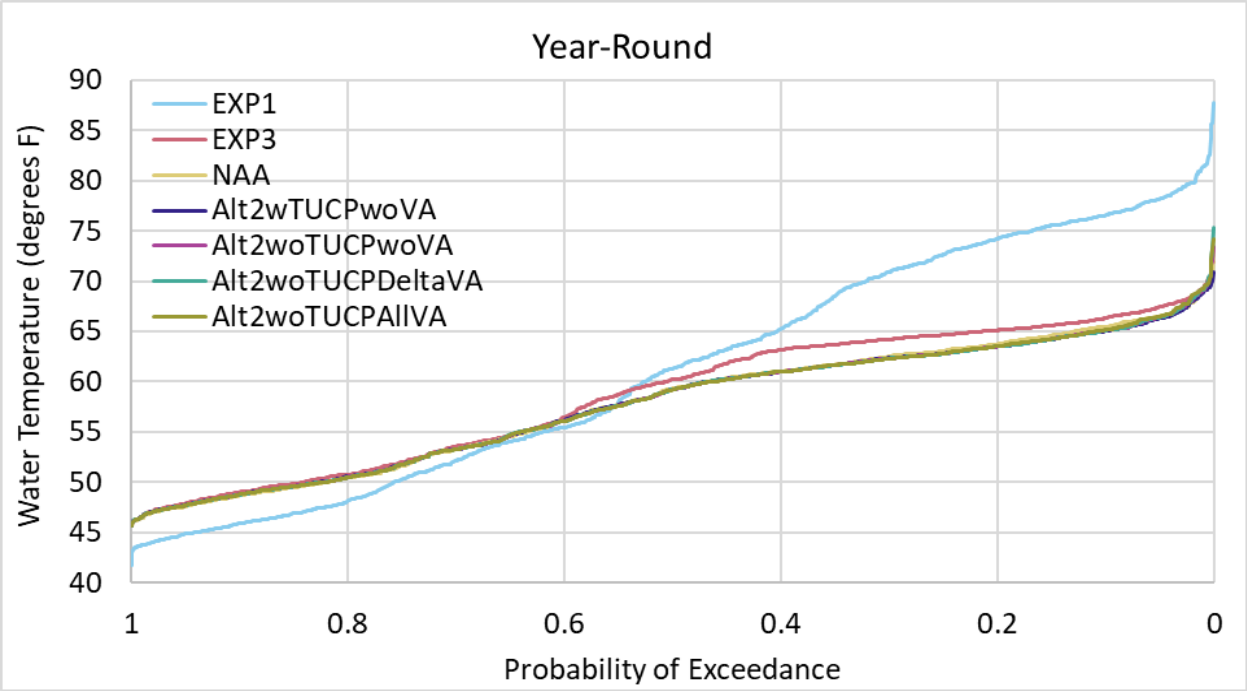

Figure L.1-53. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, year-round.

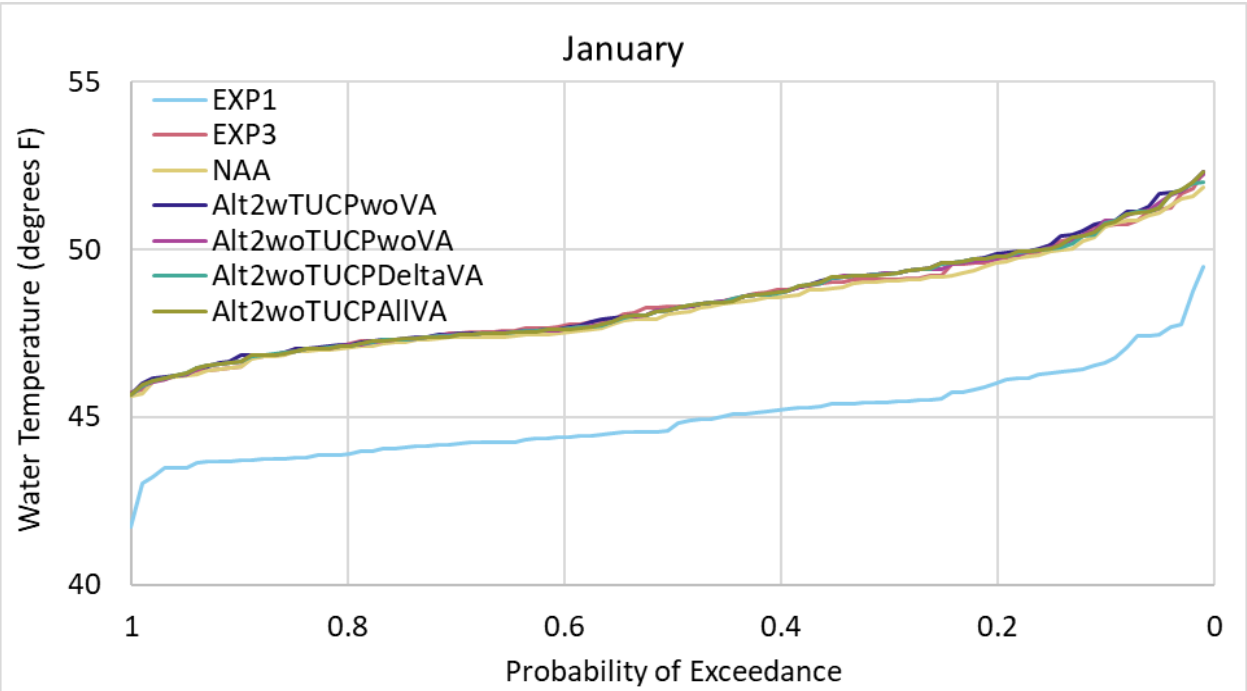

Figure L.1-54. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, January.

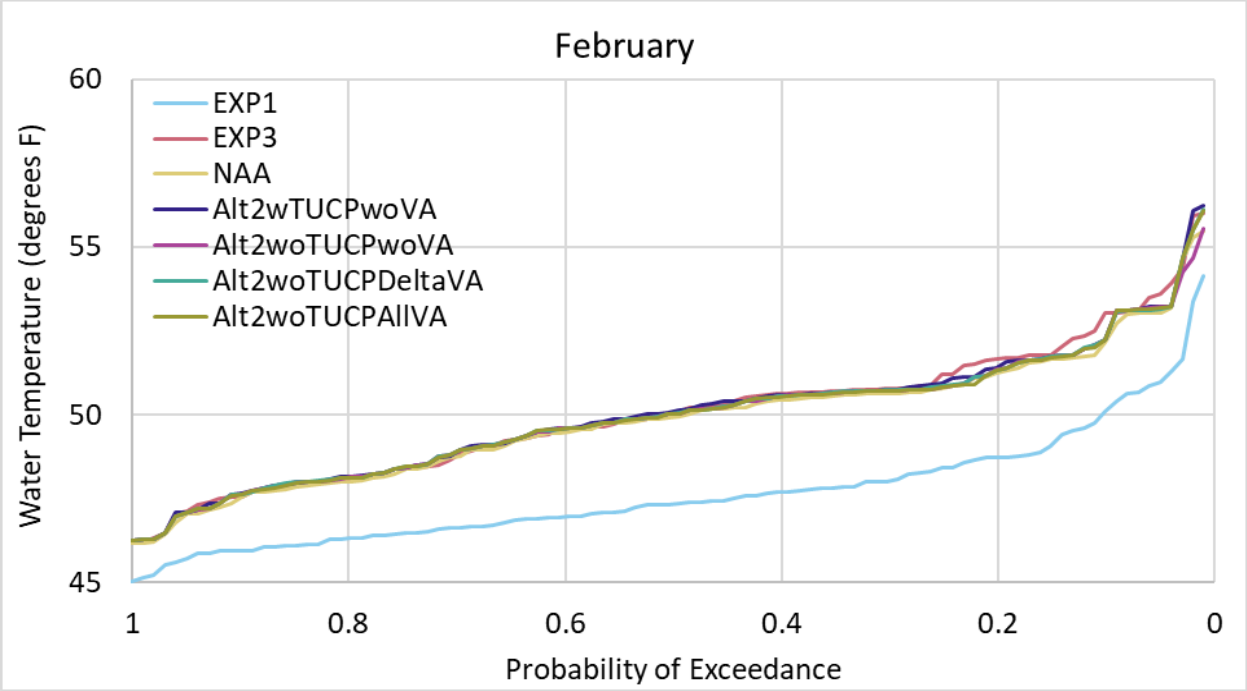

Figure L.1-55. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, February.

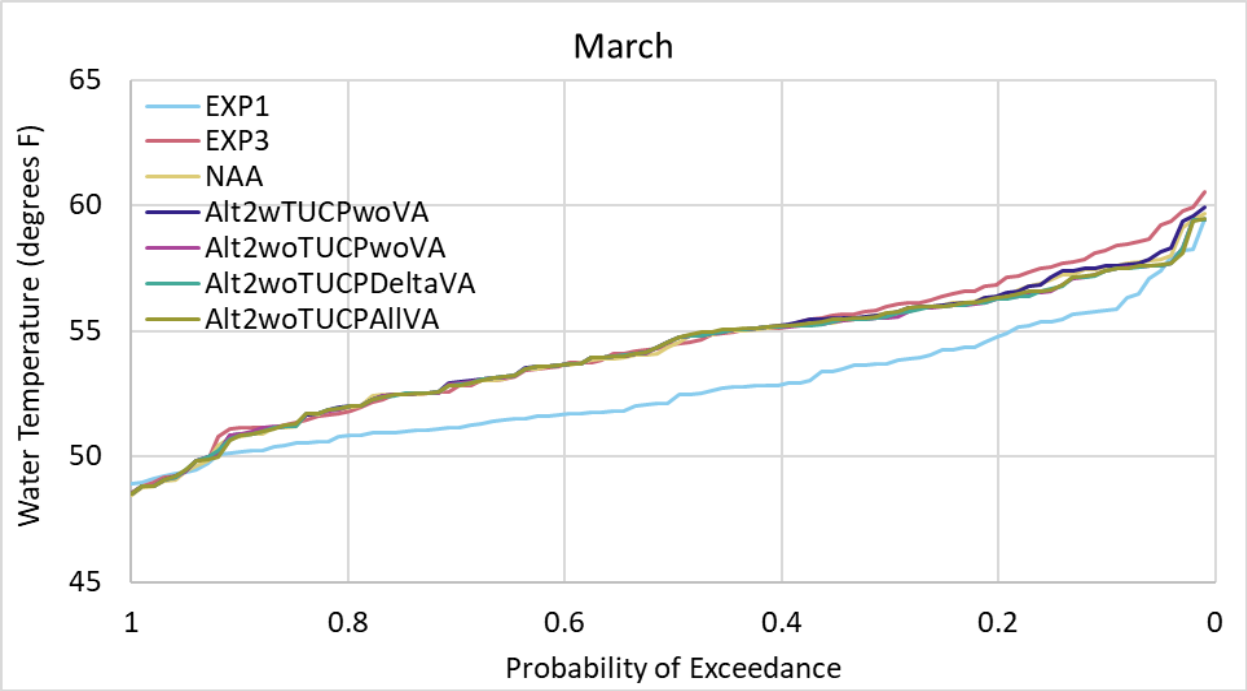

Figure L.1-56. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, March.

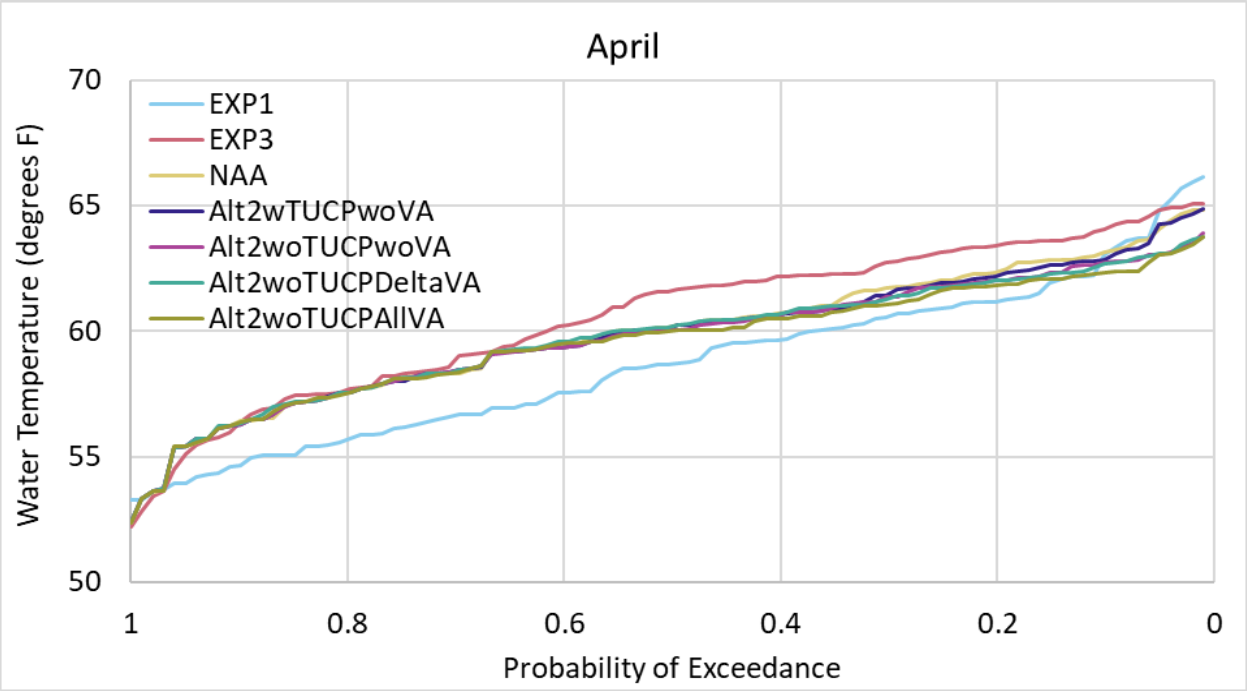

Figure L.1-57. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, April.

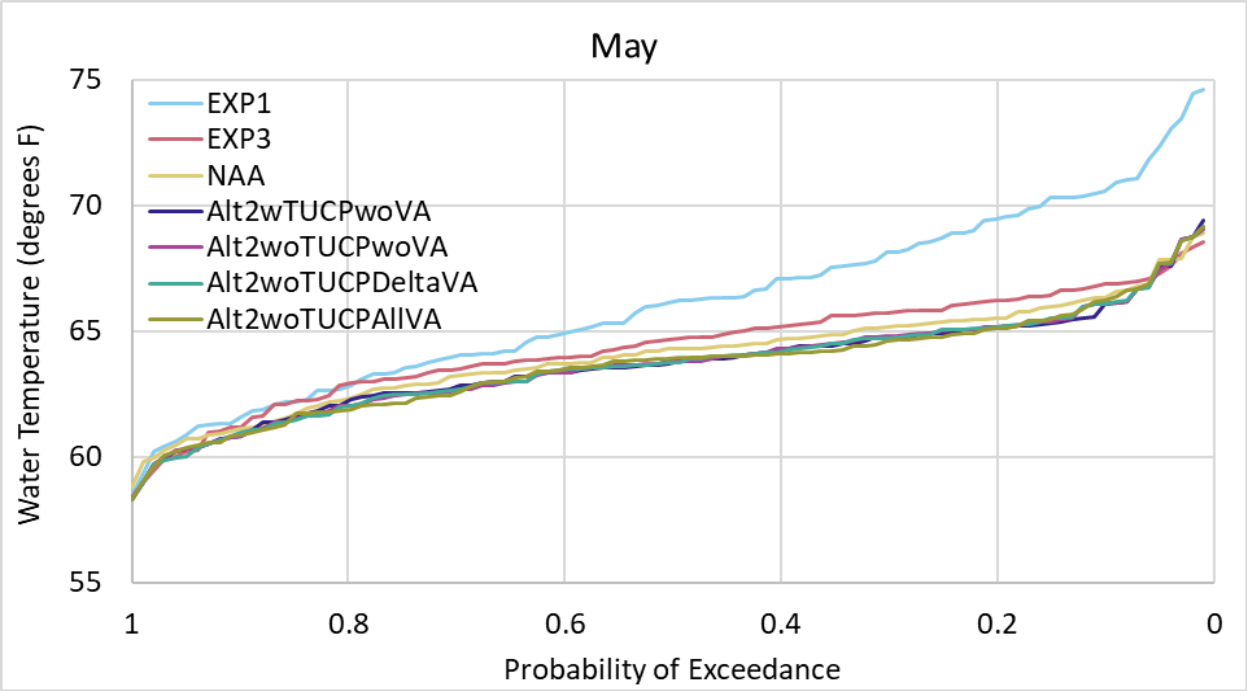

Figure L.1-58. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, May.

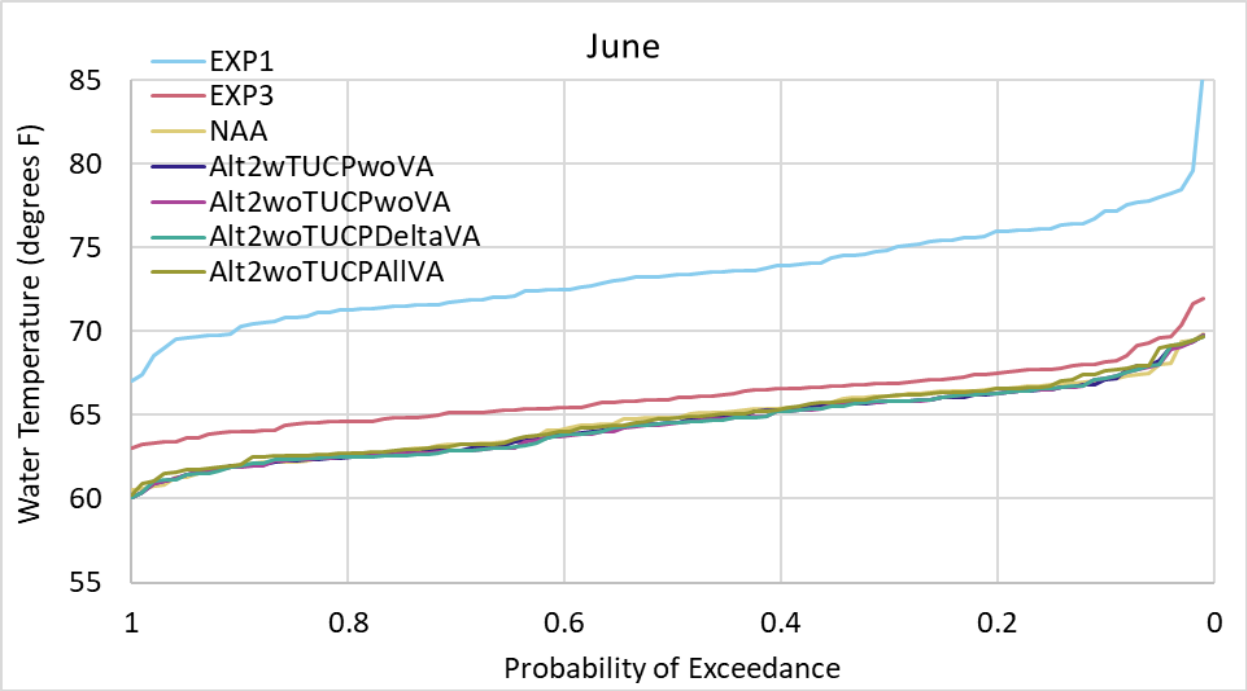

Figure L.1-59. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, June.

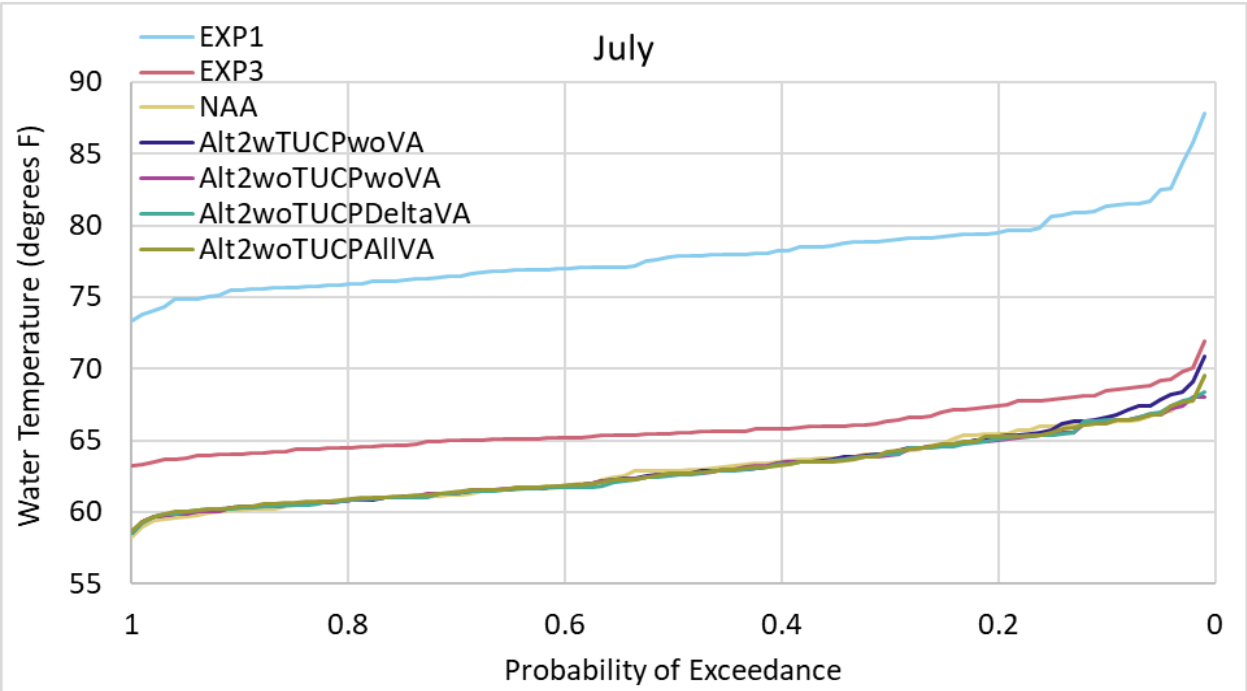

Figure L.1-60. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, July.

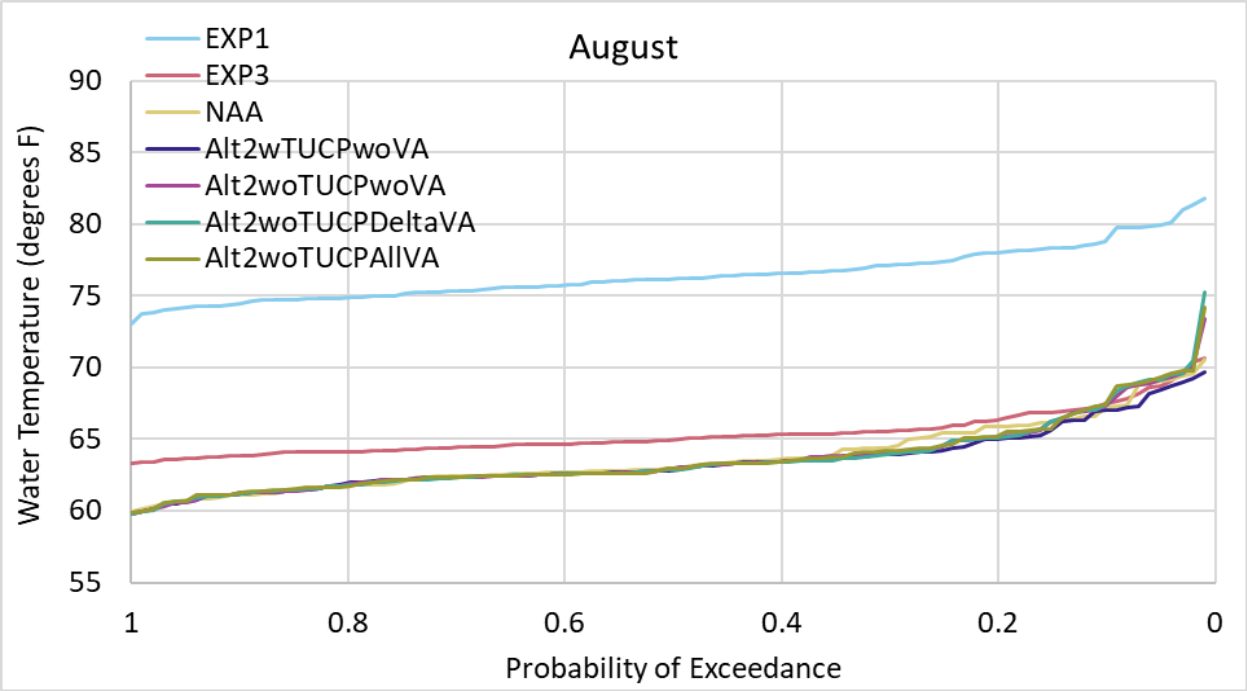

Figure L.1-61. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, August.

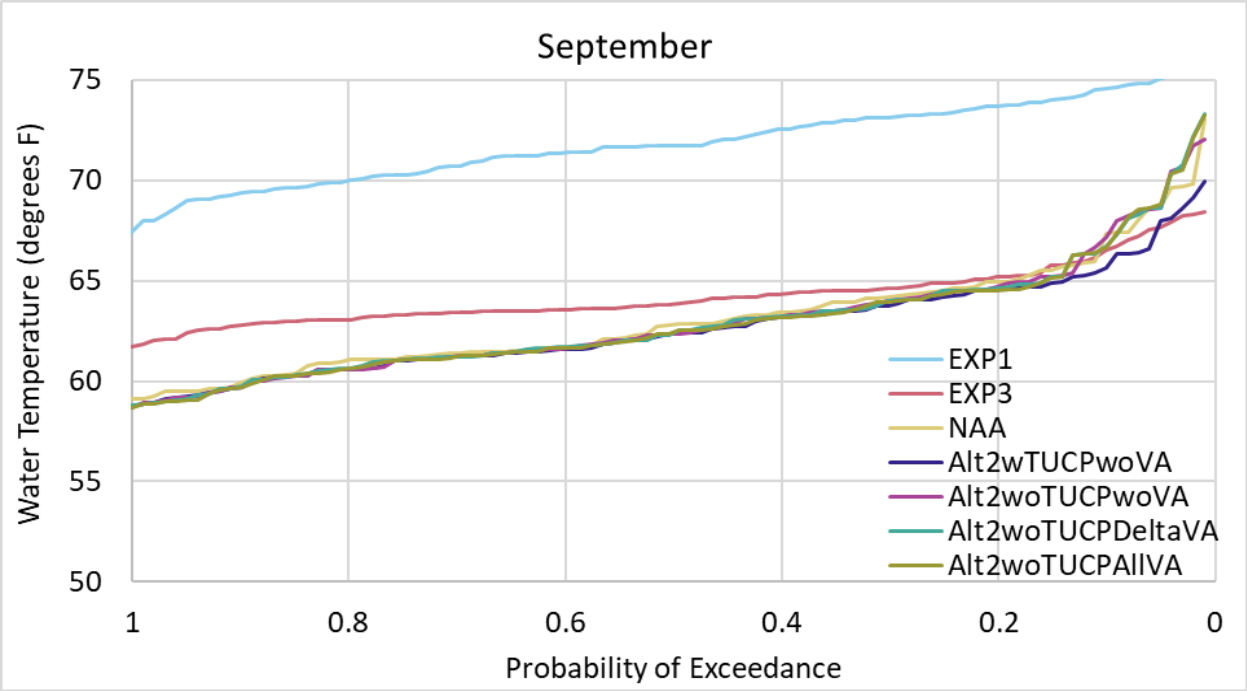

Figure L.1-62. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, September.

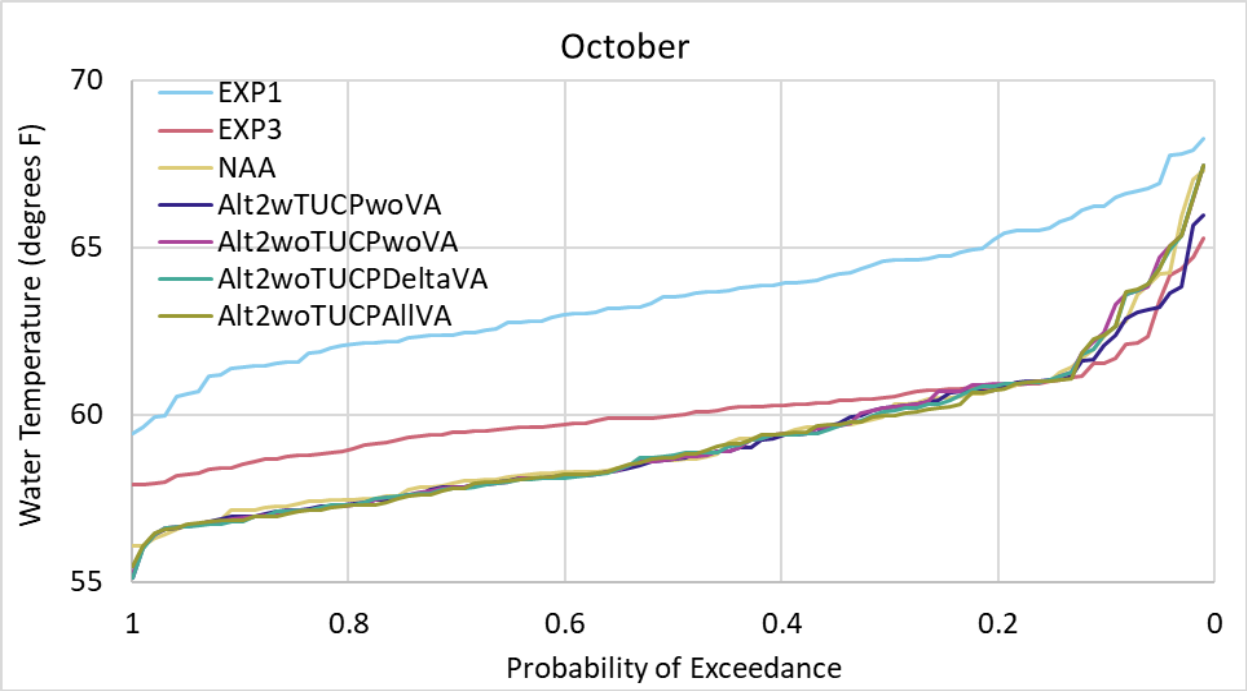

Figure L.1-63. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, October.

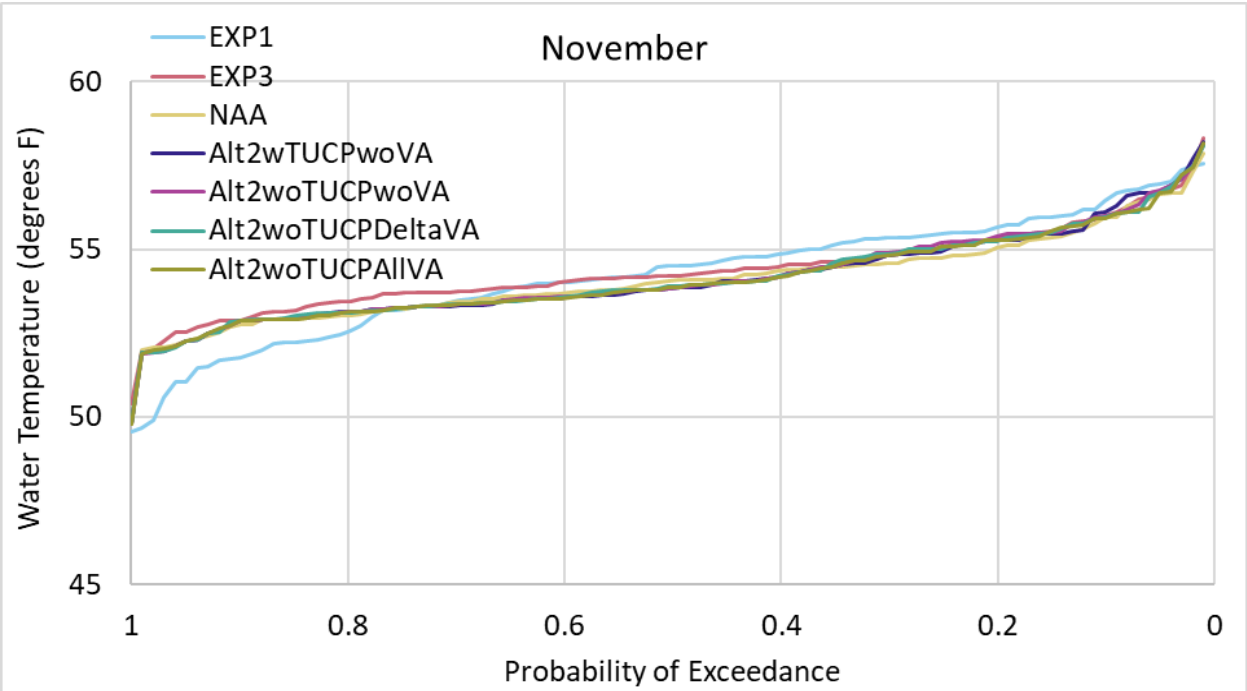

Figure L.1-64. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, November.

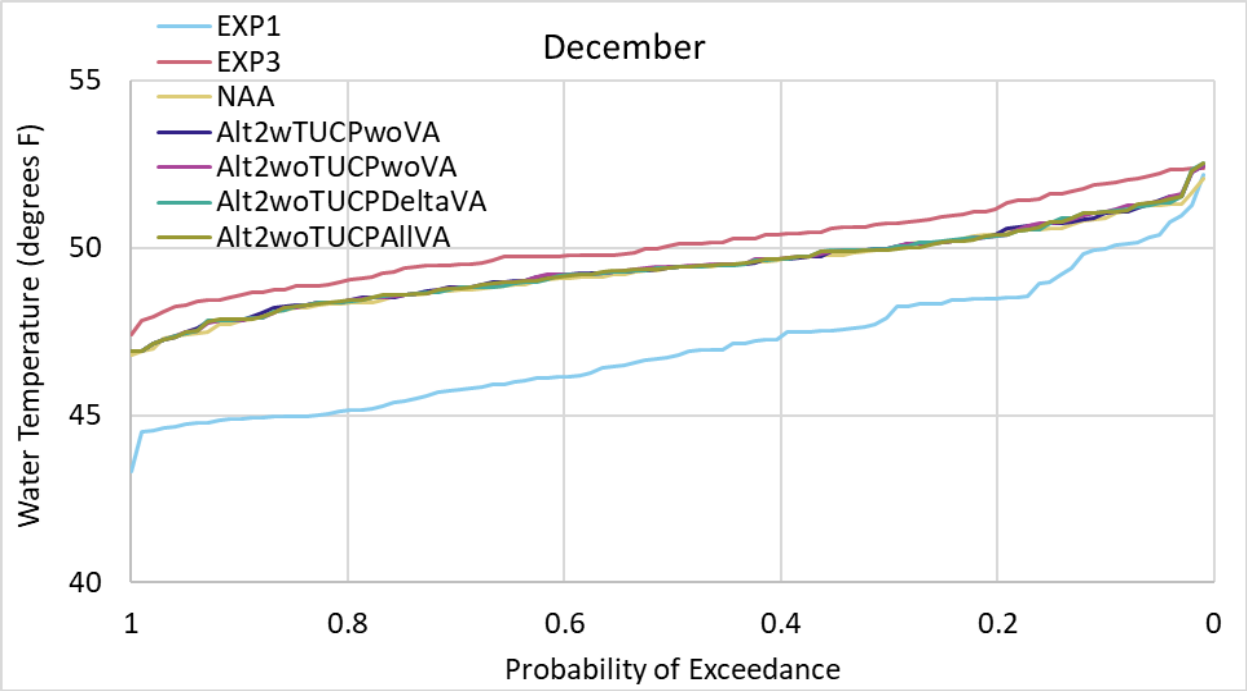

Figure L.1-65. Exceedance plot of modeled water temperatures, Sacramento River at Hamilton City, December.

L.1.3.1.6 Clear Creek below Whiskeytown

Figure L.1-66 presents exceedance curves of modeled monthly water temperatures in Clear Creek below Whiskeytown for all months combined for each model scenario. Figure L.1-67 through Figure L.1-78 present exceedance curves of modeled monthly water temperatures in the Clear Creek below Whiskeytown for each month separately.

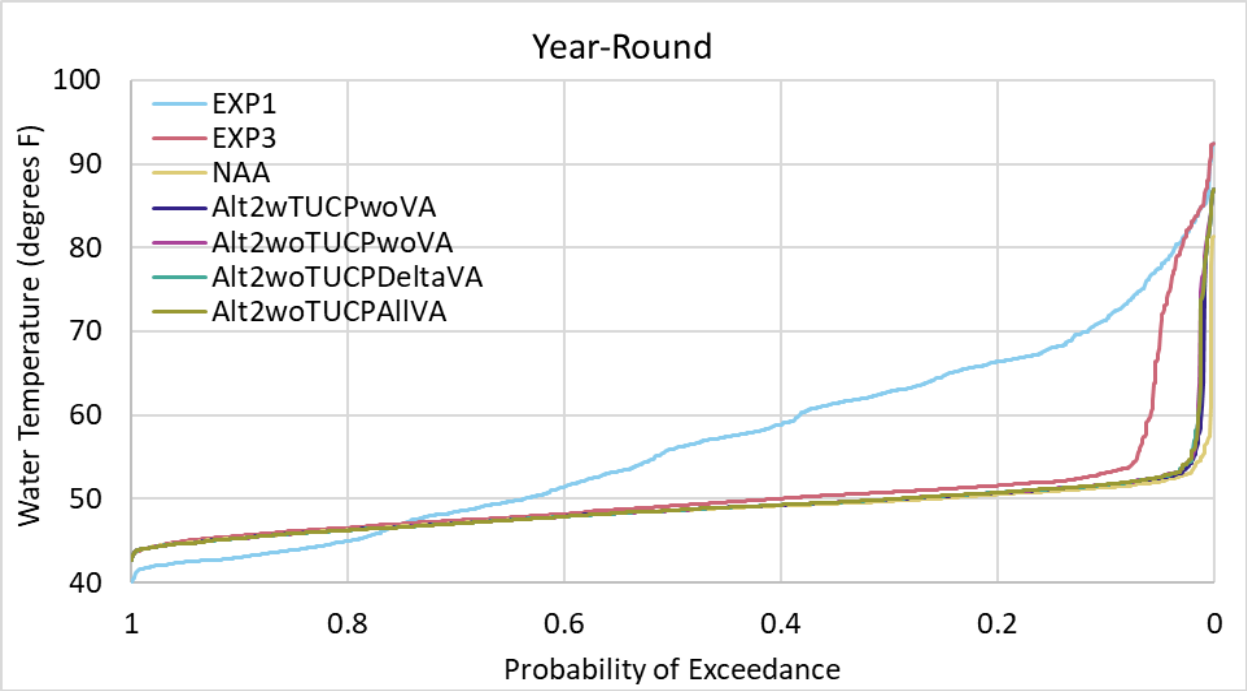

Figure L.1-66. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, year-round.

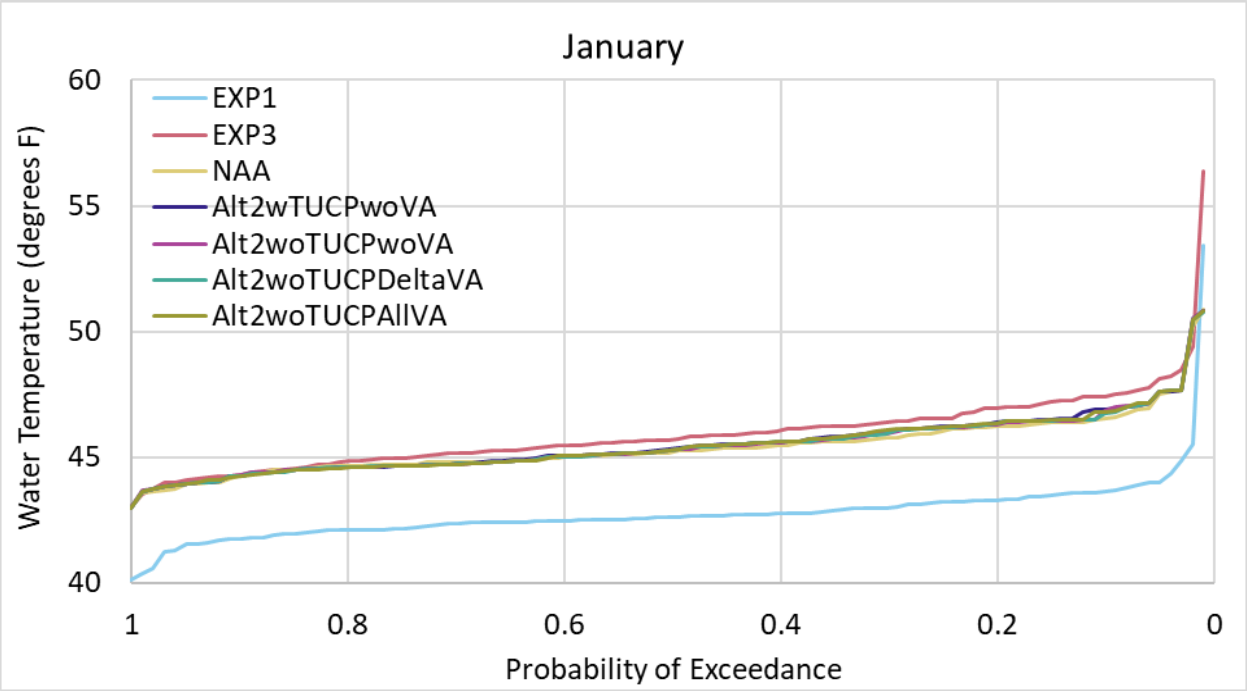

Figure L.1-67. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, January.

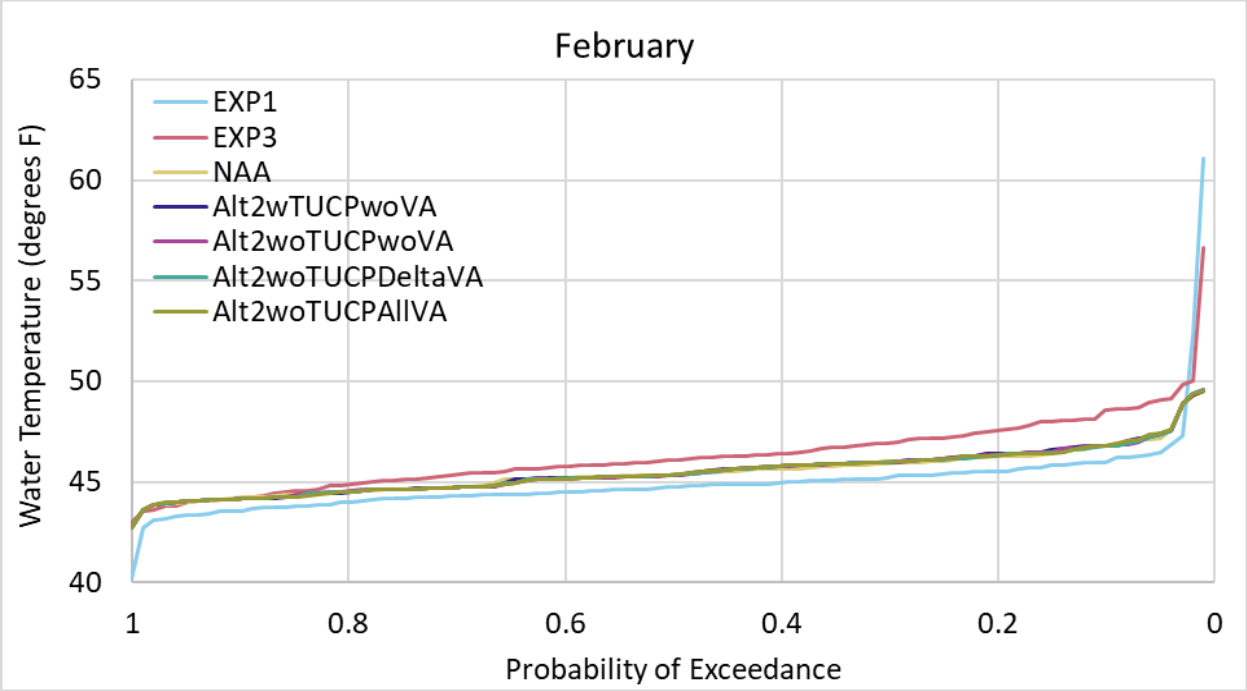

Figure L.1-68. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, February.

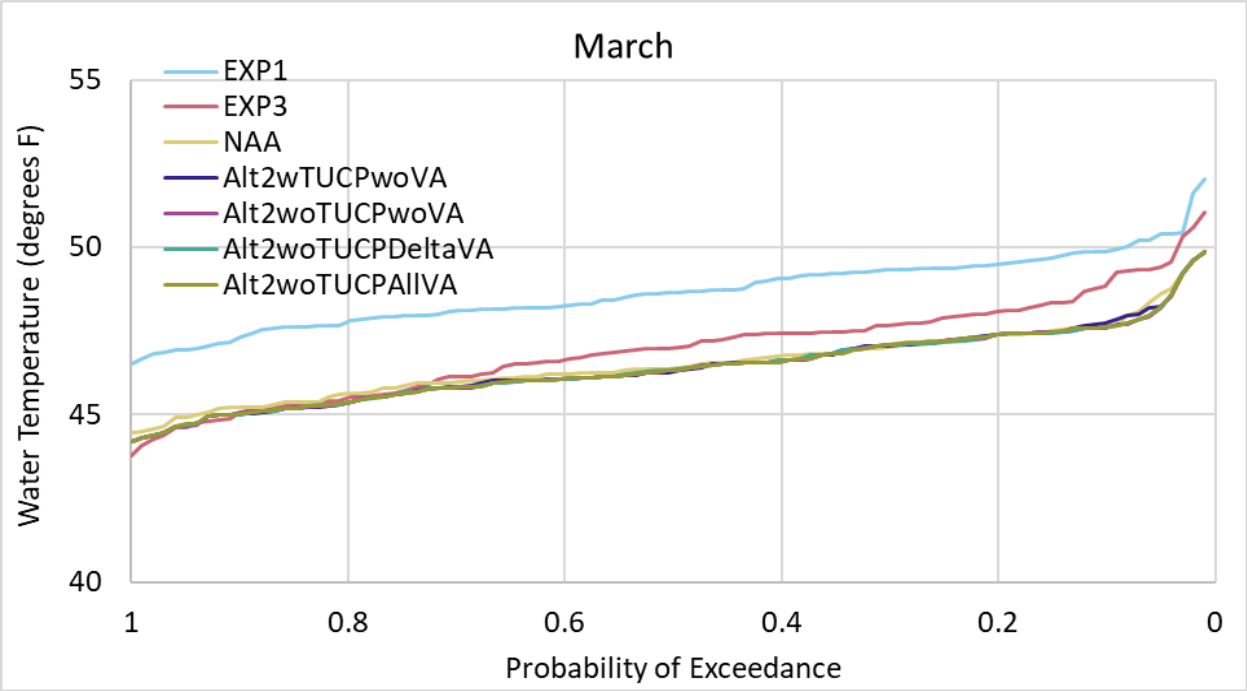

Figure L.1-69. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, March.

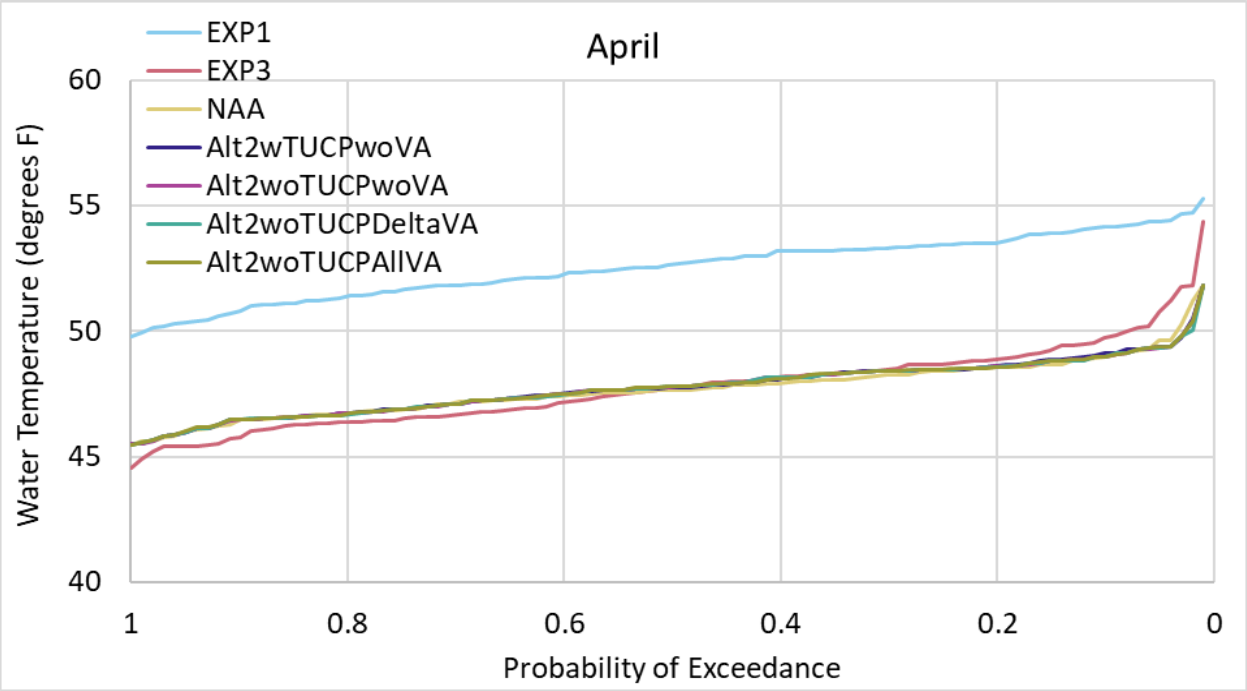

Figure L.1-70. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, April.

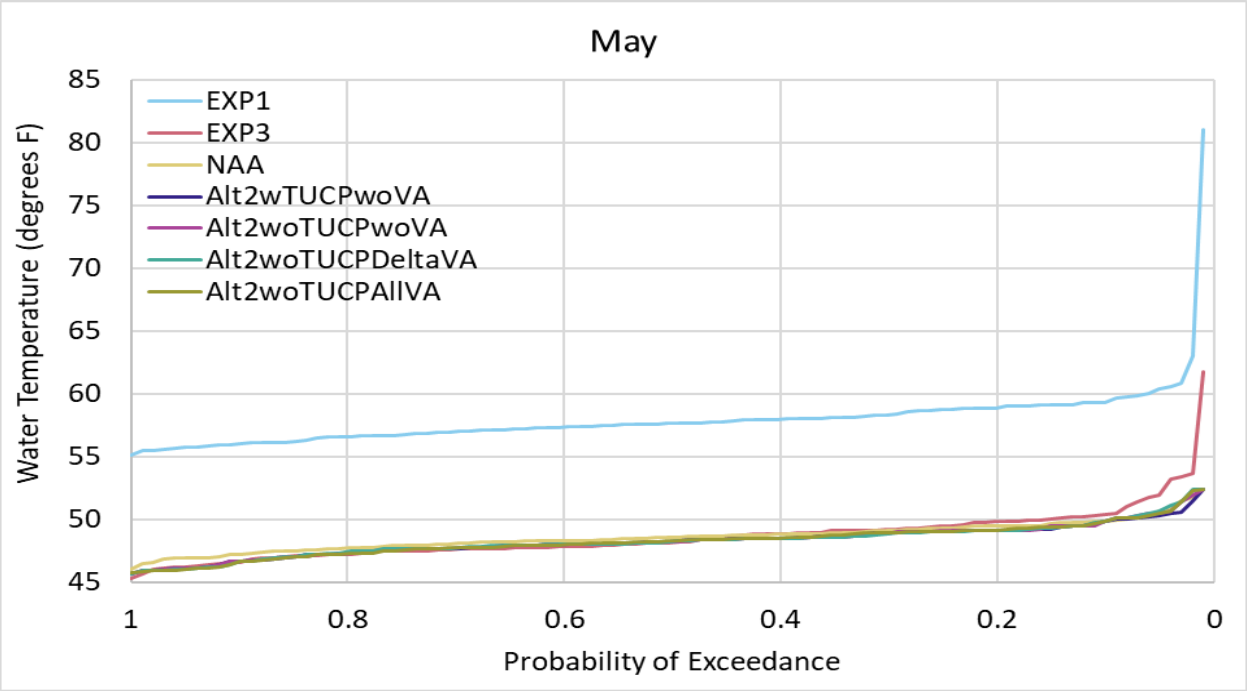

Figure L.1-71. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, May.

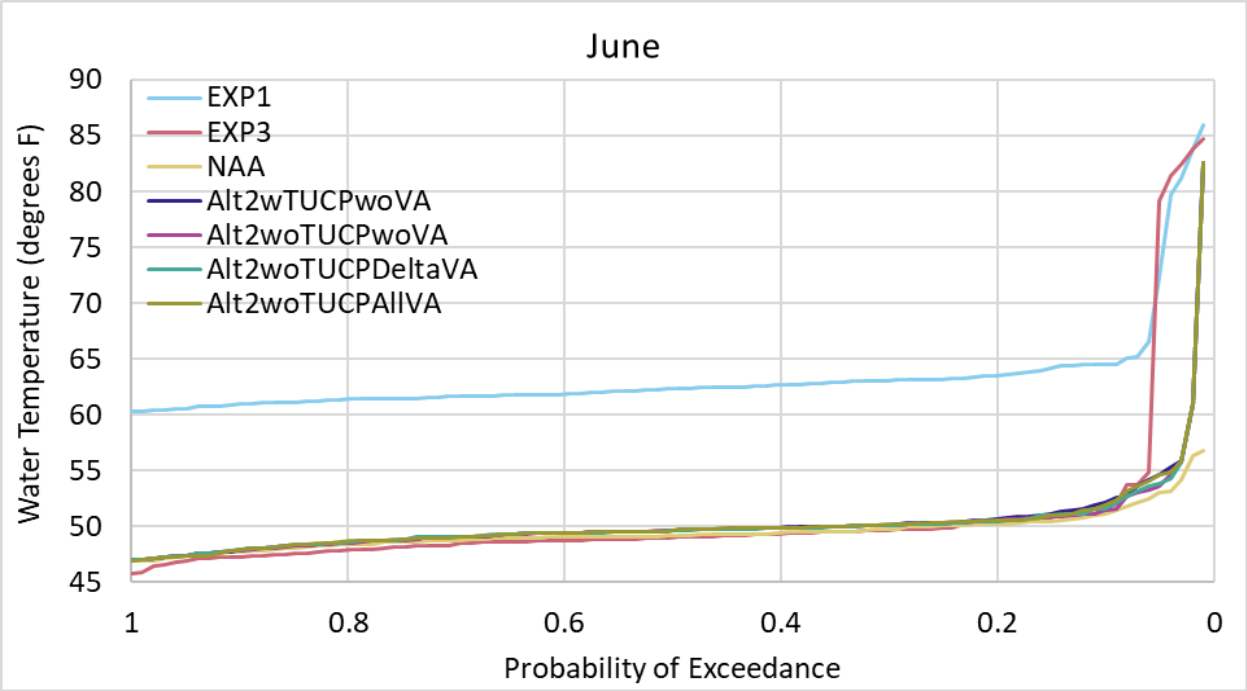

Figure L.1-72. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, June.

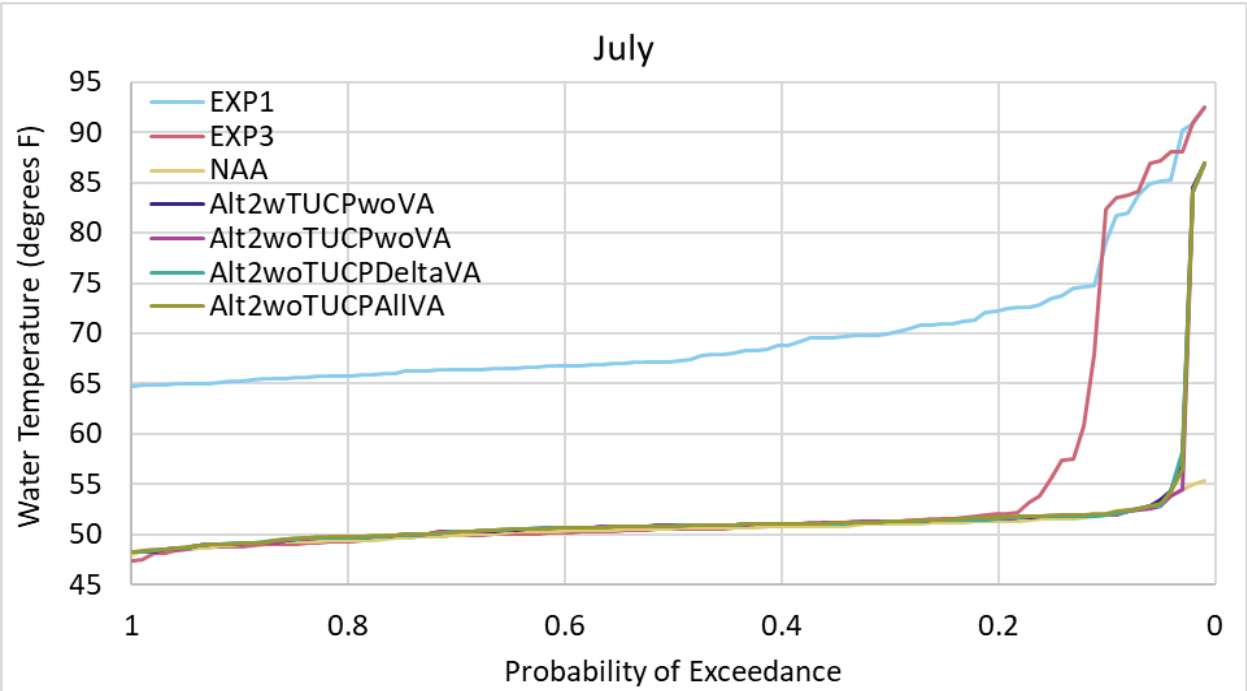

Figure L.1-73. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, July.

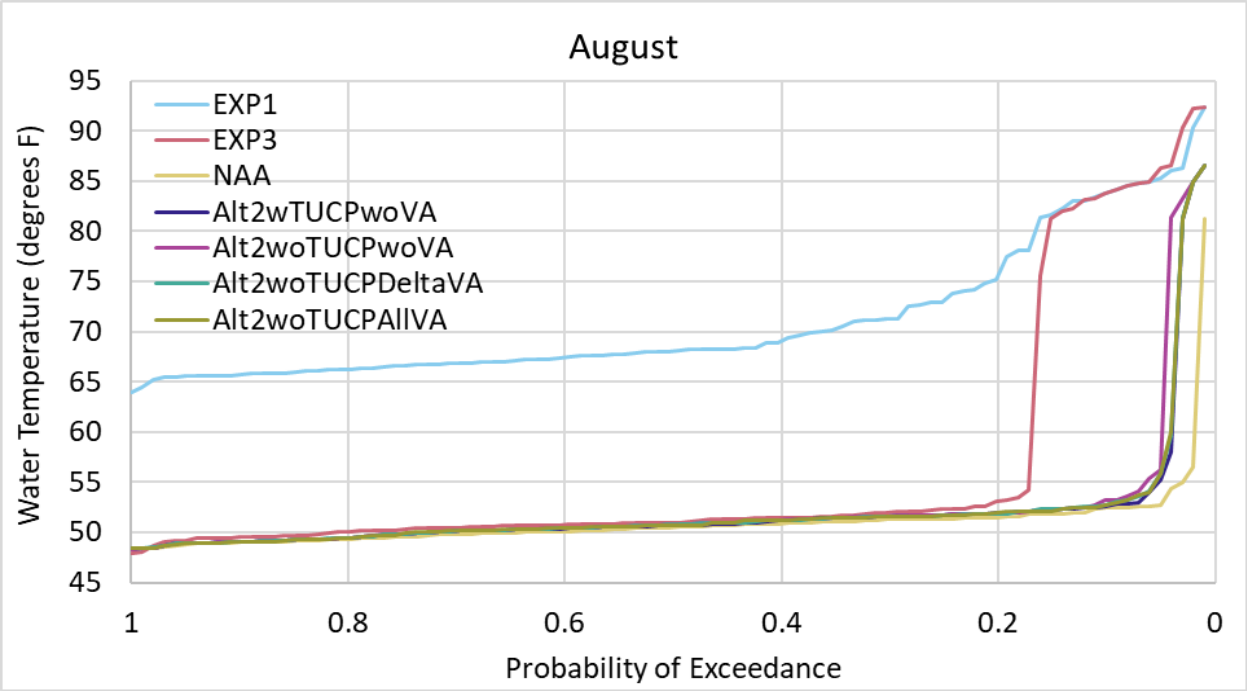

Figure L.1-74. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, August.

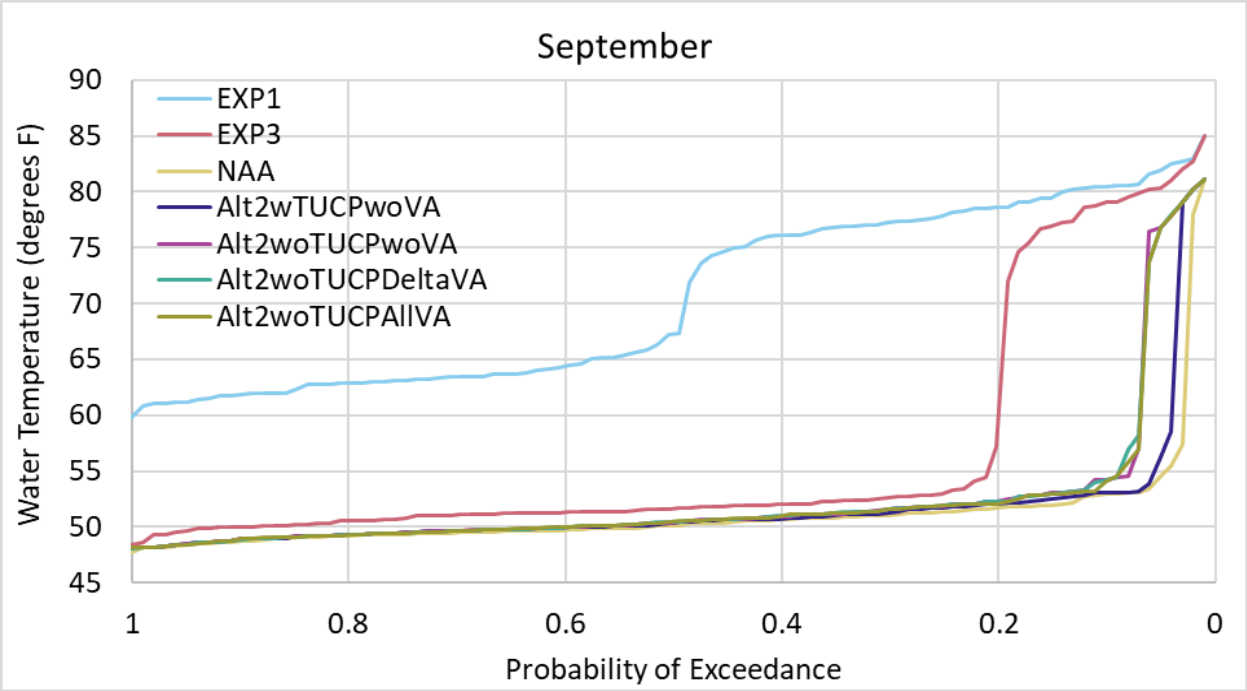

Figure L.1-75. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, September.

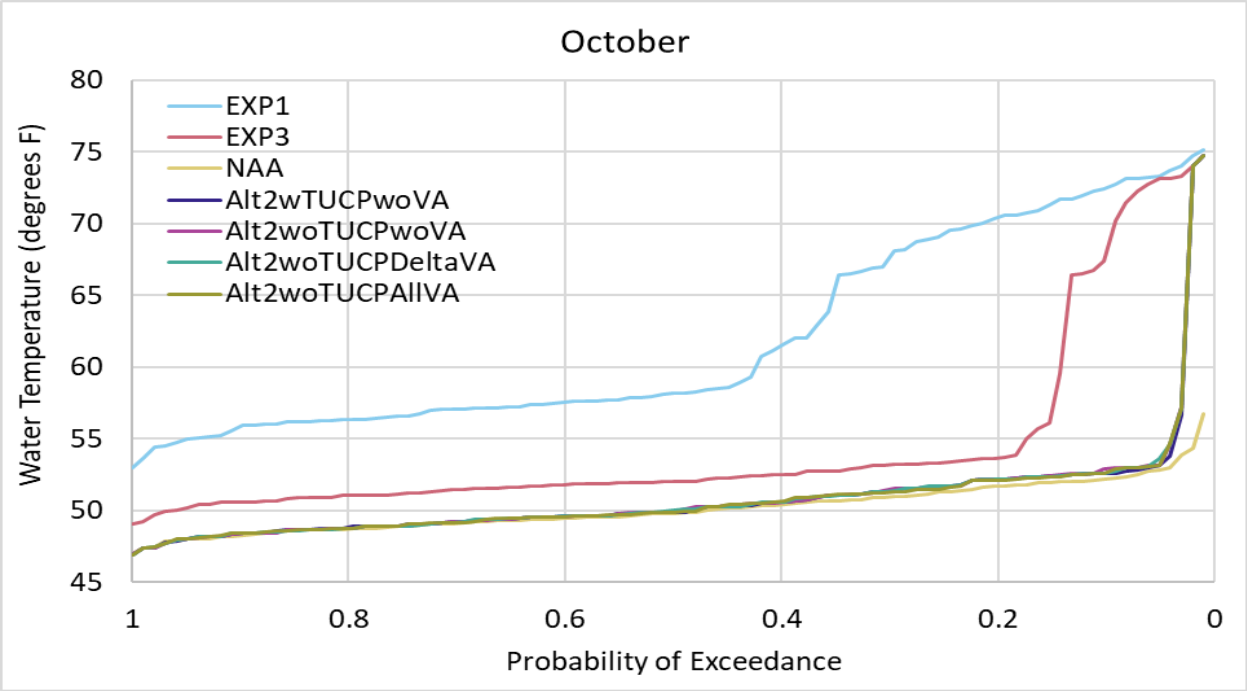

Figure L.1-76. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, October.

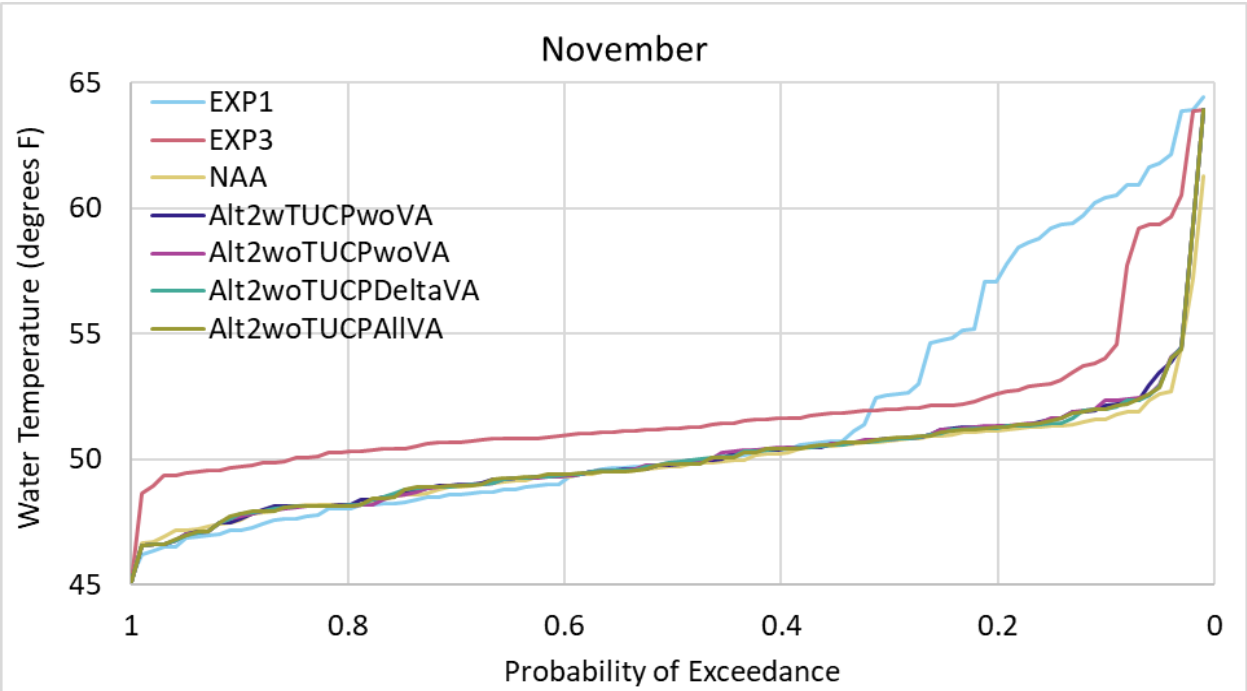

Figure L.1-77. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, November.

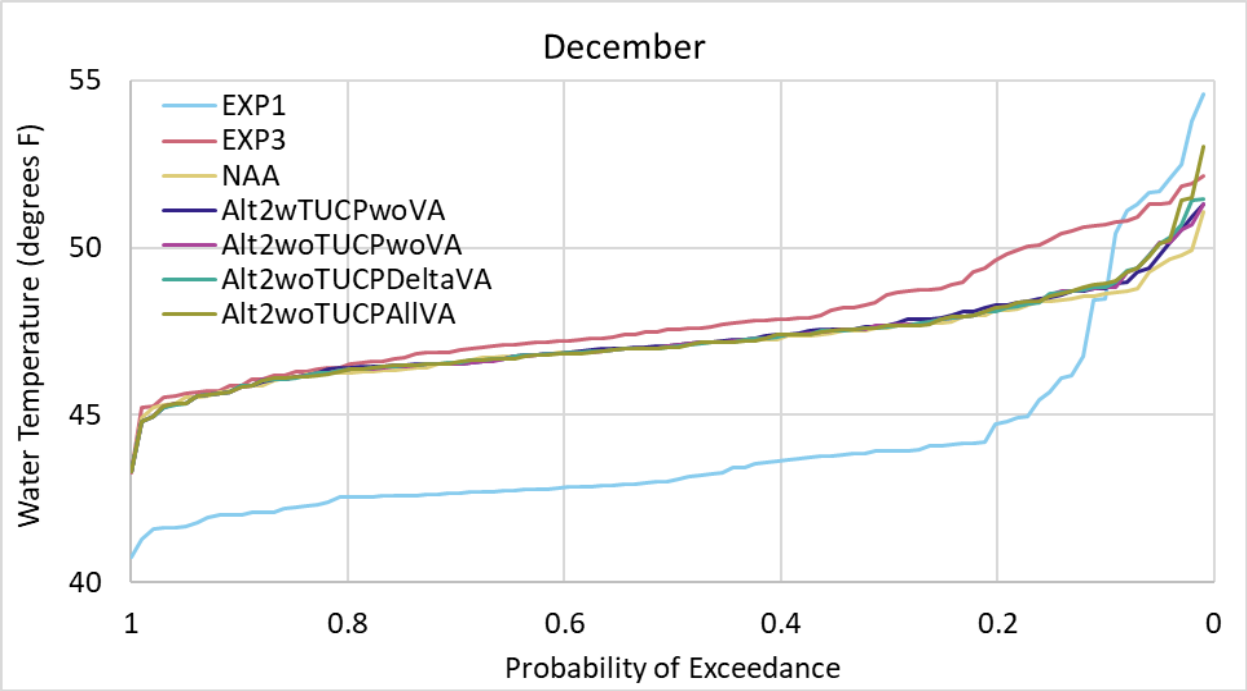

Figure L.1-78. Exceedance plot of modeled water temperatures, Clear Creek below Whiskeytown, December.

L.1.3.2 Winter-run Chinook Salmon

L.1.3.2.1 Adult Migration

Water temperature-related effects on winter-run Chinook salmon adult migration in the Sacramento River were evaluated by assessing: (1) the percent of months with water temperature outside the 37.9°F to 68°F successful migration range (Reiser and Bjornn 1979, Goniea et al. 2006); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) at Keswick, Red Bluff Diversion Dam, and Hamilton City (Table L.1-1).

Results for the 37.9°F to 68°F successful migration range are presented in Table L.1-3 and Table L.1-4 for Keswick, in Table L.1-5 and Table L.1-6 for Red Bluff Diversion Dam, and in Table L.1-7 and Table L.1-8 for Hamilton City.

- At Keswick, there were no months outside the successful migration range in all months and water year types under the NAA and all alternatives.
- At Red Bluff Diversion Dam, 0% of months were outside the successful migration range in all months and water year types under the NAA and all alternatives.

- At Hamilton City, the highest percent of months outside the optimal range was 21.4% and occurred in June of wet water years under Alt 3 (Table L.1-7 and Table L.1-8). The lowest percent of months outside the range was 0% and occurred in January through April of all water year types and in one or more water year types in May and June under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in June (4.0% to 9.1%) depending on alternative. Air temperatures drove this temporal pattern.

Results for the 59.9°F pathogen virulence water temperature threshold for adult winter-run Chinook salmon migration are presented in Table L.1-9 and Table L.1-10 for Keswick, in Table L.1-11 and Table L.1-12 for Red Bluff Diversion Dam, and in Table L.1-13 and Table L.1-14 for Hamilton City.

- At Keswick, 0% of months had water temperatures above the pathogen virulence threshold in all months and water year types under the NAA and all alternatives.
- At Red Bluff Diversion Dam, the highest percent of months above the virulence threshold was 81.3% and occurred in June of critically dry water years under Alt 4 (Table L.1-11 and Table L.1-12). The lowest percent of months above the threshold was 0% and occurred in January through March in all water year types under the NAA and all alternatives, in April of wet water year types under the NAA and all alternative, in April of above normal water year types under Alternative 1 and Alternative Alt 2 No TUCP All VA, and in April of below normal water years under Alternative 1. Combining water year types, the percent of months above the threshold was highest in May and June. The percent of months above the threshold was lowest during January through March under the NAA and all alternatives. Air temperatures drove this temporal pattern.
- At Hamilton City, the highest percent of months above the virulence threshold was 100.0% and occurred in one or more water year types during May and in all water year types during June under the NAA and all alternatives (Table L.1-13 and Table L.1-14). The lowest percent of months above the threshold was 0% and occurred in all water year types during January and February under the NAA and all alternatives, and during March in all water year types under the NAA and all alternatives except Alt 4 in critical water years. Combining water year types, the percent of months above the threshold was highest in May and June in all alternatives. The percent of months above the threshold was lowest during January through March under the NAA and all alternatives. Air temperatures drove this temporal pattern.

Table L.1-3. Percent of months outside the 37.9°F to 68°F water temperature range for successful migration of adult winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, January through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-4. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, January through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-5. Percent of months outside the 37.9°F to 68°F water temperature range for successful migration of adult winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, January through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	28.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	88.9	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	12.5	0.0	0.0	0.0	0.0	0.0	0.0
D	6	83.3	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	5.1	0.0	0.0	0.0	0.0	0.0	0.0
All	6	70.7	0.0	0.0	0.0	0.0	0.0	0.0
W	All	4.8	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	12.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	14.8	0.0	0.0	0.0	0.0	0.0	0.0
D	All	16.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	18.8	0.0	0.0	0.0	0.0	0.0	0.0
All	All	12.6	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-6. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, January through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-7. Percent of months outside the 37.9°F to 68°F water temperature range for successful migration of adult winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, January through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	7.1	7.1	7.1	7.1	7.1	7.1
W	6	96.4	21.4	14.3	10.7	10.7	10.7	10.7
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	7.7	0.0	0.0	0.0	0.0	0.0
AN	6	92.3	23.1	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	5.6	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	45.8	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	62.5	0.0	0.0	6.3	6.3	6.3	6.3
C	6	100.0	6.3	0.0	12.5	6.3	12.5	12.5
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	30.3	3.0	2.0	3.0	3.0	3.0	3.0
All	6	98.0	12.1	5.1	5.1	4.0	5.1	5.1
W	All	16.1	4.8	3.6	3.0	3.0	3.0	3.0
AN	All	17.9	5.1	0.0	0.0	0.0	0.0	0.0
BN	All	23.1	0.9	0.9	0.9	0.0	0.0	0.0
D	All	24.3	0.7	0.0	0.0	0.0	0.0	0.0
C	All	27.1	1.0	0.0	0.0	3.1	2.1	3.1
All	All	21.4	2.5	1.2	1.0	1.3	1.2	1.3

Table L.1-8. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, January through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	0.0 (-7.1%)	7.1 (0.0%)
W	6	14.3	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	21.4 (7.1%)	14.3 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	15.4 (15.4%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	5.6	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)
C	6	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	12.5 (12.5%)	6.3 (6.3%)	12.5 (12.5%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	2.0	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	6	5.1	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	5.1 (0.0%)	9.1 (4.0%)	6.1 (1.0%)
W	All	3.6	3.0 (-0.6%)	3.0 (-0.6%)	3.0 (-0.6%)	3.0 (-0.6%)	3.0 (-0.6%)	3.6 (0.0%)	3.6 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	2.6 (2.6%)	0.0 (0.0%)
BN	All	0.9	0.9 (0.0%)	0.0 (-0.9%)	0.0 (-0.9%)	0.0 (-0.9%)	0.0 (-0.9%)	0.0 (-0.9%)	0.0 (-0.9%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	2.1 (2.1%)	2.1 (2.1%)	2.1 (2.1%)	3.1 (3.1%)	2.1 (2.1%)	3.1 (3.1%)
All	All	1.2	1.0 (-0.2%)	1.2 (0.0%)	1.2 (0.0%)	1.2 (0.0%)	1.3 (0.2%)	1.7 (0.5%)	1.5 (0.3%)

Table L.1-9. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult winter-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Keswick, January through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	64.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	50.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	24.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	86.9	0.0	0.0	0.0	0.0	0.0	0.0
W	All	10.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	15.4	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	23.1	0.0	0.0	0.0	0.0	0.0	0.0
D	All	21.5	0.0	0.0	0.0	0.0	0.0	0.0
C	All	25.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	18.5	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-10. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult winter-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Keswick, January through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-11. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult winter-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, January through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	3.6	0.0	0.0	0.0	0.0	0.0
W	5	60.7	67.9	75.0	42.9	42.9	42.9	42.9
W	6	100.0	92.9	60.7	46.4	46.4	46.4	46.4
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	7.7	7.7	7.7	7.7	0.0
AN	5	92.3	76.9	69.2	53.8	53.8	53.8	46.2
AN	6	100.0	69.2	46.2	30.8	30.8	30.8	46.2
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	33.3	11.1	11.1	11.1	11.1	5.6
BN	5	94.4	44.4	44.4	16.7	27.8	27.8	22.2
BN	6	100.0	66.7	44.4	33.3	33.3	33.3	44.4
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	8.3	54.2	20.8	20.8	20.8	16.7	16.7
D	5	95.8	66.7	70.8	54.2	54.2	45.8	58.3
D	6	100.0	45.8	29.2	16.7	12.5	20.8	25.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	50.0	62.5	37.5	43.8	6.3	6.3	6.3
C	5	100.0	56.3	56.3	43.8	50.0	50.0	56.3
C	6	100.0	93.8	68.8	62.5	50.0	50.0	43.8
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	10.1	33.3	14.1	15.2	9.1	8.1	6.1
All	5	85.9	62.6	64.6	42.4	45.5	43.4	45.5
All	6	100.0	73.7	49.5	37.4	34.3	36.4	40.4
W	All	26.8	27.4	22.6	11.9	14.9	14.9	14.9
AN	All	32.1	28.2	20.5	3.8	15.4	15.4	15.4
BN	All	32.4	24.1	16.7	5.6	10.2	12.0	12.0
D	All	34.0	27.8	20.1	8.3	15.3	14.6	13.9
C	All	41.7	35.4	27.1	18.8	25.0	17.7	17.7
All	All	32.7	28.3	21.4	9.9	15.8	14.8	14.6

Table L.1-12. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult winter-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, January through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	75.0	32.1 (-42.9%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	32.1 (-42.9%)	50.0 (-25.0%)
W	6	60.7	39.3 (-21.4%)	46.4 (-14.3%)	42.9 (-17.9%)	42.9 (-17.9%)	46.4 (-14.3%)	78.6 (17.9%)	60.7 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)
AN	5	69.2	15.4 (-53.8%)	53.8 (-15.4%)	53.8 (-15.4%)	53.8 (-15.4%)	46.2 (-23.1%)	15.4 (-53.8%)	53.8 (-15.4%)
AN	6	46.2	7.7 (-38.5%)	30.8 (-15.4%)	30.8 (-15.4%)	38.5 (-7.7%)	46.2 (0.0%)	61.5 (15.4%)	53.8 (7.7%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	11.1	0.0 (-11.1%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	5	44.4	5.6 (-38.9%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	22.2 (-22.2%)	27.8 (-16.7%)	38.9 (-5.6%)
BN	6	44.4	27.8 (-16.7%)	33.3 (-11.1%)	38.9 (-5.6%)	38.9 (-5.6%)	44.4 (0.0%)	50.0 (5.6%)	50.0 (5.6%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	8.3 (-12.5%)	20.8 (0.0%)	20.8 (0.0%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)	20.8 (0.0%)
D	5	70.8	20.8 (-50.0%)	58.3 (-12.5%)	58.3 (-12.5%)	45.8 (-25.0%)	58.3 (-12.5%)	33.3 (-37.5%)	62.5 (-8.3%)
D	6	29.2	20.8 (-8.3%)	12.5 (-16.7%)	12.5 (-16.7%)	20.8 (-8.3%)	25.0 (-4.2%)	20.8 (-8.3%)	25.0 (-4.2%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	37.5	25.0 (-12.5%)	6.3 (-31.3%)	37.5 (0.0%)	6.3 (-31.3%)	6.3 (-31.3%)	37.5 (0.0%)	43.8 (6.3%)
C	5	56.3	37.5 (-18.8%)	56.3 (0.0%)	43.8 (-12.5%)	56.3 (0.0%)	56.3 (0.0%)	56.3 (0.0%)	68.8 (12.5%)
C	6	68.8	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	81.3 (12.5%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	14.1	6.1 (-8.1%)	9.1 (-5.1%)	14.1 (0.0%)	8.1 (-6.1%)	7.1 (-7.1%)	12.1 (-2.0%)	15.2 (1.0%)
All	5	64.6	23.2 (-41.4%)	47.5 (-17.2%)	45.5 (-19.2%)	44.4 (-20.2%)	45.5 (-19.2%)	33.3 (-31.3%)	54.5 (-10.1%)
All	6	49.5	30.3 (-19.2%)	34.3 (-15.2%)	35.4 (-14.1%)	37.4 (-12.1%)	41.4 (-8.1%)	53.5 (4.0%)	52.5 (3.0%)
W	All	22.6	11.9 (-10.7%)	14.9 (-7.7%)	14.3 (-8.3%)	14.3 (-8.3%)	14.9 (-7.7%)	18.5 (-4.2%)	18.5 (-4.2%)
AN	All	20.5	3.8 (-16.7%)	15.4 (-5.1%)	15.4 (-5.1%)	16.7 (-3.8%)	15.4 (-5.1%)	14.1 (-6.4%)	19.2 (-1.3%)
BN	All	16.7	5.6 (-11.1%)	12.0 (-4.6%)	13.0 (-3.7%)	13.0 (-3.7%)	13.0 (-3.7%)	14.8 (-1.9%)	16.7 (0.0%)
D	All	20.1	8.3 (-11.8%)	15.3 (-4.9%)	15.3 (-4.9%)	13.9 (-6.3%)	16.7 (-3.5%)	11.1 (-9.0%)	18.1 (-2.1%)
C	All	27.1	18.8 (-8.3%)	18.8 (-8.3%)	22.9 (-4.2%)	18.8 (-8.3%)	18.8 (-8.3%)	25.0 (-2.1%)	32.3 (5.2%)
All	All	21.4	9.9 (-11.4%)	15.2 (-6.2%)	15.8 (-5.6%)	15.0 (-6.4%)	15.7 (-5.7%)	16.5 (-4.9%)	20.4 (-1.0%)

Table L.1-13. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult winter-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Hamilton City, January through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	3.6	21.4	17.9	17.9	17.9	17.9	14.3
W	5	92.9	92.9	92.9	92.9	92.9	92.9	92.9
W	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	15.4	46.2	38.5	38.5	38.5	38.5	38.5
AN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	38.9	66.7	77.8	66.7	66.7	72.2	61.1
BN	5	100.0	94.4	100	94.4	94.4	94.4	94.4
BN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	3	0.0	4.2	0.0	0.0	0.0	0.0	0.0
D	4	58.3	87.5	66.7	66.7	66.7	75	75
D	5	100.0	100.0	100.0	100.0	100.0	95.8	100.0
D	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	6.3	0.0	6.3	0.0	0.0	0.0
C	4	81.3	100	93.8	93.8	87.5	87.5	87.5
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	2.0	0.0	1.0	0.0	0.0	0.0
All	4	37.4	61.6	55.6	53.5	52.5	55.6	52.5
All	5	98.0	97.0	98.0	97.0	97.0	96.0	97.0
All	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	32.7	35.7	35.1	35.1	35.1	35.1	35.1
AN	All	35.9	41.0	39.7	38.5	39.7	39.7	39.7
BN	All	39.8	43.5	46.3	42.6	43.5	43.5	44.4
D	All	43.1	48.6	44.4	43.1	44.4	44.4	45.1
C	All	46.9	51.0	49.0	47.9	50.0	47.9	47.9
All	All	39.2	43.4	42.3	40.9	41.9	41.6	41.9

Table L.1-14. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult winter-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Hamilton City, January through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	17.9	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	14.3 (-3.6%)	14.3 (-3.6%)	17.9 (0.0%)
W	5	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	89.3 (-3.6%)	92.9 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	38.5	46.2 (7.7%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)
AN	5	100.0	84.6 (-15.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	77.8	61.1 (-16.7%)	72.2 (-5.6%)	72.2 (-5.6%)	77.8 (0.0%)	61.1 (-16.7%)	66.7 (-11.1%)	66.7 (-11.1%)
BN	5	100.0	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	66.7	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	70.8 (4.2%)	66.7 (0.0%)	87.5 (20.8%)	66.7 (0.0%)
D	5	100.0	91.7 (-8.3%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)
C	4	93.8	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	93.8 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
All	4	55.6	52.5 (-3.0%)	53.5 (-2.0%)	54.5 (-1.0%)	55.6 (0.0%)	50.5 (-5.1%)	57.6 (2.0%)	53.5 (-2.0%)
All	5	98.0	92.9 (-5.1%)	97.0 (-1.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	35.1	35.1 (0.0%)	35.1 (0.0%)	35.1 (0.0%)	35.1 (0.0%)	34.5 (-0.6%)	33.9 (-1.2%)	35.1 (0.0%)
AN	All	39.7	38.5 (-1.3%)	39.7 (0.0%)	39.7 (0.0%)	39.7 (0.0%)	39.7 (0.0%)	39.7 (0.0%)	39.7 (0.0%)
BN	All	46.3	42.6 (-3.7%)	44.4 (-1.9%)	44.4 (-1.9%)	45.4 (-0.9%)	42.6 (-3.7%)	43.5 (-2.8%)	43.5 (-2.8%)
D	All	44.4	43.1 (-1.4%)	44.4 (0.0%)	44.4 (0.0%)	44.4 (0.0%)	44.4 (0.0%)	47.9 (3.5%)	44.4 (0.0%)
C	All	49.0	47.9 (-1.0%)	47.9 (-1.0%)	49.0 (0.0%)	47.9 (-1.0%)	47.9 (-1.0%)	49.0 (0.0%)	50.0 (1.0%)
All	All	42.3	40.9 (-1.3%)	41.8 (-0.5%)	41.9 (-0.3%)	41.9 (-0.3%)	41.2 (-1.0%)	42.3 (0.0%)	41.9 (-0.3%)

L.1.3.2.2 Adult Holding and Spawning

Water temperature-related effects on winter-run Chinook salmon adult holding and spawning in the Sacramento River were evaluated by assessing: (1) the percent of months with water temperature outside the 42.1°F to 55°F range for spawning initiation (McCullough 1999); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) at Keswick and below Clear Creek (Table L.1-1).

Results evaluating the 42.1°F to 55°F range for spawning initiation are presented in Table L.1-15 and Table L.1-16 for Keswick and in Table L.1-17 and Table L.1-18 for below Clear Creek.

- At Keswick, the highest percent of months outside the spawning initiation range was 58.3% and occurred in May of dry water years under the NAA (Table L.1-15 and Table L.1-16). The lowest percent of months outside the range was 0% and occurred in in January, February, March, June, and July under all water year types under the NAA and all alternatives, in at least one water year type during April under the NAA and all alternatives, and in at least one water year type during May for all alternatives except the NAA. Combining water year types, the percent of months outside the range was highest in April and May under the NAA and all alternative. The percent of months outside the range was lowest during January through March and June under the NAA and all alternatives. Air temperatures and seasonal operations drove this temporal pattern.
- Below Clear Creek, the highest percent of months outside the spawning initiation range was 84.6% and occurred in May of above normal water years under the NAA (Table L.1-17 and Table L.1-18). The lowest percent of months outside the range was 0% and occurred during January, February, and March, all water year types under the NAA and all alternatives and in at least one water year type during June and July for the NAA and all alternatives. Combining water year types, the percent of months outside the range was highest in April for the NAA and all alternatives except Alternative 1, for which the highest percent was in July. The percent of months outside the range was lowest during January through March under the NAA and all alternatives. Air temperatures and seasonal operations drove these temporal patterns.

Results evaluating the 59.9°F pathogen virulence for adult holding and spawning winter-run Chinook salmon are presented in Table L.1-19 and Table L.1-20 for Keswick and in Table L.1-21 and Table L.1-22 for below Clear Creek.

- At Keswick, there were no exceedances above the threshold under the NAA and all alternatives (Table L.1-19 and Table L.1-20).
- Below Clear Creek, there were no months in which the pathogen virulence threshold was exceeded under the NAA and all alternatives (Table L.1-21 and Table L.1-22).

Table L.1-15. Percent of months outside the 42.1°F to 55°F water temperature range for spawning initiation of winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, January through July (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	28.6	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	7.1	0.0	0.0	0.0	0.0	0.0
W	5	25.0	10.7	14.3	0.0	0.0	0.0	0.0
W	6	96.4	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	46.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	0.0	0.0	0.0	0.0	0.0
AN	5	53.8	0.0	15.4	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	50.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	5.6	22.2	16.7	11.1	16.7	22.2	16.7
BN	5	100.0	5.6	33.3	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	20.8	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	12.5	20.8	20.8	29.2	33.3	25.0	29.2
D	5	100.0	8.3	58.3	4.2	0.0	8.3	8.3
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	37.5	25.0	12.5	6.3	6.3	6.3	6.3
C	5	100.0	18.8	25.0	6.3	12.5	6.3	6.3
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	6.3	0.0	6.3	0.0	0.0
All	1	28.3	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	10.1	18.2	10.1	10.1	12.1	11.1	11.1
All	5	72.7	9.1	30.3	2.0	2.0	3.0	3.0
All	6	99.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	1.0	0.0	1.0	0.0	0.0
W	All	35.7	2.6	2.0	0.0	0.0	0.0	0.0
AN	All	42.9	3.3	2.2	0.0	0.0	0.0	0.0
BN	All	50.8	4.0	7.1	0.0	1.6	2.4	3.2
D	All	47.6	4.2	11.3	0.0	4.8	4.8	4.8
C	All	48.2	6.3	6.3	1.8	1.8	3.6	1.8
All	All	44.3	3.9	5.9	0.3	1.7	2.2	2.0

Table L.1-16. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, January through July (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	14.3	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	7.1 (-7.1%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	15.4	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	16.7 (0.0%)	5.6 (-11.1%)	16.7 (0.0%)
BN	5	33.3	0.0 (-33.3%)	5.6 (-27.8%)	0.0 (-33.3%)	0.0 (-33.3%)	5.6 (-27.8%)	0.0 (-33.3%)	22.2 (-11.1%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	0.0 (-20.8%)	33.3 (12.5%)	33.3 (12.5%)	25.0 (4.2%)	25.0 (4.2%)	4.2 (-16.7%)	25.0 (4.2%)
D	5	58.3	0.0 (-58.3%)	4.2 (-54.2%)	0.0 (-58.3%)	8.3 (-50.0%)	4.2 (-54.2%)	0.0 (-58.3%)	37.5 (-20.8%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	12.5	0.0 (-12.5%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	0.0 (-12.5%)	18.8 (6.3%)
C	5	25.0	0.0 (-25.0%)	6.3 (-18.8%)	6.3 (-18.8%)	6.3 (-18.8%)	6.3 (-18.8%)	0.0 (-25.0%)	18.8 (-6.3%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	6.3	12.5 (6.3%)	12.5 (6.3%)	0.0 (-6.3%)	12.5 (6.3%)	12.5 (6.3%)	0.0 (-6.3%)	0.0 (-6.3%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	10.1	0.0 (-10.1%)	11.1 (1.0%)	11.1 (1.0%)	11.1 (1.0%)	10.1 (0.0%)	2.0 (-8.1%)	12.1 (2.0%)
All	5	30.3	0.0 (-30.3%)	3.0 (-27.3%)	1.0 (-29.3%)	3.0 (-27.3%)	3.0 (-27.3%)	0.0 (-30.3%)	18.2 (-12.1%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	1.0	2.0 (1.0%)	2.0 (1.0%)	0.0 (-1.0%)	2.0 (1.0%)	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
W	All	2.0	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	1.0 (-1.0%)
AN	All	2.2	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)
BN	All	7.1	0.0 (-7.1%)	2.4 (-4.8%)	1.6 (-5.6%)	3.2 (-4.0%)	3.2 (-4.0%)	0.8 (-6.3%)	5.6 (-1.6%)
D	All	11.3	0.0 (-11.3%)	5.4 (-6.0%)	4.8 (-6.5%)	4.8 (-6.5%)	4.2 (-7.1%)	0.6 (-10.7%)	8.9 (-2.4%)
C	All	6.3	1.8 (-4.5%)	3.6 (-2.7%)	1.8 (-4.5%)	3.6 (-2.7%)	3.6 (-2.7%)	0.0 (-6.3%)	5.4 (-0.9%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	All	5.9	0.3 (-5.6%)	2.3 (-3.6%)	1.7 (-4.2%)	2.3 (-3.6%)	2.2 (-3.8%)	0.3 (-5.6%)	4.3 (-1.6%)

Table L.1-17. Percent of months outside the 42.1°F to 55°F water temperature range for spawning initiation of winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River below Clear Creek, January through July (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	17.9	7.1	7.1	7.1	7.1	7.1
W	5	82.1	53.6	78.6	28.6	28.6	28.6	28.6
W	6	100.0	10.7	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	30.8	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	15.4	46.2	30.8	30.8	30.8	30.8	30.8
AN	5	92.3	76.9	84.6	38.5	38.5	38.5	38.5
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	33.3	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	44.4	55.6	44.4	38.9	38.9	38.9	33.3

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	5	100.0	44.4	72.2	16.7	16.7	22.2	27.8
BN	6	100.0	0.0	5.6	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	11.1	0.0	0.0	0.0	0.0
D	1	12.5	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	50.0	75.0	45.8	54.2	50.0	50.0	54.2
D	5	100.0	70.8	75.0	41.7	45.8	50.0	54.2
D	6	100.0	8.3	4.2	0.0	0.0	0.0	0.0
D	7	100.0	0.0	20.8	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	81.3	50.0	43.8	25.0	18.8	25.0	12.5
C	5	100.0	43.8	50.0	31.3	37.5	37.5	37.5
C	6	100.0	0.0	56.3	12.5	12.5	12.5	12.5
C	7	100.0	0.0	75.0	31.3	25.0	37.5	31.3
All	1	18.2	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	35.4	47.5	32.3	30.3	28.3	29.3	27.3
All	5	93.9	57.6	72.7	31.3	33.3	35.4	37.4
All	6	100.0	5.1	11.1	2.0	2.0	2.0	2.0
All	7	100.0	0.0	19.2	5.1	4.0	6.1	5.1
W	All	42.9	11.7	12.2	2.0	5.1	5.1	5.1
AN	All	48.4	17.6	16.5	1.1	9.9	9.9	9.9

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	54.0	14.3	19.0	4.8	7.9	7.9	8.7
D	All	51.8	22.0	20.8	4.2	13.7	13.7	14.3
C	All	54.5	13.4	32.1	30.4	14.3	13.4	16.1
All	All	49.6	15.7	19.3	7.5	9.8	9.7	10.4

Table L.1-18. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River below Clear Creek, January through July (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	7.1	3.6 (-3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	10.7 (3.6%)	7.1 (0.0%)
W	5	78.6	10.7 (-67.9%)	28.6 (-50.0%)	28.6 (-50.0%)	28.6 (-50.0%)	28.6 (-50.0%)	25.0 (-53.6%)	39.3 (-39.3%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	10.7 (10.7%)	3.6 (3.6%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	30.8	7.7 (-23.1%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)
AN	5	84.6	0.0 (-84.6%)	38.5 (-46.2%)	38.5 (-46.2%)	38.5 (-46.2%)	38.5 (-46.2%)	7.7 (-76.9%)	53.8 (-30.8%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	44.4	16.7 (-27.8%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	27.8 (-16.7%)	27.8 (-16.7%)	38.9 (-5.6%)
BN	5	72.2	0.0 (-72.2%)	27.8 (-44.4%)	33.3 (-38.9%)	16.7 (-55.6%)	22.2 (-50.0%)	27.8 (-44.4%)	44.4 (-27.8%)
BN	6	5.6	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	11.1 (5.6%)
BN	7	11.1	11.1 (0.0%)	0.0 (-11.1%)	0.0 (-11.1%)	0.0 (-11.1%)	0.0 (-11.1%)	0.0 (-11.1%)	11.1 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	45.8	12.5 (-33.3%)	50.0 (4.2%)	54.2 (8.3%)	50.0 (4.2%)	50.0 (4.2%)	41.7 (-4.2%)	45.8 (0.0%)
D	5	75.0	4.2 (-70.8%)	41.7 (-33.3%)	41.7 (-33.3%)	41.7 (-33.3%)	41.7 (-33.3%)	16.7 (-58.3%)	58.3 (-16.7%)
D	6	4.2	0.0 (-4.2%)	0.0 (-4.2%)	0.0 (-4.2%)	0.0 (-4.2%)	0.0 (-4.2%)	0.0 (-4.2%)	0.0 (-4.2%)
D	7	20.8	12.5 (-8.3%)	0.0 (-20.8%)	0.0 (-20.8%)	0.0 (-20.8%)	0.0 (-20.8%)	0.0 (-20.8%)	8.3 (-12.5%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	43.8	37.5 (-6.3%)	25.0 (-18.8%)	25.0 (-18.8%)	18.8 (-25.0%)	12.5 (-31.3%)	12.5 (-31.3%)	43.8 (0.0%)
C	5	50.0	31.3 (-18.8%)	50.0 (0.0%)	37.5 (-12.5%)	50.0 (0.0%)	56.3 (6.3%)	18.8 (-31.3%)	50.0 (0.0%)
C	6	56.3	62.5 (6.3%)	12.5 (-43.8%)	12.5 (-43.8%)	12.5 (-43.8%)	12.5 (-43.8%)	0.0 (-56.3%)	75.0 (18.8%)
C	7	75.0	81.3 (6.3%)	25.0 (-50.0%)	31.3 (-43.8%)	25.0 (-50.0%)	31.3 (-43.8%)	18.8 (-56.3%)	81.3 (6.3%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	32.3	14.1 (-18.2%)	29.3 (-3.0%)	30.3 (-2.0%)	28.3 (-4.0%)	25.3 (-7.1%)	24.2 (-8.1%)	31.3 (-1.0%)
All	5	72.7	9.1 (-63.6%)	36.4 (-36.4%)	35.4 (-37.4%)	34.3 (-38.4%)	36.4 (-36.4%)	20.2 (-52.5%)	48.5 (-24.2%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	6	11.1	11.1 (0.0%)	2.0 (-9.1%)	2.0 (-9.1%)	2.0 (-9.1%)	2.0 (-9.1%)	4.0 (-7.1%)	15.2 (4.0%)
All	7	19.2	18.2 (-1.0%)	4.0 (-15.2%)	5.1 (-14.1%)	4.0 (-15.2%)	5.1 (-14.1%)	3.0 (-16.2%)	17.2 (-2.0%)
W	All	12.2	2.0 (-10.2%)	5.1 (-7.1%)	5.1 (-7.1%)	5.1 (-7.1%)	5.1 (-7.1%)	6.6 (-5.6%)	7.1 (-5.1%)
AN	All	16.5	1.1 (-15.4%)	9.9 (-6.6%)	9.9 (-6.6%)	9.9 (-6.6%)	9.9 (-6.6%)	6.6 (-9.9%)	12.1 (-4.4%)
BN	All	19.0	4.8 (-14.3%)	9.5 (-9.5%)	10.3 (-8.7%)	7.9 (-11.1%)	7.1 (-11.9%)	7.9 (-11.1%)	15.1 (-4.0%)
D	All	20.8	4.2 (-16.7%)	13.1 (-7.7%)	13.7 (-7.1%)	13.1 (-7.7%)	13.1 (-7.7%)	8.3 (-12.5%)	16.1 (-4.8%)
C	All	32.1	30.4 (-1.8%)	16.1 (-16.1%)	15.2 (-17.0%)	15.2 (-17.0%)	16.1 (-16.1%)	7.1 (-25.0%)	35.7 (3.6%)
All	All	19.3	7.5 (-11.8%)	10.2 (-9.1%)	10.4 (-8.9%)	9.8 (-9.5%)	9.8 (-9.5%)	7.4 (-12.0%)	16.0 (-3.3%)

Table L.1-19. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, January through July (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	64.3	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	50.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	24.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	86.9	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	23.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	27.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	34.1	0.0	0.0	0.0	0.0	0.0	0.0
D	All	32.7	0.0	0.0	0.0	0.0	0.0	0.0
C	All	35.7	0.0	0.0	0.0	0.0	0.0	0.0
All	All	30.2	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-20. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, January through July (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-21. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River below Clear Creek, January through July (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	3.6	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	6	89.3	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	23.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	61.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	66.7	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	75.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	43.4	0.0	0.0	0.0	0.0	0.0	0.0
All	6	96.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	27.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	30.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	37.3	0.0	0.0	0.0	0.0	0.0	0.0
D	All	38.1	0.0	0.0	0.0	0.0	0.0	0.0
C	All	39.3	0.0	0.0	0.0	0.0	0.0	0.0
All	All	34.2	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-22. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River below Clear Creek, January through July (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.2.3 Egg Incubation and Fry Emergence

Water temperature-related effects on winter-run Chinook salmon egg incubation and fry emergence in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 42.8°F to 56°F range for egg incubation and fry emergence (Slater 1963, USFWS 1999, Myrick and Cech 2004, Bratovich et al. 2012, Martin et al. 2017) at Keswick and below Clear Creek (Table L.1-1).

Results are presented in Table L.1-23 and Table L.1-24 for Keswick and in Table L.1-25 and Table L.1-26 for below Clear Creek.

- At Keswick, the highest percent of months outside the spawning initiation range was 73.3% and occurred in October of critical water years under Alt 2 With TUCP Without VA and Alt 2 Without TUCP Systemwide VA (Table L.1-23 and Table L.1-24). The lowest percent of months outside the range was 0% and occurred in at least two water year types in all months under the NAA and all alternatives. Combining water year types, the percent of months outside the range was highest during September through November depending on alternative. The percent of months outside the range was lowest during May through July depending on alternative. Seasonal operations drove these temporal patterns.
- Below Clear Creek, the highest percent of months outside the spawning initiation range was 86.7% and occurred in October of critical water years under Alt 2 Without TUCP Delta VA and Alt 2 Without TUCP Systemwide VA (Table L.1-25 and Table L.1-26). The lowest percent of months outside the range was 0% and occurred in at least one water year type in all months except May under the NAA and all alternatives. Combining water year types, the percent of months outside the range was highest during May under the NAA and Alt 4 and during October for the 4 components of Alt 2 and Alt 34. Seasonal operations drove these temporal patterns.

Table L.1-23. Percent of months outside the 42.8°F to 56°F water temperature range for winter-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Keswick, May through November (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	5	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	6	96.4	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	92.9	0.0	0.0	0.0	0.0	0.0	0.0
W	11	3.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	38.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	94.4	0.0	5.6	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	94.4	0.0	0.0	0.0	5.6	5.6	0.0
BN	11	0.0	0.0	0.0	0.0	5.6	5.6	5.6
D	5	91.7	4.2	12.5	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	91.7	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	100.0	12.5	12.5	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	6.3	0.0	0.0	0.0	0.0
C	8	100.0	0.0	37.5	6.3	37.5	37.5	37.5
C	9	100.0	31.3	43.8	31.3	50.0	50.0	50.0
C	10	100.0	40.0	60.0	60.0	73.3	60.0	60.0
C	11	0.0	46.7	33.3	60.0	40.0	33.3	26.7
All	5	65.7	3.0	6.1	0.0	0.0	0.0	0.0
All	6	99.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	1.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	6.1	1.0	6.1	6.1	6.1
All	9	100.0	5.1	7.1	5.1	8.1	8.1	8.1
All	10	93.9	6.1	9.2	9.2	12.2	10.2	9.2
All	11	1.0	7.1	5.1	9.1	7.1	6.1	5.1
W	All	1.0	7.1	5.1	4.0	9.1	7.1	6.1
AN	All	73.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	75.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	84.1	0.0	0.8	0.0	0.0	1.6	1.6
C	All	83.3	0.6	1.8	0.0	0.0	0.0	0.0
All	All	86.4	18.2	27.3	27.3	21.8	28.2	25.5

Table L.1-24. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for winter-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Keswick, May through November (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)	11.1 (11.1%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)	11.1 (11.1%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
D	5	12.5	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	12.5 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	8.3 (8.3%)	0.0 (0.0%)
C	5	12.5	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	6.3	12.5 (6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)
C	8	37.5	37.5 (0.0%)	37.5 (0.0%)	12.5 (-25.0%)	37.5 (0.0%)	37.5 (0.0%)	12.5 (-25.0%)	12.5 (-25.0%)
C	9	43.8	50.0 (6.3%)	56.3 (12.5%)	31.3 (-12.5%)	56.3 (12.5%)	56.3 (12.5%)	31.3 (-12.5%)	31.3 (-12.5%)
C	10	60.0	66.7 (6.7%)	73.3 (13.3%)	60.0 (0.0%)	66.7 (6.7%)	73.3 (13.3%)	53.3 (-6.7%)	46.7 (-13.3%)
C	11	33.3	26.7 (-6.7%)	33.3 (0.0%)	53.3 (20.0%)	26.7 (-6.7%)	40.0 (6.7%)	53.3 (20.0%)	40.0 (6.7%)
All	5	6.1	0.0 (-6.1%)	0.0 (-6.1%)	0.0 (-6.1%)	0.0 (-6.1%)	0.0 (-6.1%)	0.0 (-6.1%)	4.0 (-2.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	1.0	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	8	6.1	6.1 (0.0%)	6.1 (0.0%)	2.0 (-4.0%)	6.1 (0.0%)	6.1 (0.0%)	2.0 (-4.0%)	2.0 (-4.0%)
All	9	7.1	8.1 (1.0%)	9.1 (2.0%)	5.1 (-2.0%)	9.1 (2.0%)	9.1 (2.0%)	5.1 (-2.0%)	5.1 (-2.0%)
All	10	9.2	10.2 (1.0%)	13.3 (4.1%)	10.2 (1.0%)	13.3 (4.1%)	13.3 (4.1%)	9.2 (0.0%)	7.1 (-2.0%)
All	11	5.1	4.0 (-1.0%)	6.1 (1.0%)	8.1 (3.0%)	6.1 (1.0%)	7.1 (2.0%)	10.1 (5.1%)	6.1 (1.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.8	0.0 (-0.8%)	1.6 (0.8%)	0.0 (-0.8%)	3.2 (2.4%)	1.6 (0.8%)	0.0 (-0.8%)	0.8 (0.0%)
D	All	1.8	0.0 (-1.8%)	0.6 (-1.2%)	0.6 (-1.2%)	0.6 (-1.2%)	0.6 (-1.2%)	1.8 (0.0%)	1.8 (0.0%)
C	All	27.3	27.3 (0.0%)	28.2 (0.9%)	21.8 (-5.5%)	26.4 (-0.9%)	29.1 (1.8%)	20.9 (-6.4%)	18.2 (-9.1%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	All	4.9	4.3 (-0.6%)	4.9 (0.0%)	3.6 (-1.3%)	4.9 (0.0%)	5.1 (0.1%)	3.8 (-1.2%)	3.5 (-1.4%)

Table L.1-25. Percent of months outside the 42.8°F to 56°F water temperature range for winter-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River below Clear Creek, May through November (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	5	42.9	28.6	42.9	17.9	17.9	17.9	17.9
W	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	7.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	92.3	15.4	38.5	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	100.0	22.2	44.4	0.0	5.6	5.6	5.6
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	5.6	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	94.4	5.6	5.6	0.0	5.6	5.6	5.6
BN	11	0.0	0.0	0.0	0.0	5.6	5.6	5.6
D	5	100.0	29.2	58.3	12.5	12.5	12.5	20.8
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	95.8	0.0	0.0	4.2	4.2	4.2	4.2
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	100.0	37.5	37.5	6.3	18.8	25.0	18.8
C	6	100.0	0.0	6.3	0.0	0.0	0.0	0.0
C	7	100.0	0.0	12.5	12.5	6.3	6.3	6.3
C	8	100.0	18.8	43.8	25.0	43.8	37.5	43.8
C	9	100.0	43.8	56.3	56.3	62.5	68.8	68.8
C	10	100.0	40.0	60.0	73.3	80.0	86.7	86.7
C	11	0.0	46.7	40.0	60.0	40.0	33.3	33.3
All	5	82.8	27.3	45.5	9.1	12.1	13.1	14.1
All	6	100.0	0.0	1.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	2.0	2.0	1.0	1.0	1.0
All	8	100.0	3.0	8.1	4.0	7.1	6.1	7.1
All	9	100.0	7.1	9.1	9.1	10.1	11.1	11.1
All	10	98.0	7.1	10.2	12.2	14.3	15.3	15.3
All	11	2.0	7.1	6.1	9.1	7.1	6.1	6.1
W	All	78.6	4.1	6.1	0.0	2.6	2.6	2.6
AN	All	83.7	2.2	5.4	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	84.9	4.0	7.9	0.0	0.0	2.4	2.4
D	All	85.1	4.2	8.3	0.0	2.4	2.4	2.4
C	All	86.4	26.4	36.4	35.5	32.7	35.5	36.4
All	All	83.2	7.4	11.7	5.6	6.5	7.4	7.5

Table L.1-26. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for winter-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River below Clear Creek, May through November (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	42.9	0.0 (-42.9%)	17.9 (-25.0%)	17.9 (-25.0%)	17.9 (-25.0%)	17.9 (-25.0%)	3.6 (-39.3%)	25.0 (-17.9%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	38.5	0.0 (-38.5%)	0.0 (-38.5%)	0.0 (-38.5%)	0.0 (-38.5%)	0.0 (-38.5%)	0.0 (-38.5%)	7.7 (-30.8%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	44.4	0.0 (-44.4%)	5.6 (-38.9%)	0.0 (-44.4%)	5.6 (-38.9%)	5.6 (-38.9%)	0.0 (-44.4%)	22.2 (-22.2%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	5.6	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	11.1 (5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	11	0.0	0.0 (0.0%)	11.1 (11.1%)	0.0 (0.0%)	11.1 (11.1%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
D	5	58.3	0.0 (-58.3%)	12.5 (-45.8%)	8.3 (-50.0%)	12.5 (-45.8%)	12.5 (-45.8%)	0.0 (-58.3%)	37.5 (-20.8%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	8.3 (8.3%)	4.2 (4.2%)
D	10	0.0	0.0 (0.0%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	8.3 (8.3%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	4.2 (4.2%)	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)	8.3 (8.3%)	0.0 (0.0%)
C	5	37.5	6.3 (-31.3%)	18.8 (-18.8%)	6.3 (-31.3%)	18.8 (-18.8%)	18.8 (-18.8%)	12.5 (-25.0%)	37.5 (0.0%)
C	6	6.3	6.3 (0.0%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	12.5 (6.3%)
C	7	12.5	18.8 (6.3%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	6.3 (-6.3%)	25.0 (12.5%)
C	8	43.8	50.0 (6.3%)	37.5 (-6.3%)	25.0 (-18.8%)	37.5 (-6.3%)	43.8 (0.0%)	25.0 (-18.8%)	37.5 (-6.3%)
C	9	56.3	62.5 (6.3%)	68.8 (12.5%)	62.5 (6.3%)	68.8 (12.5%)	75.0 (18.8%)	50.0 (-6.3%)	43.8 (-12.5%)
C	10	60.0	66.7 (6.7%)	86.7 (26.7%)	73.3 (13.3%)	80.0 (20.0%)	86.7 (26.7%)	66.7 (6.7%)	46.7 (-13.3%)
C	11	40.0	40.0 (0.0%)	40.0 (0.0%)	53.3 (13.3%)	33.3 (-6.7%)	40.0 (0.0%)	53.3 (13.3%)	40.0 (0.0%)
All	5	45.5	1.0 (-44.4%)	12.1 (-33.3%)	8.1 (-37.4%)	12.1 (-33.3%)	12.1 (-33.3%)	3.0 (-42.4%)	27.3 (-18.2%)
All	6	1.0	1.0 (0.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	7	2.0	3.0 (1.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	1.0 (-1.0%)	4.0 (2.0%)
All	8	8.1	8.1 (0.0%)	6.1 (-2.0%)	4.0 (-4.0%)	6.1 (-2.0%)	7.1 (-1.0%)	4.0 (-4.0%)	6.1 (-2.0%)
All	9	9.1	10.1 (1.0%)	11.1 (2.0%)	10.1 (1.0%)	11.1 (2.0%)	12.1 (3.0%)	10.1 (1.0%)	8.1 (-1.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	10	10.2	10.2 (0.0%)	15.3 (5.1%)	12.2 (2.0%)	15.3 (5.1%)	15.3 (5.1%)	12.2 (2.0%)	7.1 (-3.1%)
All	11	6.1	6.1 (0.0%)	9.1 (3.0%)	9.1 (3.0%)	7.1 (1.0%)	7.1 (1.0%)	10.1 (4.0%)	6.1 (0.0%)
W	All	6.1	0.0 (-6.1%)	2.6 (-3.6%)	2.6 (-3.6%)	2.6 (-3.6%)	2.6 (-3.6%)	0.5 (-5.6%)	3.6 (-2.6%)
AN	All	5.4	0.0 (-5.4%)	0.0 (-5.4%)	0.0 (-5.4%)	0.0 (-5.4%)	0.0 (-5.4%)	1.1 (-4.3%)	1.1 (-4.3%)
BN	All	7.9	0.0 (-7.9%)	3.2 (-4.8%)	0.0 (-7.9%)	4.0 (-4.0%)	2.4 (-5.6%)	0.0 (-7.9%)	3.2 (-4.8%)
D	All	8.3	0.0 (-8.3%)	3.0 (-5.4%)	2.4 (-6.0%)	2.4 (-6.0%)	2.4 (-6.0%)	3.6 (-4.8%)	6.0 (-2.4%)
C	All	36.4	35.5 (-0.9%)	37.3 (0.9%)	32.7 (-3.6%)	35.5 (-0.9%)	39.1 (2.7%)	30.0 (-6.4%)	34.5 (-1.8%)
All	All	11.7	5.6 (-6.1%)	7.9 (-3.8%)	6.5 (-5.2%)	7.7 (-4.0%)	7.9 (-3.8%)	5.9 (-5.8%)	8.7 (-3.0%)

L.1.3.2.4 Juvenile Rearing and Outmigration

Water temperature-related effects on winter-run Chinook salmon juvenile rearing and outmigration in the Sacramento River were evaluated by assessing: (1) the percent of months with water temperature outside the 55.4°F to 68°F optimum temperature range for juvenile growth, smoltification, and predation vulnerability (Myrick and Cech 2002, Marine and Cech 2004); and (2) the percent of months with water temperature above the 75.2°F upper incipient lethal temperature (UILT) for juveniles (Brett 1952, Brett et al. 1982, Myrick and Cech 2004) at Keswick, Red Bluff Diversion Dam, and Hamilton City (Table L.1-1).

Results evaluating the 55.4°F to 68°F optimum temperature for juvenile growth, smoltification, and predation vulnerability are presented in Table L.1-27 and Table L.1-28 for Keswick, in Table L.1-29 and Table L.1-30 for Red Bluff Diversion Dam, and in Table L.1-31 and Table L.1-32 for Hamilton City.

- At Keswick, the highest percent of months outside the spawning initiation range was 100% and occurred in nearly every month and water year type combination (Table L.1-27 and Table L.1-28). The lowest percent of months outside the range was 13.3% and occurred during October of critical water years under Alt 2 without TUCP Systemwide VA. Combining water year types, the percent of months outside the range was highest during July or December depending on alternative. The percent of months outside the range was lowest during October or November depending on alternative. Air temperatures and seasonal operations drove these temporal patterns.
- At Red Bluff Diversion Dam, the highest percent of months outside the spawning initiation range was 100% and occurred in at least one water year type during November and December under the NAA and all alternatives (Table L.1-29 and Table L.1-30). The lowest percent of months outside the range was 0% and occurred in at least one water year type during July, August, and September under the NAA and all alternatives. Combining water year types, the percent of months outside the range was highest during December under the NAA and all alternatives. The percent of months outside the range was lowest between July and September depending on alternative. Air temperatures and seasonal operations drove these temporal patterns.
- At Hamilton City, the highest percent of months outside the spawning initiation range was 100% and occurred in all water year types during December and in at least one water year type during November under the NAA and all alternatives (Table L.1-31 and Table L.1-32). The lowest percent of months outside the range was 0% and occurred and occurred in at least one water year type during July through October under the NAA and all alternatives except Alt 1. Combining water year types, the percent of months outside the range was highest during December under the NAA and all alternatives. The percent of months outside the range was lowest during July and October depending on alternative. Air temperatures and seasonal operations drove these temporal patterns.

Results evaluating the 75.2°F upper incipient lethal temperature (UILT) for juvenile winter-run Chinook salmon are presented in Table L.1-33 and Table L.1-34 for Keswick, in Table L.1-35 and Table L.1-36 for Red Bluff Diversion Dam, and in Table L.1-37 and Table L.1-38 for Hamilton City.

- At Keswick, there were no exceedances above the UILT under the NAA and all alternatives (Table L.1-33 and Table L.1-34).
- At Red Bluff Diversion Dam, there were no exceedances above the UILT under the NAA and all alternatives (Table L.1-35 and Table L.1-36).
- At Hamilton City, there were no exceedances above the UILT under the NAA and all alternatives, except during August of critical water years under Alt 2 With TUCP Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP Systemwide VA (Table L.1-37 and Table L.1-38).

Table L.1-27. Percent of months outside the 55.4°F to 68°F optimal water temperature range for juvenile winter-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Keswick, July through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	3.6	100.0	100.0	100.0	100.0	100.0	100.0
W	8	17.9	100.0	100.0	100.0	100.0	100.0	100.0
W	9	0.0	100.0	100.0	100.0	100.0	100.0	100.0
W	10	0.0	100.0	100.0	100.0	100.0	100.0	100.0
W	11	89.3	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	7	7.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	8	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	9	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	10	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	11	100.0	100.0	100.0	92.9	92.9	85.7	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	7	27.8	100.0	100.0	100.0	100.0	100.0	100.0
BN	8	16.7	100.0	100.0	100.0	100.0	100.0	100.0
BN	9	5.6	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	5.6	94.4	100.0	100.0	94.4	94.4	94.4
BN	11	100.0	94.4	100.0	100.0	94.4	94.4	94.4
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	7	25.0	100.0	100.0	100.0	100.0	100.0	100.0
D	8	8.3	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	9	4.2	100.0	100.0	100.0	100.0	100.0	100.0
D	10	4.2	100.0	100.0	95.8	95.8	95.8	95.8
D	11	100.0	100.0	95.8	91.7	91.7	91.7	95.8
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	7	43.8	100.0	93.8	100.0	100.0	100.0	100.0
C	8	50.0	93.8	62.5	81.3	56.3	62.5	62.5
C	9	12.5	56.3	50.0	68.8	43.8	43.8	50.0
C	10	0.0	60.0	40.0	26.7	20.0	13.3	13.3
C	11	100.0	46.7	40.0	33.3	40.0	40.0	40.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	7	20.2	100.0	99.0	100.0	100.0	100.0	100.0
All	8	18.2	99.0	93.9	97.0	92.9	93.9	93.9
All	9	4.0	92.9	91.9	94.9	90.9	90.9	91.9
All	10	2.0	92.9	90.8	87.8	85.7	84.7	84.7
All	11	97.0	90.9	89.9	86.9	86.9	85.9	88.9
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	35.1	100.0	100.0	99.4	100.0	100.0	100.0
AN	All	36.3	100.0	100.0	97.5	98.8	98.8	97.5
BN	All	42.6	98.1	100.0	96.3	100.0	98.1	98.1
D	All	40.3	100.0	99.3	98.6	97.9	97.9	97.9
C	All	50.5	76.3	64.5	63.4	68.8	60.2	60.2
All	All	40.3	96.0	94.3	92.7	94.4	92.7	92.6

Table L.1-28. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile winter-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Keswick, July through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	96.4 (-3.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	96.4 (-3.6%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	85.7 (-14.3%)	92.9 (-7.1%)	92.9 (-7.1%)	85.7 (-14.3%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	83.3 (-16.7%)	88.9 (-11.1%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	95.8 (-4.2%)	95.8 (-4.2%)	95.8 (-4.2%)	95.8 (-4.2%)	91.7 (-8.3%)	100.0 (0.0%)
D	11	95.8	91.7 (-4.2%)	87.5 (-8.3%)	83.3 (-12.5%)	91.7 (-4.2%)	95.8 (0.0%)	91.7 (-4.2%)	95.8 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)
C	7	93.8	87.5 (-6.3%)	87.5 (-6.3%)	100.0 (6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	100.0 (6.3%)	100.0 (6.3%)
C	8	62.5	62.5 (0.0%)	68.8 (6.3%)	81.3 (18.8%)	68.8 (6.3%)	68.8 (6.3%)	87.5 (25.0%)	87.5 (25.0%)
C	9	50.0	50.0 (0.0%)	43.8 (-6.3%)	62.5 (12.5%)	43.8 (-6.3%)	37.5 (-12.5%)	62.5 (12.5%)	68.8 (18.8%)
C	10	40.0	33.3 (-6.7%)	20.0 (-20.0%)	26.7 (-13.3%)	20.0 (-20.0%)	13.3 (-26.7%)	33.3 (-6.7%)	53.3 (13.3%)
C	11	40.0	46.7 (6.7%)	46.7 (6.7%)	33.3 (-6.7%)	46.7 (6.7%)	46.7 (6.7%)	40.0 (0.0%)	46.7 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	99.0	98.0 (-1.0%)	98.0 (-1.0%)	100.0 (1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	100.0 (1.0%)	100.0 (1.0%)
All	8	93.9	93.9 (0.0%)	94.9 (1.0%)	97.0 (3.0%)	94.9 (1.0%)	94.9 (1.0%)	98.0 (4.0%)	98.0 (4.0%)
All	9	91.9	91.9 (0.0%)	90.9 (-1.0%)	93.9 (2.0%)	90.9 (-1.0%)	89.9 (-2.0%)	93.9 (2.0%)	94.9 (3.0%)
All	10	90.8	89.8 (-1.0%)	85.7 (-5.1%)	87.8 (-3.1%)	84.7 (-6.1%)	84.7 (-6.1%)	87.8 (-3.1%)	92.9 (2.0%)
All	11	89.9	83.8 (-6.1%)	85.9 (-4.0%)	84.8 (-5.1%)	85.9 (-4.0%)	88.9 (-1.0%)	88.9 (-1.0%)	90.9 (1.0%)
All	12	100.0	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.0 (-2.0%)
W	All	100.0	99.4 (-0.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	99.4 (-0.6%)
AN	All	100.0	97.5 (-2.5%)	98.8 (-1.3%)	98.8 (-1.3%)	97.5 (-2.5%)	98.8 (-1.3%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	96.3 (-3.7%)	97.2 (-2.8%)	100.0 (0.0%)	96.3 (-3.7%)	98.1 (-1.9%)	100.0 (0.0%)	100.0 (0.0%)
D	All	99.3	98.6 (-0.7%)	97.2 (-2.1%)	96.5 (-2.8%)	97.9 (-1.4%)	98.6 (-0.7%)	97.2 (-2.1%)	98.6 (-0.7%)
C	All	64.5	63.4 (-1.1%)	61.3 (-3.2%)	67.7 (3.2%)	61.3 (-3.2%)	59.1 (-5.4%)	71.0 (6.5%)	76.3 (11.8%)
All	All	94.3	92.7 (-1.5%)	92.6 (-1.7%)	93.9 (-0.3%)	92.4 (-1.9%)	92.7 (-1.5%)	94.8 (0.5%)	95.8 (1.5%)

Table L.1-29. Percent of months outside the 55.4°F to 68°F optimal water temperature range for juvenile winter-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	0.0	7.1	3.6	3.6	3.6	3.6
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	53.6	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	60.7	71.4	71.4	71.4	71.4
W	11	89.3	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	61.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	30.8	38.5	38.5	38.5	38.5
AN	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	7	100.0	0.0	5.6	5.6	5.6	5.6	5.6
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	72.2	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	16.7	11.1	11.1	16.7	22.2
BN	11	100.0	100.0	100.0	100.0	94.4	94.4	94.4
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	9	95.8	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	12.5	12.5	12.5	12.5	12.5
D	11	95.8	95.8	91.7	91.7	91.7	91.7	91.7
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	0.0	0.0	6.3	6.3	6.3
C	9	100.0	0.0	6.3	0.0	25.0	25.0	18.8
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	100.0	46.7	46.7	46.7	60.0	60.0	60.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	7	100.0	0.0	3.0	2.0	2.0	2.0	2.0
All	8	100.0	0.0	0.0	0.0	1.0	1.0	1.0
All	9	75.8	0.0	1.0	0.0	4.0	4.0	3.0
All	10	0.0	0.0	27.6	30.6	30.6	31.6	32.7
All	11	96.0	90.9	89.9	89.9	90.9	90.9	90.9
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	73.8	33.3	44.6	32.7	45.8	45.8	45.8
AN	All	77.5	35.0	40.0	35.0	41.3	41.3	41.3
BN	All	78.7	33.3	37.0	33.3	36.1	35.2	36.1
D	All	81.9	32.6	34.0	29.9	34.0	34.0	34.0
C	All	83.9	23.7	24.7	32.3	23.7	31.2	31.2
All	All	78.8	31.9	36.9	32.4	37.1	38.1	38.3

Table L.1-30. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile winter-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	7.1	0.0 (-7.1%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	0.0 (-7.1%)	3.6 (-3.6%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	60.7	3.6 (-57.1%)	71.4 (10.7%)	71.4 (10.7%)	67.9 (7.1%)	71.4 (10.7%)	57.1 (-3.6%)	53.6 (-7.1%)
W	11	100.0	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	30.8	0.0 (-30.8%)	30.8 (0.0%)	30.8 (0.0%)	38.5 (7.7%)	30.8 (0.0%)	23.1 (-7.7%)	23.1 (-7.7%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	5.6	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	11.1 (-5.6%)	11.1 (-5.6%)
BN	11	100.0	94.4 (-5.6%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	12.5	0.0 (-12.5%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	8.3 (-4.2%)	12.5 (0.0%)
D	11	91.7	79.2 (-12.5%)	83.3 (-8.3%)	83.3 (-8.3%)	87.5 (-4.2%)	87.5 (-4.2%)	91.7 (0.0%)	95.8 (4.2%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	18.8 (18.8%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	6.3 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	53.3 (6.7%)	53.3 (6.7%)	53.3 (6.7%)	46.7 (0.0%)	60.0 (13.3%)	46.7 (0.0%)	53.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	3.0	1.0 (-2.0%)	2.0 (-1.0%)	2.0 (-1.0%)	2.0 (-1.0%)	2.0 (-1.0%)	0.0 (-3.0%)	2.0 (-1.0%)
All	8	0.0	3.0 (3.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	1.0 (0.0%)
All	10	27.6	1.0 (-26.5%)	29.6 (2.0%)	29.6 (2.0%)	29.6 (2.0%)	31.6 (4.1%)	23.5 (-4.1%)	23.5 (-4.1%)
All	11	89.9	84.8 (-5.1%)	87.9 (-2.0%)	88.9 (-1.0%)	86.9 (-3.0%)	89.9 (0.0%)	89.9 (0.0%)	91.9 (2.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	44.6	32.7 (-11.9%)	45.8 (1.2%)	45.8 (1.2%)	45.2 (0.6%)	45.8 (1.2%)	42.9 (-1.8%)	42.9 (-1.8%)
AN	All	40.0	35.0 (-5.0%)	40.0 (0.0%)	40.0 (0.0%)	41.3 (1.3%)	40.0 (0.0%)	38.8 (-1.3%)	38.8 (-1.3%)
BN	All	37.0	33.3 (-3.7%)	35.2 (-1.9%)	36.1 (-0.9%)	34.3 (-2.8%)	37.0 (0.0%)	35.2 (-1.9%)	36.1 (-0.9%)
D	All	34.0	29.9 (-4.2%)	32.6 (-1.4%)	32.6 (-1.4%)	33.3 (-0.7%)	33.3 (-0.7%)	33.3 (-0.7%)	34.7 (0.7%)
C	All	24.7	32.3 (7.5%)	30.1 (5.4%)	24.7 (0.0%)	29.0 (4.3%)	31.2 (6.5%)	23.7 (-1.1%)	25.8 (1.1%)
All	All	36.9	32.4 (-4.6%)	37.4 (0.5%)	36.8 (-0.2%)	37.3 (0.3%)	38.1 (1.2%)	35.6 (-1.3%)	36.4 (-0.5%)

Table L.1-31. Percent of months outside the 55.4°F to 68°F optimal water temperature range for juvenile winter-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Hamilton City, July through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	25.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	14.3	0.0	0.0	0.0	0.0	0.0
W	9	92.9	3.6	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	3.6	3.6	3.6	0.0
W	11	71.4	89.3	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	7	100.0	7.7	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	85.7	100.0	100.0	100.0	92.9	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	7	100.0	11.1	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	77.8	83.3	94.4	94.4	83.3	83.3	83.3
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	4.2	4.2	4.2	4.2	4.2	4.2

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	9	100.0	4.2	4.2	4.2	4.2	4.2	4.2
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	70.8	83.3	83.3	79.2	75.0	79.2	83.3
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	7	100.0	18.8	6.3	25.0	12.5	6.3	6.3
C	8	100.0	12.5	37.5	31.3	43.8	50.0	50.0
C	9	100.0	6.3	37.5	25.0	43.8	43.8	43.8
C	10	6.7	0.0	0.0	0.0	0.0	0.0	0.0
C	11	60.0	40.0	46.7	33.3	40.0	40.0	40.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	7	100.0	13.1	1.0	4.0	2.0	1.0	1.0
All	8	100.0	7.1	7.1	6.1	8.1	9.1	9.1
All	9	97.0	3.0	7.1	5.1	8.1	8.1	8.1
All	10	1.0	0.0	0.0	1.0	1.0	1.0	0.0
All	11	72.7	80.8	86.9	83.8	80.8	82.8	83.8
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	77.4	38.7	33.3	29.8	33.9	33.9	33.9
AN	All	80.0	36.3	35.0	33.8	35.0	33.8	35.0
BN	All	79.6	32.4	32.4	25.9	32.4	30.6	30.6
D	All	78.5	31.9	31.9	27.8	31.3	30.6	31.3
C	All	78.5	29.0	37.6	33.3	35.5	39.8	39.8
All	All	78.6	34.1	33.7	29.7	33.4	33.4	33.7

Table L.1-32. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile winter-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Hamilton City, July through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)
W	11	100.0	78.6 (-21.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	100.0	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	94.4	55.6 (-38.9%)	83.3 (-11.1%)	88.9 (-5.6%)	83.3 (-11.1%)	83.3 (-11.1%)	88.9 (-5.6%)	94.4 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	0.0 (-4.2%)	4.2 (0.0%)
D	9	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	83.3	58.3 (-25.0%)	75.0 (-8.3%)	79.2 (-4.2%)	75.0 (-8.3%)	79.2 (-4.2%)	83.3 (0.0%)	83.3 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	6.3	0.0 (-6.3%)	0.0 (-6.3%)	18.8 (12.5%)	0.0 (-6.3%)	6.3 (0.0%)	6.3 (0.0%)	18.8 (12.5%)
C	8	37.5	37.5 (0.0%)	50.0 (12.5%)	31.3 (-6.3%)	50.0 (12.5%)	50.0 (12.5%)	18.8 (-18.8%)	25.0 (-12.5%)
C	9	37.5	31.3 (-6.3%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	43.8 (6.3%)	25.0 (-12.5%)	12.5 (-25.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	33.3 (-13.3%)	40.0 (-6.7%)	33.3 (-13.3%)	40.0 (-6.7%)	40.0 (-6.7%)	26.7 (-20.0%)	46.7 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	1.0	0.0 (-1.0%)	0.0 (-1.0%)	3.0 (2.0%)	0.0 (-1.0%)	1.0 (0.0%)	4.0 (3.0%)	3.0 (2.0%)
All	8	7.1	7.1 (0.0%)	9.1 (2.0%)	6.1 (-1.0%)	9.1 (2.0%)	9.1 (2.0%)	5.1 (-2.0%)	5.1 (-2.0%)
All	9	7.1	6.1 (-1.0%)	8.1 (1.0%)	5.1 (-2.0%)	8.1 (1.0%)	8.1 (1.0%)	5.1 (-2.0%)	3.0 (-4.0%)
All	10	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	86.9	64.6 (-22.2%)	80.8 (-6.1%)	81.8 (-5.1%)	80.8 (-6.1%)	82.8 (-4.0%)	82.8 (-4.0%)	86.9 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	33.3	29.8 (-3.6%)	33.9 (0.6%)	33.9 (0.6%)	33.9 (0.6%)	33.9 (0.6%)	35.7 (2.4%)	33.3 (0.0%)
AN	All	35.0	33.8 (-1.3%)	33.8 (-1.3%)	33.8 (-1.3%)	33.8 (-1.3%)	35.0 (0.0%)	35.0 (0.0%)	35.0 (0.0%)
BN	All	32.4	25.9 (-6.5%)	30.6 (-1.9%)	31.5 (-0.9%)	30.6 (-1.9%)	30.6 (-1.9%)	32.4 (0.0%)	32.4 (0.0%)
D	All	31.9	27.8 (-4.2%)	30.6 (-1.4%)	31.3 (-0.7%)	30.6 (-1.4%)	31.3 (-0.7%)	31.3 (-0.7%)	31.9 (0.0%)
C	All	37.6	33.3 (-4.3%)	38.7 (1.1%)	34.4 (-3.2%)	38.7 (1.1%)	39.8 (2.2%)	29.0 (-8.6%)	33.3 (-4.3%)
All	All	33.7	29.7 (-4.0%)	33.2 (-0.5%)	32.9 (-0.8%)	33.2 (-0.5%)	33.7 (0.0%)	32.9 (-0.8%)	33.1 (-0.7%)

Table L.1-33. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, July through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-34. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, July through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-35. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	8	7.1	0.0	0.0	0.0	0.0	0.0	0.0
W	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	11.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	11.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	8	4.2	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	37.5	0.0	0.0	0.0	0.0	0.0	0.0
C	8	25.0	0.0	0.0	0.0	0.0	0.0	0.0
C	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	11.1	0.0	0.0	0.0	0.0	0.0	0.0
All	8	9.1	0.0	0.0	0.0	0.0	0.0	0.0
All	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	1.8	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	1.3	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	3.7	0.0	0.0	0.0	0.0	0.0	0.0
D	All	1.4	0.0	0.0	0.0	0.0	0.0	0.0
C	All	10.8	0.0	0.0	0.0	0.0	0.0	0.0
All	All	3.4	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-36. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-37. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, July through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	85.7	0.0	0.0	0.0	0.0	0.0	0.0
W	8	53.6	0.0	0.0	0.0	0.0	0.0	0.0
W	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	69.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	88.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	77.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	87.5	0.0	0.0	0.0	0.0	0.0	0.0
D	8	83.3	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	9	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	93.8	0.0	0.0	0.0	0.0	6.3	0.0
C	9	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	90.9	0.0	0.0	0.0	0.0	0.0	0.0
All	8	73.7	0.0	0.0	0.0	0.0	1.0	0.0
All	9	3.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	23.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	27.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	27.8	0.0	0.0	0.0	0.0	0.0	0.0
D	All	29.2	0.0	0.0	0.0	0.0	0.0	0.0
C	All	35.5	0.0	0.0	0.0	0.0	0.0	1.1
All	All	28.0	0.0	0.0	0.0	0.0	0.0	0.2

Table L.1-38. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile winter-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, July through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	1.1 (1.1%)	0.0 (0.0%)	1.1 (1.1%)	1.1 (1.1%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.2 (0.2%)	0.0 (0.0%)	0.2 (0.2%)	0.2 (0.2%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.3 Spring-run Chinook Salmon

L.1.3.3.1 Adult Migration

Water temperature-related effects on spring-run Chinook salmon adult migration in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 37.9°F to 68°F successful migration range (Reiser and Bjornn 1979, Goniea et al. 2006) in the Sacramento River at Keswick, Red Bluff Diversion Dam, and Hamilton City and in Clear Creek below Whiskeytown (Table L.1-1).

- At Keswick, there were no occurrences outside the range for any month or water year type under the NAA and all alternatives, except during August of critical water years under Alt 2 With TUCP Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP Systemwide VA (Table L.1-39 and Table L.1-40).
- At Red Bluff Diversion Dam, there were no occurrences outside the range except during August and September of critical water years (Table L.1-41 and Table L.1-42). The highest percent of months outside the range was 25% and occurred in September of critical water years under Alt 1, Alt 2 With TUCP Without VA, Alt 2 Without TUCP Delta VA and Alt 2 Without TUCP Systemwide VA. Combining water year types, the highest percent of months outside the range was in September under the NAA and all alternatives except Alt 2 Without TUCP Without VA and Alt 3, in which both had no occurrences outside the range in all month and water year types. Air temperature and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months outside the successful spring-run Chinook salmon migration range was 50% and occurred in August of critical water years under Alt 2 With TUCP Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP Systemwide VA (Table L.1-43 and Table L.1-44). The lowest percent of months outside the range was 0% and occurred in all months during one or more water year types under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was 9.1% and occurred in June under Alt 3 and in August under Alt 2 With TUCP Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP Systemwide VA. The lowest percent of months outside the range was 0% and occurred in July under Alt 1, Alt 2 With TUCP Without VA, and Alt 2 Without TUCP Delta VA and in October and November under the NAA and all alternatives. Air temperature and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, the highest percent of months outside the successful spring-run Chinook salmon migration range was 13.3% and occurred in October of critical water years under Alt 1 (Table L.1-45 and Table L.1-46). The lowest percent of months outside the range was 0% and occurred in nearly all months and water year types under the NAA and all alternatives except critical years. Combining water year types, the highest percent of months outside the range was 41% and occurred in September under Alt 2 With TUCP Without VA. The lowest percent of months outside the range was 0% and occurred in May, June, July, October, and November depending on alternative. Air temperature and operations drove these temporal patterns.

Table L.1-39. Percent of months outside the 37.9°F to 68°F water temperature range for successful migration of adult spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, March through September (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	7	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	8	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	27.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	16.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	25.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	8.3	0.0	0.0	0.0	0.0	0.0	0.0
D	9	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	43.8	0.0	0.0	0.0	0.0	0.0	0.0
C	8	50.0	0.0	0.0	0.0	0.0	0.0	0.0
C	9	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	20.2	0.0	0.0	0.0	0.0	0.0	0.0
All	8	18.2	0.0	0.0	0.0	0.0	0.0	0.0
All	9	4.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	3.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	1.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	7.1	0.0	0.0	0.0	0.0	0.0	0.0
D	All	5.4	0.0	0.0	0.0	0.0	0.0	0.0
C	All	15.5	0.0	0.0	0.0	0.0	0.0	0.0
All	All	6.1	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-40. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, March through September (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.9 (0.9%)	0.0 (0.0%)	0.9 (0.9%)	0.9 (0.9%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	All	0.0	0.0 (0.0%)	0.1 (0.1%)	0.0 (0.0%)	0.1 (0.1%)	0.1 (0.1%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-41. Percent of months outside the 37.9°F to 68°F water temperature range for successful migration of adult spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, March through September (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	28.6	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	53.6	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	61.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	88.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	9	72.2	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	12.5	0.0	0.0	0.0	0.0	0.0	0.0
D	6	83.3	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	95.8	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	0.0	0.0	6.3	6.3	6.3
C	9	100.0	0.0	6.3	0.0	25.0	25.0	18.8
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	5.1	0.0	0.0	0.0	0.0	0.0	0.0
All	6	70.7	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	0.0	0.0	1.0	1.0	1.0
All	9	75.8	0.0	1.0	0.0	4.0	4.0	3.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	40.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	63.0	15.2	15.2	15.2	15.2	15.2	15.2

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	65.9	14.3	14.3	14.3	14.3	14.3	14.3
D	All	70.2	14.3	14.3	14.3	14.3	14.3	14.3
C	All	73.6	13.6	14.5	20.0	13.6	18.2	18.2
All	All	50.3	0.0	0.1	1.0	0.0	0.7	0.7

Table L.1-42. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, March through September (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	18.8 (18.8%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	6.3 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	3.0 (3.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	1.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	15.2	15.2 (0.0%)	15.2 (0.0%)	15.2 (0.0%)	15.2 (0.0%)	15.2 (0.0%)	15.2 (0.0%)	15.2 (0.0%)
BN	All	14.3	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)
D	All	14.3	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)
C	All	14.5	20.0 (5.5%)	18.2 (3.6%)	13.6 (-0.9%)	18.2 (3.6%)	18.2 (3.6%)	13.6 (-0.9%)	14.5 (0.0%)
All	All	0.1	1.0 (0.9%)	0.7 (0.6%)	0.0 (-0.1%)	0.7 (0.6%)	0.7 (0.6%)	0.0 (-0.1%)	0.1 (0.0%)

Table L.1-43. Percent of months outside the 37.9°F to 68°F water temperature range for successful migration of adult spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, March through September (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	5	0.0	7.1	7.1	7.1	7.1	7.1	7.1
W	6	96.4	21.4	14.3	10.7	10.7	10.7	10.7
W	7	100.0	25.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	14.3	0.0	0.0	0.0	0.0	0.0
W	9	92.9	3.6	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	7.7	0.0	0.0	0.0	0.0	0.0
AN	6	92.3	23.1	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	7.7	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
AN	9	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	5.6	0.0	0.0	0.0	0.0
BN	7	100.0	11.1	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	45.8	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	4.2	4.2	4.2	4.2	4.2	4.2
D	9	100.0	4.2	4.2	4.2	4.2	4.2	4.2
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	62.5	0.0	0.0	6.3	6.3	6.3	6.3
C	6	100.0	6.3	0.0	12.5	6.3	12.5	12.5
C	7	100.0	18.8	6.3	25.0	12.5	6.3	6.3
C	8	100.0	12.5	37.5	31.3	43.8	50.0	50.0
C	9	100.0	6.3	37.5	25.0	43.8	43.8	43.8
C	10	6.7	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	30.3	3.0	2.0	3.0	3.0	3.0	3.0
All	6	98.0	12.1	5.1	5.1	4.0	5.1	5.1

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	7	100.0	13.1	1.0	4.0	2.0	1.0	1.0
All	8	100.0	7.1	7.1	6.1	8.1	9.1	9.1
All	9	97.0	3.0	7.1	5.1	8.1	8.1	8.1
All	10	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	55.6	10.2	3.1	2.6	2.6	2.6	2.6
AN	All	56.5	5.4	0.0	0.0	0.0	0.0	0.0
BN	All	62.7	2.4	0.8	0.8	0.0	0.0	0.0
D	All	63.7	1.8	1.2	1.2	1.2	1.2	1.2
C	All	68.2	6.4	11.8	10.0	14.5	16.4	17.3
All	All	61.0	5.5	3.2	2.7	3.3	3.6	3.8

Table L.1-44. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, March through September (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	0.0 (-7.1%)	7.1 (0.0%)
W	6	14.3	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	21.4 (7.1%)	14.3 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	15.4 (15.4%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	5.6	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	0.0 (-4.2%)	4.2 (0.0%)
D	9	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)
C	6	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	12.5 (12.5%)	6.3 (6.3%)	12.5 (12.5%)
C	7	6.3	0.0 (-6.3%)	0.0 (-6.3%)	18.8 (12.5%)	0.0 (-6.3%)	6.3 (0.0%)	6.3 (0.0%)	18.8 (12.5%)
C	8	37.5	37.5 (0.0%)	50.0 (12.5%)	31.3 (-6.3%)	50.0 (12.5%)	50.0 (12.5%)	18.8 (-18.8%)	25.0 (-12.5%)
C	9	37.5	31.3 (-6.3%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	43.8 (6.3%)	25.0 (-12.5%)	12.5 (-25.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	2.0	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	6	5.1	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	5.1 (0.0%)	9.1 (4.0%)	6.1 (1.0%)
All	7	1.0	0.0 (-1.0%)	0.0 (-1.0%)	3.0 (2.0%)	0.0 (-1.0%)	1.0 (0.0%)	4.0 (3.0%)	3.0 (2.0%)
All	8	7.1	7.1 (0.0%)	9.1 (2.0%)	6.1 (-1.0%)	9.1 (2.0%)	9.1 (2.0%)	5.1 (-2.0%)	5.1 (-2.0%)
All	9	7.1	6.1 (-1.0%)	8.1 (1.0%)	5.1 (-2.0%)	8.1 (1.0%)	8.1 (1.0%)	5.1 (-2.0%)	3.0 (-4.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	3.1	2.6 (-0.5%)	2.6 (-0.5%)	2.6 (-0.5%)	2.6 (-0.5%)	2.6 (-0.5%)	5.1 (2.0%)	3.1 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	2.2 (2.2%)	0.0 (0.0%)
BN	All	0.8	0.8 (0.0%)	0.0 (-0.8%)	0.0 (-0.8%)	0.0 (-0.8%)	0.0 (-0.8%)	0.8 (0.0%)	0.0 (-0.8%)
D	All	1.2	1.2 (0.0%)	1.2 (0.0%)	1.2 (0.0%)	1.2 (0.0%)	1.2 (0.0%)	0.6 (-0.6%)	1.2 (0.0%)
C	All	11.8	10.0 (-1.8%)	15.5 (3.6%)	12.7 (0.9%)	15.5 (3.6%)	17.3 (5.5%)	9.1 (-2.7%)	10.9 (-0.9%)
All	All	3.2	2.7 (-0.4%)	3.5 (0.3%)	3.0 (-0.1%)	3.5 (0.3%)	3.8 (0.6%)	3.5 (0.3%)	2.9 (-0.3%)

Table L.1-45. Percent of months outside the 37.9°F to 68°F water temperature range for successful migration of adult spring-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, March through September (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	7	25.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	32.1	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	9	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	10	7.1	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	30.8	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	5.6	5.6	0.0	0.0	0.0	0.0	0.0
BN	7	38.9	5.6	0.0	0.0	0.0	0.0	0.0
BN	8	61.1	5.6	0.0	0.0	0.0	0.0	0.0
BN	9	61.1	16.7	5.6	0.0	11.1	11.1	11.1
BN	10	38.9	11.1	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	8.3	4.2	0.0	0.0	0.0	0.0	0.0
D	7	62.5	16.7	0.0	0.0	0.0	0.0	0.0
D	8	62.5	37.5	0.0	0.0	0.0	0.0	0.0
D	9	70.8	37.5	0.0	0.0	0.0	0.0	0.0
D	10	37.5	12.5	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	12.5	18.8	0.0	6.3	6.3	6.3	6.3

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	7	87.5	31.3	0.0	12.5	12.5	12.5	12.5
C	8	75.0	37.5	6.3	18.8	25.0	18.8	18.8
C	9	87.5	43.8	6.3	18.8	25.0	25.0	25.0
C	10	66.7	26.7	0.0	13.3	13.3	13.3	13.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	5.1	5.1	0.0	1.0	1.0	1.0	1.0
All	7	44.4	10.1	0.0	2.0	2.0	2.0	2.0
All	8	51.5	16.2	1.0	3.0	4.0	3.0	3.0
All	9	48.5	19.2	2.0	3.0	6.1	6.1	6.1
All	10	29.6	9.2	0.0	2.0	2.0	2.0	2.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	11.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	7.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	29.4	6.3	0.8	0.8	0.0	1.6	1.6
D	All	34.5	15.5	0.0	0.0	0.0	0.0	0.0
C	All	48.2	22.7	1.8	4.5	10.0	11.8	10.9
All	All	25.7	8.5	0.4	0.9	1.6	2.2	2.0

Table L.1-46. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult spring-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, March through September (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.8	0.8 (0.0%)	1.6 (0.8%)	0.8 (0.0%)	0.8 (0.0%)	0.8 (0.0%)	0.0 (-0.8%)	0.8 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.8	4.5 (2.7%)	3.6 (1.8%)	4.5 (2.7%)	4.5 (2.7%)	4.5 (2.7%)	3.6 (1.8%)	5.5 (3.6%)
All	All	0.4	0.9 (0.4%)	0.9 (0.4%)	0.9 (0.4%)	0.9 (0.4%)	0.9 (0.4%)	0.6 (0.1%)	1.0 (0.6%)

L.1.3.3.2 Adult Holding and Spawning

Water temperature-related effects on spring-run Chinook salmon adult holding and spawning were evaluated by assessing: (1) the percent of months with water temperature outside the 42.1°F to 55°F range for spawning initiation (McCullough 1999); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick and Red Bluff Diversion Dam, and in Clear Creek below Whiskeytown (Table L.1-1).

Results evaluating the 42.1°F to 55°F range for spawning initiation are presented in Table L.1-47 and Table L.1-48 for Keswick, in Table L.1-49 and Table L.1-50 for Red Bluff Diversion Dam, and in Table L.1-51 and Table L.1-52 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the spring-run Chinook salmon spawning initiation range was 93.3% and occurred in October of critical water years under Alt 2 With TUCP without VA. The lowest percent of months outside the range was 0% and occurred in all months except June in at least one water year type under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range occurred in May for the NAA and Alt 4 and in October for the remaining alternatives. Air temperature and operations drove these temporal patterns.
- At Red Bluff Diversion Dam, the highest percent of months outside the spring-run Chinook salmon spawning initiation range was 100% and occurred in at least one month of all water types under the NAA and all alternatives (Table L.1-49 and Table L.1-50). The lowest percent of months outside the range was 53.6% and occurred in October of wet water years under Alt 2 With TUCP Without VA, Alt 2 Without TUCP Without VA, and Alt 2 Without TUCP Systemwide VA. Combining water year types, the highest percent of months outside the range was 100% and occurred during May through September under the NAA and all alternatives.The lowest percent of month outside the range occurred during April and October under the NAA and all alternatives. Because temperatures wer outside the range in nearly all months, no obvious temporal patterns were observed.
- In Clear Creek below Whiskeytown, the highest percent of months outside the spawning initiation temperature range for spring-run Chinook salmon was 25% and occurred in September of critical years under Alternative 1 (Table L.1-51 and Table L.1-52). The lowest percent of months outside the range was 0% and occurred in at least one water year type in all months under the NAA and all alternatives. Combining all water year types, the highest percent of months outside the range generally occurred during September and the lower percent occurred in April and May. Air temperatures and operations drove these temporal patterns.

Results evaluating the 59.9°F pathogen virulence for adult holding and spawning spring-run Chinook salmon are presented in Table L.1-53 and Table L.1-54 for the Sacramento River at Keswick, in Table L.1-55 and Table L.1-56 for Red Bluff Diversion Dam, and in Table L.1-57 and Table L.1-58 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months above the virulence threshold for spring-run Chinook salmon was 53.3% and occurred in October of critical water years under Alt 2

Without TUCP Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP Systemwide VA (Table L.1-53 and Table L.1-54). The lowest percent of months above the virulence threshold was 0% and occurred in all months of all water year types except critical years for the NAA and all alternatives except Alt 3. Under Alt 3, there were also 0% of months above the threshold in August of critical water years. Combining all water year types, the highest percent of months above the virulence threshold occurred during September and October and the lowest percent occurred in April through July. Air temperatures and operations drove these temporal patterns.

- At Red Bluff Diversion Dam, the highest percent of months above the virulence threshold for adult holding and spawning spring-run Chinook salmon was 100% and occurred in September of critical water years under Alt 1, Alt 2 with TUCP without VA, and Alt 2 without TUCP Systemwide VA (Table L.1-55 and Table L.1-56). The lowest percent of months above the virulence threshold was 0% and occurred in October during a wet water year type and July through October in an above normal water year type under the NAA and all alternatives. Combining all water year types, the highest percent of months above the virulence threshold occurred during May and June and the lowest percent occurred in April and October depending on alternative. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, the highest percent of months above the virulence threshold for adult holding and spawning spring-run Chinook salmon was 13.3% and occurred in October during a critical water year type under Alt 1(Table L.1-57 and Table L.1-58). The lowest percent of months above the virulence threshold was 0% and occurred in all months in at least one water year type under the NAA and all alternatives. Combining all water year types, the highest percent of above the virulence threshold occurred primarily during September and the lowest percent primarily occurred in April and May depending on alternative. Air temperatures and operations drove these temporal patterns.

Table L.1-47. Percent of months outside the 42.1°F to 55°F water temperature range for spawning initiation of spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, April through October (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	7.1	0.0	0.0	0.0	0.0	0.0
W	5	25.0	10.7	14.3	0.0	0.0	0.0	0.0
W	6	96.4	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	0.0	0.0	0.0	0.0	0.0
AN	5	53.8	0.0	15.4	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	5.6	22.2	16.7	11.1	16.7	22.2	16.7
BN	5	100.0	5.6	33.3	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	100.0	5.6	0.0	0.0	5.6	5.6	5.6
D	4	12.5	20.8	20.8	29.2	33.3	25.0	29.2

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	5	100.0	8.3	58.3	4.2	0.0	8.3	8.3
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	100.0	0.0	0.0	4.2	4.2	4.2	4.2
C	4	37.5	25.0	12.5	6.3	6.3	6.3	6.3
C	5	100.0	18.8	25.0	6.3	12.5	6.3	6.3
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	6.3	0.0	6.3	0.0	0.0
C	8	100.0	6.3	37.5	18.8	43.8	37.5	37.5
C	9	100.0	43.8	50.0	43.8	56.3	56.3	56.3
C	10	100.0	40.0	66.7	73.3	86.7	86.7	86.7
All	4	10.1	18.2	10.1	10.1	12.1	11.1	11.1
All	5	72.7	9.1	30.3	2.0	2.0	3.0	3.0
All	6	99.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	1.0	0.0	1.0	0.0	0.0
All	8	100.0	1.0	6.1	3.0	7.1	6.1	6.1
All	9	100.0	7.1	8.1	7.1	9.1	9.1	9.1
All	10	100.0	7.1	10.2	12.2	15.3	15.3	15.3
W	All	74.5	2.6	2.0	0.0	0.0	0.0	0.0
AN	All	79.1	3.3	2.2	0.0	0.0	0.0	0.0
BN	All	86.5	4.8	7.1	0.0	1.6	3.2	4.0
D	All	87.5	4.2	11.3	0.0	5.4	5.4	5.4
C	All	91.0	18.9	27.9	23.4	20.7	29.7	27.0
All	All	83.1	6.1	9.4	3.8	4.9	6.6	6.4

Table L.1-48. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, April through October (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	14.3	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	7.1 (-7.1%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	15.4	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	16.7 (0.0%)	5.6 (-11.1%)	16.7 (0.0%)
BN	5	33.3	0.0 (-33.3%)	5.6 (-27.8%)	0.0 (-33.3%)	0.0 (-33.3%)	5.6 (-27.8%)	0.0 (-33.3%)	22.2 (-11.1%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)	11.1 (11.1%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	0.0 (-20.8%)	33.3 (12.5%)	33.3 (12.5%)	25.0 (4.2%)	25.0 (4.2%)	4.2 (-16.7%)	25.0 (4.2%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	5	58.3	0.0 (-58.3%)	4.2 (-54.2%)	0.0 (-58.3%)	8.3 (-50.0%)	4.2 (-54.2%)	0.0 (-58.3%)	37.5 (-20.8%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	8.3 (8.3%)	8.3 (8.3%)	4.2 (4.2%)	4.2 (4.2%)	8.3 (8.3%)	0.0 (0.0%)
C	4	12.5	0.0 (-12.5%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	0.0 (-12.5%)	18.8 (6.3%)
C	5	25.0	0.0 (-25.0%)	6.3 (-18.8%)	6.3 (-18.8%)	6.3 (-18.8%)	6.3 (-18.8%)	0.0 (-25.0%)	18.8 (-6.3%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	6.3	12.5 (6.3%)	12.5 (6.3%)	0.0 (-6.3%)	12.5 (6.3%)	12.5 (6.3%)	0.0 (-6.3%)	0.0 (-6.3%)
C	8	37.5	37.5 (0.0%)	37.5 (0.0%)	18.8 (-18.8%)	37.5 (0.0%)	37.5 (0.0%)	12.5 (-25.0%)	18.8 (-18.8%)
C	9	50.0	50.0 (0.0%)	56.3 (6.3%)	50.0 (0.0%)	62.5 (12.5%)	62.5 (12.5%)	43.8 (-6.3%)	31.3 (-18.8%)
C	10	66.7	66.7 (0.0%)	93.3 (26.7%)	80.0 (13.3%)	80.0 (13.3%)	86.7 (20.0%)	66.7 (0.0%)	46.7 (-20.0%)
All	4	10.1	0.0 (-10.1%)	11.1 (1.0%)	11.1 (1.0%)	11.1 (1.0%)	10.1 (0.0%)	2.0 (-8.1%)	12.1 (2.0%)
All	5	30.3	0.0 (-30.3%)	3.0 (-27.3%)	1.0 (-29.3%)	3.0 (-27.3%)	3.0 (-27.3%)	0.0 (-30.3%)	18.2 (-12.1%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	1.0	2.0 (1.0%)	2.0 (1.0%)	0.0 (-1.0%)	2.0 (1.0%)	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	8	6.1	6.1 (0.0%)	6.1 (0.0%)	3.0 (-3.0%)	6.1 (0.0%)	6.1 (0.0%)	2.0 (-4.0%)	3.0 (-3.0%)
All	9	8.1	8.1 (0.0%)	9.1 (1.0%)	8.1 (0.0%)	10.1 (2.0%)	10.1 (2.0%)	8.1 (0.0%)	5.1 (-3.0%)
All	10	10.2	10.2 (0.0%)	17.3 (7.1%)	14.3 (4.1%)	15.3 (5.1%)	15.3 (5.1%)	12.2 (2.0%)	7.1 (-3.1%)
W	All	2.0	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	1.0 (-1.0%)
AN	All	2.2	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)	0.0 (-2.2%)
BN	All	7.1	0.0 (-7.1%)	3.2 (-4.0%)	1.6 (-5.6%)	4.8 (-2.4%)	4.0 (-3.2%)	0.8 (-6.3%)	5.6 (-1.6%)
D	All	11.3	0.0 (-11.3%)	6.5 (-4.8%)	6.0 (-5.4%)	5.4 (-6.0%)	4.8 (-6.5%)	2.4 (-8.9%)	8.9 (-2.4%)
C	All	27.9	23.4 (-4.5%)	29.7 (1.8%)	22.5 (-5.4%)	28.8 (0.9%)	29.7 (1.8%)	17.1 (-10.8%)	18.9 (-9.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	All	9.4	3.8 (-5.6%)	6.9 (-2.5%)	5.3 (-4.0%)	6.8 (-2.6%)	6.6 (-2.7%)	3.5 (-5.9%)	6.5 (-2.9%)

Table L.1-49. Percent of months outside the 42.1°F to 55°F water temperature range for spawning initiation of spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through October (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	28.6	71.4	75.0	75.0	75.0	75.0	75.0
W	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	10	100.0	100.0	64.3	53.6	50.0	46.4	50.0
AN	4	76.9	92.3	92.3	92.3	92.3	92.3	92.3
AN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	10	100.0	100.0	84.6	84.6	84.6	84.6	84.6
BN	4	83.3	100.0	94.4	94.4	94.4	94.4	94.4
BN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	7	100.0	100.0	94.4	94.4	94.4	94.4	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	100.0	100.0	94.4	100.0	100.0	100.0	94.4
D	4	91.7	95.8	91.7	91.7	91.7	95.8	95.8
D	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	10	100.0	100.0	100.0	91.7	91.7	95.8	95.8
C	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	10	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	4	71.7	89.9	88.9	88.9	88.9	89.9	89.9
All	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	7	100.0	100.0	99.0	99.0	99.0	99.0	100.0
All	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	10	100.0	100.0	86.7	82.7	81.6	81.6	81.6
W	All	89.8	95.9	91.3	96.4	89.8	89.3	88.8
AN	All	96.7	98.9	96.7	98.9	96.7	96.7	96.7

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	97.6	100.0	97.6	99.2	98.4	98.4	98.4
D	All	98.8	99.4	98.8	99.4	97.6	97.6	98.8
C	All	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	All	96.0	98.6	96.4	98.6	95.8	95.7	95.8

Table L.1-50. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through October (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	75.0	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	64.3	100.0 (35.7%)	53.6 (-10.7%)	53.6 (-10.7%)	57.1 (-7.1%)	53.6 (-10.7%)	71.4 (7.1%)	82.1 (17.9%)
AN	4	92.3	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	84.6 (-7.7%)	92.3 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	84.6	100.0 (15.4%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	92.3 (7.7%)
BN	4	94.4	100.0 (5.6%)	100.0 (5.6%)	100.0 (5.6%)	94.4 (0.0%)	94.4 (0.0%)	100.0 (5.6%)	94.4 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	94.4	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	100.0 (5.6%)	100.0 (5.6%)	94.4 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	94.4	100.0 (5.6%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	88.9 (-5.6%)
D	4	91.7	95.8 (4.2%)	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	100.0 (8.3%)	95.8 (4.2%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	91.7 (-8.3%)	91.7 (-8.3%)	91.7 (-8.3%)	95.8 (-4.2%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	88.9	90.9 (2.0%)	89.9 (1.0%)	89.9 (1.0%)	88.9 (0.0%)	88.9 (0.0%)	90.9 (2.0%)	89.9 (1.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	99.0	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	100.0 (1.0%)	100.0 (1.0%)	99.0 (0.0%)
All	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	86.7	100.0 (13.3%)	81.6 (-5.1%)	81.6 (-5.1%)	82.7 (-4.1%)	82.7 (-4.1%)	88.8 (2.0%)	91.8 (5.1%)
W	All	91.3	96.4 (5.1%)	89.8 (-1.5%)	89.8 (-1.5%)	90.3 (-1.0%)	89.8 (-1.5%)	92.3 (1.0%)	93.9 (2.6%)
AN	All	96.7	98.9 (2.2%)	96.7 (0.0%)	96.7 (0.0%)	96.7 (0.0%)	96.7 (0.0%)	95.6 (-1.1%)	97.8 (1.1%)
BN	All	97.6	99.2 (1.6%)	98.4 (0.8%)	98.4 (0.8%)	97.6 (0.0%)	98.4 (0.8%)	99.2 (1.6%)	96.8 (-0.8%)
D	All	98.8	99.4 (0.6%)	97.6 (-1.2%)	97.6 (-1.2%)	97.6 (-1.2%)	98.2 (-0.6%)	100.0 (1.2%)	99.4 (0.6%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	All	96.4	98.6 (2.2%)	95.8 (-0.6%)	95.8 (-0.6%)	95.8 (-0.6%)	96.0 (-0.4%)	97.1 (0.7%)	97.3 (0.9%)

Table L.1-51. Percent of months outside the 42.1°F to 55°F water temperature range for spawning initiation of spring-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through October (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	100.0	0.0	7.1	3.6	3.6	3.6	3.6
W	7	100.0	0.0	3.6	3.6	0.0	3.6	3.6
W	8	100.0	0.0	3.6	3.6	3.6	3.6	3.6
W	9	100.0	0.0	3.6	3.6	0.0	3.6	3.6
W	10	92.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	7.7	7.7	7.7	7.7
AN	7	100.0	0.0	7.7	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	0.0	5.6	0.0	0.0	0.0
BN	7	100.0	11.1	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	16.7	5.6	0.0	11.1	11.1	11.1
BN	10	100.0	11.1	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
D	7	100.0	29.2	0.0	0.0	0.0	0.0	0.0
D	8	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	9	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	10	87.5	33.3	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	18.8	0.0	6.3	6.3	6.3	6.3
C	7	100.0	37.5	0.0	12.5	12.5	12.5	12.5
C	8	100.0	37.5	6.3	25.0	31.3	25.0	25.0
C	9	100.0	50.0	12.5	25.0	31.3	31.3	31.3
C	10	100.0	40.0	6.7	20.0	20.0	20.0	20.0
All	4	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	100.0	1.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	6	100.0	5.1	2.0	4.0	3.0	3.0	3.0
All	7	100.0	15.2	2.0	3.0	2.0	3.0	3.0
All	8	100.0	16.2	2.0	5.1	6.1	5.1	5.1
All	9	100.0	20.2	4.0	5.1	7.1	8.1	8.1
All	10	94.9	16.3	1.0	3.1	3.1	3.1	3.1
W	All	84.7	0.0	2.6	0.0	2.0	1.0	2.0
AN	All	85.7	0.0	1.1	0.0	1.1	1.1	1.1
BN	All	86.5	7.9	0.8	0.8	0.8	1.6	1.6
D	All	83.9	20.2	0.0	0.0	0.0	0.0	0.0
C	All	85.6	26.1	3.6	8.1	12.6	14.4	13.5
All	All	85.1	10.5	1.6	1.4	2.9	3.0	3.2

Table L.1-52. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of spring-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through October (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	7.1	0.0 (-7.1%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	10.7 (3.6%)
W	7	3.6	0.0 (-3.6%)	3.6 (0.0%)	3.6 (0.0%)	7.1 (3.6%)	3.6 (0.0%)	0.0 (-3.6%)	3.6 (0.0%)
W	8	3.6	0.0 (-3.6%)	3.6 (0.0%)	3.6 (0.0%)	7.1 (3.6%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)
W	9	3.6	0.0 (-3.6%)	3.6 (0.0%)	3.6 (0.0%)	7.1 (3.6%)	3.6 (0.0%)	0.0 (-3.6%)	3.6 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	7.7 (7.7%)	7.7 (7.7%)	7.7 (7.7%)	7.7 (7.7%)	7.7 (7.7%)	7.7 (7.7%)
AN	7	7.7	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	12.5 (6.3%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	9	12.5	25.0 (12.5%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	6.3 (-6.3%)	12.5 (0.0%)
C	10	6.7	20.0 (13.3%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	2.0	0.0 (-2.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	3.0 (1.0%)	4.0 (2.0%)
All	7	2.0	0.0 (-2.0%)	1.0 (-1.0%)	2.0 (0.0%)	3.0 (1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	2.0 (0.0%)
All	8	2.0	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	5.1 (3.0%)	3.0 (1.0%)	2.0 (0.0%)	3.0 (1.0%)
All	9	4.0	5.1 (1.0%)	5.1 (1.0%)	4.0 (0.0%)	5.1 (1.0%)	4.0 (0.0%)	1.0 (-3.0%)	4.0 (0.0%)
All	10	1.0	3.1 (2.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)
W	All	2.6	0.0 (-2.6%)	2.0 (-0.5%)	2.0 (-0.5%)	3.6 (1.0%)	2.0 (-0.5%)	1.0 (-1.5%)	3.1 (0.5%)
AN	All	1.1	0.0 (-1.1%)	1.1 (0.0%)	1.1 (0.0%)	1.1 (0.0%)	1.1 (0.0%)	1.1 (0.0%)	1.1 (0.0%)
BN	All	0.8	0.8 (0.0%)	1.6 (0.8%)	0.8 (0.0%)	2.4 (1.6%)	0.8 (0.0%)	0.0 (-0.8%)	0.8 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	3.6	8.1 (4.5%)	3.6 (0.0%)	4.5 (0.9%)	4.5 (0.9%)	4.5 (0.9%)	4.5 (0.9%)	5.4 (1.8%)
All	All	1.6	1.4 (-0.1%)	1.6 (0.0%)	1.6 (0.0%)	2.3 (0.7%)	1.6 (0.0%)	1.2 (-0.4%)	2.0 (0.4%)

Table L.1-53. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, April through October (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	64.3	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	57.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	38.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	33.3	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	50.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	25.0	6.3	18.8	18.8	18.8
C	9	100.0	6.3	37.5	18.8	50.0	50.0	50.0
C	10	46.7	33.3	46.7	33.3	53.3	53.3	53.3
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	24.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	86.9	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	4.0	1.0	3.0	3.0	3.0
All	9	100.0	1.0	6.1	3.0	8.1	8.1	8.1
All	10	37.8	5.1	7.1	5.1	8.2	8.2	8.2
W	All	60.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	61.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	67.5	0.0	0.0	0.0	0.0	0.0	0.0
D	All	63.1	0.0	0.0	0.0	0.0	0.0	0.0
C	All	71.2	5.4	15.3	16.2	8.1	17.1	17.1
All	All	64.2	0.9	2.5	2.6	1.3	2.7	2.7

Table L.1-54. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, April through October (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	25.0	31.3 (6.3%)	25.0 (0.0%)	6.3 (-18.8%)	25.0 (0.0%)	25.0 (0.0%)	0.0 (-25.0%)	6.3 (-18.8%)
C	9	37.5	37.5 (0.0%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	50.0 (12.5%)	12.5 (-25.0%)	18.8 (-18.8%)
C	10	46.7	46.7 (0.0%)	53.3 (6.7%)	33.3 (-13.3%)	53.3 (6.7%)	53.3 (6.7%)	20.0 (-26.7%)	33.3 (-13.3%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	4.0	5.1 (1.0%)	4.0 (0.0%)	1.0 (-3.0%)	4.0 (0.0%)	4.0 (0.0%)	0.0 (-4.0%)	1.0 (-3.0%)
All	9	6.1	6.1 (0.0%)	7.1 (1.0%)	4.0 (-2.0%)	7.1 (1.0%)	8.1 (2.0%)	2.0 (-4.0%)	3.0 (-3.0%)
All	10	7.1	7.1 (0.0%)	8.2 (1.0%)	5.1 (-2.0%)	8.2 (1.0%)	8.2 (1.0%)	3.1 (-4.1%)	5.1 (-2.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	15.3	16.2 (0.9%)	17.1 (1.8%)	9.0 (-6.3%)	17.1 (1.8%)	18.0 (2.7%)	4.5 (-10.8%)	8.1 (-7.2%)
All	All	2.5	2.6 (0.1%)	2.7 (0.3%)	1.4 (-1.0%)	2.7 (0.3%)	2.9 (0.4%)	0.7 (-1.7%)	1.3 (-1.2%)

Table L.1-55. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through October (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	3.6	0.0	0.0	0.0	0.0	0.0
W	5	60.7	67.9	75.0	42.9	42.9	42.9	42.9
W	6	100.0	92.9	60.7	46.4	46.4	46.4	46.4
W	7	100.0	67.9	10.7	10.7	10.7	10.7	10.7
W	8	100.0	50.0	14.3	7.1	7.1	7.1	7.1
W	9	100.0	42.9	0.0	0.0	0.0	0.0	0.0
W	10	89.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	7.7	7.7	7.7	7.7	0.0
AN	5	92.3	76.9	69.2	53.8	53.8	53.8	46.2
AN	6	100.0	69.2	46.2	30.8	30.8	30.8	46.2
AN	7	100.0	30.8	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	46.2	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	23.1	0.0	0.0	0.0	0.0	0.0
AN	10	84.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	33.3	11.1	11.1	11.1	11.1	5.6
BN	5	94.4	44.4	44.4	16.7	27.8	27.8	22.2
BN	6	100.0	66.7	44.4	33.3	33.3	33.3	44.4
BN	7	100.0	33.3	16.7	16.7	11.1	16.7	16.7
BN	8	100.0	38.9	22.2	5.6	5.6	5.6	16.7
BN	9	100.0	38.9	33.3	22.2	22.2	22.2	16.7
BN	10	72.2	0.0	5.6	0.0	0.0	0.0	0.0
D	4	8.3	54.2	20.8	20.8	20.8	16.7	16.7

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	5	95.8	66.7	70.8	54.2	54.2	45.8	58.3
D	6	100.0	45.8	29.2	16.7	12.5	20.8	25.0
D	7	100.0	33.3	16.7	4.2	4.2	4.2	8.3
D	8	100.0	20.8	25.0	8.3	8.3	8.3	12.5
D	9	100.0	20.8	33.3	33.3	33.3	33.3	33.3
D	10	75.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	50.0	62.5	37.5	43.8	6.3	6.3	6.3
C	5	100.0	56.3	56.3	43.8	50.0	50.0	56.3
C	6	100.0	93.8	68.8	62.5	50.0	50.0	43.8
C	7	100.0	81.3	81.3	81.3	68.8	68.8	62.5
C	8	100.0	93.8	81.3	81.3	87.5	81.3	81.3
C	9	100.0	62.5	93.8	75.0	93.8	93.8	87.5
C	10	100.0	40.0	60.0	60.0	60.0	53.3	53.3
All	4	10.1	33.3	14.1	15.2	9.1	8.1	6.1
All	5	85.9	62.6	64.6	42.4	45.5	43.4	45.5
All	6	100.0	73.7	49.5	37.4	34.3	36.4	40.4
All	7	100.0	50.5	23.2	20.2	17.2	18.2	18.2
All	8	100.0	47.5	27.3	18.2	19.2	18.2	21.2
All	9	100.0	37.4	29.3	24.2	27.3	27.3	25.3
All	10	83.7	6.1	10.2	9.2	9.2	8.2	8.2
W	All	78.6	46.4	23.0	12.8	15.3	15.3	15.3
AN	All	82.4	38.5	17.6	3.3	13.2	13.2	13.2
BN	All	81.0	36.5	25.4	13.5	15.1	15.9	16.7
D	All	82.7	34.5	28.0	17.9	19.6	19.0	18.5
C	All	92.8	70.3	68.5	63.1	64.0	59.5	57.7
All	All	82.8	44.5	31.2	21.0	23.8	23.1	22.8

Table L.1-56. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through October (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	75.0	32.1 (-42.9%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	32.1 (-42.9%)	50.0 (-25.0%)
W	6	60.7	39.3 (-21.4%)	46.4 (-14.3%)	42.9 (-17.9%)	42.9 (-17.9%)	46.4 (-14.3%)	78.6 (17.9%)	60.7 (0.0%)
W	7	10.7	7.1 (-3.6%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	14.3 (3.6%)	10.7 (0.0%)
W	8	14.3	10.7 (-3.6%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	14.3 (0.0%)	14.3 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)
AN	5	69.2	15.4 (-53.8%)	53.8 (-15.4%)	53.8 (-15.4%)	53.8 (-15.4%)	46.2 (-23.1%)	15.4 (-53.8%)	53.8 (-15.4%)
AN	6	46.2	7.7 (-38.5%)	30.8 (-15.4%)	30.8 (-15.4%)	38.5 (-7.7%)	46.2 (0.0%)	61.5 (15.4%)	53.8 (7.7%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	11.1	0.0 (-11.1%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	5	44.4	5.6 (-38.9%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	22.2 (-22.2%)	27.8 (-16.7%)	38.9 (-5.6%)
BN	6	44.4	27.8 (-16.7%)	33.3 (-11.1%)	38.9 (-5.6%)	38.9 (-5.6%)	44.4 (0.0%)	50.0 (5.6%)	50.0 (5.6%)
BN	7	16.7	11.1 (-5.6%)	11.1 (-5.6%)	11.1 (-5.6%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)
BN	8	22.2	27.8 (5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	16.7 (-5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	11.1 (-11.1%)
BN	9	33.3	22.2 (-11.1%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	27.8 (-5.6%)	27.8 (-5.6%)
BN	10	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
D	4	20.8	8.3 (-12.5%)	20.8 (0.0%)	20.8 (0.0%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)	20.8 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	5	70.8	20.8 (-50.0%)	58.3 (-12.5%)	58.3 (-12.5%)	45.8 (-25.0%)	58.3 (-12.5%)	33.3 (-37.5%)	62.5 (-8.3%)
D	6	29.2	20.8 (-8.3%)	12.5 (-16.7%)	12.5 (-16.7%)	20.8 (-8.3%)	25.0 (-4.2%)	20.8 (-8.3%)	25.0 (-4.2%)
D	7	16.7	16.7 (0.0%)	4.2 (-12.5%)	4.2 (-12.5%)	4.2 (-12.5%)	4.2 (-12.5%)	8.3 (-8.3%)	8.3 (-8.3%)
D	8	25.0	25.0 (0.0%)	12.5 (-12.5%)	12.5 (-12.5%)	12.5 (-12.5%)	8.3 (-16.7%)	4.2 (-20.8%)	8.3 (-16.7%)
D	9	33.3	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	29.2 (-4.2%)	20.8 (-12.5%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	37.5	25.0 (-12.5%)	6.3 (-31.3%)	37.5 (0.0%)	6.3 (-31.3%)	6.3 (-31.3%)	37.5 (0.0%)	43.8 (6.3%)
C	5	56.3	37.5 (-18.8%)	56.3 (0.0%)	43.8 (-12.5%)	56.3 (0.0%)	56.3 (0.0%)	56.3 (0.0%)	68.8 (12.5%)
C	6	68.8	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	81.3 (12.5%)
C	7	81.3	81.3 (0.0%)	68.8 (-12.5%)	81.3 (0.0%)	68.8 (-12.5%)	68.8 (-12.5%)	62.5 (-18.8%)	93.8 (12.5%)
C	8	81.3	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	81.3 (0.0%)	62.5 (-18.8%)	81.3 (0.0%)
C	9	93.8	100.0 (6.3%)	100.0 (6.3%)	87.5 (-6.3%)	93.8 (0.0%)	100.0 (6.3%)	75.0 (-18.8%)	81.3 (-12.5%)
C	10	60.0	60.0 (0.0%)	66.7 (6.7%)	60.0 (0.0%)	53.3 (-6.7%)	66.7 (6.7%)	40.0 (-20.0%)	46.7 (-13.3%)
All	4	14.1	6.1 (-8.1%)	9.1 (-5.1%)	14.1 (0.0%)	8.1 (-6.1%)	7.1 (-7.1%)	12.1 (-2.0%)	15.2 (1.0%)
All	5	64.6	23.2 (-41.4%)	47.5 (-17.2%)	45.5 (-19.2%)	44.4 (-20.2%)	45.5 (-19.2%)	33.3 (-31.3%)	54.5 (-10.1%)
All	6	49.5	30.3 (-19.2%)	34.3 (-15.2%)	35.4 (-14.1%)	37.4 (-12.1%)	41.4 (-8.1%)	53.5 (4.0%)	52.5 (3.0%)
All	7	23.2	21.2 (-2.0%)	17.2 (-6.1%)	19.2 (-4.0%)	18.2 (-5.1%)	18.2 (-5.1%)	19.2 (-4.0%)	23.2 (0.0%)
All	8	27.3	28.3 (1.0%)	22.2 (-5.1%)	20.2 (-7.1%)	22.2 (-5.1%)	20.2 (-7.1%)	16.2 (-11.1%)	21.2 (-6.1%)
All	9	29.3	28.3 (-1.0%)	27.3 (-2.0%)	25.3 (-4.0%)	26.3 (-3.0%)	27.3 (-2.0%)	25.3 (-4.0%)	23.2 (-6.1%)
All	10	10.2	9.2 (-1.0%)	10.2 (0.0%)	9.2 (-1.0%)	9.2 (-1.0%)	10.2 (0.0%)	6.1 (-4.1%)	7.1 (-3.1%)
W	All	23.0	12.8 (-10.2%)	15.3 (-7.7%)	14.8 (-8.2%)	14.8 (-8.2%)	15.3 (-7.7%)	20.4 (-2.6%)	19.4 (-3.6%)
AN	All	17.6	3.3 (-14.3%)	13.2 (-4.4%)	13.2 (-4.4%)	14.3 (-3.3%)	13.2 (-4.4%)	12.1 (-5.5%)	16.5 (-1.1%)
BN	All	25.4	13.5 (-11.9%)	16.7 (-8.7%)	15.9 (-9.5%)	19.0 (-6.3%)	18.3 (-7.1%)	19.8 (-5.6%)	22.2 (-3.2%)
D	All	28.0	17.9 (-10.1%)	20.2 (-7.7%)	20.2 (-7.7%)	19.0 (-8.9%)	20.8 (-7.1%)	15.5 (-12.5%)	20.8 (-7.1%)
C	All	68.5	63.1 (-5.4%)	62.2 (-6.3%)	64.9 (-3.6%)	59.5 (-9.0%)	61.3 (-7.2%)	55.9 (-12.6%)	71.2 (2.7%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	All	31.2	21.0 (-10.3%)	24.0 (-7.2%)	24.1 (-7.1%)	23.7 (-7.5%)	24.3 (-6.9%)	23.7 (-7.5%)	28.2 (-3.0%)

Table L.1-57. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning spring-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through October (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	100.0	0.0	0.0	3.6	3.6	3.6	3.6
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	3.6
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	25.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	7.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	5.6	5.6	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	5.6	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	8	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	16.7	5.6	0.0	11.1	11.1	11.1
BN	10	50.0	11.1	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	8.3	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
D	7	100.0	20.8	0.0	0.0	0.0	0.0	0.0
D	8	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	9	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	10	54.2	29.2	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	18.8	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	18.8	0.0	6.3	6.3	6.3	6.3
C	7	100.0	37.5	0.0	12.5	12.5	12.5	12.5
C	8	100.0	37.5	6.3	18.8	25.0	18.8	18.8
C	9	100.0	43.8	6.3	18.8	25.0	25.0	25.0
C	10	73.3	26.7	0.0	13.3	13.3	13.3	13.3
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	6.1	1.0	0.0	0.0	0.0	0.0	0.0
All	6	100.0	5.1	0.0	2.0	2.0	2.0	2.0
All	7	100.0	12.1	0.0	2.0	2.0	2.0	2.0
All	8	100.0	16.2	1.0	3.0	4.0	3.0	4.0
All	9	99.0	19.2	2.0	3.0	6.1	6.1	6.1
All	10	41.8	13.3	0.0	2.0	2.0	2.0	2.0
W	All	60.7	0.0	0.0	0.0	0.5	0.5	0.5
AN	All	57.1	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	65.1	7.1	0.8	0.8	0.0	1.6	1.6
D	All	66.1	18.5	0.0	0.0	0.0	0.0	0.0
C	All	70.3	23.4	1.8	4.5	9.9	11.7	10.8
All	All	63.9	9.5	0.4	0.9	1.7	2.3	2.2

Table L.1-58. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning spring-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through October (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	7.1 (7.1%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	2.0 (2.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	3.0 (2.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
W	All	0.0	0.0 (0.0%)	0.5 (0.5%)	1.0 (1.0%)	1.0 (1.0%)	0.5 (0.5%)	0.0 (0.0%)	1.0 (1.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.8	0.8 (0.0%)	1.6 (0.8%)	0.8 (0.0%)	0.8 (0.0%)	0.8 (0.0%)	0.0 (-0.8%)	0.8 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.8	4.5 (2.7%)	3.6 (1.8%)	4.5 (2.7%)	4.5 (2.7%)	4.5 (2.7%)	3.6 (1.8%)	5.4 (3.6%)
All	All	0.4	0.9 (0.4%)	1.0 (0.6%)	1.2 (0.7%)	1.2 (0.7%)	1.0 (0.6%)	0.6 (0.1%)	1.3 (0.9%)

L.1.3.3.3 Egg Incubation and Fry Emergence

Water temperature-related effects on spring-run Chinook salmon egg incubation and fry emergence were evaluated by assessing the percent of months with water temperature outside the 42.8°F to 56°F range (Slater 1963, USFWS 1999, Myrick and Cech 2004, Bratovich et al. 2012, Martin et al. 2017) in the Sacramento River at Keswick and Red Bluff Diversion Dam and in Clear Creek below Whiskeytown (Table L.1-1).

Results are presented in Table L.1-59 and Table L.1-60 for the Sacramento River at Keswick, in Table L.1-61 and Table L.1-62 for the Sacramento River at Red Bluff Diversion Dam, and in Table L.1-63 and Table L.1-64 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the range was 73.3% and occurred in October of critical water years under Alt 2 With TUCP Without VA and Alt 2 without TUCP Systemwide VAs (Table L.1-59 and Table L.1-60). The lowest percent of months outside the range was 0% and occurred in all months of at least one water year type under the NAA and all alternatives. Combining all water year types, the highest percent of months outside the range occurred during October and November and the lowest percent occurred in December thought March depending on alternative. Air temperatures and operations drove these temporal patterns.
- At Red Bluff Diversion Dam, the highest percent of months outside the range was 100% and occurred in September of at least one water year type under the NAA and all alternatives and in October of critical water years under the NAA and all alternatives (Table L.1-61 and Table L.1-62). The lowest percent of months outside the range was 0% and occurred during November through March of at least one water year type under the NAA and all alternatives. Combining all water year types, the highest percent of months outside the range occurred during September and the lowest percent occurred in December thought February for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, the highest percent of months outside the range was 20.0% and occurred in October and November of critical water years under Alternative 1 (Table L.1-63 and Table L.1-64). The lowest percent of months outside the range was 0% and occurred during all month of at least one water year type under the NAA and all alternatives. Combining all water year types, the highest percent of months outside the range occurred during September and the lowest percent occurred in December thought March for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Table L.1-59. Percent of months outside the 42.8°F to 56°F water temperature range for spring-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Keswick, September through March (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	92.9	0.0	0.0	0.0	0.0	0.0	0.0
W	11	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	12	10.7	0.0	0.0	0.0	0.0	0.0	0.0
W	1	82.1	0.0	0.0	0.0	0.0	0.0	0.0
W	2	7.1	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	28.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	94.4	0.0	0.0	0.0	5.6	5.6	0.0
BN	11	0.0	0.0	0.0	0.0	5.6	5.6	5.6
BN	12	27.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	61.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	10	91.7	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	16.7	0.0	0.0	0.0	0.0	0.0	0.0
D	1	33.3	0.0	0.0	0.0	0.0	0.0	0.0
D	2	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	9	100.0	31.3	43.8	31.3	50.0	50.0	50.0
C	10	100.0	40.0	60.0	60.0	73.3	60.0	60.0
C	11	0.0	46.7	33.3	60.0	40.0	33.3	26.7
C	12	13.3	0.0	0.0	0.0	0.0	0.0	0.0
C	1	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	9	100.0	5.1	7.1	5.1	8.1	8.1	8.1
All	10	93.9	6.1	9.2	9.2	12.2	10.2	9.2
All	11	1.0	7.1	5.1	9.1	7.1	6.1	5.1
All	12	18.2	0.0	0.0	0.0	0.0	0.0	0.0
All	1	54.5	0.0	0.0	0.0	0.0	0.0	0.0
All	2	4.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	42.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	43.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	40.5	0.0	0.0	0.0	0.0	1.6	1.6
D	All	35.1	0.0	0.0	0.0	0.0	0.0	0.0
C	All	32.1	16.5	19.3	20.2	21.1	22.9	20.2
All	All	38.7	2.6	3.0	3.2	3.3	3.9	3.5

Table L.1-60. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for spring-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Keswick, September through March (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)	11.1 (11.1%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)	11.1 (11.1%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	8.3 (8.3%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	43.8	50.0 (6.3%)	56.3 (12.5%)	31.3 (-12.5%)	56.3 (12.5%)	56.3 (12.5%)	31.3 (-12.5%)	31.3 (-12.5%)
C	10	60.0	66.7 (6.7%)	73.3 (13.3%)	60.0 (0.0%)	66.7 (6.7%)	73.3 (13.3%)	53.3 (-6.7%)	46.7 (-13.3%)
C	11	33.3	26.7 (-6.7%)	33.3 (0.0%)	53.3 (20.0%)	26.7 (-6.7%)	40.0 (6.7%)	53.3 (20.0%)	40.0 (6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	7.1	8.1 (1.0%)	9.1 (2.0%)	5.1 (-2.0%)	9.1 (2.0%)	9.1 (2.0%)	5.1 (-2.0%)	5.1 (-2.0%)
All	10	9.2	10.2 (1.0%)	13.3 (4.1%)	10.2 (1.0%)	13.3 (4.1%)	13.3 (4.1%)	9.2 (0.0%)	7.1 (-2.0%)
All	11	5.1	4.0 (-1.0%)	6.1 (1.0%)	8.1 (3.0%)	6.1 (1.0%)	7.1 (2.0%)	10.1 (5.1%)	6.1 (1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	1.6 (1.6%)	0.0 (0.0%)	3.2 (3.2%)	1.6 (1.6%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.6 (0.6%)	0.6 (0.6%)	0.6 (0.6%)	0.6 (0.6%)	1.8 (1.8%)	0.6 (0.6%)
C	All	19.3	20.2 (0.9%)	22.9 (3.7%)	20.2 (0.9%)	21.1 (1.8%)	23.9 (4.6%)	19.3 (0.0%)	16.5 (-2.8%)
All	All	3.0	3.2 (0.1%)	4.0 (1.0%)	3.3 (0.3%)	4.0 (1.0%)	4.2 (1.2%)	3.5 (0.4%)	2.7 (-0.3%)

Table L.1-61. Percent of months outside the 42.8°F to 56°F water temperature range for spring-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, September through March (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	9	100.0	100.0	100.0	96.4	96.4	92.9	85.7
W	10	100.0	85.7	3.6	3.6	3.6	3.6	7.1
W	11	10.7	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	3.6	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	100.0	100.0	92.3	92.3	84.6	92.3
AN	10	100.0	92.3	23.1	15.4	7.7	23.1	23.1
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	100.0	94.4	55.6	55.6	61.1	66.7	61.1
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	16.7	11.1	11.1	5.6	5.6	5.6
D	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	10	100.0	75.0	75.0	75.0	75.0	75.0	75.0
D	11	0.0	0.0	0.0	4.2	4.2	4.2	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	4.2	8.3	0.0	0.0	0.0	0.0	0.0
C	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	10	100.0	93.3	100.0	100.0	100.0	100.0	100.0
C	11	0.0	33.3	26.7	33.3	33.3	26.7	26.7
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	12.5	43.8	25.0	25.0	12.5	12.5	12.5
All	9	100.0	100.0	100.0	98.0	98.0	96.0	94.9
All	10	100.0	86.7	48.0	46.9	46.9	50.0	50.0
All	11	3.0	5.1	4.0	6.1	6.1	5.1	4.0
All	12	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	2.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	3.0	13.1	6.1	6.1	3.0	3.0	3.0
W	All	30.1	27.0	14.8	24.0	14.3	14.3	13.8
AN	All	28.0	26.9	17.2	25.8	15.1	14.0	15.1
BN	All	30.2	30.2	23.8	27.8	23.8	23.8	24.6
D	All	29.8	26.2	25.0	28.6	25.6	25.6	25.6
C	All	30.3	38.5	35.8	33.0	36.7	34.9	33.9
All	All	29.8	29.2	22.5	27.5	22.4	22.0	22.0

Table L.1-62. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for spring-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, September through March (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	9	100.0	100.0 (0.0%)	92.9 (-7.1%)	89.3 (-10.7%)	89.3 (-10.7%)	89.3 (-10.7%)	96.4 (-3.6%)	96.4 (-3.6%)
W	10	3.6	64.3 (60.7%)	7.1 (3.6%)	7.1 (3.6%)	7.1 (3.6%)	7.1 (3.6%)	7.1 (3.6%)	17.9 (14.3%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	84.6 (-15.4%)	92.3 (-7.7%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	23.1	84.6 (61.5%)	15.4 (-7.7%)	15.4 (-7.7%)	7.7 (-15.4%)	15.4 (-7.7%)	23.1 (0.0%)	61.5 (38.5%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	55.6	88.9 (33.3%)	61.1 (5.6%)	55.6 (0.0%)	61.1 (5.6%)	61.1 (5.6%)	61.1 (5.6%)	55.6 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	11.1	5.6 (-5.6%)	5.6 (-5.6%)	11.1 (0.0%)	5.6 (-5.6%)	5.6 (-5.6%)	0.0 (-11.1%)	5.6 (-5.6%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	75.0	95.8 (20.8%)	70.8 (-4.2%)	70.8 (-4.2%)	83.3 (8.3%)	75.0 (0.0%)	83.3 (8.3%)	75.0 (0.0%)
D	11	0.0	0.0 (0.0%)	8.3 (8.3%)	8.3 (8.3%)	8.3 (8.3%)	0.0 (0.0%)	8.3 (8.3%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	8.3 (8.3%)	0.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	26.7	26.7 (0.0%)	26.7 (0.0%)	40.0 (13.3%)	26.7 (0.0%)	33.3 (6.7%)	33.3 (6.7%)	33.3 (6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	25.0	6.3 (-18.8%)	12.5 (-12.5%)	25.0 (0.0%)	12.5 (-12.5%)	12.5 (-12.5%)	25.0 (0.0%)	25.0 (0.0%)
All	9	100.0	100.0 (0.0%)	97.0 (-3.0%)	96.0 (-4.0%)	94.9 (-5.1%)	96.0 (-4.0%)	99.0 (-1.0%)	99.0 (-1.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	10	48.0	84.7 (36.7%)	48.0 (0.0%)	46.9 (-1.0%)	50.0 (2.0%)	49.0 (1.0%)	52.0 (4.1%)	57.1 (9.2%)
All	11	4.0	4.0 (0.0%)	6.1 (2.0%)	8.1 (4.0%)	6.1 (2.0%)	5.1 (1.0%)	7.1 (3.0%)	5.1 (1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	6.1	4.0 (-2.0%)	3.0 (-3.0%)	6.1 (0.0%)	3.0 (-3.0%)	3.0 (-3.0%)	7.1 (1.0%)	5.1 (-1.0%)
W	All	14.8	24.0 (9.2%)	14.3 (-0.5%)	13.8 (-1.0%)	13.8 (-1.0%)	13.8 (-1.0%)	15.3 (0.5%)	16.3 (1.5%)
AN	All	17.2	25.8 (8.6%)	15.1 (-2.2%)	15.1 (-2.2%)	12.9 (-4.3%)	15.1 (-2.2%)	17.2 (0.0%)	22.6 (5.4%)
BN	All	23.8	27.8 (4.0%)	23.8 (0.0%)	23.8 (0.0%)	23.8 (0.0%)	23.8 (0.0%)	23.0 (-0.8%)	23.0 (-0.8%)
D	All	25.0	28.6 (3.6%)	25.6 (0.6%)	25.6 (0.6%)	27.4 (2.4%)	25.0 (0.0%)	28.6 (3.6%)	25.0 (0.0%)
C	All	35.8	33.0 (-2.8%)	33.9 (-1.8%)	37.6 (1.8%)	33.9 (-1.8%)	34.9 (-0.9%)	36.7 (0.9%)	36.7 (0.9%)
All	All	22.5	27.5 (4.9%)	22.0 (-0.6%)	22.4 (-0.1%)	22.0 (-0.6%)	21.8 (-0.7%)	23.6 (1.0%)	23.7 (1.2%)

Table L.1-63. Percent of months outside the 42.8°F to 56°F water temperature range for spring-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Clear Creek below Whiskeytown, September through March (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	9	100.0	0.0	3.6	3.6	0.0	3.6	0.0
W	10	71.4	0.0	0.0	0.0	0.0	0.0	0.0
W	11	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	12	46.4	0.0	0.0	0.0	0.0	0.0	0.0
W	1	71.4	0.0	0.0	0.0	0.0	0.0	0.0
W	2	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	14.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	57.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	46.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	16.7	5.6	0.0	11.1	11.1	11.1
BN	10	88.9	11.1	0.0	0.0	0.0	0.0	0.0
BN	11	22.2	5.6	0.0	0.0	0.0	0.0	0.0
BN	12	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	77.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	5.6	5.6	0.0	5.6	5.6	5.6	5.6
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	10	83.3	33.3	0.0	0.0	0.0	0.0	0.0
D	11	29.2	12.5	0.0	0.0	0.0	0.0	0.0
D	12	25.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	58.3	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	9	100.0	50.0	6.3	25.0	31.3	31.3	31.3
C	10	100.0	33.3	6.7	20.0	20.0	20.0	20.0
C	11	46.7	26.7	13.3	13.3	13.3	13.3	13.3
C	12	33.3	0.0	0.0	0.0	0.0	0.0	0.0
C	1	56.3	6.3	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	2	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	9	100.0	20.2	3.0	5.1	7.1	8.1	7.1
All	10	85.7	15.3	1.0	3.1	3.1	3.1	3.1
All	11	21.2	8.1	2.0	2.0	2.0	2.0	2.0
All	12	39.4	0.0	0.0	0.0	0.0	0.0	0.0
All	1	63.6	1.0	0.0	0.0	0.0	0.0	0.0
All	2	3.0	1.0	0.0	1.0	1.0	1.0	1.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	42.3	0.0	0.5	0.0	0.5	0.0	0.5
AN	All	45.2	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	47.6	5.6	0.8	0.8	0.8	2.4	2.4
D	All	42.3	11.9	0.0	0.0	0.0	0.0	0.0
C	All	48.6	16.5	3.7	8.3	8.3	9.2	9.2
All	All	44.7	6.5	0.9	1.4	1.6	1.9	2.0

Table L.1-64. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for spring-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Clear Creek below Whiskeytown, September through March (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	9	3.6	0.0 (-3.6%)	0.0 (-3.6%)	3.6 (0.0%)	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	3.6 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	18.8 (12.5%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	10	6.7	20.0 (13.3%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)
C	11	13.3	20.0 (6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	6.7 (-6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	3.0	4.0 (1.0%)	4.0 (1.0%)	4.0 (1.0%)	3.0 (0.0%)	3.0 (0.0%)	1.0 (-2.0%)	4.0 (1.0%)
All	10	1.0	3.1 (2.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)
All	11	2.0	3.0 (1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	1.0 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.5	0.0 (-0.5%)	0.0 (-0.5%)	0.5 (0.0%)	0.0 (-0.5%)	0.0 (-0.5%)	0.0 (-0.5%)	0.5 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.8	0.8 (0.0%)	2.4 (1.6%)	1.6 (0.8%)	1.6 (0.8%)	1.6 (0.8%)	0.8 (0.0%)	1.6 (0.8%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	3.7	8.3 (4.6%)	3.7 (0.0%)	3.7 (0.0%)	3.7 (0.0%)	3.7 (0.0%)	2.8 (-0.9%)	3.7 (0.0%)
All	All	0.9	1.4 (0.6%)	1.0 (0.1%)	1.0 (0.1%)	0.9 (0.0%)	0.9 (0.0%)	0.6 (-0.3%)	1.0 (0.1%)

L.1.3.3.4 Juvenile Rearing and Outmigration

Water temperature-related effects on spring-run Chinook salmon juvenile rearing and outmigration were evaluated by assessing: (1) the percent of months with water temperature outside the 55.4°F to 68°F optimum temperature for juvenile growth, smoltification, and predation vulnerability (Myrick and Cech 2002, Marine and Cech 2004); and (2) the percent of months with water temperature above the 75.2°F upper incipient lethal temperature (UILT) for juveniles (Brett 1952, Brett et al. 1982, Myrick and Cech 2004) in the Sacramento River at Keswick, Red Bluff Diversion Dam, and Hamilton City, and in Clear Creek below Whiskeytown (Table L.1-1).

Results evaluating the 55.4°F to 68°F optimum temperature for juvenile growth, smoltification, and predation vulnerability are presented in Table L.1-65 and Table L.1-66 for Keswick, in Table L.1-67 and Table L.1-68 for Red Bluff Diversion Dam, in Table L.1-69 and Table L.1-70 for Hamilton City, and in Table L.1-71 and Table L.1-72 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the range was 100% and occurred in all months of at least one water year type under the NAA and all alternatives (Table L.1-65 and Table L.1-66). The lowest percent of months outside the range was 33% and occurred during November of critical water years under Alt 2 With TUCP Without VA. Combining all water year types, the highest percent of months outside the range occurred during December through March and June and the lowest percent occurred in May and November depending on alternative. Air temperatures and operations drove these temporal patterns.
- At Red Bluff Diversion Dam, the highest percent of months outside the optimal range was 100% and occurred in November through February of at least one water year type under the NAA and all alternatives (Table L.1-67 and Table L.1-68). The lowest percent of months outside the range was 0% and occurred during May and June of all water year types and during April of critical years for the NAA and all water year types. Combining all water year types, the highest percent of months outside the range occurred during December through February and June and the lowest percent occurred in May and June depending on alternative. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months outside the range was 100% and occurred in all month of at least one water year type under the NAA and all alternatives except Alt 1 in November during a wet water year type (Table L.1-69 and Table L.1-70). The lowest percent of months outside the range was 0% and occurred during April through June of at least one water year type. Combining all water year types, the highest percent of months outside the range occurred during December and January and the lowest percent occurred in May under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

- In Clear Creek below Whiskeytown, the vast majority of monthly temperatures were outside the optimal water temperature range for juvenile spring-run Chinook salmon (Table L.1-71 and Table L.1-72). The highest percent of months outside the range was 100% and occurred during November through May in wet and above normal years, November through June in below normal and dry years, and December through June in critical water years for most alternatives. The lowest percent of months outside the range was 80% and occurred during of critical water years under Alt 1. Combining all water year types, the highest percent of months outside the range occurred during December through May and the lowest percent occurred during November and June under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Results evaluating the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon are presented in Table L.1-73 and Table L.1-74 for the Sacramento River at Keswick, Table L.1-75 and Table L.1-76 for Red Bluff Diversion Dam, Table L.1-77 and Table L.1-78 for Hamilton City, and Table L.1-79 and Table L.1-80 for Clear Creek below Whiskeytown.

- At Keswick, water temperature did not exceed the UILT in any month, water year type, or alternative.
- At Red Bluff Diversion Dam, water temperature did not exceed the UILT in any month, water year type, or alternative (Table L.1-75 and Table L.1-76).
- At Hamilton City, water temperature did not exceed the UILT in any month, water year type, or alternative (Table L.1-77 and Table L.1-78).
- In Clear Creek below Whiskeytown, water temperature did not exceed the UILT in any month, water year type or alternative (Table L.1-79 and Table L.1-80).

Table L.1-65. Percent of months outside the 55.4°F to 68°F optimal water temperature range for juvenile spring-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Keswick, November through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	11	89.3	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	4	100.0	92.9	100.0	100.0	100.0	100.0	100.0
W	5	78.6	96.4	100.0	100.0	100.0	100.0	100.0
W	6	3.6	100.0	100.0	100.0	100.0	100.0	100.0
AN	11	100.0	100.0	100.0	92.9	92.9	85.7	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	4	100.0	92.3	100.0	100.0	100.0	100.0	100.0
AN	5	53.8	100.0	92.3	100.0	100.0	100.0	100.0
AN	6	0.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	11	100.0	94.4	100.0	100.0	94.4	94.4	94.4
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	4	100.0	88.9	88.9	88.9	83.3	83.3	83.3
BN	5	5.6	100.0	83.3	100.0	100.0	100.0	100.0
BN	6	0.0	100.0	100.0	100.0	100.0	100.0	100.0
D	11	100.0	100.0	95.8	91.7	91.7	91.7	95.8
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	4	91.7	83.3	79.2	87.5	83.3	91.7	83.3
D	5	4.2	91.7	70.8	100.0	100.0	100.0	100.0
D	6	0.0	100.0	100.0	100.0	100.0	100.0	100.0
C	11	100.0	46.7	40.0	33.3	40.0	40.0	40.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	4	62.5	75.0	87.5	93.8	93.8	93.8	93.8
C	5	0.0	87.5	75.0	100.0	100.0	93.8	100.0
C	6	0.0	100.0	100.0	100.0	100.0	100.0	100.0
All	11	97.0	90.9	89.9	86.9	86.9	85.9	88.9
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	4	91.9	86.9	90.9	93.9	91.9	93.9	91.9
All	5	31.3	94.9	84.8	100.0	100.0	99.0	100.0
All	6	1.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	83.9	98.7	100.0	99.6	100.0	100.0	100.0
AN	All	82.1	99.1	99.1	98.1	99.1	99.1	98.1
BN	All	75.7	97.9	96.5	97.2	98.6	97.2	97.2
D	All	74.5	96.9	93.2	99.0	97.4	96.9	97.9
C	All	69.8	88.9	88.1	93.7	91.3	92.1	91.3
All	All	77.7	96.6	95.7	97.9	97.6	97.3	97.3

Table L.1-66. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile spring-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Keswick, November through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	100.0	96.4 (-3.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	96.4 (-3.6%)
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	85.7 (-14.3%)	92.9 (-7.1%)	92.9 (-7.1%)	85.7 (-14.3%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	92.3	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	83.3 (-16.7%)	88.9 (-11.1%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	88.9	100.0 (11.1%)	94.4 (5.6%)	94.4 (5.6%)	88.9 (0.0%)	88.9 (0.0%)	100.0 (11.1%)	94.4 (5.6%)
BN	5	83.3	100.0 (16.7%)	94.4 (11.1%)	100.0 (16.7%)	100.0 (16.7%)	94.4 (11.1%)	100.0 (16.7%)	94.4 (11.1%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	95.8	91.7 (-4.2%)	87.5 (-8.3%)	83.3 (-12.5%)	91.7 (-4.2%)	95.8 (0.0%)	91.7 (-4.2%)	95.8 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	79.2	100.0 (20.8%)	83.3 (4.2%)	87.5 (8.3%)	87.5 (8.3%)	83.3 (4.2%)	95.8 (16.7%)	79.2 (0.0%)
D	5	70.8	100.0 (29.2%)	100.0 (29.2%)	100.0 (29.2%)	100.0 (29.2%)	95.8 (25.0%)	100.0 (29.2%)	75.0 (4.2%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	40.0	46.7 (6.7%)	46.7 (6.7%)	33.3 (-6.7%)	46.7 (6.7%)	46.7 (6.7%)	40.0 (0.0%)	46.7 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	87.5	100.0 (12.5%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	100.0 (12.5%)	87.5 (0.0%)
C	5	75.0	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	87.5 (12.5%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	11	89.9	83.8 (-6.1%)	85.9 (-4.0%)	84.8 (-5.1%)	85.9 (-4.0%)	88.9 (-1.0%)	88.9 (-1.0%)	90.9 (1.0%)
All	12	100.0	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.0 (-2.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	90.9	100.0 (9.1%)	93.9 (3.0%)	94.9 (4.0%)	93.9 (3.0%)	92.9 (2.0%)	99.0 (8.1%)	91.9 (1.0%)
All	5	84.8	100.0 (15.2%)	99.0 (14.1%)	100.0 (15.2%)	100.0 (15.2%)	98.0 (13.1%)	100.0 (15.2%)	90.9 (6.1%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	99.6 (-0.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	99.6 (-0.4%)
AN	All	99.1	98.1 (-0.9%)	99.1 (0.0%)	99.1 (0.0%)	98.1 (-0.9%)	99.1 (0.0%)	100.0 (0.9%)	100.0 (0.9%)
BN	All	96.5	97.2 (0.7%)	97.2 (0.7%)	99.3 (2.8%)	97.2 (0.7%)	97.2 (0.7%)	100.0 (3.5%)	98.6 (2.1%)
D	All	93.2	99.0 (5.7%)	96.4 (3.1%)	96.4 (3.1%)	97.4 (4.2%)	96.9 (3.6%)	98.4 (5.2%)	93.2 (0.0%)
C	All	88.1	93.7 (5.6%)	92.9 (4.8%)	91.3 (3.2%)	92.9 (4.8%)	92.9 (4.8%)	92.9 (4.8%)	90.5 (2.4%)
All	All	95.7	97.9 (2.1%)	97.3 (1.6%)	97.5 (1.8%)	97.5 (1.8%)	97.5 (1.8%)	98.5 (2.8%)	96.5 (0.8%)

Table L.1-67. Percent of months outside the 55.4°F to 68°F optimal water temperature range for juvenile spring-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, November through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	11	89.3	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	3	100.0	92.9	92.9	92.9	92.9	92.9	92.9
W	4	75.0	32.1	32.1	32.1	32.1	32.1	32.1
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	28.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	4	46.2	7.7	7.7	7.7	7.7	7.7	7.7
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	100.0	100.0	100.0	100.0	94.4	94.4	94.4
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	3	100.0	83.3	88.9	83.3	88.9	88.9	83.3
BN	4	27.8	5.6	11.1	11.1	11.1	11.1	11.1
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	88.9	0.0	0.0	0.0	0.0	0.0	0.0
D	11	95.8	95.8	91.7	91.7	91.7	91.7	91.7
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	3	95.8	83.3	91.7	95.8	95.8	95.8	95.8
D	4	12.5	4.2	8.3	8.3	8.3	8.3	4.2
D	5	12.5	0.0	0.0	0.0	0.0	0.0	0.0
D	6	83.3	0.0	0.0	0.0	0.0	0.0	0.0
C	11	100.0	46.7	46.7	46.7	60.0	60.0	60.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	3	81.3	50.0	62.5	56.3	68.8	75.0	75.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	96.0	90.9	89.9	89.9	90.9	90.9	90.9
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	3	96.0	82.8	87.9	86.9	89.9	90.9	89.9
All	4	35.4	12.1	14.1	14.1	14.1	14.1	13.1
All	5	5.1	0.0	0.0	0.0	0.0	0.0	0.0
All	6	70.7	0.0	0.0	0.0	0.0	0.0	0.0
W	All	74.1	65.6	65.6	65.2	65.6	65.6	65.6
AN	All	78.3	64.2	64.2	64.2	64.2	64.2	64.2
BN	All	77.1	61.1	62.5	61.8	61.8	61.8	61.8
D	All	75.0	60.4	61.5	59.4	62.0	62.0	62.0
C	All	73.8	49.2	50.8	53.2	50.0	53.2	54.0
All	All	75.4	60.7	61.5	61.1	61.4	61.9	62.0

Table L.1-68. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile spring-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, November through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	100.0	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	92.9	96.4 (3.6%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	96.4 (3.6%)
W	4	32.1	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	35.7 (3.6%)	32.1 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	7.7	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	15.4 (7.7%)	7.7 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	100.0	94.4 (-5.6%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	88.9	94.4 (5.6%)	88.9 (0.0%)	83.3 (-5.6%)	88.9 (0.0%)	88.9 (0.0%)	83.3 (-5.6%)	83.3 (-5.6%)
BN	4	11.1	5.6 (-5.6%)	5.6 (-5.6%)	5.6 (-5.6%)	11.1 (0.0%)	11.1 (0.0%)	5.6 (-5.6%)	11.1 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	91.7	79.2 (-12.5%)	83.3 (-8.3%)	83.3 (-8.3%)	87.5 (-4.2%)	87.5 (-4.2%)	91.7 (0.0%)	95.8 (4.2%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	91.7	91.7 (0.0%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	87.5 (-4.2%)	95.8 (4.2%)
D	4	8.3	4.2 (-4.2%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	12.5 (4.2%)	8.3 (0.0%)	8.3 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	53.3 (6.7%)	53.3 (6.7%)	53.3 (6.7%)	46.7 (0.0%)	60.0 (13.3%)	46.7 (0.0%)	53.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	62.5	75.0 (12.5%)	68.8 (6.3%)	56.3 (-6.3%)	81.3 (18.8%)	75.0 (12.5%)	50.0 (-12.5%)	62.5 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	89.9	84.8 (-5.1%)	87.9 (-2.0%)	88.9 (-1.0%)	86.9 (-3.0%)	89.9 (0.0%)	89.9 (0.0%)	91.9 (2.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	87.9	91.9 (4.0%)	89.9 (2.0%)	86.9 (-1.0%)	91.9 (4.0%)	90.9 (3.0%)	83.8 (-4.0%)	88.9 (1.0%)
All	4	14.1	12.1 (-2.0%)	13.1 (-1.0%)	13.1 (-1.0%)	14.1 (0.0%)	15.2 (1.0%)	15.2 (1.0%)	14.1 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	65.6	65.2 (-0.4%)	65.6 (0.0%)	65.6 (0.0%)	65.6 (0.0%)	65.6 (0.0%)	66.1 (0.4%)	66.1 (0.4%)
AN	All	64.2	64.2 (0.0%)	64.2 (0.0%)	64.2 (0.0%)	64.2 (0.0%)	64.2 (0.0%)	65.1 (0.9%)	64.2 (0.0%)
BN	All	62.5	61.8 (-0.7%)	61.1 (-1.4%)	61.1 (-1.4%)	61.1 (-1.4%)	61.8 (-0.7%)	61.1 (-1.4%)	61.8 (-0.7%)
D	All	61.5	59.4 (-2.1%)	60.9 (-0.5%)	60.9 (-0.5%)	61.5 (0.0%)	62.0 (0.5%)	60.9 (-0.5%)	62.5 (1.0%)
C	All	50.8	53.2 (2.4%)	52.4 (1.6%)	50.8 (0.0%)	53.2 (2.4%)	54.0 (3.2%)	49.2 (-1.6%)	51.6 (0.8%)
All	All	61.5	61.1 (-0.4%)	61.4 (-0.1%)	61.1 (-0.4%)	61.6 (0.1%)	62.0 (0.5%)	61.1 (-0.4%)	61.9 (0.4%)

Table L.1-69. Percent of months outside the 55.4°F to 68°F optimal water temperature range for juvenile spring-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Hamilton City, November through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	11	71.4	89.3	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	3	92.9	92.9	92.9	92.9	92.9	92.9	92.9
W	4	42.9	17.9	21.4	21.4	21.4	17.9	17.9
W	5	0.0	7.1	7.1	7.1	7.1	7.1	7.1
W	6	96.4	21.4	14.3	10.7	10.7	10.7	10.7
AN	11	85.7	100.0	100.0	100.0	92.9	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	3	100.0	84.6	84.6	84.6	84.6	84.6	84.6
AN	4	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	7.7	0.0	0.0	0.0	0.0	0.0
AN	6	92.3	23.1	0.0	0.0	0.0	0.0	0.0
BN	11	77.8	83.3	94.4	94.4	83.3	83.3	83.3
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	3	94.4	61.1	61.1	61.1	61.1	61.1	61.1
BN	4	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	5.6	0.0	0.0	0.0	0.0
D	11	70.8	83.3	83.3	79.2	75.0	79.2	83.3
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	3	91.7	45.8	54.2	45.8	50.0	50.0	45.8
D	4	8.3	4.2	0.0	0.0	0.0	0.0	0.0
D	5	45.8	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
C	11	60.0	40.0	46.7	33.3	40.0	40.0	40.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	2	100.0	87.5	93.8	87.5	93.8	87.5	87.5
C	3	43.8	18.8	25.0	18.8	31.3	31.3	31.3
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	62.5	0.0	0.0	6.3	6.3	6.3	6.3
C	6	100.0	6.3	0.0	12.5	6.3	12.5	12.5
All	11	72.7	80.8	86.9	83.8	80.8	82.8	83.8
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	100.0	98.0	99.0	98.0	99.0	98.0	98.0
All	3	85.9	62.6	65.7	62.6	65.7	65.7	64.6
All	4	17.2	6.1	6.1	6.1	6.1	5.1	5.1
All	5	30.3	3.0	2.0	3.0	3.0	3.0	3.0
All	6	98.0	12.1	5.1	5.1	4.0	5.1	5.1
W	All	75.4	66.1	67.0	63.4	66.5	66.5	66.1
AN	All	76.4	65.1	61.3	60.4	61.3	60.4	61.3
BN	All	77.1	56.3	57.6	52.1	56.9	55.6	55.6
D	All	77.1	54.7	54.7	51.6	53.1	53.1	53.6
C	All	70.6	43.7	45.2	44.4	44.4	46.8	46.8
All	All	75.5	57.8	58.1	55.1	57.3	57.3	57.4

Table L.1-70. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile spring-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Hamilton City, November through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	100.0	78.6 (-21.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)
W	4	21.4	17.9 (-3.6%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	17.9 (-3.6%)	14.3 (-7.1%)	17.9 (-3.6%)
W	5	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	0.0 (-7.1%)	7.1 (0.0%)
W	6	14.3	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	21.4 (7.1%)	14.3 (0.0%)
AN	11	100.0	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	84.6	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	92.3 (7.7%)	84.6 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	15.4 (15.4%)	0.0 (0.0%)
BN	11	94.4	55.6 (-38.9%)	83.3 (-11.1%)	88.9 (-5.6%)	83.3 (-11.1%)	83.3 (-11.1%)	88.9 (-5.6%)	94.4 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	61.1	55.6 (-5.6%)	61.1 (0.0%)	61.1 (0.0%)	61.1 (0.0%)	61.1 (0.0%)	66.7 (5.6%)	61.1 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	5.6	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
D	11	83.3	58.3 (-25.0%)	75.0 (-8.3%)	79.2 (-4.2%)	75.0 (-8.3%)	79.2 (-4.2%)	83.3 (0.0%)	83.3 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	54.2	54.2 (0.0%)	50.0 (-4.2%)	45.8 (-8.3%)	50.0 (-4.2%)	45.8 (-8.3%)	50.0 (-4.2%)	50.0 (-4.2%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	33.3 (-13.3%)	40.0 (-6.7%)	33.3 (-13.3%)	40.0 (-6.7%)	40.0 (-6.7%)	26.7 (-20.0%)	46.7 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	93.8	100.0 (6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	87.5 (-6.3%)
C	3	25.0	25.0 (0.0%)	31.3 (6.3%)	18.8 (-6.3%)	31.3 (6.3%)	31.3 (6.3%)	25.0 (0.0%)	25.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)
C	6	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	12.5 (12.5%)	6.3 (6.3%)	12.5 (12.5%)
All	11	86.9	64.6 (-22.2%)	80.8 (-6.1%)	81.8 (-5.1%)	80.8 (-6.1%)	82.8 (-4.0%)	82.8 (-4.0%)	86.9 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	99.0	100.0 (1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	98.0 (-1.0%)
All	3	65.7	64.6 (-1.0%)	65.7 (0.0%)	62.6 (-3.0%)	65.7 (0.0%)	64.6 (-1.0%)	66.7 (1.0%)	64.6 (-1.0%)
All	4	6.1	5.1 (-1.0%)	6.1 (0.0%)	6.1 (0.0%)	6.1 (0.0%)	5.1 (-1.0%)	4.0 (-2.0%)	5.1 (-1.0%)
All	5	2.0	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	6	5.1	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	5.1 (0.0%)	9.1 (4.0%)	6.1 (1.0%)
W	All	67.0	63.4 (-3.6%)	66.5 (-0.4%)	66.5 (-0.4%)	66.5 (-0.4%)	66.1 (-0.9%)	66.1 (-0.9%)	66.5 (-0.4%)
AN	All	61.3	60.4 (-0.9%)	60.4 (-0.9%)	60.4 (-0.9%)	60.4 (-0.9%)	61.3 (0.0%)	64.2 (2.8%)	61.3 (0.0%)
BN	All	57.6	52.1 (-5.6%)	55.6 (-2.1%)	56.3 (-1.4%)	55.6 (-2.1%)	55.6 (-2.1%)	56.9 (-0.7%)	56.9 (-0.7%)
D	All	54.7	51.6 (-3.1%)	53.1 (-1.6%)	53.1 (-1.6%)	53.1 (-1.6%)	53.1 (-1.6%)	54.2 (-0.5%)	54.2 (-0.5%)
C	All	45.2	44.4 (-0.8%)	46.0 (0.8%)	43.7 (-1.6%)	46.0 (0.8%)	46.8 (1.6%)	43.7 (-1.6%)	46.8 (1.6%)
All	All	58.1	55.1 (-3.0%)	57.2 (-0.9%)	56.9 (-1.1%)	57.2 (-0.9%)	57.3 (-0.8%)	57.7 (-0.4%)	58.0 (-0.1%)

Table L.1-71. Percent of months outside the 55.4°F to 68°F optimal water temperature range for juvenile spring-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Clear Creek below Whiskeytown, November through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	11	96.4	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	5	0.0	100.0	100.0	100.0	100.0	100.0	100.0
W	6	0.0	100.0	92.9	96.4	96.4	96.4	96.4
AN	11	85.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	5	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	6	0.0	100.0	100.0	92.3	92.3	92.3	92.3
BN	11	77.8	94.4	100.0	100.0	100.0	100.0	100.0
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	2	100.0	94.4	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	5	5.6	94.4	100.0	100.0	100.0	100.0	100.0
BN	6	5.6	100.0	100.0	100.0	100.0	100.0	100.0
D	11	70.8	87.5	100.0	100.0	100.0	100.0	100.0
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	5	0.0	100.0	100.0	100.0	100.0	100.0	100.0
D	6	8.3	100.0	100.0	100.0	100.0	100.0	100.0
C	11	53.3	73.3	86.7	86.7	86.7	86.7	86.7
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	100.0	93.8	100.0	100.0	100.0	100.0	100.0
C	2	93.8	100.0	100.0	100.0	100.0	100.0	100.0
C	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	5	6.3	100.0	100.0	100.0	100.0	100.0	100.0
C	6	12.5	100.0	100.0	100.0	100.0	100.0	100.0
All	11	78.8	91.9	98.0	98.0	98.0	98.0	98.0
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	1	100.0	99.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	99.0	99.0	100.0	100.0	100.0	100.0	100.0
All	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	5	2.0	99.0	100.0	100.0	100.0	100.0	100.0
All	6	5.1	100.0	98.0	98.0	98.0	98.0	98.0
W	All	74.6	100.0	99.1	100.0	99.6	99.6	99.6
AN	All	73.6	100.0	100.0	100.0	99.1	99.1	99.1
BN	All	73.6	97.9	100.0	100.0	100.0	100.0	100.0
D	All	72.4	98.4	100.0	100.0	100.0	100.0	100.0
C	All	70.6	96.0	98.4	97.6	98.4	98.4	98.4
All	All	73.1	98.6	99.5	99.6	99.5	99.5	99.5

Table L.1-72. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile spring-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Clear Creek below Whiskeytown, November through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	92.9	100.0 (7.1%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	89.3 (-3.6%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	86.7	80.0 (-6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)
All	11	98.0	97.0 (-1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	98.0	100.0 (2.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	97.0 (-1.0%)	96.0 (-2.0%)
W	All	99.1	100.0 (0.9%)	99.6 (0.4%)	99.6 (0.4%)	99.6 (0.4%)	99.6 (0.4%)	99.6 (0.4%)	98.7 (-0.4%)
AN	All	100.0	100.0 (0.0%)	99.1 (-0.9%)	99.1 (-0.9%)	99.1 (-0.9%)	99.1 (-0.9%)	99.1 (-0.9%)	99.1 (-0.9%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	98.4	97.6 (-0.8%)	99.2 (0.8%)	99.2 (0.8%)	99.2 (0.8%)	99.2 (0.8%)	98.4 (0.0%)	99.2 (0.8%)
All	All	99.5	99.6 (0.1%)	99.6 (0.1%)	99.6 (0.1%)	99.6 (0.1%)	99.6 (0.1%)	99.5 (0.0%)	99.4 (-0.1%)

Table L.1-73. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, November through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-74. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, November through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-75. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, November through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	4.2	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	1.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.5	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-76. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, November through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-77. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, November through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	23.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	33.3	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	33.3	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	56.3	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	26.3	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	2.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	All	4.2	0.0	0.0	0.0	0.0	0.0	0.0
C	All	7.1	0.0	0.0	0.0	0.0	0.0	0.0
All	All	3.3	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-78. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, November through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-79. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, November through June (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	5.6	5.6	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	8.3	4.2	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	6.3	18.8	0.0	6.3	6.3	6.3	6.3
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	4.0	5.1	0.0	1.0	1.0	1.0	1.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.7	0.7	0.0	0.0	0.0	0.0	0.0
D	All	1.0	0.5	0.0	0.0	0.0	0.0	0.0
C	All	1.6	2.4	0.0	0.0	0.8	0.8	0.8
All	All	0.6	0.6	0.0	0.0	0.1	0.1	0.1

Table L.1-80. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile spring-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, November through June (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.3.5 Yearling Rearing

Water temperature-related effects on spring-run Chinook salmon yearling rearing were evaluated by assessing: (1) the percent of months with water temperature outside the 55.4°F to 68°F optimum temperature without food limitation (Myrick and Cech 2002, Marine and Cech 2004); and (2) the percent of months with water temperature above the 75.2°F upper incipient lethal temperature (UILT) for yearlings (Brett 1952, Brett et al. 1982, Myrick and Cech 2004) in the Sacramento River at Keswick and Red Bluff Diversion Dam, and in Clear Creek below Whiskeytown (Table L.1-1).

Results evaluating the 55.4°F to 68°F optimum temperature for juvenile growth, smoltification, and predation vulnerability are presented in Table L.1-81 and Table L.1-82 for Keswick, in Table L.1-83 and Table L.1-84 for Red Bluff Diversion Dam, in Table L.1-85 and Table L.1-86 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the range was 100% and occurred in all months of at least one water year type under the NAA and all alternatives (Table L.1-81 and Table L.1-82). The lowest percent of months outside the range was 13.3% and occurred during October of a critical water years type under Alt 2 without TUCP Systemwide VAs. Combining all water year types, the percent of months outside the range was at least 100% for all months under the NAA and all alternatives.
- At Red Bluff Diversion Dam, the highest percent of months outside the range was 100% and occurred during December of all water year types under the NAA and all alternatives and during November of 1 to 3 water year types depending on alternative (Table L.1-83 and Table L.1-84). The lowest percent of months outside the range was 0% and occurred during May through September in most or all water year types under the NAA and all alternatives. Combining all water year types, the highest percent of months outside the range occurred during December and the lowest percent occurred in April through October for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek at Whiskeytown, the highest percent of months outside the range was 100% and occurred during all months in at least one water year type under the NAA and all alternatives (Table L.1-85 and Table L.1-86). The lowest percent of months outside the range was 80% and occurred during November of critical water years under Alt 1. Combining all water year types, water temperatures were outside the range in at least 97% between April and December under the NAA and all alternatives.

Results evaluating the 75.2°F upper incipient lethal temperature (UILT) for spring-run Chinook salmon yearlings are presented in Table L.1-87 and Table L.1-88 for the Sacramento River at Keswick, Table L.1-89 and Table L.1-90 for Red Bluff Diversion Dam, and Table L.1-91 and Table L.1-92 for Clear Creek below Whiskeytown.

- At Keswick, water temperature did not exceed the UILT in any month, water year type, or alternative (Table L.1-87 and Table L.1-88).
- At Red Bluff Diversion Dam, water temperature did not exceed the UILT in any month, water year type, or alternative (Table L.1-89 and Table L.1-90).
- In Clear Creek below Whiskeytown, the highest percent of months outside the range was 12.5% and occurred in September of critical water years under Alt 1, each Alternative 2 component, and Alt 4 (Table L.1-91 and Table L.1-92). The lowest percent of months outside the range was 0% and occurred during all months in most water year types under the NAA and all alternatives. Combining all water year types, the percent of months outside the range was 4.0% or lower for all months under the NAA and all alternatives and peaked during September. Air temperatures and operations drove these temporal patterns.

Table L.1-81. Percent of months outside the 55.4°F to 68°F optimal water temperature range for rearing spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Keswick, April through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	100.0	92.9	100.0	100.0	100.0	100.0	100.0
W	5	78.6	96.4	100.0	100.0	100.0	100.0	100.0
W	6	3.6	100.0	100.0	100.0	100.0	100.0	100.0
W	7	3.6	100.0	100.0	100.0	100.0	100.0	100.0
W	8	17.9	100.0	100.0	100.0	100.0	100.0	100.0
W	9	0.0	100.0	100.0	100.0	100.0	100.0	100.0
W	10	0.0	100.0	100.0	100.0	100.0	100.0	100.0
W	11	89.3	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	4	100.0	92.3	100.0	100.0	100.0	100.0	100.0
AN	5	53.8	100.0	92.3	100.0	100.0	100.0	100.0
AN	6	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	7	7.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	8	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	9	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	10	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	11	100.0	100.0	100.0	92.9	92.9	85.7	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	4	100.0	88.9	88.9	88.9	83.3	83.3	83.3
BN	5	5.6	100.0	83.3	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	6	0.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	7	27.8	100.0	100.0	100.0	100.0	100.0	100.0
BN	8	16.7	100.0	100.0	100.0	100.0	100.0	100.0
BN	9	5.6	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	5.6	94.4	100.0	100.0	94.4	94.4	94.4
BN	11	100.0	94.4	100.0	100.0	94.4	94.4	94.4
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	4	91.7	83.3	79.2	87.5	83.3	91.7	83.3
D	5	4.2	91.7	70.8	100.0	100.0	100.0	100.0
D	6	0.0	100.0	100.0	100.0	100.0	100.0	100.0
D	7	25.0	100.0	100.0	100.0	100.0	100.0	100.0
D	8	8.3	100.0	100.0	100.0	100.0	100.0	100.0
D	9	4.2	100.0	100.0	100.0	100.0	100.0	100.0
D	10	4.2	100.0	100.0	95.8	95.8	95.8	95.8
D	11	100.0	100.0	95.8	91.7	91.7	91.7	95.8
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	4	62.5	75.0	87.5	93.8	93.8	93.8	93.8
C	5	0.0	87.5	75.0	100.0	100.0	93.8	100.0
C	6	0.0	100.0	100.0	100.0	100.0	100.0	100.0
C	7	43.8	100.0	93.8	100.0	100.0	100.0	100.0
C	8	50.0	93.8	62.5	81.3	56.3	62.5	62.5
C	9	12.5	56.3	50.0	68.8	43.8	43.8	50.0
C	10	0.0	60.0	40.0	26.7	20.0	13.3	13.3

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	11	100.0	46.7	40.0	33.3	40.0	40.0	40.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	4	91.9	86.9	90.9	93.9	91.9	93.9	91.9
All	5	31.3	94.9	84.8	100.0	100.0	99.0	100.0
All	6	1.0	100.0	100.0	100.0	100.0	100.0	100.0
All	7	20.2	100.0	99.0	100.0	100.0	100.0	100.0
All	8	18.2	99.0	93.9	97.0	92.9	93.9	93.9
All	9	4.0	92.9	91.9	94.9	90.9	90.9	91.9
All	10	2.0	92.9	90.8	87.8	85.7	84.7	84.7
All	11	97.0	90.9	89.9	86.9	86.9	85.9	88.9
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	43.7	98.8	100.0	99.6	100.0	100.0	100.0
AN	All	41.2	99.2	99.2	98.3	99.2	99.2	98.3
BN	All	40.1	97.5	96.9	97.5	98.8	96.9	96.9
D	All	37.5	97.2	94.0	99.1	97.2	96.8	97.7
C	All	40.4	80.1	72.3	75.9	78.7	73.0	72.3
All	All	40.7	95.3	93.5	95.2	95.6	94.3	94.3

Table L.1-82. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for rearing spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Keswick, April through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	92.9	100.0 (7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	96.4 (3.6%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	96.4	100.0 (3.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (3.6%)	100.0 (0.0%)
W	9	96.4	100.0 (3.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (3.6%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	96.4 (-3.6%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (0.0%)	100.0 (7.7%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	92.3 (-7.7%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	92.9 (-7.1%)	92.9 (-7.1%)	85.7 (-14.3%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	94.4 (5.6%)	94.4 (5.6%)	88.9 (0.0%)	88.9 (0.0%)	100.0 (0.0%)	94.4 (5.6%)
BN	5	100.0	100.0 (0.0%)	94.4 (11.1%)	100.0 (16.7%)	100.0 (16.7%)	94.4 (11.1%)	100.0 (0.0%)	94.4 (11.1%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	88.9 (-11.1%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	83.3 (4.2%)	87.5 (8.3%)	87.5 (8.3%)	83.3 (4.2%)	100.0 (0.0%)	79.2 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (29.2%)	100.0 (29.2%)	100.0 (29.2%)	95.8 (25.0%)	100.0 (0.0%)	75.0 (4.2%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	95.8 (-4.2%)	95.8 (-4.2%)	95.8 (-4.2%)	95.8 (-4.2%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	87.5 (-8.3%)	83.3 (-12.5%)	91.7 (-4.2%)	95.8 (0.0%)	100.0 (0.0%)	95.8 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)
C	4	100.0	100.0 (0.0%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	100.0 (0.0%)	87.5 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (0.0%)	87.5 (12.5%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	87.5 (-6.3%)	100.0 (6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	100.0 (0.0%)	100.0 (6.3%)
C	8	100.0	93.8 (-6.3%)	68.8 (6.3%)	81.3 (18.8%)	68.8 (6.3%)	68.8 (6.3%)	100.0 (0.0%)	87.5 (25.0%)
C	9	93.8	87.5 (-6.3%)	43.8 (-6.3%)	62.5 (12.5%)	43.8 (-6.3%)	37.5 (-12.5%)	100.0 (6.3%)	68.8 (18.8%)
C	10	93.3	93.3 (0.0%)	20.0 (-20.0%)	26.7 (-13.3%)	20.0 (-20.0%)	13.3 (-26.7%)	100.0 (6.7%)	53.3 (13.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	11	86.7	80.0 (-6.7%)	46.7 (6.7%)	33.3 (-6.7%)	46.7 (6.7%)	46.7 (6.7%)	93.3 (6.7%)	46.7 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	93.9 (3.0%)	94.9 (4.0%)	93.9 (3.0%)	92.9 (2.0%)	100.0 (0.0%)	91.9 (1.0%)
All	5	100.0	100.0 (0.0%)	99.0 (14.1%)	100.0 (15.2%)	100.0 (15.2%)	98.0 (13.1%)	100.0 (0.0%)	90.9 (6.1%)
All	6	98.0	100.0 (2.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	97.0 (-1.0%)	100.0 (0.0%)
All	7	100.0	100.0 (0.0%)	98.0 (-1.0%)	100.0 (1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	100.0 (0.0%)	100.0 (1.0%)
All	8	99.0	99.0 (0.0%)	94.9 (1.0%)	97.0 (3.0%)	94.9 (1.0%)	94.9 (1.0%)	100.0 (1.0%)	98.0 (4.0%)
All	9	98.0	98.0 (0.0%)	90.9 (-1.0%)	93.9 (2.0%)	90.9 (-1.0%)	89.9 (-2.0%)	100.0 (2.0%)	94.9 (3.0%)
All	10	99.0	99.0 (0.0%)	85.7 (-5.1%)	87.8 (-3.1%)	84.7 (-6.1%)	84.7 (-6.1%)	100.0 (1.0%)	92.9 (2.0%)
All	11	98.0	97.0 (-1.0%)	85.9 (-4.0%)	84.8 (-5.1%)	85.9 (-4.0%)	88.9 (-1.0%)	99.0 (1.0%)	90.9 (1.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.0 (-2.0%)
W	All	100.0	99.6 (-0.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	99.6 (-0.4%)
AN	All	99.2	98.3 (-0.8%)	99.2 (0.0%)	99.2 (0.0%)	98.3 (-0.8%)	99.2 (0.0%)	100.0 (0.8%)	100.0 (0.8%)
BN	All	96.9	97.5 (0.6%)	96.9 (0.0%)	99.4 (2.5%)	96.3 (-0.6%)	96.9 (0.0%)	100.0 (3.1%)	98.8 (1.9%)
D	All	94.0	99.1 (5.1%)	96.3 (2.3%)	96.3 (2.3%)	97.2 (3.2%)	96.8 (2.8%)	97.7 (3.7%)	94.0 (0.0%)
C	All	72.3	75.9 (3.5%)	73.8 (1.4%)	78.0 (5.7%)	73.8 (1.4%)	72.3 (0.0%)	80.9 (8.5%)	81.6 (9.2%)
All	All	93.5	95.2 (1.7%)	94.3 (0.8%)	95.4 (1.9%)	94.3 (0.8%)	94.2 (0.7%)	96.4 (2.9%)	95.3 (1.8%)

Table L.1-83. Percent of months outside the 55.4°F to 68°F optimal water temperature range for rearing spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	75.0	32.1	32.1	32.1	32.1	32.1	32.1
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	28.6	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	7.1	3.6	3.6	3.6	3.6
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	53.6	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	60.7	71.4	71.4	71.4	71.4
W	11	89.3	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	4	46.2	7.7	7.7	7.7	7.7	7.7	7.7
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	61.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	30.8	38.5	38.5	38.5	38.5
AN	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	4	27.8	5.6	11.1	11.1	11.1	11.1	11.1
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	6	88.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	5.6	5.6	5.6	5.6	5.6
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	72.2	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	16.7	11.1	11.1	16.7	22.2
BN	11	100.0	100.0	100.0	100.0	94.4	94.4	94.4
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	4	12.5	4.2	8.3	8.3	8.3	8.3	4.2
D	5	12.5	0.0	0.0	0.0	0.0	0.0	0.0
D	6	83.3	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	95.8	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	12.5	12.5	12.5	12.5	12.5
D	11	95.8	95.8	91.7	91.7	91.7	91.7	91.7
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	0.0	0.0	6.3	6.3	6.3
C	9	100.0	0.0	6.3	0.0	25.0	25.0	18.8
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	11	100.0	46.7	46.7	46.7	60.0	60.0	60.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	4	35.4	12.1	14.1	14.1	14.1	14.1	13.1
All	5	5.1	0.0	0.0	0.0	0.0	0.0	0.0
All	6	70.7	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	3.0	2.0	2.0	2.0	2.0
All	8	100.0	0.0	0.0	0.0	1.0	1.0	1.0
All	9	75.8	0.0	1.0	0.0	4.0	4.0	3.0
All	10	0.0	0.0	27.6	30.6	30.6	31.6	32.7
All	11	96.0	90.9	89.9	89.9	90.9	90.9	90.9
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	60.7	25.8	33.3	25.4	34.1	34.1	34.1
AN	All	65.5	24.4	27.7	24.4	28.6	28.6	28.6
BN	All	65.4	22.8	25.9	22.8	25.3	24.7	25.3
D	All	66.7	22.2	23.6	20.4	23.6	23.6	23.6
C	All	68.1	15.6	16.3	21.3	15.6	20.6	20.6
All	All	64.8	22.6	26.2	22.9	26.3	27.0	27.1

Table L.1-84. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for rearing spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	32.1	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	35.7 (3.6%)	32.1 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	7.1	0.0 (-7.1%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	0.0 (-7.1%)	3.6 (-3.6%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	60.7	3.6 (-57.1%)	71.4 (10.7%)	71.4 (10.7%)	67.9 (7.1%)	71.4 (10.7%)	57.1 (-3.6%)	53.6 (-7.1%)
W	11	100.0	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	7.7	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	15.4 (7.7%)	7.7 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	30.8	0.0 (-30.8%)	30.8 (0.0%)	30.8 (0.0%)	38.5 (7.7%)	30.8 (0.0%)	23.1 (-7.7%)	23.1 (-7.7%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	11.1	5.6 (-5.6%)	5.6 (-5.6%)	5.6 (-5.6%)	11.1 (0.0%)	11.1 (0.0%)	5.6 (-5.6%)	11.1 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	5.6	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	11.1 (-5.6%)	11.1 (-5.6%)
BN	11	100.0	94.4 (-5.6%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	8.3	4.2 (-4.2%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	12.5 (4.2%)	8.3 (0.0%)	8.3 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	12.5	0.0 (-12.5%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	8.3 (-4.2%)	12.5 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	11	91.7	79.2 (-12.5%)	83.3 (-8.3%)	83.3 (-8.3%)	87.5 (-4.2%)	87.5 (-4.2%)	91.7 (0.0%)	95.8 (4.2%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	18.8 (18.8%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	6.3 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	53.3 (6.7%)	53.3 (6.7%)	53.3 (6.7%)	46.7 (0.0%)	60.0 (13.3%)	46.7 (0.0%)	53.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	14.1	12.1 (-2.0%)	13.1 (-1.0%)	13.1 (-1.0%)	14.1 (0.0%)	15.2 (1.0%)	15.2 (1.0%)	14.1 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	3.0	1.0 (-2.0%)	2.0 (-1.0%)	2.0 (-1.0%)	2.0 (-1.0%)	2.0 (-1.0%)	0.0 (-3.0%)	2.0 (-1.0%)
All	8	0.0	3.0 (3.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	1.0 (0.0%)
All	10	27.6	1.0 (-26.5%)	29.6 (2.0%)	29.6 (2.0%)	29.6 (2.0%)	31.6 (4.1%)	23.5 (-4.1%)	23.5 (-4.1%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	11	89.9	84.8 (-5.1%)	87.9 (-2.0%)	88.9 (-1.0%)	86.9 (-3.0%)	89.9 (0.0%)	89.9 (0.0%)	91.9 (2.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	33.3	25.4 (-7.9%)	34.1 (0.8%)	34.1 (0.8%)	33.7 (0.4%)	34.1 (0.8%)	32.5 (-0.8%)	32.1 (-1.2%)
AN	All	27.7	24.4 (-3.4%)	27.7 (0.0%)	27.7 (0.0%)	28.6 (0.8%)	27.7 (0.0%)	27.7 (0.0%)	26.9 (-0.8%)
BN	All	25.9	22.8 (-3.1%)	24.1 (-1.9%)	24.7 (-1.2%)	24.1 (-1.9%)	25.9 (0.0%)	24.1 (-1.9%)	25.3 (-0.6%)
D	All	23.6	20.4 (-3.2%)	22.7 (-0.9%)	22.7 (-0.9%)	23.1 (-0.5%)	23.6 (0.0%)	23.1 (-0.5%)	24.1 (0.5%)
C	All	16.3	21.3 (5.0%)	19.9 (3.5%)	16.3 (0.0%)	19.1 (2.8%)	20.6 (4.3%)	15.6 (-0.7%)	17.0 (0.7%)
All	All	26.2	22.9 (-3.3%)	26.4 (0.2%)	26.0 (-0.2%)	26.4 (0.2%)	27.1 (0.9%)	25.4 (-0.8%)	25.8 (-0.3%)

Table L.1-85. Percent of months outside the 55.4°F to 68°F optimal water temperature range for rearing spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	5	0.0	100.0	100.0	100.0	100.0	100.0	100.0
W	6	0.0	100.0	92.9	96.4	96.4	96.4	96.4
W	7	25.0	100.0	100.0	96.4	100.0	96.4	96.4
W	8	32.1	100.0	96.4	96.4	100.0	96.4	96.4
W	9	17.9	100.0	96.4	96.4	100.0	96.4	96.4
W	10	25.0	100.0	100.0	100.0	100.0	100.0	100.0
W	11	96.4	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	5	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	6	0.0	100.0	100.0	92.3	92.3	92.3	92.3
AN	7	7.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	8	30.8	100.0	100.0	100.0	100.0	100.0	100.0
AN	9	7.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	10	7.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	11	85.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	5	5.6	94.4	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	6	5.6	100.0	100.0	100.0	100.0	100.0	100.0
BN	7	38.9	94.4	100.0	100.0	100.0	100.0	100.0
BN	8	61.1	100.0	100.0	100.0	100.0	100.0	100.0
BN	9	61.1	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	44.4	100.0	100.0	100.0	100.0	100.0	100.0
BN	11	77.8	94.4	100.0	100.0	100.0	100.0	100.0
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	5	0.0	100.0	100.0	100.0	100.0	100.0	100.0
D	6	8.3	100.0	100.0	100.0	100.0	100.0	100.0
D	7	62.5	87.5	100.0	100.0	100.0	100.0	100.0
D	8	62.5	100.0	100.0	100.0	100.0	100.0	100.0
D	9	70.8	100.0	100.0	100.0	100.0	100.0	100.0
D	10	50.0	79.2	100.0	100.0	100.0	100.0	100.0
D	11	70.8	87.5	100.0	100.0	100.0	100.0	100.0
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	5	6.3	100.0	100.0	100.0	100.0	100.0	100.0
C	6	12.5	100.0	100.0	100.0	100.0	100.0	100.0
C	7	87.5	93.8	100.0	100.0	100.0	100.0	100.0
C	8	75.0	100.0	100.0	100.0	93.8	93.8	93.8
C	9	87.5	93.8	93.8	93.8	93.8	93.8	93.8
C	10	66.7	86.7	93.3	93.3	93.3	93.3	93.3

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	11	53.3	73.3	86.7	86.7	86.7	86.7	86.7
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	5	2.0	99.0	100.0	100.0	100.0	100.0	100.0
All	6	5.1	100.0	98.0	98.0	98.0	98.0	98.0
All	7	44.4	94.9	100.0	99.0	100.0	99.0	99.0
All	8	51.5	100.0	99.0	99.0	99.0	98.0	98.0
All	9	48.5	99.0	98.0	98.0	99.0	98.0	98.0
All	10	38.8	92.9	99.0	99.0	99.0	99.0	99.0
All	11	78.8	91.9	98.0	98.0	98.0	98.0	98.0
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	44.0	100.0	98.4	100.0	98.4	99.6	98.4
AN	All	38.7	100.0	100.0	100.0	99.2	99.2	99.2
BN	All	54.9	98.1	100.0	100.0	100.0	100.0	100.0
D	All	58.3	94.9	100.0	100.0	100.0	100.0	100.0
C	All	65.2	94.3	97.2	95.0	97.2	96.5	96.5
All	All	52.1	97.5	99.1	99.2	99.0	99.2	98.9

Table L.1-86. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for rearing spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	92.9	100.0 (7.1%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	89.3 (-3.6%)
W	7	100.0	100.0 (0.0%)	96.4 (-3.6%)	96.4 (-3.6%)	92.9 (-7.1%)	96.4 (-3.6%)	100.0 (0.0%)	96.4 (-3.6%)
W	8	96.4	100.0 (3.6%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	100.0 (3.6%)	96.4 (0.0%)
W	9	96.4	100.0 (3.6%)	100.0 (3.6%)	96.4 (0.0%)	96.4 (0.0%)	100.0 (3.6%)	100.0 (3.6%)	96.4 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	93.8 (-6.3%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	93.8	87.5 (-6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)
C	10	93.3	93.3 (0.0%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	11	86.7	80.0 (-6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	98.0	100.0 (2.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	97.0 (-1.0%)	96.0 (-2.0%)
All	7	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	97.0 (-3.0%)	99.0 (-1.0%)	100.0 (0.0%)	99.0 (-1.0%)
All	8	99.0	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	98.0 (-1.0%)	99.0 (0.0%)	100.0 (1.0%)	99.0 (0.0%)
All	9	98.0	98.0 (0.0%)	100.0 (2.0%)	99.0 (1.0%)	99.0 (1.0%)	100.0 (2.0%)	100.0 (2.0%)	99.0 (1.0%)
All	10	99.0	99.0 (0.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)
All	11	98.0	97.0 (-1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	98.4	100.0 (1.6%)	98.8 (0.4%)	98.4 (0.0%)	98.0 (-0.4%)	98.8 (0.4%)	99.6 (1.2%)	97.6 (-0.8%)
AN	All	100.0	100.0 (0.0%)	99.2 (-0.8%)	99.2 (-0.8%)	99.2 (-0.8%)	99.2 (-0.8%)	99.2 (-0.8%)	99.2 (-0.8%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.8 (-1.2%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	97.2	95.0 (-2.1%)	99.3 (2.1%)	99.3 (2.1%)	99.3 (2.1%)	99.3 (2.1%)	98.6 (1.4%)	99.3 (2.1%)
All	All	99.1	99.2 (0.1%)	99.4 (0.3%)	99.3 (0.2%)	99.0 (-0.1%)	99.4 (0.3%)	99.6 (0.4%)	99.1 (0.0%)

Table L.1-87. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for rearing spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Keswick, April through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-88. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for rearing spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Keswick, April through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-89. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for rearing spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	7	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	8	7.1	0.0	0.0	0.0	0.0	0.0	0.0
W	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	11.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	11.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	7	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	8	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	37.5	0.0	0.0	0.0	0.0	0.0	0.0
C	8	25.0	0.0	0.0	0.0	0.0	0.0	0.0
C	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	11.1	0.0	0.0	0.0	0.0	0.0	0.0
All	8	9.1	0.0	0.0	0.0	0.0	0.0	0.0
All	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	1.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	2.5	0.0	0.0	0.0	0.0	0.0	0.0
D	All	1.4	0.0	0.0	0.0	0.0	0.0	0.0
C	All	7.1	0.0	0.0	0.0	0.0	0.0	0.0
All	All	2.4	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-90. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for rearing spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-91. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for rearing spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	7	14.3	0.0	0.0	0.0	0.0	0.0	0.0
W	8	7.1	0.0	0.0	0.0	0.0	0.0	0.0
W	9	10.7	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	6	5.6	5.6	0.0	0.0	0.0	0.0	0.0
BN	7	16.7	5.6	0.0	0.0	0.0	0.0	0.0
BN	8	22.2	5.6	0.0	0.0	0.0	0.0	0.0
BN	9	55.6	11.1	5.6	0.0	11.1	11.1	11.1
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	8.3	4.2	0.0	0.0	0.0	0.0	0.0
D	7	4.2	16.7	0.0	0.0	0.0	0.0	0.0
D	8	25.0	37.5	0.0	0.0	0.0	0.0	0.0
D	9	62.5	33.3	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	6.3	18.8	0.0	6.3	6.3	6.3	6.3
C	7	12.5	31.3	0.0	12.5	12.5	12.5	12.5
C	8	43.8	37.5	6.3	18.8	25.0	18.8	18.8
C	9	81.3	43.8	6.3	18.8	25.0	18.8	18.8
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	4.0	5.1	0.0	1.0	1.0	1.0	1.0
All	7	10.1	10.1	0.0	2.0	2.0	2.0	2.0
All	8	19.2	16.2	1.0	3.0	4.0	3.0	3.0
All	9	42.4	17.2	2.0	3.0	6.1	5.1	5.1
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	3.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	11.1	3.1	0.6	0.6	0.0	1.2	1.2
D	All	11.1	10.2	0.0	0.0	0.0	0.0	0.0
C	All	17.0	14.9	1.4	2.1	6.4	7.8	6.4
All	All	8.5	5.4	0.3	0.4	1.0	1.5	1.2

Table L.1-92. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for rearing spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.6	0.6 (0.0%)	1.2 (0.6%)	0.6 (0.0%)	0.6 (0.0%)	0.6 (0.0%)	0.0 (-0.6%)	0.6 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.4	2.1 (0.7%)	2.1 (0.7%)	2.8 (1.4%)	2.8 (1.4%)	2.8 (1.4%)	2.1 (0.7%)	3.5 (2.1%)
All	All	0.3	0.4 (0.1%)	0.6 (0.2%)	0.6 (0.2%)	0.6 (0.2%)	0.6 (0.2%)	0.3 (0.0%)	0.7 (0.3%)

L.1.3.3.6 Yearling Outmigration

Water temperature-related effects on spring-run Chinook salmon yearling outmigration were evaluated by assessing: (1) the percent of months with water temperature outside the 55.4°F to 68°F optimum temperature without food limitation (Myrick and Cech 2002, Marine and Cech 2004); and (2) the percent of months with water temperature above the 75.2°F upper incipient lethal temperature (UILT) for yearlings (Brett 1952, Brett et al. 1982, Myrick and Cech 2004) in the Sacramento River at Keswick, Red Bluff Diversion Dam, and Hamilton City, and in Clear Creek below Whiskeytown (Table L.1-1).

Results evaluating the 55.4°F to 68°F optimum temperature without food limitation are presented in Table L.1-93 and Table L.1-94 for Keswick, in Table L.1-95 and Table L.1-96 for Red Bluff Diversion Dam, in Table L.1-97 and Table L.1-98 for Hamilton City, and in Table L.1-99 and Table L.1-100 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the range was 100% and occurred in all months of at least one water year type under all alternatives except November of wet years under Alt 1 (Table L.1-93 and Table L.1-94). The lowest percent of months outside the range was 13.3% and occurred during October of critical water years under Alt 2 Without TUCP Systemwide VA. Combining all water year types, the percent of months outside the range was 84.7% or higher for all months under the NAA and all alternatives.
- At Red Bluff Diversion Dam, the highest percent of months outside the range was 100% and occurred in November and December of at least one water year type under the NAA and all alternatives (Table L.1-95 and Table L.1-96). The lowest percent of months outside the range was 0% and occurred during October of above normal, below normal, dry, and critical water years under Alt 1 and during October of critical water years under the NAA and all alternatives. Combining all water year types, the percent of months outside the range increase from October to December for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months outside the range was 100% and occurred in December of all water years under the NAA and all alternatives and in November during a wet water year type for the NAA and all alternatives except Alt 1 (Table L.1-97 and Table L.1-98). The lowest percent of months outside the range was 0% and occurred during October of most or all water year types under the NAA and all alternatives. Combining all water year types, the percent of months outside the range increase from October to December for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, the highest percent of months outside the range was 100% and occurred in all months of all water year types except October and November of critical water years under the NAA and all alternatives (Table L.1-99 and Table L.1-100). The lowest percent of months outside the range was 80% and occurred during November of critical water years under Alt 1. Combining all water year types, the percent of months outside the range was 98% or higher for all months under the NAA and all alternatives and peaked during December. Air temperatures and operations drove these temporal patterns.

Results evaluating the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings are presented in Table L.1-101 and Table L.1-102 for the Sacramento River at Keswick, Table L.1-103 and Table L.1-104 for Red Bluff Diversion Dam, Table L.1-105 and Table L.1-106 for Hamilton City, and Table L.1-107 and Table L.1-108 for Clear Creek below Whiskeytown.

- At Keswick, water temperature did not exceed the UILT in any month, water year type, or alternative (Table L.1-101 and Table L.1-102).
- At Red Bluff Diversion Dam, water temperature did not exceed the UILT in any month, water year type, or alternative (Table L.1-103 and Table L.1-104).
- At Hamilton City, water temperature did not exceed the UILT in any month, water year type, or alternative (Table L.1-105 and Table L.1-106).
- In Clear Creek below Whiskeytown, water temperature did not exceed the UILT in any month, water year type, or alternative (Table L.1-107 and Table L.1-108).

Table L.1-93. Percent of months outside the 55.4°F to 68°F optimal water temperature range for outmigrating spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Keswick, October through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	10	0.0	100.0	100.0	100.0	100.0	100.0	100.0
W	11	89.3	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	10	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	11	100.0	100.0	100.0	92.9	92.9	85.7	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	5.6	94.4	100.0	100.0	94.4	94.4	94.4
BN	11	100.0	94.4	100.0	100.0	94.4	94.4	94.4
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	10	4.2	100.0	100.0	95.8	95.8	95.8	95.8
D	11	100.0	100.0	95.8	91.7	91.7	91.7	95.8
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	10	0.0	60.0	40.0	26.7	20.0	13.3	13.3
C	11	100.0	46.7	40.0	33.3	40.0	40.0	40.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	10	2.0	92.9	90.8	87.8	85.7	84.7	84.7
All	11	97.0	90.9	89.9	86.9	86.9	85.9	88.9
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	63.1	100.0	100.0	98.8	100.0	100.0	100.0
AN	All	68.3	100.0	100.0	95.1	97.6	97.6	95.1

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	68.5	96.3	100.0	92.6	100.0	96.3	96.3
D	All	68.1	100.0	98.6	97.2	95.8	95.8	95.8
C	All	66.7	68.9	60.0	60.0	53.3	53.3	51.1
All	All	66.6	94.6	93.6	90.9	91.6	90.9	90.2

Table L.1-94. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for outmigrating spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Keswick, October through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	96.4 (-3.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	96.4 (-3.6%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	85.7 (-14.3%)	92.9 (-7.1%)	92.9 (-7.1%)	85.7 (-14.3%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	83.3 (-16.7%)	88.9 (-11.1%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	95.8 (-4.2%)	95.8 (-4.2%)	95.8 (-4.2%)	95.8 (-4.2%)	91.7 (-8.3%)	100.0 (0.0%)
D	11	95.8	91.7 (-4.2%)	87.5 (-8.3%)	83.3 (-12.5%)	91.7 (-4.2%)	95.8 (0.0%)	91.7 (-4.2%)	95.8 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)
C	10	40.0	33.3 (-6.7%)	20.0 (-20.0%)	26.7 (-13.3%)	20.0 (-20.0%)	13.3 (-26.7%)	33.3 (-6.7%)	53.3 (13.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	11	40.0	46.7 (6.7%)	46.7 (6.7%)	33.3 (-6.7%)	46.7 (6.7%)	46.7 (6.7%)	40.0 (0.0%)	46.7 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	90.8	89.8 (-1.0%)	85.7 (-5.1%)	87.8 (-3.1%)	84.7 (-6.1%)	84.7 (-6.1%)	87.8 (-3.1%)	92.9 (2.0%)
All	11	89.9	83.8 (-6.1%)	85.9 (-4.0%)	84.8 (-5.1%)	85.9 (-4.0%)	88.9 (-1.0%)	88.9 (-1.0%)	90.9 (1.0%)
All	12	100.0	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.0 (-2.0%)
W	All	100.0	98.8 (-1.2%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.8 (-1.2%)
AN	All	100.0	95.1 (-4.9%)	97.6 (-2.4%)	97.6 (-2.4%)	95.1 (-4.9%)	97.6 (-2.4%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	92.6 (-7.4%)	94.4 (-5.6%)	100.0 (0.0%)	92.6 (-7.4%)	96.3 (-3.7%)	100.0 (0.0%)	100.0 (0.0%)
D	All	98.6	97.2 (-1.4%)	94.4 (-4.2%)	93.1 (-5.6%)	95.8 (-2.8%)	97.2 (-1.4%)	94.4 (-4.2%)	97.2 (-1.4%)
C	All	60.0	60.0 (0.0%)	55.6 (-4.4%)	53.3 (-6.7%)	55.6 (-4.4%)	53.3 (-6.7%)	57.8 (-2.2%)	66.7 (6.7%)
All	All	93.6	90.9 (-2.7%)	90.5 (-3.0%)	90.9 (-2.7%)	90.2 (-3.4%)	91.2 (-2.4%)	92.2 (-1.4%)	93.9 (0.3%)

Table L.1-95. Percent of months outside the 55.4°F to 68°F optimal water temperature range for outmigrating spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, October through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	10	0.0	0.0	60.7	71.4	71.4	71.4	71.4
W	11	89.3	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	10	0.0	0.0	30.8	38.5	38.5	38.5	38.5
AN	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	10	0.0	0.0	16.7	11.1	11.1	16.7	22.2
BN	11	100.0	100.0	100.0	100.0	94.4	94.4	94.4
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	10	0.0	0.0	12.5	12.5	12.5	12.5	12.5
D	11	95.8	95.8	91.7	91.7	91.7	91.7	91.7
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	100.0	46.7	46.7	46.7	60.0	60.0	60.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	10	0.0	0.0	27.6	30.6	30.6	31.6	32.7
All	11	96.0	90.9	89.9	89.9	90.9	90.9	90.9
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	63.1	66.7	86.9	65.5	90.5	90.5	90.5
AN	All	68.3	68.3	78.0	68.3	80.5	80.5	80.5
BN	All	66.7	66.7	72.2	64.8	70.4	68.5	70.4
D	All	65.3	65.3	68.1	59.7	68.1	68.1	68.1
C	All	66.7	48.9	48.9	51.1	48.9	53.3	53.3
All	All	65.5	63.9	72.6	62.2	73.6	74.0	74.3

Table L.1-96. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for outmigrating spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, October through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	60.7	3.6 (-57.1%)	71.4 (10.7%)	71.4 (10.7%)	67.9 (7.1%)	71.4 (10.7%)	57.1 (-3.6%)	53.6 (-7.1%)
W	11	100.0	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	30.8	0.0 (-30.8%)	30.8 (0.0%)	30.8 (0.0%)	38.5 (7.7%)	30.8 (0.0%)	23.1 (-7.7%)	23.1 (-7.7%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	11.1 (-5.6%)	11.1 (-5.6%)
BN	11	100.0	94.4 (-5.6%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	12.5	0.0 (-12.5%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	8.3 (-4.2%)	12.5 (0.0%)
D	11	91.7	79.2 (-12.5%)	83.3 (-8.3%)	83.3 (-8.3%)	87.5 (-4.2%)	87.5 (-4.2%)	91.7 (0.0%)	95.8 (4.2%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	53.3 (6.7%)	53.3 (6.7%)	53.3 (6.7%)	46.7 (0.0%)	60.0 (13.3%)	46.7 (0.0%)	53.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	27.6	1.0 (-26.5%)	29.6 (2.0%)	29.6 (2.0%)	29.6 (2.0%)	31.6 (4.1%)	23.5 (-4.1%)	23.5 (-4.1%)
All	11	89.9	84.8 (-5.1%)	87.9 (-2.0%)	88.9 (-1.0%)	86.9 (-3.0%)	89.9 (0.0%)	89.9 (0.0%)	91.9 (2.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	86.9	65.5 (-21.4%)	90.5 (3.6%)	90.5 (3.6%)	89.3 (2.4%)	90.5 (3.6%)	85.7 (-1.2%)	84.5 (-2.4%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	All	78.0	68.3 (-9.8%)	78.0 (0.0%)	78.0 (0.0%)	80.5 (2.4%)	78.0 (0.0%)	75.6 (-2.4%)	75.6 (-2.4%)
BN	All	72.2	64.8 (-7.4%)	68.5 (-3.7%)	70.4 (-1.9%)	66.7 (-5.6%)	72.2 (0.0%)	70.4 (-1.9%)	70.4 (-1.9%)
D	All	68.1	59.7 (-8.3%)	65.3 (-2.8%)	65.3 (-2.8%)	66.7 (-1.4%)	66.7 (-1.4%)	66.7 (-1.4%)	69.4 (1.4%)
C	All	48.9	51.1 (2.2%)	51.1 (2.2%)	51.1 (2.2%)	48.9 (0.0%)	53.3 (4.4%)	48.9 (0.0%)	51.1 (2.2%)
All	All	72.6	62.2 (-10.5%)	72.6 (0.0%)	73.0 (0.3%)	72.3 (-0.3%)	74.0 (1.4%)	71.3 (-1.4%)	72.0 (-0.7%)

Table L.1-97. Percent of months outside the 55.4°F to 68°F optimal water temperature range for outmigrating spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Hamilton City, October through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	10	0.0	0.0	0.0	3.6	3.6	3.6	0.0
W	11	71.4	89.3	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	85.7	100.0	100.0	100.0	92.9	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	77.8	83.3	94.4	94.4	83.3	83.3	83.3
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	70.8	83.3	83.3	79.2	75.0	79.2	83.3
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	10	6.7	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	11	60.0	40.0	46.7	33.3	40.0	40.0	40.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	10	1.0	0.0	0.0	1.0	1.0	1.0	0.0
All	11	72.7	80.8	86.9	83.8	80.8	82.8	83.8
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	57.1	63.1	66.7	59.5	67.9	67.9	67.9
AN	All	63.4	68.3	68.3	65.9	68.3	65.9	68.3
BN	All	59.3	61.1	64.8	51.9	64.8	61.1	61.1
D	All	56.9	61.1	61.1	52.8	59.7	58.3	59.7
C	All	55.6	46.7	48.9	44.4	44.4	46.7	46.7
All	All	58.1	60.5	62.5	55.1	61.8	60.8	61.5

Table L.1-98. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for outmigrating spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Sacramento River at Hamilton City, October through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)
W	11	100.0	78.6 (-21.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	100.0	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	11	94.4	55.6 (-38.9%)	83.3 (-11.1%)	88.9 (-5.6%)	83.3 (-11.1%)	83.3 (-11.1%)	88.9 (-5.6%)	94.4 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	83.3	58.3 (-25.0%)	75.0 (-8.3%)	79.2 (-4.2%)	75.0 (-8.3%)	79.2 (-4.2%)	83.3 (0.0%)	83.3 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	33.3 (-13.3%)	40.0 (-6.7%)	33.3 (-13.3%)	40.0 (-6.7%)	40.0 (-6.7%)	26.7 (-20.0%)	46.7 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	86.9	64.6 (-22.2%)	80.8 (-6.1%)	81.8 (-5.1%)	80.8 (-6.1%)	82.8 (-4.0%)	82.8 (-4.0%)	86.9 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	66.7	59.5 (-7.1%)	67.9 (1.2%)	67.9 (1.2%)	67.9 (1.2%)	67.9 (1.2%)	66.7 (0.0%)	66.7 (0.0%)
AN	All	68.3	65.9 (-2.4%)	65.9 (-2.4%)	65.9 (-2.4%)	65.9 (-2.4%)	68.3 (0.0%)	68.3 (0.0%)	68.3 (0.0%)
BN	All	64.8	51.9 (-13.0%)	61.1 (-3.7%)	63.0 (-1.9%)	61.1 (-3.7%)	61.1 (-3.7%)	63.0 (-1.9%)	64.8 (0.0%)
D	All	61.1	52.8 (-8.3%)	58.3 (-2.8%)	59.7 (-1.4%)	58.3 (-2.8%)	59.7 (-1.4%)	61.1 (0.0%)	61.1 (0.0%)
C	All	48.9	44.4 (-4.4%)	46.7 (-2.2%)	44.4 (-4.4%)	46.7 (-2.2%)	46.7 (-2.2%)	42.2 (-6.7%)	48.9 (0.0%)
All	All	62.5	55.1 (-7.4%)	60.8 (-1.7%)	61.1 (-1.4%)	60.8 (-1.7%)	61.5 (-1.0%)	61.1 (-1.4%)	62.5 (0.0%)

Table L.1-99. Percent of months outside the 55.4°F to 68°F optimal water temperature range for outmigrating spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Clear Creek below Whiskeytown, October through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	10	25.0	100.0	100.0	100.0	100.0	100.0	100.0
W	11	96.4	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	10	7.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	11	85.7	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	44.4	100.0	100.0	100.0	100.0	100.0	100.0
BN	11	77.8	94.4	100.0	100.0	100.0	100.0	100.0
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	10	50.0	79.2	100.0	100.0	100.0	100.0	100.0
D	11	70.8	87.5	100.0	100.0	100.0	100.0	100.0
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	10	66.7	86.7	93.3	93.3	93.3	93.3	93.3
C	11	53.3	73.3	86.7	86.7	86.7	86.7	86.7
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	10	38.8	92.9	99.0	99.0	99.0	99.0	99.0
All	11	78.8	91.9	98.0	98.0	98.0	98.0	98.0
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	73.8	100.0	100.0	100.0	100.0	100.0	100.0
AN	All	65.9	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	74.1	98.1	100.0	100.0	100.0	100.0	100.0
D	All	73.6	88.9	100.0	100.0	100.0	100.0	100.0
C	All	73.3	86.7	93.3	91.1	93.3	93.3	93.3
All	All	72.6	94.9	99.0	98.6	99.0	99.0	99.0

Table L.1-100. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for outmigrating spring-run Chinook salmon yearlings without food limitation by water year type and month, and for all years combined, Clear Creek below Whiskeytown, October through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	93.3	93.3 (0.0%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	11	86.7	80.0 (-6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	99.0	99.0 (0.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)
All	11	98.0	97.0 (-1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	93.3	91.1 (-2.2%)	97.8 (4.4%)	97.8 (4.4%)	97.8 (4.4%)	97.8 (4.4%)	97.8 (4.4%)	97.8 (4.4%)
All	All	99.0	98.6 (-0.3%)	99.7 (0.7%)	99.7 (0.7%)	99.7 (0.7%)	99.7 (0.7%)	99.7 (0.7%)	99.7 (0.7%)

Table L.1-101. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Keswick, October through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-102. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Keswick, October through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-103. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, October through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-104. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, October through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-105. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Hamilton City, October through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-106. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Sacramento River at Hamilton City, October through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-107. Percent of months above the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Clear Creek below Whiskeytown, October through December (BA scenarios).

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-108. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for outmigrating spring-run Chinook salmon yearlings by water year type and month, and for all years combined, Clear Creek below Whiskeytown, October through December (EIS scenarios).

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.4 Central Valley Steelhead

L.1.3.4.1 Adult Migration and Holding

Water temperature-related effects on steelhead adult migration and holding were evaluated by assessing: (1) the percent of months with water temperature outside the 41°F to 66.2°F range of minimal migration impairment (Keefer et al. 2009); (2) the percent of months with water temperature above the 69.8°F upper lethal limit to adult migrants (Coutant 1970); and (3) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick, Red Bluff Diversion Dam, and Hamilton City, and in Clear Creek below Whiskeytown (Table L.1-1).

Results for the 41°F to 66.2°F range for minimal migration impairment are presented in Table L.1-109 and Table L.1-110 for Sacramento River at Keswick, in Table L.1-111 and Table L.1-112 for Red Bluff Diversion Dam, in Table L.1-113 and Table L.1-114 for Hamilton City, and in Table L.1-115 and Table L.1-116 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the range was 12.5% and occurred in September of critical water years under Alt 2 Without TUCP Delta VA and Alt 2 Without TUCP Systemwide VA (Table L.1-109 and Table L.1-110). The lowest percent of months outside the range was 0% and occurred in all months and water year types except August of critical water years under Alt 2 with TUCP without VA, Alt 2 Without TUCP Delta VA and Alt 2 Without TUCP Systemwide VA, and in September of critical water years under the NAA, Alt 1, Alt 2 with TUCP without VA,, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP Systemwide VA. Combining all water year types, the percent of months outside the range was 2% or lower for all months under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Red Bluff Diversion Dam, the highest percent of months outside the range was 37.5% and occurred in September of critical water years under the NAA, Alt 1, Alt 2 With TUCP, Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP Systemwide VA (Table L.1-111 and Table L.1-112). The lowest percent of months outside the range was 0% and occurred in all months and water year types except in August of critical water years under the NAA, Alt 1, Alt 2 With TUCP, Without VA, Alt 2 Without TUCP Delta VA, Alt 2 Without TUCP Systemwide VA, and Alt 4, and in September of critical water years under the NAA and all alternatives. Combining all water year types, the percent of months outside the range was 6.1% or lower for all months under the NAA and all alternatives, and peaked in September. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months outside the range was 68.8% and occurred in August of critical water years under Alt 2 With TUCP, Without VA, Alt 2 without TUCP Delta VA, and Alt 4 (Table L.1-113 and Table L.1-114). The lowest percent of months outside the range was 0% and occurred in all months of at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months outside the range was highest in July and August and lowest in

- November through March. Air temperatures and operations drove these temporal patterns.
- At Clear Creek below Whiskeytown, the highest percent of months outside the range was 13.3% and occurred in October of a critical water year type under Alt 1(Table L.1-115 and Table L.1-116). The lowest percent of months outside the range was 0% and occurred in all months of at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months outside the range was highest in August and September and lowest in November through March. Air temperatures and operations drove these temporal patterns.

Results for the 69.8°F upper lethal limit to adult migrants are presented in Table L.1-117 and Table L.1-118 for the Sacramento River at Keswick, Table L.1-119 and Table L.1-120 for Red Bluff Diversion Dam, Table L.1-121 and Table L.1-122 for Hamilton City, and Table L.1-123 and Table L.1-124 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures did not exceed the upper lethal limit to adult migrants in any month, water year type, or alternative (Table L.1-117 and Table L.1-118).
- At Red Bluff Diversion Dam, the highest percent of months above the lethal limit was 18.8% and occurred in August of critical water years under Alt 1 (Table L.1-119 and Table L.1-120). The lowest percent of months above the lethal limit was 0% and occurred during all months of most water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the lethal limit was 3% or lower for all months under the NAA and all alternatives.
- At Hamilton City, the highest percent of months above the lethal limit was 25% and occurred in September of critical water years under Alt 1, Alt 2 With TUCP Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP systemwide VA (Table L.1-121 and Table L.1-122). The lowest percent of months above the lethal limit was 0% and occurred during all months of most water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the lethal limit was 4% or lower for all months under the NAA and all alternatives.
- In Clear Creek below Whiskeytown, the highest percent of months above the lethal limit was 25% and occurred in August of critical water years under Alt 2 Without TUCP Without VA and in September of critical water years under Alt 2 Without TUCP Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP systemwide VA (Table L.1-123 and Table L.1-124). The lowest percent of months above the lethal limit was 0% and occurred during all months of most water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the lethal limit peaked during September and was lowest from November to March under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Results for the 59.9°F pathogen virulence threshold for adult migration and holding are presented in Table L.1-125 and Table L.1-126 for the Sacramento River at Keswick, in Table L.1-127 and Table L.1-128 for Red Bluff Diversion Dam, in Table L.1-129 and Table L.1-130 for Hamilton City, and Table L.1-131 and Table L.1-132 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months above the pathogen virulence threshold was 53.3% and occurred in October of critical water years under Alt 2 With TUCP, Without VA, Alt 2 Without TUCP Delta VA, and Alt 2 Without TUCP systemwide VA (Table L.1-125 and Table L.1-126). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during all months of most water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold peaked during October and was lowest from November to March and during July under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Red Bluff Diversion Dam, the highest percent of months above the pathogen virulence threshold was 100% and occurred in September of critical water years under Alt 1, Alt 2 With TUCP without VA and Alt 2 Without TUCP systemwide VA (Table L.1-127 and Table L.1-128). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during September through March of at least two water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold peaked during August and September and was lowest from November to March under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months above the pathogen virulence threshold was 100% and occurred during July, August and September of at least 2 water year types under the NAA and all alternatives (Table L.1-129 and Table L.1-130). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during October through March of all water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold peaked during August and was lowest from November to March under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, the highest percent of months above the pathogen virulence threshold was 13.3% and occurred during October and November of critical water years under Alt 1(Table L.1-131 and Table L.1-132). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during all months of at least three water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold was 4.0% or lower in all months. Air temperatures and operations drove these temporal patterns.

Table L.1-109. Percent of months outside the 41°F to 66.2°F water temperature range for minimal adult steelhead migration impairment by month and water year type and for all years combined, Sacramento River at Keswick, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	8	57.1	0.0	0.0	0.0	0.0	0.0	0.0
W	9	10.7	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	30.8	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	66.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	61.1	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	9	16.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	58.3	0.0	0.0	0.0	0.0	0.0	0.0
D	8	54.2	0.0	0.0	0.0	0.0	0.0	0.0
D	9	25.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	81.3	0.0	0.0	0.0	0.0	0.0	0.0
C	8	93.8	0.0	0.0	0.0	0.0	6.3	6.3
C	9	31.3	0.0	6.3	0.0	6.3	12.5	12.5
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	48.5	0.0	0.0	0.0	0.0	0.0	0.0
All	8	65.7	0.0	0.0	0.0	0.0	1.0	1.0
All	9	17.2	0.0	1.0	0.0	1.0	2.0	2.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	9.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	11.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	17.3	0.0	0.0	0.0	0.0	0.0	0.0
D	All	15.3	0.0	0.0	0.0	0.0	0.0	0.0
C	All	23.4	0.0	0.7	0.7	0.0	0.7	2.1
All	All	14.8	0.0	0.1	0.1	0.0	0.1	0.3

Table L.1-110. Percent (difference in percent relative to NAA) of months outside the 41°F to 66.2°F water temperature range for minimal adult steelhead migration impairment by month and water year type and for all years combined, Sacramento River at Keswick, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	6.3 (0.0%)	6.3 (0.0%)	0.0 (-6.3%)	12.5 (6.3%)	12.5 (6.3%)	0.0 (-6.3%)	0.0 (-6.3%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	1.0 (0.0%)	1.0 (0.0%)	0.0 (-1.0%)	2.0 (1.0%)	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.7	0.7 (0.0%)	1.4 (0.7%)	0.0 (-0.7%)	2.1 (1.4%)	2.1 (1.4%)	0.0 (-0.7%)	0.0 (-0.7%)
All	All	0.1	0.1 (0.0%)	0.2 (0.1%)	0.0 (-0.1%)	0.3 (0.2%)	0.3 (0.2%)	0.0 (-0.1%)	0.0 (-0.1%)

Table L.1-111. Percent of months outside the 41°F to 66.2°F water temperature range for minimal adult steelhead migration impairment by month and water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	92.9	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	84.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	6.3	0.0	12.5	12.5	12.5
C	9	100.0	0.0	31.3	6.3	31.3	31.3	31.3
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	1.0	0.0	2.0	2.0	2.0
All	9	96.0	0.0	5.1	1.0	5.1	5.1	5.1
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	32.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	31.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	33.3	0.0	0.0	0.0	0.0	0.0	0.0
D	All	33.3	0.0	0.0	0.0	0.0	0.0	0.0
C	All	34.0	0.0	4.3	5.7	0.7	5.0	5.0
All	All	32.9	0.0	0.7	0.9	0.1	0.8	0.8

Table L.1-112. Percent (difference in percent relative to NAA) of months outside the 41°F to 66.2°F water temperature range for minimal adult steelhead migration impairment by month and water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	6.3	18.8 (12.5%)	12.5 (6.3%)	0.0 (-6.3%)	12.5 (6.3%)	18.8 (12.5%)	0.0 (-6.3%)	6.3 (0.0%)
C	9	31.3	31.3 (0.0%)	37.5 (6.3%)	6.3 (-25.0%)	37.5 (6.3%)	37.5 (6.3%)	12.5 (-18.8%)	12.5 (-18.8%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	1.0	3.0 (2.0%)	2.0 (1.0%)	0.0 (-1.0%)	2.0 (1.0%)	3.0 (2.0%)	0.0 (-1.0%)	1.0 (0.0%)
All	9	5.1	5.1 (0.0%)	6.1 (1.0%)	1.0 (-4.0%)	6.1 (1.0%)	6.1 (1.0%)	2.0 (-3.0%)	2.0 (-3.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	4.3	5.7 (1.4%)	5.7 (1.4%)	0.7 (-3.5%)	5.7 (1.4%)	6.4 (2.1%)	1.4 (-2.8%)	2.1 (-2.1%)
All	All	0.7	0.9 (0.2%)	0.9 (0.2%)	0.1 (-0.6%)	0.9 (0.2%)	1.0 (0.3%)	0.2 (-0.4%)	0.3 (-0.3%)

Table L.1-113. Percent of months outside the 41°F to 66.2°F water temperature range for minimal adult steelhead migration impairment by month and water year type and for all years combined, Sacramento River at Hamilton City, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	46.4	7.1	3.6	3.6	7.1	7.1
W	8	100.0	28.6	7.1	7.1	7.1	7.1	7.1
W	9	100.0	14.3	0.0	0.0	0.0	0.0	0.0
W	10	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	30.8	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	15.4	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	22.2	5.6	5.6	5.6	5.6	5.6
BN	8	100.0	16.7	0.0	5.6	5.6	5.6	5.6

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	11.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	16.7	0.0	4.2	4.2	4.2	4.2
D	8	100.0	8.3	8.3	4.2	4.2	4.2	4.2
D	9	100.0	8.3	8.3	8.3	8.3	12.5	12.5
D	10	8.3	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	31.3	50.0	62.5	50.0	50.0	31.3
C	8	100.0	43.8	62.5	62.5	68.8	68.8	62.5
C	9	100.0	25.0	50.0	43.8	62.5	62.5	62.5
C	10	40.0	0.0	13.3	0.0	13.3	13.3	13.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	30.3	11.1	13.1	11.1	12.1	9.1
All	8	100.0	22.2	14.1	14.1	15.2	15.2	14.1
All	9	100.0	10.1	10.1	9.1	12.1	13.1	13.1
All	10	11.2	0.0	2.0	0.0	2.0	2.0	2.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	33.7	9.9	1.6	1.6	1.2	1.2	1.6
AN	All	32.8	5.0	0.0	0.0	0.0	0.0	0.0
BN	All	34.6	4.3	0.6	0.0	1.2	1.2	1.2
D	All	34.3	3.7	1.9	2.3	1.9	1.9	2.3
C	All	38.3	11.3	19.9	18.4	19.1	22.0	22.0
All	All	34.6	7.0	4.2	3.9	4.0	4.5	4.7

Table L.1-114. Percent (difference in percent relative to NAA) of months outside the 41°F to 66.2°F water temperature range for minimal adult steelhead migration impairment by month and water year type and for all years combined, Sacramento River at Hamilton City, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	7.1	3.6 (-3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	3.6 (-3.6%)	14.3 (7.1%)	3.6 (-3.6%)
W	8	7.1	10.7 (3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	10.7 (3.6%)	10.7 (3.6%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	5.6	0.0 (-5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)
BN	8	0.0	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)
D	8	8.3	8.3 (0.0%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	8.3 (0.0%)
D	9	8.3	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	12.5 (4.2%)	12.5 (4.2%)	12.5 (4.2%)	8.3 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	50.0	37.5 (-12.5%)	31.3 (-18.8%)	56.3 (6.3%)	43.8 (-6.3%)	50.0 (0.0%)	50.0 (0.0%)	62.5 (12.5%)
C	8	62.5	62.5 (0.0%)	68.8 (6.3%)	62.5 (0.0%)	68.8 (6.3%)	62.5 (0.0%)	50.0 (-12.5%)	68.8 (6.3%)
C	9	50.0	50.0 (0.0%)	56.3 (6.3%)	43.8 (-6.3%)	56.3 (6.3%)	62.5 (12.5%)	31.3 (-18.8%)	31.3 (-18.8%)
C	10	13.3	13.3 (0.0%)	13.3 (0.0%)	0.0 (-13.3%)	13.3 (0.0%)	13.3 (0.0%)	0.0 (-13.3%)	6.7 (-6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	11.1	8.1 (-3.0%)	9.1 (-2.0%)	13.1 (2.0%)	11.1 (0.0%)	11.1 (0.0%)	14.1 (3.0%)	12.1 (1.0%)
All	8	14.1	15.2 (1.0%)	15.2 (1.0%)	14.1 (0.0%)	15.2 (1.0%)	14.1 (0.0%)	12.1 (-2.0%)	16.2 (2.0%)
All	9	10.1	10.1 (0.0%)	11.1 (1.0%)	9.1 (-1.0%)	12.1 (2.0%)	13.1 (3.0%)	9.1 (-1.0%)	7.1 (-3.0%)
All	10	2.0	2.0 (0.0%)	2.0 (0.0%)	0.0 (-2.0%)	2.0 (0.0%)	2.0 (0.0%)	0.0 (-2.0%)	1.0 (-1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	1.6	1.6 (0.0%)	1.6 (0.0%)	1.6 (0.0%)	1.6 (0.0%)	1.2 (-0.4%)	3.2 (1.6%)	1.6 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.6	0.0 (-0.6%)	1.2 (0.6%)	1.2 (0.6%)	1.2 (0.6%)	1.2 (0.6%)	1.2 (0.6%)	0.6 (0.0%)
D	All	1.9	2.3 (0.5%)	1.9 (0.0%)	1.9 (0.0%)	2.3 (0.5%)	2.3 (0.5%)	1.9 (0.0%)	1.9 (0.0%)
C	All	19.9	18.4 (-1.4%)	19.1 (-0.7%)	18.4 (-1.4%)	20.6 (0.7%)	21.3 (1.4%)	14.9 (-5.0%)	19.1 (-0.7%)
All	All	4.2	3.9 (-0.2%)	4.2 (0.0%)	4.0 (-0.1%)	4.5 (0.3%)	4.5 (0.3%)	3.9 (-0.2%)	4.0 (-0.1%)

Table L.1-115. Percent of months outside the 41°F to 66.2°F water temperature range for minimal adult steelhead migration impairment by month and water year type and for all years combined, Clear Creek below Whiskeytown, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	57.1	0.0	0.0	0.0	0.0	0.0	0.0
W	8	67.9	0.0	0.0	0.0	0.0	0.0	0.0
W	9	21.4	0.0	0.0	0.0	0.0	0.0	0.0
W	10	7.1	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	69.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	69.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	72.2	5.6	0.0	0.0	0.0	0.0	0.0
BN	8	83.3	5.6	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	9	66.7	16.7	5.6	0.0	11.1	11.1	11.1
BN	10	44.4	11.1	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	87.5	20.8	0.0	0.0	0.0	0.0	0.0
D	8	91.7	37.5	0.0	0.0	0.0	0.0	0.0
D	9	75.0	37.5	0.0	0.0	0.0	0.0	0.0
D	10	54.2	29.2	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	8.3	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	93.8	31.3	0.0	12.5	12.5	12.5	12.5
C	8	87.5	37.5	6.3	18.8	25.0	18.8	18.8
C	9	87.5	43.8	6.3	18.8	25.0	25.0	25.0
C	10	66.7	26.7	0.0	13.3	13.3	13.3	13.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	74.7	11.1	0.0	2.0	2.0	2.0	2.0
All	8	79.8	16.2	1.0	3.0	4.0	3.0	3.0
All	9	51.5	19.2	2.0	3.0	6.1	6.1	6.1
All	10	34.7	13.3	0.0	2.0	2.0	2.0	2.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	3.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	17.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	16.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	30.9	4.3	0.6	0.6	0.0	1.2	1.2
D	All	35.2	13.9	0.0	0.0	0.0	0.0	0.0
C	All	37.6	15.6	1.4	3.5	7.1	8.5	7.8
All	All	27.3	6.6	0.3	0.7	1.1	1.6	1.5

Table L.1-116. Percent (difference in percent relative to NAA) of months outside the 41°F to 66.2°F water temperature range for minimal adult steelhead migration impairment by month and water year type and for all years combined, Clear Creek below Whiskeytown, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.6	0.6 (0.0%)	1.2 (0.6%)	0.6 (0.0%)	0.6 (0.0%)	0.6 (0.0%)	0.0 (-0.6%)	0.6 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.4	3.5 (2.1%)	2.8 (1.4%)	3.5 (2.1%)	3.5 (2.1%)	3.5 (2.1%)	2.8 (1.4%)	4.3 (2.8%)
All	All	0.3	0.7 (0.3%)	0.7 (0.3%)	0.7 (0.3%)	0.7 (0.3%)	0.7 (0.3%)	0.4 (0.1%)	0.8 (0.4%)

Table L.1-117. Percent of months above the 69.8°F lethal water temperature limit for adult steelhead migration by water year type and for all years combined, Sacramento River at Keswick, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	9	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	8	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	4.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	3.0	0.0	0.0	0.0	0.0	0.0	0.0
All	9	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	1.2	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.9	0.0	0.0	0.0	0.0	0.0	0.0
C	All	2.1	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.9	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-118. Percent (difference in percent relative to NAA) of months above the 69.8°F lethal water temperature limit for adult steelhead migration by water year type and for all years combined, Sacramento River at Keswick, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-119. Percent of months above the 69.8°F lethal water temperature limit for adult steelhead migration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	96.4	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	10.7	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	44.4	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	95.8	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	70.8	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	0.0	0.0	6.3	6.3	6.3
C	9	81.3	0.0	6.3	0.0	0.0	12.5	12.5
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	98.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	0.0	0.0	1.0	1.0	1.0
All	9	43.4	0.0	1.0	0.0	0.0	2.0	2.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	23.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	23.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	27.2	0.0	0.0	0.0	0.0	0.0	0.0
D	All	29.6	0.0	0.0	0.0	0.0	0.0	0.0
C	All	31.9	0.0	0.7	2.8	0.0	0.7	2.1
All	All	26.9	0.0	0.1	0.4	0.0	0.1	0.3

Table L.1-120. Percent (difference in percent relative to NAA) of months above the 69.8°F lethal water temperature limit for adult steelhead migration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	18.8 (18.8%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	6.3 (0.0%)	12.5 (6.3%)	0.0 (-6.3%)	12.5 (6.3%)	12.5 (6.3%)	0.0 (-6.3%)	0.0 (-6.3%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	3.0 (3.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	1.0 (0.0%)	2.0 (1.0%)	0.0 (-1.0%)	2.0 (1.0%)	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.7	2.8 (2.1%)	2.1 (1.4%)	0.0 (-0.7%)	2.1 (1.4%)	2.1 (1.4%)	0.0 (-0.7%)	0.0 (-0.7%)
All	All	0.1	0.4 (0.3%)	0.3 (0.2%)	0.0 (-0.1%)	0.3 (0.2%)	0.3 (0.2%)	0.0 (-0.1%)	0.0 (-0.1%)

Table L.1-121. Percent of months above the 69.8°F lethal water temperature limit for adult steelhead migration by water year type and for all years combined, Sacramento River at Hamilton City, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	7.1	0.0	0.0	0.0	0.0	0.0
W	8	100.0	7.1	0.0	0.0	0.0	0.0	0.0
W	9	64.3	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	83.3	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	4.2
D	9	95.8	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	6.3	0.0	0.0	0.0
C	8	100.0	0.0	6.3	0.0	12.5	12.5	6.3
C	9	100.0	0.0	12.5	6.3	25.0	25.0	25.0
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	2.0	0.0	1.0	0.0	0.0	0.0
All	8	100.0	2.0	1.0	0.0	2.0	2.0	2.0
All	9	82.8	0.0	2.0	1.0	4.0	4.0	4.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	29.4	1.6	0.0	0.0	0.0	0.0	0.0
AN	All	30.3	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	31.5	0.0	0.0	0.0	0.0	0.0	0.0
D	All	32.9	0.0	0.0	0.0	0.0	0.0	0.0
C	All	34.0	0.0	2.1	5.0	1.4	4.3	4.3
All	All	31.5	0.4	0.3	0.8	0.2	0.7	0.7

Table L.1-122. Percent (difference in percent relative to NAA) of months above the 69.8°F lethal water temperature limit for adult steelhead migration by water year type and for all years combined, Sacramento River at Hamilton City, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)
C	8	6.3	18.8 (12.5%)	12.5 (6.3%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	0.0 (-6.3%)	6.3 (0.0%)
C	9	12.5	25.0 (12.5%)	25.0 (12.5%)	0.0 (-12.5%)	25.0 (12.5%)	25.0 (12.5%)	6.3 (-6.3%)	6.3 (-6.3%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
All	8	1.0	3.0 (2.0%)	2.0 (1.0%)	1.0 (0.0%)	1.0 (0.0%)	3.0 (2.0%)	1.0 (0.0%)	1.0 (0.0%)
All	9	2.0	4.0 (2.0%)	4.0 (2.0%)	0.0 (-2.0%)	4.0 (2.0%)	4.0 (2.0%)	1.0 (-1.0%)	1.0 (-1.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.4 (0.4%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.5 (0.5%)	0.0 (0.0%)	0.0 (0.0%)
C	All	2.1	5.0 (2.8%)	4.3 (2.1%)	1.4 (-0.7%)	3.5 (1.4%)	4.3 (2.1%)	0.7 (-1.4%)	2.1 (0.0%)
All	All	0.3	0.8 (0.4%)	0.7 (0.3%)	0.2 (-0.1%)	0.6 (0.2%)	0.8 (0.4%)	0.2 (-0.1%)	0.3 (0.0%)

Table L.1-123. Percent of months above the 69.8°F lethal water temperature limit for adult steelhead migration by water year type and for all years combined, Clear Creek below Whiskeytown, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2wo TUCP DeltaVA	Alt2woTUCP AllVA
W	7	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	8	14.3	0.0	0.0	0.0	0.0	0.0	0.0
W	9	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	33.3	5.6	0.0	0.0	0.0	0.0	0.0
BN	8	50.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	9	61.1	16.7	5.6	0.0	11.1	11.1	11.1

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2wo TUCP DeltaVA	Alt2woTUCP AllVA
BN	10	33.3	11.1	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	50.0	16.7	0.0	0.0	0.0	0.0	0.0
D	8	50.0	37.5	0.0	0.0	0.0	0.0	0.0
D	9	70.8	37.5	0.0	0.0	0.0	0.0	0.0
D	10	33.3	12.5	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	62.5	31.3	0.0	12.5	12.5	12.5	12.5
C	8	68.8	37.5	6.3	18.8	25.0	18.8	18.8
C	9	87.5	43.8	6.3	18.8	25.0	25.0	25.0
C	10	53.3	26.7	0.0	13.3	13.3	13.3	13.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2wo TUCP DeltaVA	Alt2woTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	33.3	10.1	0.0	2.0	2.0	2.0	2.0
All	8	37.4	16.2	1.0	3.0	4.0	3.0	3.0
All	9	48.5	19.2	2.0	3.0	6.1	6.1	6.1
All	10	22.4	9.2	0.0	2.0	2.0	2.0	2.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	5.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	1.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	19.8	4.3	0.6	0.6	0.0	1.2	1.2
D	All	22.7	11.6	0.0	0.0	0.0	0.0	0.0
C	All	30.5	15.6	1.4	3.5	7.1	8.5	7.8
All	All	15.7	6.1	0.3	0.7	1.1	1.6	1.5

Table L.1-124. Percent (difference in percent relative to NAA) of months above the 69.8°F lethal water temperature limit for adult steelhead migration by water year type and for all years combined, Clear Creek below Whiskeytown, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.6	0.6 (0.0%)	1.2 (0.6%)	0.6 (0.0%)	0.6 (0.0%)	0.6 (0.0%)	0.0 (-0.6%)	0.6 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.4	3.5 (2.1%)	2.8 (1.4%)	3.5 (2.1%)	3.5 (2.1%)	3.5 (2.1%)	2.8 (1.4%)	4.3 (2.8%)
All	All	0.3	0.7 (0.3%)	0.7 (0.3%)	0.7 (0.3%)	0.7 (0.3%)	0.7 (0.3%)	0.4 (0.1%)	0.8 (0.4%)

Table L.1-125. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult steelhead migration by water year type and for all years combined, Sacramento River at Keswick, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	57.1	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	38.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	10	33.3	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	12.5	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	25.0	6.3	18.8	18.8	18.8
C	9	100.0	6.3	37.5	18.8	50.0	50.0	50.0
C	10	46.7	33.3	46.7	33.3	53.3	53.3	53.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	4.0	1.0	3.0	3.0	3.0
All	9	100.0	1.0	6.1	3.0	8.1	8.1	8.1
All	10	37.8	5.1	7.1	5.1	8.2	8.2	8.2
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	39.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	37.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	37.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	34.7	0.0	0.0	0.0	0.0	0.0	0.0
C	All	39.0	4.3	12.1	12.8	6.4	13.5	13.5
All	All	37.5	0.7	1.9	2.0	1.0	2.1	2.1

Table L.1-126. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult steelhead migration by water year type and for all years combined, Sacramento River at Keswick, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	25.0	31.3 (6.3%)	25.0 (0.0%)	6.3 (-18.8%)	25.0 (0.0%)	25.0 (0.0%)	0.0 (-25.0%)	6.3 (-18.8%)
C	9	37.5	37.5 (0.0%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	50.0 (12.5%)	12.5 (-25.0%)	18.8 (-18.8%)
C	10	46.7	46.7 (0.0%)	53.3 (6.7%)	33.3 (-13.3%)	53.3 (6.7%)	53.3 (6.7%)	20.0 (-26.7%)	33.3 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	4.0	5.1 (1.0%)	4.0 (0.0%)	1.0 (-3.0%)	4.0 (0.0%)	4.0 (0.0%)	0.0 (-4.0%)	1.0 (-3.0%)
All	9	6.1	6.1 (0.0%)	7.1 (1.0%)	4.0 (-2.0%)	7.1 (1.0%)	8.1 (2.0%)	2.0 (-4.0%)	3.0 (-3.0%)
All	10	7.1	7.1 (0.0%)	8.2 (1.0%)	5.1 (-2.0%)	8.2 (1.0%)	8.2 (1.0%)	3.1 (-4.1%)	5.1 (-2.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	12.1	12.8 (0.7%)	13.5 (1.4%)	7.1 (-5.0%)	13.5 (1.4%)	14.2 (2.1%)	3.5 (-8.5%)	6.4 (-5.7%)
All	All	1.9	2.0 (0.1%)	2.1 (0.2%)	1.1 (-0.8%)	2.1 (0.2%)	2.2 (0.3%)	0.6 (-1.3%)	1.0 (-0.9%)

Table L.1-127. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult steelhead migration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	67.9	10.7	10.7	10.7	10.7	10.7
W	8	100.0	50.0	14.3	7.1	7.1	7.1	7.1
W	9	100.0	42.9	0.0	0.0	0.0	0.0	0.0
W	10	89.3	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	30.8	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	46.2	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	23.1	0.0	0.0	0.0	0.0	0.0
AN	10	84.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	33.3	16.7	16.7	11.1	16.7	16.7
BN	8	100.0	38.9	22.2	5.6	5.6	5.6	16.7

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	9	100.0	38.9	33.3	22.2	22.2	22.2	16.7
BN	10	72.2	0.0	5.6	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	33.3	16.7	4.2	4.2	4.2	8.3
D	8	100.0	20.8	25.0	8.3	8.3	8.3	12.5
D	9	100.0	20.8	33.3	33.3	33.3	33.3	33.3
D	10	75.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	81.3	81.3	81.3	68.8	68.8	62.5
C	8	100.0	93.8	81.3	81.3	87.5	81.3	81.3
C	9	100.0	62.5	93.8	75.0	93.8	93.8	87.5
C	10	100.0	40.0	60.0	60.0	60.0	53.3	53.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	50.5	23.2	20.2	17.2	18.2	18.2
All	8	100.0	47.5	27.3	18.2	19.2	18.2	21.2
All	9	100.0	37.4	29.3	24.2	27.3	27.3	25.3
All	10	83.7	6.1	10.2	9.2	9.2	8.2	8.2
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	43.3	17.9	2.8	2.0	2.0	2.0	2.0
AN	All	42.0	10.9	0.0	0.0	0.0	0.0	0.0
BN	All	41.4	12.3	8.6	6.8	4.9	4.3	4.9
D	All	41.7	8.3	8.3	8.3	5.1	5.1	5.1
C	All	44.7	31.2	35.5	36.9	33.3	34.8	33.3
All	All	42.6	15.7	10.0	9.7	8.0	8.1	8.0

Table L.1-128. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult steelhead migration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	10.7	7.1 (-3.6%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	14.3 (3.6%)	10.7 (0.0%)
W	8	14.3	10.7 (-3.6%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	14.3 (0.0%)	14.3 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	16.7	11.1 (-5.6%)	11.1 (-5.6%)	11.1 (-5.6%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)
BN	8	22.2	27.8 (5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	16.7 (-5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	11.1 (-11.1%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	33.3	22.2 (-11.1%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	27.8 (-5.6%)	27.8 (-5.6%)
BN	10	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	16.7	16.7 (0.0%)	4.2 (-12.5%)	4.2 (-12.5%)	4.2 (-12.5%)	4.2 (-12.5%)	8.3 (-8.3%)	8.3 (-8.3%)
D	8	25.0	25.0 (0.0%)	12.5 (-12.5%)	12.5 (-12.5%)	12.5 (-12.5%)	8.3 (-16.7%)	4.2 (-20.8%)	8.3 (-16.7%)
D	9	33.3	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	29.2 (-4.2%)	20.8 (-12.5%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	81.3	81.3 (0.0%)	68.8 (-12.5%)	81.3 (0.0%)	68.8 (-12.5%)	68.8 (-12.5%)	62.5 (-18.8%)	93.8 (12.5%)
C	8	81.3	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	81.3 (0.0%)	62.5 (-18.8%)	81.3 (0.0%)
C	9	93.8	100.0 (6.3%)	100.0 (6.3%)	87.5 (-6.3%)	93.8 (0.0%)	100.0 (6.3%)	75.0 (-18.8%)	81.3 (-12.5%)
C	10	60.0	60.0 (0.0%)	66.7 (6.7%)	60.0 (0.0%)	53.3 (-6.7%)	66.7 (6.7%)	40.0 (-20.0%)	46.7 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	23.2	21.2 (-2.0%)	17.2 (-6.1%)	19.2 (-4.0%)	18.2 (-5.1%)	18.2 (-5.1%)	19.2 (-4.0%)	23.2 (0.0%)
All	8	27.3	28.3 (1.0%)	22.2 (-5.1%)	20.2 (-7.1%)	22.2 (-5.1%)	20.2 (-7.1%)	16.2 (-11.1%)	21.2 (-6.1%)
All	9	29.3	28.3 (-1.0%)	27.3 (-2.0%)	25.3 (-4.0%)	26.3 (-3.0%)	27.3 (-2.0%)	25.3 (-4.0%)	23.2 (-6.1%)
All	10	10.2	9.2 (-1.0%)	10.2 (0.0%)	9.2 (-1.0%)	9.2 (-1.0%)	10.2 (0.0%)	6.1 (-4.1%)	7.1 (-3.1%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	2.8	2.0 (-0.8%)	2.0 (-0.8%)	2.0 (-0.8%)	2.0 (-0.8%)	2.0 (-0.8%)	3.6 (0.8%)	2.8 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	8.6	6.8 (-1.9%)	4.9 (-3.7%)	3.7 (-4.9%)	6.2 (-2.5%)	5.6 (-3.1%)	5.6 (-3.1%)	6.2 (-2.5%)
D	All	8.3	8.3 (0.0%)	5.6 (-2.8%)	5.6 (-2.8%)	5.6 (-2.8%)	5.1 (-3.2%)	4.6 (-3.7%)	4.2 (-4.2%)
C	All	35.5	36.9 (1.4%)	36.2 (0.7%)	35.5 (0.0%)	34.0 (-1.4%)	35.5 (0.0%)	27.0 (-8.5%)	34.0 (-1.4%)
All	All	10.0	9.7 (-0.3%)	8.5 (-1.5%)	8.2 (-1.8%)	8.4 (-1.6%)	8.4 (-1.6%)	7.4 (-2.6%)	8.3 (-1.7%)

Table L.1-129. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult steelhead migration by water year type and for all years combined, Sacramento River at Hamilton City, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	100.0	92.9	92.9	92.9	92.9	92.9
W	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	9	100.0	100.0	75.0	71.4	71.4	71.4	67.9
W	10	100.0	35.7	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	100.0	76.9	92.3	84.6	92.3	92.3
AN	8	100.0	100.0	100.0	92.3	92.3	92.3	92.3
AN	9	100.0	100.0	76.9	76.9	76.9	76.9	76.9
AN	10	100.0	53.8	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	100.0	88.9	88.9	94.4	88.9	94.4
BN	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	10	100.0	61.1	27.8	27.8	27.8	27.8	27.8
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	10	91.7	50.0	45.8	54.2	54.2	54.2	54.2
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	4.2	0.0	0.0	0.0	0.0	0.0
C	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	10	100.0	80.0	93.3	100.0	93.3	86.7	86.7
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	3	0.0	6.3	0.0	6.3	0.0	0.0	0.0
All	7	100.0	100.0	92.9	94.9	94.9	94.9	96.0
All	8	100.0	100.0	100.0	99.0	99.0	99.0	99.0
All	9	100.0	100.0	89.9	88.9	88.9	88.9	87.9
All	10	98.0	53.1	30.6	33.7	32.7	31.6	31.6
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	2.0	0.0	1.0	0.0	0.0	0.0
W	All	44.4	37.3	29.8	32.1	29.4	29.4	29.4
AN	All	43.7	38.7	27.7	32.8	28.6	27.7	28.6
BN	All	44.4	40.1	35.2	37.0	35.2	35.8	35.2
D	All	43.5	39.4	38.4	40.7	39.4	39.4	39.4
C	All	44.7	43.3	44.0	44.0	45.4	44.0	43.3
All	All	44.2	39.4	34.8	37.1	35.3	35.1	34.9

Table L.1-130. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult steelhead migration by water year type and for all years combined, Sacramento River at Hamilton City, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	100.0 (7.1%)	92.9 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	75.0	96.4 (21.4%)	67.9 (-7.1%)	67.9 (-7.1%)	67.9 (-7.1%)	64.3 (-10.7%)	78.6 (3.6%)	82.1 (7.1%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	76.9	100.0 (23.1%)	84.6 (7.7%)	84.6 (7.7%)	76.9 (0.0%)	84.6 (7.7%)	100.0 (23.1%)	76.9 (0.0%)
AN	8	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	76.9	100.0 (23.1%)	76.9 (0.0%)	76.9 (0.0%)	69.2 (-7.7%)	76.9 (0.0%)	92.3 (15.4%)	100.0 (23.1%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	88.9	94.4 (5.6%)	88.9 (0.0%)	88.9 (0.0%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	88.9 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)
BN	10	27.8	38.9 (11.1%)	22.2 (-5.6%)	16.7 (-11.1%)	22.2 (-5.6%)	27.8 (0.0%)	27.8 (0.0%)	27.8 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	45.8	66.7 (20.8%)	54.2 (8.3%)	54.2 (8.3%)	58.3 (12.5%)	54.2 (8.3%)	45.8 (0.0%)	45.8 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	93.3	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)
All	7	92.9	97.0 (4.0%)	93.9 (1.0%)	93.9 (1.0%)	93.9 (1.0%)	94.9 (2.0%)	99.0 (6.1%)	92.9 (0.0%)
All	8	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	89.9	99.0 (9.1%)	87.9 (-2.0%)	87.9 (-2.0%)	86.9 (-3.0%)	86.9 (-3.0%)	91.9 (2.0%)	94.9 (5.1%)
All	10	30.6	37.8 (7.1%)	31.6 (1.0%)	30.6 (0.0%)	32.7 (2.0%)	32.7 (2.0%)	31.6 (1.0%)	30.6 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
W	All	29.8	32.1 (2.4%)	29.0 (-0.8%)	29.0 (-0.8%)	29.0 (-0.8%)	28.6 (-1.2%)	31.3 (1.6%)	30.6 (0.8%)
AN	All	27.7	32.8 (5.0%)	27.7 (0.0%)	27.7 (0.0%)	26.1 (-1.7%)	28.6 (0.8%)	31.9 (4.2%)	30.3 (2.5%)
BN	All	35.2	37.0 (1.9%)	34.6 (-0.6%)	34.0 (-1.2%)	35.2 (0.0%)	35.8 (0.6%)	35.2 (0.0%)	35.2 (0.0%)
D	All	38.4	40.7 (2.3%)	39.4 (0.9%)	39.4 (0.9%)	39.8 (1.4%)	39.4 (0.9%)	38.4 (0.0%)	38.4 (0.0%)
C	All	44.0	44.0 (0.0%)	44.0 (0.0%)	44.0 (0.0%)	44.0 (0.0%)	44.0 (0.0%)	44.0 (0.0%)	44.7 (0.7%)
All	All	34.8	37.1 (2.2%)	34.7 (-0.1%)	34.6 (-0.2%)	34.7 (-0.1%)	34.9 (0.1%)	35.8 (1.0%)	35.5 (0.7%)

Table L.1-131. Percent of months above the 59.9°F pathogen virulence water temperature threshold for adult steelhead migration by water year type and for all years combined, Clear Creek below Whiskeytown, July through March.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	3.6
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	25.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	7.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	16.7	5.6	0.0	11.1	11.1	11.1

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	10	50.0	11.1	0.0	0.0	0.0	0.0	0.0
BN	11	11.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	20.8	0.0	0.0	0.0	0.0	0.0
D	8	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	9	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	10	54.2	29.2	0.0	0.0	0.0	0.0	0.0
D	11	20.8	8.3	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	37.5	0.0	12.5	12.5	12.5	12.5
C	8	100.0	37.5	6.3	18.8	25.0	18.8	18.8
C	9	100.0	43.8	6.3	18.8	25.0	25.0	25.0
C	10	73.3	26.7	0.0	13.3	13.3	13.3	13.3
C	11	20.0	6.7	6.7	6.7	6.7	6.7	6.7
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	6.3	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	12.1	0.0	2.0	2.0	2.0	2.0
All	8	100.0	16.2	1.0	3.0	4.0	3.0	4.0
All	9	99.0	19.2	2.0	3.0	6.1	6.1	6.1
All	10	41.8	13.3	0.0	2.0	2.0	2.0	2.0
All	11	11.1	3.0	1.0	1.0	1.0	1.0	1.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	36.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	33.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	40.1	4.3	0.6	0.6	0.0	1.2	1.2
D	All	41.7	14.8	0.0	0.0	0.0	0.0	0.0
C	All	44.7	17.0	2.1	5.0	7.8	9.2	8.5
All	All	39.2	7.1	0.4	0.9	1.2	1.7	1.6

Table L.1-132. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult steelhead migration by water year type and for all years combined, Clear Creek below Whiskeytown, July through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	6.7	13.3 (6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	3.0 (2.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	1.0	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.4 (0.4%)	0.4 (0.4%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.6	0.6 (0.0%)	1.2 (0.6%)	0.6 (0.0%)	0.6 (0.0%)	0.6 (0.0%)	0.0 (-0.6%)	0.6 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	2.1	5.0 (2.8%)	2.8 (0.7%)	3.5 (1.4%)	3.5 (1.4%)	3.5 (1.4%)	2.8 (0.7%)	4.3 (2.1%)
All	All	0.4	0.9 (0.4%)	0.7 (0.2%)	0.8 (0.3%)	0.8 (0.3%)	0.7 (0.2%)	0.4 (0.0%)	0.8 (0.3%)

L.1.3.4.2 Spawning

Water temperature-related effects on steelhead spawning were evaluated by assessing: (1) the percent of months with water temperature outside the 45°F to 55°F range for successful spawning (Bell 1991, FERC 1993, Richter and Kolmes 2005); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick and Red Bluff Diversion Dam and in Clear Creek below Whiskeytown (Table L.1-1).

Results for the 45°F to 55°F range for successful spawning are presented in Table L.1-133 and Table L.1-134 for the Sacramento River at Keswick, in Table L.1-135 and Table L.1-136 for Red Bluff Diversion Dam, and in Table L.1-137 and Table L.1-138 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the successful steelhead spawning range was 58.3% and occurred during May of dry water years under the NAA (Table L.1-133 and Table L.1-134). The lowest percent of months outside the range was 0% and occurred during January and March of each water year type under the NAA and all alternatives. Combining all water year types, the percent of months outside the range was highest in April or May depending on alternative and lowest in January and March. Air temperatures and operations drove these temporal patterns.
- At Red Bluff Diversion Dam, the highest percent of months outside the successful steelhead spawning range was 100% and occurred during April of critical years and May of all water year types for the NAA and all alternatives (Table L.1-135 and Table L.1-136). The lowest percent of months outside the range was 0% and occurred during December, January, and February of all water year types under the NAA and all alternatives. Combining all water year types, the percent of months outside the range was highest in May and lowest in December, January, and February for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, the highest percent of months outside the successful steelhead spawning range was 60.7% and occurred during February of wet water years under Alt 3 (Table L.1-137 and Table L.1-138). The lowest percent of months outside the range was 0% and occurred primarily during April through May in all water year types, but also in March and December under some alternatives. Combining all water year types, the percent of months outside the range was highest in January and lowest in April and May for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Results for the 59.9°F pathogen virulence threshold for spawning steelhead are presented in Table L.1-139 and Table L.1-140 for the Sacramento River at Keswick, in Table L.1-141 and Table L.1-142 for Red Bluff Diversion Dam, and in Table L.1-143 and Table L.1-144 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures for all months, water year types, and alternatives were under the virulence threshold (Table L.1-139 and Table L.1-140).
- At Red Bluff Diversion Dam, the highest percent of months above the pathogen virulence threshold was 75% and occurred during May of wet water years under the NAA (Table L.1-141 and Table L.1-142). The lowest percent of months above the threshold was 0% and occurred during December through March in all water year types under the NAA and all alternatives, during April in wet water years under the NAA and all alternatives, and in April of above normal water years under Alt 1 and Alt 2 Without TUCP Systemwide VA. Combining all water year types, the percent of months above the threshold was highest during May and lowest during December through March for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, water temperatures for all months, water year types, and alternatives were under the virulence threshold (Table L.1-143 and Table L.1-144).

Table L.1-133. Percent of months outside the 45°F to 55°F water temperature range for successful steelhead spawning by water year type and for all years combined, Sacramento River at Keswick, December through May.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	12	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	96.4	10.7	10.7	10.7	10.7	10.7	10.7
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	7.1	0.0	0.0	0.0	0.0	0.0
W	5	25.0	10.7	14.3	0.0	0.0	0.0	0.0
AN	12	42.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	92.3	0.0	7.7	7.7	7.7	7.7	7.7
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	0.0	0.0	0.0	0.0	0.0
AN	5	53.8	0.0	15.4	0.0	0.0	0.0	0.0
BN	12	88.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	94.4	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	66.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	5.6	22.2	16.7	11.1	16.7	22.2	16.7
BN	5	100.0	5.6	33.3	0.0	0.0	0.0	0.0
D	12	75.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	95.8	0.0	0.0	0.0	0.0	0.0	0.0
D	2	83.3	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	12.5	20.8	20.8	29.2	33.3	25.0	29.2
D	5	100.0	8.3	58.3	4.2	0.0	8.3	8.3
C	12	86.7	0.0	0.0	0.0	0.0	0.0	0.0
C	1	81.3	0.0	0.0	0.0	0.0	0.0	0.0
C	2	50.0	0.0	12.5	0.0	6.3	6.3	6.3
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	37.5	25.0	12.5	6.3	6.3	6.3	6.3
C	5	100.0	18.8	25.0	6.3	12.5	6.3	6.3
All	12	58.6	0.0	0.0	0.0	0.0	0.0	0.0
All	1	94.9	0.0	0.0	0.0	0.0	0.0	0.0
All	2	79.8	3.0	6.1	4.0	5.1	5.1	5.1
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	10.1	18.2	10.1	10.1	12.1	11.1	11.1
All	5	72.7	9.1	30.3	2.0	2.0	3.0	3.0
W	All							
AN	All	39.9	4.8	4.2	2.4	1.8	1.8	1.8
BN	All	48.1	3.8	3.8	1.3	1.3	1.3	1.3
D	All	59.3	4.6	8.3	1.9	1.9	2.8	3.7
C	All	61.1	4.9	13.2	1.4	5.6	5.6	5.6
All	All	58.9	7.4	8.4	2.1	2.1	4.2	3.2

Table L.1-134. Percent (difference in percent relative to NAA) of months outside the 45°F to 55°F water temperature range for successful steelhead spawning by water year type and for all years combined, Sacramento River at Keswick, December through May.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	12	0.0	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	10.7	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	14.3	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	7.1 (-7.1%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	7.7	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	15.4	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)
BN	12	0.0	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	16.7 (0.0%)	5.6 (-11.1%)	16.7 (0.0%)
BN	5	33.3	0.0 (-33.3%)	5.6 (-27.8%)	0.0 (-33.3%)	0.0 (-33.3%)	5.6 (-27.8%)	0.0 (-33.3%)	22.2 (-11.1%)
D	12	0.0	8.3 (8.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	0.0 (-20.8%)	33.3 (12.5%)	33.3 (12.5%)	25.0 (4.2%)	25.0 (4.2%)	4.2 (-16.7%)	25.0 (4.2%)
D	5	58.3	0.0 (-58.3%)	4.2 (-54.2%)	0.0 (-58.3%)	8.3 (-50.0%)	4.2 (-54.2%)	0.0 (-58.3%)	37.5 (-20.8%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.7 (6.7%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	12.5	12.5 (0.0%)	12.5 (0.0%)	0.0 (-12.5%)	12.5 (0.0%)	12.5 (0.0%)	0.0 (-12.5%)	6.3 (-6.3%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	12.5	0.0 (-12.5%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	0.0 (-12.5%)	18.8 (6.3%)
C	5	25.0	0.0 (-25.0%)	6.3 (-18.8%)	6.3 (-18.8%)	6.3 (-18.8%)	6.3 (-18.8%)	0.0 (-25.0%)	18.8 (-6.3%)
All	12	0.0	4.0 (4.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.1 (5.1%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	6.1	7.1 (1.0%)	6.1 (0.0%)	3.0 (-3.0%)	6.1 (0.0%)	6.1 (0.0%)	4.0 (-2.0%)	5.1 (-1.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	10.1	0.0 (-10.1%)	11.1 (1.0%)	11.1 (1.0%)	11.1 (1.0%)	10.1 (0.0%)	2.0 (-8.1%)	12.1 (2.0%)
All	5	30.3	0.0 (-30.3%)	3.0 (-27.3%)	1.0 (-29.3%)	3.0 (-27.3%)	3.0 (-27.3%)	0.0 (-30.3%)	18.2 (-12.1%)
W	All	4.2	2.4 (-1.8%)	1.8 (-2.4%)	1.8 (-2.4%)	1.8 (-2.4%)	1.8 (-2.4%)	1.8 (-2.4%)	4.2 (0.0%)
AN	All	3.8	1.3 (-2.5%)	1.3 (-2.5%)	0.0 (-3.8%)	1.3 (-2.5%)	1.3 (-2.5%)	1.3 (-2.5%)	1.3 (-2.5%)
BN	All	8.3	1.9 (-6.5%)	2.8 (-5.6%)	1.9 (-6.5%)	3.7 (-4.6%)	3.7 (-4.6%)	0.9 (-7.4%)	7.4 (-0.9%)
D	All	13.2	1.4 (-11.8%)	6.3 (-6.9%)	5.6 (-7.6%)	5.6 (-7.6%)	4.9 (-8.3%)	0.7 (-12.5%)	11.1 (-2.1%)
C	All	8.4	2.1 (-6.3%)	4.2 (-4.2%)	2.1 (-6.3%)	4.2 (-4.2%)	4.2 (-4.2%)	0.0 (-8.4%)	8.4 (0.0%)
All	All	7.7	1.9 (-5.9%)	3.4 (-4.4%)	2.5 (-5.2%)	3.4 (-4.4%)	3.2 (-4.5%)	1.0 (-6.7%)	6.7 (-1.0%)

Table L.1-135. Percent of months outside the 45°F to 55°F water temperature range for successful steelhead spawning by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through May.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	12	10.7	0.0	0.0	0.0	0.0	0.0	0.0
W	1	92.9	0.0	0.0	0.0	0.0	0.0	0.0
W	2	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	7.1	7.1	7.1	7.1	7.1	7.1
W	4	28.6	71.4	75.0	75.0	75.0	75.0	75.0
W	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	35.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	7.7	7.7	7.7	7.7	7.7	7.7
AN	4	76.9	92.3	92.3	92.3	92.3	92.3	92.3
AN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	12	50.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	88.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	22.2	16.7	16.7	16.7	16.7	16.7
BN	4	83.3	100.0	94.4	94.4	94.4	94.4	94.4
BN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	12	29.2	0.0	0.0	0.0	0.0	0.0	0.0
D	1	62.5	0.0	0.0	0.0	0.0	0.0	0.0
D	2	4.2	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	3	4.2	29.2	8.3	12.5	12.5	12.5	12.5
D	4	91.7	95.8	91.7	91.7	91.7	95.8	95.8
D	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	12	40.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	31.3	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	25.0	62.5	50.0	56.3	37.5	37.5	37.5
C	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	12	30.3	0.0	0.0	0.0	0.0	0.0	0.0
All	1	74.7	0.0	0.0	0.0	0.0	0.0	0.0
All	2	7.1	0.0	0.0	0.0	0.0	0.0	0.0
All	3	5.1	24.2	16.2	18.2	15.2	15.2	15.2
All	4	71.7	89.9	88.9	88.9	88.9	89.9	89.9
All	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	41.7	29.8	30.4	29.8	30.4	30.4	30.4
AN	All	51.9	32.9	32.9	32.9	32.9	32.9	32.9
BN	All	53.7	37.0	35.2	35.2	35.2	35.2	35.2
D	All	48.6	37.5	33.3	36.8	34.0	34.0	34.7
C	All	49.5	44.2	42.1	40.0	43.2	40.0	40.0
All	All	48.1	35.7	34.2	34.5	34.5	34.0	34.2

Table L.1-136. Percent (difference in percent relative to NAA) of months outside the 45°F to 55°F water temperature range for successful steelhead spawning by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through May.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	7.1	3.6 (-3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)
W	4	75.0	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	7.7	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)
AN	4	92.3	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	84.6 (-7.7%)	92.3 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	16.7	11.1 (-5.6%)	11.1 (-5.6%)	16.7 (0.0%)	11.1 (-5.6%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)
BN	4	94.4	100.0 (5.6%)	100.0 (5.6%)	100.0 (5.6%)	94.4 (0.0%)	94.4 (0.0%)	100.0 (5.6%)	94.4 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	8.3	25.0 (16.7%)	12.5 (4.2%)	12.5 (4.2%)	12.5 (4.2%)	12.5 (4.2%)	25.0 (16.7%)	8.3 (0.0%)
D	4	91.7	95.8 (4.2%)	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	100.0 (8.3%)	95.8 (4.2%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	50.0	37.5 (-12.5%)	37.5 (-12.5%)	56.3 (6.3%)	31.3 (-18.8%)	37.5 (-12.5%)	56.3 (6.3%)	56.3 (6.3%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	16.2	16.2 (0.0%)	14.1 (-2.0%)	18.2 (2.0%)	13.1 (-3.0%)	15.2 (-1.0%)	21.2 (5.1%)	17.2 (1.0%)
All	4	88.9	90.9 (2.0%)	89.9 (1.0%)	89.9 (1.0%)	88.9 (0.0%)	88.9 (0.0%)	90.9 (2.0%)	89.9 (1.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	30.4	29.8 (-0.6%)	30.4 (0.0%)	30.4 (0.0%)	30.4 (0.0%)	30.4 (0.0%)	30.4 (0.0%)	30.4 (0.0%)
AN	All	32.9	32.9 (0.0%)	32.9 (0.0%)	32.9 (0.0%)	32.9 (0.0%)	32.9 (0.0%)	31.6 (-1.3%)	32.9 (0.0%)
BN	All	35.2	35.2 (0.0%)	35.2 (0.0%)	36.1 (0.9%)	34.3 (-0.9%)	35.2 (0.0%)	36.1 (0.9%)	35.2 (0.0%)
D	All	33.3	36.8 (3.5%)	34.0 (0.7%)	34.0 (0.7%)	34.0 (0.7%)	34.0 (0.7%)	37.5 (4.2%)	34.0 (0.7%)
C	All	42.1	40.0 (-2.1%)	40.0 (-2.1%)	43.2 (1.1%)	38.9 (-3.2%)	40.0 (-2.1%)	43.2 (1.1%)	43.2 (1.1%)
All	All	34.2	34.5 (0.3%)	34.0 (-0.2%)	34.7 (0.5%)	33.7 (-0.5%)	34.0 (-0.2%)	35.4 (1.2%)	34.5 (0.3%)

Table L.1-137. Percent of months outside the 45°F to 55°F water temperature range for successful steelhead spawning by water year type and for all years combined, Clear Creek below Whiskeytown, December through May.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	92.9	0.0	3.6	3.6	3.6	3.6	3.6
W	1	100.0	14.3	53.6	53.6	57.1	57.1	57.1
W	2	67.9	35.7	57.1	57.1	60.7	60.7	60.7
W	3	0.0	25.0	21.4	21.4	21.4	21.4	21.4
W	4	0.0	7.1	0.0	0.0	0.0	0.0	0.0
W	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	100.0	7.1	7.1	7.1	7.1	7.1	7.1
AN	1	100.0	15.4	23.1	38.5	38.5	38.5	38.5
AN	2	76.9	15.4	46.2	53.8	53.8	53.8	53.8
AN	3	0.0	7.7	0.0	7.7	0.0	7.7	7.7
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	83.3	0.0	0.0	5.6	5.6	5.6	5.6
BN	1	100.0	50.0	55.6	38.9	38.9	38.9	38.9
BN	2	55.6	38.9	44.4	38.9	38.9	38.9	38.9
BN	3	0.0	11.1	5.6	11.1	11.1	11.1	11.1
BN	4	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	100.0	5.6	0.0	0.0	0.0	0.0	0.0
D	12	75.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	95.8	41.7	37.5	33.3	33.3	33.3	33.3
D	2	62.5	12.5	12.5	12.5	12.5	12.5	12.5

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	3	0.0	0.0	0.0	4.2	4.2	4.2	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	66.7	0.0	0.0	0.0	0.0	0.0	0.0
C	1	93.8	18.8	18.8	18.8	18.8	18.8	18.8
C	2	56.3	12.5	6.3	12.5	12.5	12.5	12.5
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	83.8	1.0	2.0	3.0	3.0	3.0	3.0
All	1	98.0	28.3	40.4	38.4	39.4	39.4	39.4
All	2	63.6	24.2	34.3	35.4	36.4	36.4	36.4
All	3	0.0	10.1	7.1	10.1	9.1	10.1	9.1
All	4	1.0	2.0	0.0	0.0	0.0	0.0	0.0
All	5	100.0	1.0	0.0	0.0	0.0	0.0	0.0
W	All	60.1	13.7	22.6	13.7	22.6	23.8	23.8
AN	All	63.3	7.6	12.7	11.4	17.7	16.5	17.7
BN	All	57.4	17.6	17.6	18.5	15.7	15.7	15.7
D	All	55.6	9.0	8.3	10.4	8.3	8.3	8.3
C	All	52.6	5.3	4.2	6.3	5.3	5.3	5.3
All	All	57.7	11.1	14.0	12.3	14.5	14.6	14.8

Table L.1-138. Percent (difference in percent relative to NAA) of months outside the 45°F to 55°F water temperature range for successful steelhead spawning by water year type and for all years combined, Clear Creek below Whiskeytown, December through May.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	3.6	0.0 (-3.6%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	0.0 (-3.6%)	0.0 (-3.6%)
W	1	53.6	46.4 (-7.1%)	53.6 (0.0%)	53.6 (0.0%)	53.6 (0.0%)	53.6 (0.0%)	53.6 (0.0%)	53.6 (0.0%)
W	2	57.1	32.1 (-25.0%)	57.1 (0.0%)	57.1 (0.0%)	57.1 (0.0%)	57.1 (0.0%)	60.7 (3.6%)	57.1 (0.0%)
W	3	21.4	3.6 (-17.9%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	17.9 (-3.6%)	21.4 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)
AN	1	23.1	30.8 (7.7%)	38.5 (15.4%)	38.5 (15.4%)	38.5 (15.4%)	38.5 (15.4%)	46.2 (23.1%)	38.5 (15.4%)
AN	2	46.2	30.8 (-15.4%)	53.8 (7.7%)	53.8 (7.7%)	53.8 (7.7%)	53.8 (7.7%)	53.8 (7.7%)	53.8 (7.7%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)
BN	1	55.6	55.6 (0.0%)	38.9 (-16.7%)	38.9 (-16.7%)	38.9 (-16.7%)	38.9 (-16.7%)	38.9 (-16.7%)	38.9 (-16.7%)
BN	2	44.4	50.0 (5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)
BN	3	5.6	0.0 (-5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	37.5	45.8 (8.3%)	33.3 (-4.2%)	33.3 (-4.2%)	33.3 (-4.2%)	33.3 (-4.2%)	33.3 (-4.2%)	37.5 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	2	12.5	16.7 (4.2%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)
D	3	0.0	0.0 (0.0%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	0.0 (0.0%)	4.2 (4.2%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	18.8	25.0 (6.3%)	18.8 (0.0%)	18.8 (0.0%)	18.8 (0.0%)	18.8 (0.0%)	18.8 (0.0%)	18.8 (0.0%)
C	2	6.3	12.5 (6.3%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)	6.3 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	2.0	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	2.0 (0.0%)	3.0 (1.0%)	2.0 (0.0%)	2.0 (0.0%)
All	1	40.4	42.4 (2.0%)	38.4 (-2.0%)	38.4 (-2.0%)	38.4 (-2.0%)	38.4 (-2.0%)	39.4 (-1.0%)	39.4 (-1.0%)
All	2	34.3	28.3 (-6.1%)	34.3 (0.0%)	34.3 (0.0%)	35.4 (1.0%)	34.3 (0.0%)	36.4 (2.0%)	34.3 (0.0%)
All	3	7.1	1.0 (-6.1%)	9.1 (2.0%)	9.1 (2.0%)	9.1 (2.0%)	10.1 (3.0%)	7.1 (0.0%)	9.1 (2.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	22.6	13.7 (-8.9%)	22.6 (0.0%)	22.6 (0.0%)	22.6 (0.0%)	22.6 (0.0%)	22.0 (-0.6%)	22.0 (-0.6%)
AN	All	12.7	11.4 (-1.3%)	16.5 (3.8%)	16.5 (3.8%)	16.5 (3.8%)	17.7 (5.1%)	17.7 (5.1%)	16.5 (3.8%)
BN	All	17.6	18.5 (0.9%)	15.7 (-1.9%)	15.7 (-1.9%)	14.8 (-2.8%)	15.7 (-1.9%)	15.7 (-1.9%)	15.7 (-1.9%)
D	All	8.3	10.4 (2.1%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	7.6 (-0.7%)	9.0 (0.7%)
C	All	4.2	6.3 (2.1%)	4.2 (0.0%)	4.2 (0.0%)	5.3 (1.1%)	4.2 (0.0%)	5.3 (1.1%)	4.2 (0.0%)
All	All	14.0	12.3 (-1.7%)	14.1 (0.2%)	14.1 (0.2%)	14.1 (0.2%)	14.3 (0.3%)	14.1 (0.2%)	14.1 (0.2%)

Table L.1-139. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead spawning by water year type and for all years combined, Sacramento River at Keswick, December through May.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	50.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	24.2	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	2.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	6.5	0.0	0.0	0.0	0.0	0.0	0.0
D	All	4.9	0.0	0.0	0.0	0.0	0.0	0.0
C	All	8.4	0.0	0.0	0.0	0.0	0.0	0.0
All	All	4.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-140. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead spawning by water year type and for all years combined, Sacramento River at Keswick, December through May.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-141. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead spawning by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through May.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	3.6	0.0	0.0	0.0	0.0	0.0
W	5	60.7	67.9	75.0	42.9	42.9	42.9	42.9
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	7.7	7.7	7.7	7.7	0.0
AN	5	92.3	76.9	69.2	53.8	53.8	53.8	46.2
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	33.3	11.1	11.1	11.1	11.1	5.6
BN	5	94.4	44.4	44.4	16.7	27.8	27.8	22.2
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	8.3	54.2	20.8	20.8	20.8	16.7	16.7
D	5	95.8	66.7	70.8	54.2	54.2	45.8	58.3
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	50.0	62.5	37.5	43.8	6.3	6.3	6.3
C	5	100.0	56.3	56.3	43.8	50.0	50.0	56.3
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	10.1	33.3	14.1	15.2	9.1	8.1	6.1
All	5	85.9	62.6	64.6	42.4	45.5	43.4	45.5
W	All	10.1	11.9	12.5	5.4	7.1	7.1	7.1
AN	All	15.2	16.5	12.7	2.5	10.1	10.1	10.1
BN	All	15.7	13.0	9.3	0.9	4.6	6.5	6.5
D	All	17.4	20.1	15.3	4.9	12.5	12.5	10.4
C	All	25.3	20.0	15.8	10.5	14.7	9.5	9.5
All	All	16.0	16.0	13.1	4.9	9.6	9.1	8.6

Table L.1-142. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead spawning by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through May.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	75.0	32.1 (-42.9%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	32.1 (-42.9%)	50.0 (-25.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)
AN	5	69.2	15.4 (-53.8%)	53.8 (-15.4%)	53.8 (-15.4%)	53.8 (-15.4%)	46.2 (-23.1%)	15.4 (-53.8%)	53.8 (-15.4%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	11.1	0.0 (-11.1%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	5	44.4	5.6 (-38.9%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	22.2 (-22.2%)	27.8 (-16.7%)	38.9 (-5.6%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	8.3 (-12.5%)	20.8 (0.0%)	20.8 (0.0%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)	20.8 (0.0%)
D	5	70.8	20.8 (-50.0%)	58.3 (-12.5%)	58.3 (-12.5%)	45.8 (-25.0%)	58.3 (-12.5%)	33.3 (-37.5%)	62.5 (-8.3%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	37.5	25.0 (-12.5%)	6.3 (-31.3%)	37.5 (0.0%)	6.3 (-31.3%)	6.3 (-31.3%)	37.5 (0.0%)	43.8 (6.3%)
C	5	56.3	37.5 (-18.8%)	56.3 (0.0%)	43.8 (-12.5%)	56.3 (0.0%)	56.3 (0.0%)	56.3 (0.0%)	68.8 (12.5%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	14.1	6.1 (-8.1%)	9.1 (-5.1%)	14.1 (0.0%)	8.1 (-6.1%)	7.1 (-7.1%)	12.1 (-2.0%)	15.2 (1.0%)
All	5	64.6	23.2 (-41.4%)	47.5 (-17.2%)	45.5 (-19.2%)	44.4 (-20.2%)	45.5 (-19.2%)	33.3 (-31.3%)	54.5 (-10.1%)
W	All	12.5	5.4 (-7.1%)	7.1 (-5.4%)	7.1 (-5.4%)	7.1 (-5.4%)	7.1 (-5.4%)	5.4 (-7.1%)	8.3 (-4.2%)
AN	All	12.7	2.5 (-10.1%)	10.1 (-2.5%)	10.1 (-2.5%)	10.1 (-2.5%)	7.6 (-5.1%)	3.8 (-8.9%)	10.1 (-2.5%)
BN	All	9.3	0.9 (-8.3%)	6.5 (-2.8%)	6.5 (-2.8%)	6.5 (-2.8%)	5.6 (-3.7%)	6.5 (-2.8%)	8.3 (-0.9%)
D	All	15.3	4.9 (-10.4%)	13.2 (-2.1%)	13.2 (-2.1%)	10.4 (-4.9%)	12.5 (-2.8%)	7.6 (-7.6%)	13.9 (-1.4%)
C	All	15.8	10.5 (-5.3%)	10.5 (-5.3%)	13.7 (-2.1%)	10.5 (-5.3%)	10.5 (-5.3%)	15.8 (0.0%)	18.9 (3.2%)
All	All	13.1	4.9 (-8.2%)	9.4 (-3.7%)	9.9 (-3.2%)	8.8 (-4.4%)	8.8 (-4.4%)	7.6 (-5.6%)	11.6 (-1.5%)

Table L.1-143. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead spawning by water year type and for all years combined, Clear Creek below Whiskeytown, December through May.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	5.6	5.6	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	8.3	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	18.8	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	6.1	1.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.9	0.9	0.0	0.0	0.0	0.0	0.0
D	All	1.4	0.0	0.0	0.0	0.0	0.0	0.0
C	All	4.2	0.0	0.0	0.0	0.0	0.0	0.0
All	All	1.2	0.2	0.0	0.0	0.0	0.0	0.0

Table L.1-144. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead spawning by water year type and for all years combined, Clear Creek below Whiskeytown, December through May.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.4.3 Kelt Emigration

Water temperature-related effects on steelhead kelt emigration were evaluated by assessing: (1) the percent of months with water temperature above the 66.2°F limit of migration impairment (Keefer et al. 2009); (2) the percent of months with water temperature above the 69.8°F lethal limit (Coutant 1970) and (3) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick, Red Bluff Diversion Dam, and Hamilton City, and in Clear Creek below Whiskeytown (Table L.1-1).

Results for the 66.2°F migration impairment limit are presented in Table L.1-145 and Table L.1-146 for the Sacramento River at Keswick, Table L.1-147 and Table L.1-148 for Red Bluff Diversion Dam, Table L.1-149 and Table L.1-150 for Hamilton City, and in Table L.1-151 and Table L.1-152 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures for all months, water year types, and alternatives were under the kelt migration impairment limit (Table L.1-145 and Table L.1-146).
- At Red Bluff Diversion Dam, water temperatures for all months, water year types, and alternatives were under the kelt migration impairment limit, except for 7.7% of months during June of above normal water years under Alt 3 (Table L.1-147 and Table L.1-148).
- At Hamilton City, the highest percent of months above the migration impairment limit was 71.4% and occurred during June of wet water years under Alt 3 (Table L.1-149 and Table L.1-150). The lowest percent of months above the migration impairment limit was 0% and occurred during February through April in all water year types under the NAA and all alternatives, and during May in at least one water year type depending on alternative. Combining all water year types, the percent of months above the migration impairment limit was highest during June and lowest during February through April for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, water temperatures for all months, water year types, and alternatives were under the kelt migration impairment limit (Table L.1-151 and Table L.1-152).

Results for the 69.8°F lethal limit to kelt emigrants are presented in Table L.1-153 and Table L.1-154 for the Sacramento River at Keswick, Table L.1-155 and Table L.1-156 for Red Bluff Diversion Dam, Table L.1-157 and Table L.1-158 for Hamilton City, and in Table L.1-159 and Table L.1-160 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures for all months, water year types, and alternatives were under the kelt lethal limit (Table L.1-153 and Table L.1-154).
- At Red Bluff Diversion Dam, water temperatures for all months, water year types, and alternatives were under the kelt lethal limit (Table L.1-155 and Table L.1-156).
- At Hamilton City, water temperatures for all months, water year types, and alternatives were under the kelt lethal limit, except during June in wet water years under the NAA (3.6% of months), Alt 3 (10.7% of months), and Alt 4 (3.6% of months), and in June of

above normal water years under Alt 3 (7.7% of months) (Table L.1-157 and Table L.1-158).

- In Clear Creek below Whiskeytown, water temperatures for all months, water year types, and alternatives were under the kelt lethal limit (6.3% of months for all; Table L.1-159 and Table L.1-160).

Results for the 59.9°F pathogen virulence threshold for kelt emigrants are presented in Table L.1-161 and Table L.1-162 for the Sacramento River at Keswick, Table L.1-163 and Table L.1-164 for Red Bluff Diversion Dam, Table L.1-165 and Table L.1-166 for Hamilton City, and in Table L.1-167 and Table L.1-168 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures for all months, water year types, and alternatives were under the pathogen virulence threshold (Table L.1-161 and Table L.1-162).
- At Red Bluff Diversion Dam, the highest percent of months above the pathogen virulence threshold was 78.6% and occurred during June of wet water years under Alt 3 (Table L.1-163 and Table L.1-164). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during February and March in all water year types under the NAA and all alternatives, and during April of a wet water year type under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold was highest during May or June depending on alternative and lowest during February and March for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months above the pathogen virulence threshold was 100% and occurred during May in at least one water year type and during June of all water year types for the NAA and all alternatives (Table L.1-165 and Table L.1-166). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during February and March in all water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold was highest during June and lowest during February and March for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, water temperatures for all months, water year types, and alternatives were under the pathogen virulence limit, except during June of wet water years under all Alt 2 components was 3.6% and Alt 4 which was 7.1%. During critical water years, all Alt 2 components were 1% above the threshold and Alt 4 was 2.0%; (Table L.1-167 and Table L.1-168).

Table L.1-145. Percent of months above the 66.2°F migration impairment water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Keswick, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	7.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	4.2	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	12.5	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	4.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	1.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.8	0.0	0.0	0.0	0.0	0.0	0.0
C	All	2.5	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.8	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-146. Percent (difference in percent relative to NAA) of months above the 66.2°F migration impairment water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Keswick, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-147. Percent of months above the 66.2°F migration impairment water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	82.1	3.6	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	92.3	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	16.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	20.8	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	37.5	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	16.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	93.9	1.0	0.0	0.0	0.0	0.0	0.0
W	All	16.4	0.7	0.0	0.0	0.0	0.0	0.0
AN	All	21.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	23.3	0.0	0.0	0.0	0.0	0.0	0.0
D	All	24.2	0.0	0.0	0.0	0.0	0.0	0.0
C	All	27.5	0.0	0.0	0.0	0.0	0.0	0.0
All	All	22.0	0.2	0.0	0.0	0.0	0.0	0.0

Table L.1-148. Percent (difference in percent relative to NAA) of months above the 66.2°F migration impairment water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.5 (1.5%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.2 (0.2%)	0.0 (0.0%)

Table L.1-149. Percent of months above the 66.2°F migration impairment water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Hamilton City, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	10.7	25.0	21.4	14.3	14.3	14.3	14.3
W	6	100.0	67.9	35.7	32.1	32.1	32.1	32.1
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	38.5	30.8	0.0	0.0	0.0	0.0	0.0
AN	6	100.0	53.8	23.1	7.7	7.7	15.4	30.8
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	72.2	5.6	5.6	0.0	0.0	0.0	0.0
BN	6	100.0	33.3	33.3	22.2	22.2	22.2	33.3
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	66.7	25.0	8.3	8.3	8.3	12.5	20.8
D	6	100.0	29.2	12.5	8.3	8.3	8.3	12.5
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	75.0	12.5	18.8	6.3	6.3	6.3	6.3
C	6	100.0	37.5	37.5	31.3	37.5	37.5	37.5
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	49.5	20.2	12.1	7.1	7.1	8.1	10.1
All	6	100.0	45.5	28.3	21.2	22.2	23.2	28.3
W	All	22.1	18.6	11.4	7.1	9.3	9.3	9.3
AN	All	27.7	16.9	4.6	0.0	1.5	1.5	3.1
BN	All	34.4	7.8	7.8	4.4	4.4	4.4	4.4
D	All	33.3	10.8	4.2	3.3	3.3	3.3	4.2
C	All	35.0	10.0	11.3	7.5	7.5	8.8	8.8

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	All	29.9	13.1	8.1	4.8	5.7	5.9	6.3

Table L.1-150. Percent (difference in percent relative to NAA) of months above the 66.2°F migration impairment water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Hamilton City, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	21.4	14.3 (-7.1%)	14.3 (-7.1%)	14.3 (-7.1%)	14.3 (-7.1%)	14.3 (-7.1%)	7.1 (-14.3%)	17.9 (-3.6%)
W	6	35.7	21.4 (-14.3%)	32.1 (-3.6%)	32.1 (-3.6%)	32.1 (-3.6%)	32.1 (-3.6%)	71.4 (35.7%)	35.7 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	23.1	0.0 (-23.1%)	15.4 (-7.7%)	15.4 (-7.7%)	15.4 (-7.7%)	30.8 (7.7%)	46.2 (23.1%)	7.7 (-15.4%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	5.6	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	6	33.3	22.2 (-11.1%)	27.8 (-5.6%)	22.2 (-11.1%)	22.2 (-11.1%)	22.2 (-11.1%)	27.8 (-5.6%)	22.2 (-11.1%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	8.3	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	12.5 (4.2%)	4.2 (-4.2%)	16.7 (8.3%)
D	6	12.5	8.3 (-4.2%)	8.3 (-4.2%)	8.3 (-4.2%)	8.3 (-4.2%)	16.7 (4.2%)	8.3 (-4.2%)	12.5 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	18.8	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	12.5 (-6.3%)	6.3 (-12.5%)
C	6	37.5	31.3 (-6.3%)	31.3 (-6.3%)	31.3 (-6.3%)	31.3 (-6.3%)	31.3 (-6.3%)	37.5 (0.0%)	56.3 (18.8%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	12.1	7.1 (-5.1%)	8.1 (-4.0%)	7.1 (-5.1%)	8.1 (-4.0%)	8.1 (-4.0%)	5.1 (-7.1%)	10.1 (-2.0%)
All	6	28.3	17.2 (-11.1%)	23.2 (-5.1%)	22.2 (-6.1%)	22.2 (-6.1%)	26.3 (-2.0%)	39.4 (11.1%)	27.3 (-1.0%)
W	All	11.4	7.1 (-4.3%)	9.3 (-2.1%)	9.3 (-2.1%)	9.3 (-2.1%)	9.3 (-2.1%)	15.7 (4.3%)	10.7 (-0.7%)
AN	All	4.6	0.0 (-4.6%)	3.1 (-1.5%)	3.1 (-1.5%)	3.1 (-1.5%)	6.2 (1.5%)	9.2 (4.6%)	1.5 (-3.1%)
BN	All	7.8	4.4 (-3.3%)	6.7 (-1.1%)	4.4 (-3.3%)	5.6 (-2.2%)	4.4 (-3.3%)	5.6 (-2.2%)	4.4 (-3.3%)
D	All	4.2	3.3 (-0.8%)	3.3 (-0.8%)	3.3 (-0.8%)	3.3 (-0.8%)	5.8 (1.7%)	2.5 (-1.7%)	5.8 (1.7%)
C	All	11.3	7.5 (-3.8%)	7.5 (-3.8%)	7.5 (-3.8%)	7.5 (-3.8%)	7.5 (-3.8%)	10.0 (-1.3%)	12.5 (1.3%)
All	All	8.1	4.8 (-3.2%)	6.3 (-1.8%)	5.9 (-2.2%)	6.1 (-2.0%)	6.9 (-1.2%)	8.9 (0.8%)	7.5 (-0.6%)

Table L.1-151. Percent of months above the 66.2°F migration impairment water temperature limit for steelhead kelt emigration by water year type and for all years combined, Clear Creek below Whiskeytown, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	5.6	5.6	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	8.3	4.2	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	18.8	18.8	0.0	6.3	6.3	6.3	6.3
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	6.1	5.1	0.0	1.0	1.0	1.0	1.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	1.1	1.1	0.0	0.0	0.0	0.0	0.0
D	All	1.7	0.8	0.0	0.0	0.0	0.0	0.0
C	All	5.0	3.8	0.0	0.0	1.3	1.3	1.3
All	All	1.4	1.0	0.0	0.0	0.2	0.2	0.2

Table L.1-152. Percent (difference in percent relative to NAA) of months above the 66.2°F migration impairment water temperature limit for steelhead kelt emigration by water year type and for all years combined, Clear Creek below Whiskeytown, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-153. Percent of months above the 69.8°F lethal water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Keswick, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-154. Percent (difference in percent relative to NAA) of months above the 69.8°F lethal water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Keswick, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-155. Percent of months above the 69.8°F lethal water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	3.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	38.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	50.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	50.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	81.3	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	40.4	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	7.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	10.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	10.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	17.5	0.0	0.0	0.0	0.0	0.0	0.0
All	All	8.3	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-156. Percent (difference in percent relative to NAA) of months above the 69.8°F lethal water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-157. Percent of months above the 69.8°F lethal water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Hamilton City, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	78.6	10.7	3.6	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	84.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	16.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	94.4	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	20.8	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	43.8	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	17.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	90.9	3.0	1.0	0.0	0.0	0.0	0.0
W	All	15.7	2.1	0.7	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	All	20.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	22.2	0.0	0.0	0.0	0.0	0.0	0.0
D	All	24.2	0.0	0.0	0.0	0.0	0.0	0.0
C	All	28.8	0.0	0.0	0.0	0.0	0.0	0.0
All	All	21.6	0.6	0.2	0.0	0.0	0.0	0.0

Table L.1-158. Percent (difference in percent relative to NAA) of months above the 69.8°F lethal water temperature limit for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Hamilton City, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	3.6	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	10.7 (7.1%)	3.6 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	1.0	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	4.0 (3.0%)	1.0 (0.0%)
W	All	0.7	0.0 (-0.7%)	0.0 (-0.7%)	0.0 (-0.7%)	0.0 (-0.7%)	0.0 (-0.7%)	2.1 (1.4%)	0.7 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.5 (1.5%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.2	0.0 (-0.2%)	0.0 (-0.2%)	0.0 (-0.2%)	0.0 (-0.2%)	0.0 (-0.2%)	0.8 (0.6%)	0.2 (0.0%)

Table L.1-159. Percent of months above the 69.8°F lethal water temperature limit for steelhead kelt emigration by water year type and for all years combined, Clear Creek below Whiskeytown, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	5.6	5.6	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	8.3	4.2	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	12.5	18.8	0.0	6.3	6.3	6.3	6.3
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	5.1	5.1	0.0	1.0	1.0	1.0	1.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	1.1	1.1	0.0	0.0	0.0	0.0	0.0
D	All	1.7	0.8	0.0	0.0	0.0	0.0	0.0
C	All	3.8	3.8	0.0	0.0	1.3	1.3	1.3
All	All	1.2	1.0	0.0	0.0	0.2	0.2	0.2

Table L.1-160. Percent (difference in percent relative to NAA) of months above the 69.8°F lethal water temperature limit for steelhead kelt emigration by water year type and for all years combined, Clear Creek below Whiskeytown, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-161. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Keswick, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	64.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	50.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	24.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	86.9	0.0	0.0	0.0	0.0	0.0	0.0
W	All	12.9	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	All	18.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	27.8	0.0	0.0	0.0	0.0	0.0	0.0
D	All	25.8	0.0	0.0	0.0	0.0	0.0	0.0
C	All	30.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	22.2	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-162. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Keswick, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-163. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	3.6	0.0	0.0	0.0	0.0	0.0
W	5	60.7	67.9	75.0	42.9	42.9	42.9	42.9
W	6	100.0	92.9	60.7	46.4	46.4	46.4	46.4
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	7.7	7.7	7.7	7.7	0.0
AN	5	92.3	76.9	69.2	53.8	53.8	53.8	46.2
AN	6	100.0	69.2	46.2	30.8	30.8	30.8	46.2
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	33.3	11.1	11.1	11.1	11.1	5.6
BN	5	94.4	44.4	44.4	16.7	27.8	27.8	22.2
BN	6	100.0	66.7	44.4	33.3	33.3	33.3	44.4
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	8.3	54.2	20.8	20.8	20.8	16.7	16.7
D	5	95.8	66.7	70.8	54.2	54.2	45.8	58.3
D	6	100.0	45.8	29.2	16.7	12.5	20.8	25.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	50.0	62.5	37.5	43.8	6.3	6.3	6.3
C	5	100.0	56.3	56.3	43.8	50.0	50.0	56.3
C	6	100.0	93.8	68.8	62.5	50.0	50.0	43.8
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	10.1	33.3	14.1	15.2	9.1	8.1	6.1
All	5	85.9	62.6	64.6	42.4	45.5	43.4	45.5
All	6	100.0	73.7	49.5	37.4	34.3	36.4	40.4
W	All	32.1	32.9	27.1	14.3	17.9	17.9	17.9
AN	All	38.5	33.8	24.6	4.6	18.5	18.5	18.5
BN	All	38.9	28.9	20.0	6.7	12.2	14.4	14.4
D	All	40.8	33.3	24.2	10.0	18.3	17.5	16.7
C	All	50.0	42.5	32.5	22.5	30.0	21.3	21.3
All	All	39.2	33.9	25.7	11.9	19.0	17.8	17.6

Table L.1-164. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	75.0	32.1 (-42.9%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	32.1 (-42.9%)	50.0 (-25.0%)
W	6	60.7	39.3 (-21.4%)	46.4 (-14.3%)	42.9 (-17.9%)	42.9 (-17.9%)	46.4 (-14.3%)	78.6 (17.9%)	60.7 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)
AN	5	69.2	15.4 (-53.8%)	53.8 (-15.4%)	53.8 (-15.4%)	53.8 (-15.4%)	46.2 (-23.1%)	15.4 (-53.8%)	53.8 (-15.4%)
AN	6	46.2	7.7 (-38.5%)	30.8 (-15.4%)	30.8 (-15.4%)	38.5 (-7.7%)	46.2 (0.0%)	61.5 (15.4%)	53.8 (7.7%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	11.1	0.0 (-11.1%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	5	44.4	5.6 (-38.9%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	22.2 (-22.2%)	27.8 (-16.7%)	38.9 (-5.6%)
BN	6	44.4	27.8 (-16.7%)	33.3 (-11.1%)	38.9 (-5.6%)	38.9 (-5.6%)	44.4 (0.0%)	50.0 (5.6%)	50.0 (5.6%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	8.3 (-12.5%)	20.8 (0.0%)	20.8 (0.0%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)	20.8 (0.0%)
D	5	70.8	20.8 (-50.0%)	58.3 (-12.5%)	58.3 (-12.5%)	45.8 (-25.0%)	58.3 (-12.5%)	33.3 (-37.5%)	62.5 (-8.3%)
D	6	29.2	20.8 (-8.3%)	12.5 (-16.7%)	12.5 (-16.7%)	20.8 (-8.3%)	25.0 (-4.2%)	20.8 (-8.3%)	25.0 (-4.2%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	37.5	25.0 (-12.5%)	6.3 (-31.3%)	37.5 (0.0%)	6.3 (-31.3%)	6.3 (-31.3%)	37.5 (0.0%)	43.8 (6.3%)
C	5	56.3	37.5 (-18.8%)	56.3 (0.0%)	43.8 (-12.5%)	56.3 (0.0%)	56.3 (0.0%)	56.3 (0.0%)	68.8 (12.5%)
C	6	68.8	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	81.3 (12.5%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	14.1	6.1 (-8.1%)	9.1 (-5.1%)	14.1 (0.0%)	8.1 (-6.1%)	7.1 (-7.1%)	12.1 (-2.0%)	15.2 (1.0%)
All	5	64.6	23.2 (-41.4%)	47.5 (-17.2%)	45.5 (-19.2%)	44.4 (-20.2%)	45.5 (-19.2%)	33.3 (-31.3%)	54.5 (-10.1%)
All	6	49.5	30.3 (-19.2%)	34.3 (-15.2%)	35.4 (-14.1%)	37.4 (-12.1%)	41.4 (-8.1%)	53.5 (4.0%)	52.5 (3.0%)
W	All	27.1	14.3 (-12.9%)	17.9 (-9.3%)	17.1 (-10.0%)	17.1 (-10.0%)	17.9 (-9.3%)	22.1 (-5.0%)	22.1 (-5.0%)
AN	All	24.6	4.6 (-20.0%)	18.5 (-6.2%)	18.5 (-6.2%)	20.0 (-4.6%)	18.5 (-6.2%)	16.9 (-7.7%)	23.1 (-1.5%)
BN	All	20.0	6.7 (-13.3%)	14.4 (-5.6%)	15.6 (-4.4%)	15.6 (-4.4%)	15.6 (-4.4%)	17.8 (-2.2%)	20.0 (0.0%)
D	All	24.2	10.0 (-14.2%)	18.3 (-5.8%)	18.3 (-5.8%)	16.7 (-7.5%)	20.0 (-4.2%)	13.3 (-10.8%)	21.7 (-2.5%)
C	All	32.5	22.5 (-10.0%)	22.5 (-10.0%)	27.5 (-5.0%)	22.5 (-10.0%)	22.5 (-10.0%)	30.0 (-2.5%)	38.8 (6.3%)
All	All	25.7	11.9 (-13.7%)	18.2 (-7.5%)	19.0 (-6.7%)	18.0 (-7.7%)	18.8 (-6.9%)	19.8 (-5.9%)	24.4 (-1.2%)

Table L.1-165. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Hamilton City, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	3.6	21.4	17.9	17.9	17.9	17.9	14.3
W	5	92.9	92.9	92.9	92.9	92.9	92.9	92.9
W	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	4	15.4	46.2	38.5	38.5	38.5	38.5	38.5
AN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	38.9	66.7	77.8	66.7	66.7	72.2	61.1
BN	5	100.0	94.4	100.0	94.4	94.4	94.4	94.4
BN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	4.2	0.0	0.0	0.0	0.0	0.0
D	4	58.3	87.5	66.7	66.7	66.7	75.0	75.0
D	5	100.0	100.0	100.0	100.0	100.0	95.8	100.0
D	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	6.3	0.0	6.3	0.0	0.0	0.0
C	4	81.3	100.0	93.8	93.8	87.5	87.5	87.5
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	2.0	0.0	1.0	0.0	0.0	0.0
All	4	37.4	61.6	55.6	53.5	52.5	55.6	52.5
All	5	98.0	97.0	98.0	97.0	97.0	96.0	97.0
All	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	All	39.3	42.9	42.1	42.1	42.1	42.1	42.1
AN	All	43.1	49.2	47.7	46.2	47.7	47.7	47.7
BN	All	47.8	52.2	55.6	51.1	52.2	52.2	53.3
D	All	51.7	58.3	53.3	51.7	53.3	53.3	54.2
C	All	56.3	61.3	58.8	57.5	60.0	57.5	57.5
All	All	47.1	52.1	50.7	49.1	50.3	49.9	50.3

Table L.1-166. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead kelt emigration by water year type and for all years combined, Sacramento River at Hamilton City, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	17.9	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	14.3 (-3.6%)	14.3 (-3.6%)	17.9 (0.0%)
W	5	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	89.3 (-3.6%)	92.9 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	38.5	46.2 (7.7%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)
AN	5	100.0	84.6 (-15.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	77.8	61.1 (-16.7%)	72.2 (-5.6%)	72.2 (-5.6%)	77.8 (0.0%)	61.1 (-16.7%)	66.7 (-11.1%)	66.7 (-11.1%)
BN	5	100.0	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	66.7	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	70.8 (4.2%)	66.7 (0.0%)	87.5 (20.8%)	66.7 (0.0%)
D	5	100.0	91.7 (-8.3%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)
C	4	93.8	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	93.8 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
All	4	55.6	52.5 (-3.0%)	53.5 (-2.0%)	54.5 (-1.0%)	55.6 (0.0%)	50.5 (-5.1%)	57.6 (2.0%)	53.5 (-2.0%)
All	5	98.0	92.9 (-5.1%)	97.0 (-1.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	42.1	42.1 (0.0%)	42.1 (0.0%)	42.1 (0.0%)	42.1 (0.0%)	41.4 (-0.7%)	40.7 (-1.4%)	42.1 (0.0%)
AN	All	47.7	46.2 (-1.5%)	47.7 (0.0%)	47.7 (0.0%)	47.7 (0.0%)	47.7 (0.0%)	47.7 (0.0%)	47.7 (0.0%)
BN	All	55.6	51.1 (-4.4%)	53.3 (-2.2%)	53.3 (-2.2%)	54.4 (-1.1%)	51.1 (-4.4%)	52.2 (-3.3%)	52.2 (-3.3%)
D	All	53.3	51.7 (-1.7%)	53.3 (0.0%)	53.3 (0.0%)	53.3 (0.0%)	53.3 (0.0%)	57.5 (4.2%)	53.3 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
C	All	58.8	57.5 (-1.3%)	57.5 (-1.3%)	58.8 (0.0%)	57.5 (-1.3%)	57.5 (-1.3%)	58.8 (0.0%)	60.0 (1.3%)
All	All	50.7	49.1 (-1.6%)	50.1 (-0.6%)	50.3 (-0.4%)	50.3 (-0.4%)	49.5 (-1.2%)	50.7 (0.0%)	50.3 (-0.4%)

Table L.1-167. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead kelt emigration by water year type and for all years combined, Clear Creek below Whiskeytown, February through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	100.0	0.0	0.0	3.6	3.6	3.6	3.6
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	5.6	5.6	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	8.3	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
C	2	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	18.8	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	18.8	0.0	6.3	6.3	6.3	6.3
All	2	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	6.1	1.0	0.0	0.0	0.0	0.0	0.0
All	6	100.0	5.1	0.0	2.0	2.0	2.0	2.0
W	All	20.0	0.0	0.0	0.0	0.7	0.7	0.7
AN	All	20.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	21.1	2.2	0.0	0.0	0.0	0.0	0.0
D	All	21.7	0.8	0.0	0.0	0.0	0.0	0.0
C	All	25.0	3.8	0.0	0.0	1.3	1.3	1.3
All	All	21.4	1.2	0.0	0.0	0.4	0.4	0.4

Table L.1-168. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead kelt emigration by water year type and for all years combined, Clear Creek below Whiskeytown, February through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	7.1 (7.1%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	2.0 (2.0%)
W	All	0.0	0.0 (0.0%)	0.7 (0.7%)	0.7 (0.7%)	0.7 (0.7%)	0.7 (0.7%)	0.0 (0.0%)	1.4 (1.4%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.2 (0.2%)	0.2 (0.2%)	0.2 (0.2%)	0.2 (0.2%)	0.0 (0.0%)	0.4 (0.4%)

L.1.3.4.4 Egg Incubation and Fry Emergence

Water temperature-related effects on steelhead egg incubation and fry emergence were evaluated by assessing: (1) the percent of months with water temperature outside the 45°F to 52°F range for optimal egg incubation (McCullough et al. 2001); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick and Red Bluff Diversion Dam and Clear Creek below Whiskeytown (Table L.1-1).

Results for the 42°F to 52°F optimal steelhead egg incubation water temperature range are presented in Table L.1-169 and Table L.1-170 for the Sacramento River at Keswick, Table L.1-171 and Table L.1-172 for Red Bluff Diversion Dam, and in Table L.1-173 and Table L.1-174 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the optimal egg incubation range was 100% and occurred during May and June of above normal years under the NAA and during May of below normal water years under the NAA and Alt 4 (Table L.1-169 and Table L.1-170). The lowest percent of months outside the optimal egg incubation range limit was 0% and occurred during January and February of at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months outside the optimal egg incubation range was highest during May for the NAA and all alternatives and lowest during January or February depending on alternative. Air temperatures and operations drove these temporal patterns.
- At Red Bluff Diversion Dam, the highest percent of months outside the optimal egg incubation range was 100% and occurred during March through June in at least one water year type under the NAA and all alternatives (Table L.1-171 and Table L.1-172). The lowest percent of months outside the optimal egg incubation range limit was 0% and occurred during December through February in at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months outside the optimal egg incubation range was highest during May and June and lowest during January for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, the highest percent of months outside the optimal egg incubation range was 60.7% and occurred during February of wet years under Alt 3(Table L.1-173 and Table L.1-174). The lowest percent of months outside the optimal egg incubation range was 0% and occurred during March through May of at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months outside the optimal egg incubation range was highest during January and lowest during April for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Results for the 55.9°F pathogen virulence threshold for steelhead fry are presented in Table L.1-175 and Table L.1-176 for the Sacramento River at Keswick, Table L.1-177 and Table L.1-178 for Red Bluff Diversion Dam, and in Table L.1-179 and Table L.1-180 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures for all months, water year types, and alternatives were below the pathogen virulence threshold for steelhead fry (Table L.1-175 and Table L.1-176).
- At Red Bluff Diversion Dam, the highest percent of months above the pathogen virulence threshold for steelhead fry was 81.3% and occurred during June of a critical water year type under Alt 4 (Table L.1-177 and Table L.1-178). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during December through April in at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold was highest during May or June depending on alternative and lowest during December through March for the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, water temperatures were predominantly below the pathogen virulence threshold for steelhead fry in all months, water year types and alternatives, except June of wet years where 3.6% of months exceeded the threshold under all components of Alt 2 and 7.1% of months exceeding the threshold under Alt 4 (Table L.1-179 and Table L.1-180).

Table L.1-169. Percent of months outside the 45°F to 52°F optimal egg incubation water temperature range steelhead by water year type and for all years combined, Sacramento River at Keswick, December through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	28.6	57.1	17.9	46.4	46.4	46.4	50.0
W	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	96.4	10.7	10.7	10.7	10.7	10.7	10.7
W	3	0.0	3.6	0.0	0.0	0.0	0.0	0.0
W	4	42.9	75.0	57.1	64.3	64.3	60.7	64.3
W	5	100.0	92.9	100.0	89.3	92.9	92.9	89.3
W	6	100.0	10.7	10.7	0.0	0.0	0.0	0.0
AN	12	42.9	64.3	35.7	21.4	28.6	14.3	21.4
AN	1	100.0	7.7	0.0	0.0	0.0	0.0	0.0
AN	2	92.3	0.0	7.7	7.7	7.7	7.7	7.7
AN	3	0.0	7.7	0.0	0.0	0.0	0.0	0.0
AN	4	76.9	76.9	69.2	69.2	69.2	69.2	69.2
AN	5	100.0	100.0	100.0	92.3	92.3	92.3	92.3
AN	6	100.0	0.0	30.8	7.7	7.7	7.7	0.0
BN	12	88.9	33.3	33.3	33.3	33.3	33.3	38.9
BN	1	94.4	5.6	5.6	16.7	11.1	11.1	11.1
BN	2	66.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	27.8	22.2	22.2	16.7	16.7	16.7
BN	4	88.9	77.8	83.3	83.3	83.3	83.3	83.3
BN	5	100.0	88.9	94.4	94.4	88.9	88.9	88.9
BN	6	100.0	5.6	55.6	11.1	16.7	11.1	22.2
D	12	75.0	41.7	37.5	45.8	54.2	50.0	50.0
D	1	95.8	4.2	0.0	20.8	16.7	8.3	12.5

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	2	83.3	4.2	0.0	0.0	0.0	0.0	0.0
D	3	4.2	29.2	12.5	16.7	12.5	12.5	12.5
D	4	91.7	95.8	79.2	79.2	79.2	83.3	83.3
D	5	100.0	100.0	87.5	87.5	87.5	87.5	87.5
D	6	100.0	12.5	54.2	8.3	8.3	12.5	8.3
C	12	86.7	80.0	40.0	53.3	40.0	40.0	33.3
C	1	81.3	6.3	18.8	31.3	25.0	31.3	25.0
C	2	50.0	0.0	18.8	6.3	18.8	18.8	12.5
C	3	12.5	25.0	18.8	12.5	12.5	12.5	18.8
C	4	93.8	68.8	56.3	43.8	50.0	50.0	50.0
C	5	100.0	81.3	81.3	87.5	81.3	81.3	81.3
C	6	100.0	87.5	87.5	87.5	75.0	75.0	75.0
All	12	61.6	53.5	31.3	41.4	42.4	39.4	41.4
All	1	94.9	4.0	4.0	13.1	10.1	9.1	9.1
All	2	79.8	4.0	7.1	5.1	7.1	7.1	6.1
All	3	3.0	18.2	10.1	10.1	8.1	8.1	9.1
All	4	75.8	79.8	68.7	68.7	69.7	69.7	70.7
All	5	100.0	92.9	92.9	89.9	88.9	88.9	87.9
All	6	100.0	21.2	44.4	19.2	18.2	18.2	18.2
W	All	66.8	48.5	40.8	29.6	44.4	44.9	44.4
AN	All	72.8	51.1	44.6	30.4	41.3	42.4	40.2
BN	All	77.0	47.6	48.4	40.5	50.0	47.6	47.6
D	All	78.6	53.6	45.2	40.5	50.0	50.0	48.8
C	All	74.8	51.4	47.7	40.5	47.7	46.8	47.7
All	All	73.6	39.1	36.9	28.0	35.4	34.9	34.3

Table L.1-170. Percent (difference in percent relative to NAA) of months outside the 45°F to 52°F optimal egg incubation water temperature range steelhead by water year type and for all years combined, Sacramento River at Keswick, December through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	17.9	50.0 (32.1%)	46.4 (28.6%)	50.0 (32.1%)	46.4 (28.6%)	50.0 (32.1%)	28.6 (10.7%)	60.7 (42.9%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	10.7	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	57.1	25.0 (-32.1%)	60.7 (3.6%)	64.3 (7.1%)	64.3 (7.1%)	60.7 (3.6%)	46.4 (-10.7%)	57.1 (0.0%)
W	5	100.0	21.4 (-78.6%)	89.3 (-10.7%)	89.3 (-10.7%)	89.3 (-10.7%)	89.3 (-10.7%)	96.4 (-3.6%)	96.4 (-3.6%)
W	6	10.7	10.7 (0.0%)	0.0 (-10.7%)	0.0 (-10.7%)	0.0 (-10.7%)	0.0 (-10.7%)	17.9 (7.1%)	21.4 (10.7%)
AN	12	35.7	71.4 (35.7%)	21.4 (-14.3%)	21.4 (-14.3%)	21.4 (-14.3%)	21.4 (-14.3%)	50.0 (14.3%)	78.6 (42.9%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	7.7	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	69.2	30.8 (-38.5%)	69.2 (0.0%)	69.2 (0.0%)	69.2 (0.0%)	69.2 (0.0%)	69.2 (0.0%)	69.2 (0.0%)
AN	5	100.0	0.0 (-100.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	100.0 (0.0%)
AN	6	30.8	15.4 (-15.4%)	7.7 (-23.1%)	7.7 (-23.1%)	7.7 (-23.1%)	0.0 (-30.8%)	23.1 (-7.7%)	38.5 (7.7%)
BN	12	33.3	61.1 (27.8%)	44.4 (11.1%)	33.3 (0.0%)	33.3 (0.0%)	38.9 (5.6%)	16.7 (-16.7%)	55.6 (22.2%)
BN	1	5.6	5.6 (0.0%)	11.1 (5.6%)	16.7 (11.1%)	11.1 (5.6%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)
BN	2	0.0	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	22.2	5.6 (-16.7%)	16.7 (-5.6%)	22.2 (0.0%)	16.7 (-5.6%)	16.7 (-5.6%)	22.2 (0.0%)	27.8 (5.6%)
BN	4	83.3	50.0 (-33.3%)	83.3 (0.0%)	83.3 (0.0%)	83.3 (0.0%)	83.3 (0.0%)	83.3 (0.0%)	83.3 (0.0%)
BN	5	94.4	55.6 (-38.9%)	83.3 (-11.1%)	88.9 (-5.6%)	88.9 (-5.6%)	88.9 (-5.6%)	94.4 (0.0%)	88.9 (-5.6%)
BN	6	55.6	61.1 (5.6%)	16.7 (-38.9%)	16.7 (-38.9%)	16.7 (-38.9%)	11.1 (-44.4%)	33.3 (-22.2%)	50.0 (-5.6%)
D	12	37.5	58.3 (20.8%)	58.3 (20.8%)	54.2 (16.7%)	54.2 (16.7%)	54.2 (16.7%)	50.0 (12.5%)	62.5 (25.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	1	0.0	0.0 (0.0%)	12.5 (12.5%)	12.5 (12.5%)	16.7 (16.7%)	12.5 (12.5%)	4.2 (4.2%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	12.5	8.3 (-4.2%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	25.0 (12.5%)	12.5 (0.0%)
D	4	79.2	50.0 (-29.2%)	79.2 (0.0%)	79.2 (0.0%)	79.2 (0.0%)	79.2 (0.0%)	75.0 (-4.2%)	79.2 (0.0%)
D	5	87.5	66.7 (-20.8%)	83.3 (-4.2%)	83.3 (-4.2%)	79.2 (-8.3%)	83.3 (-4.2%)	66.7 (-20.8%)	91.7 (4.2%)
D	6	54.2	54.2 (0.0%)	8.3 (-45.8%)	8.3 (-45.8%)	12.5 (-41.7%)	8.3 (-45.8%)	20.8 (-33.3%)	41.7 (-12.5%)
C	12	40.0	40.0 (0.0%)	33.3 (-6.7%)	60.0 (20.0%)	40.0 (0.0%)	33.3 (-6.7%)	73.3 (33.3%)	80.0 (40.0%)
C	1	18.8	0.0 (-18.8%)	25.0 (6.3%)	25.0 (6.3%)	25.0 (6.3%)	25.0 (6.3%)	18.8 (0.0%)	18.8 (0.0%)
C	2	18.8	12.5 (-6.3%)	25.0 (6.3%)	6.3 (-12.5%)	25.0 (6.3%)	18.8 (0.0%)	6.3 (-12.5%)	12.5 (-6.3%)
C	3	18.8	6.3 (-12.5%)	12.5 (-6.3%)	12.5 (-6.3%)	12.5 (-6.3%)	12.5 (-6.3%)	18.8 (0.0%)	18.8 (0.0%)
C	4	56.3	50.0 (-6.3%)	50.0 (-6.3%)	43.8 (-12.5%)	50.0 (-6.3%)	50.0 (-6.3%)	31.3 (-25.0%)	56.3 (0.0%)
C	5	81.3	75.0 (-6.3%)	87.5 (6.3%)	81.3 (0.0%)	81.3 (0.0%)	81.3 (0.0%)	68.8 (-12.5%)	81.3 (0.0%)
C	6	87.5	87.5 (0.0%)	75.0 (-12.5%)	87.5 (0.0%)	75.0 (-12.5%)	75.0 (-12.5%)	87.5 (0.0%)	87.5 (0.0%)
All	12	31.3	55.6 (24.2%)	43.4 (12.1%)	45.5 (14.1%)	41.4 (10.1%)	42.4 (11.1%)	41.4 (10.1%)	65.7 (34.3%)
All	1	4.0	1.0 (-3.0%)	9.1 (5.1%)	10.1 (6.1%)	10.1 (6.1%)	9.1 (5.1%)	5.1 (1.0%)	4.0 (0.0%)
All	2	7.1	7.1 (0.0%)	8.1 (1.0%)	4.0 (-3.0%)	8.1 (1.0%)	7.1 (0.0%)	5.1 (-2.0%)	6.1 (-1.0%)
All	3	10.1	4.0 (-6.1%)	8.1 (-2.0%)	9.1 (-1.0%)	8.1 (-2.0%)	8.1 (-2.0%)	13.1 (3.0%)	11.1 (1.0%)
All	4	68.7	40.4 (-28.3%)	68.7 (0.0%)	68.7 (0.0%)	69.7 (1.0%)	68.7 (0.0%)	60.6 (-8.1%)	68.7 (0.0%)
All	5	92.9	44.4 (-48.5%)	86.9 (-6.1%)	86.9 (-6.1%)	85.9 (-7.1%)	86.9 (-6.1%)	83.8 (-9.1%)	91.9 (-1.0%)
All	6	44.4	43.4 (-1.0%)	18.2 (-26.3%)	20.2 (-24.2%)	19.2 (-25.3%)	16.2 (-28.3%)	33.3 (-11.1%)	44.4 (0.0%)
W	All	40.8	29.6 (-11.2%)	43.9 (3.1%)	44.9 (4.1%)	44.4 (3.6%)	44.4 (3.6%)	40.3 (-0.5%)	46.4 (5.6%)
AN	All	44.6	30.4 (-14.1%)	41.3 (-3.3%)	40.2 (-4.3%)	41.3 (-3.3%)	41.3 (-3.3%)	45.7 (1.1%)	51.1 (6.5%)
BN	All	48.4	40.5 (-7.9%)	48.4 (0.0%)	49.2 (0.8%)	47.6 (-0.8%)	48.4 (0.0%)	46.0 (-2.4%)	51.6 (3.2%)
D	All	45.2	40.5 (-4.8%)	49.4 (4.2%)	48.8 (3.6%)	48.8 (3.6%)	48.8 (3.6%)	45.8 (0.6%)	49.4 (4.2%)
C	All	47.7	40.5 (-7.2%)	47.7 (0.0%)	46.8 (-0.9%)	47.7 (0.0%)	45.9 (-1.8%)	45.0 (-2.7%)	52.3 (4.5%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	All	36.9	28.0 (-8.9%)	34.6 (-2.3%)	34.9 (-2.0%)	34.6 (-2.3%)	34.1 (-2.9%)	34.6 (-2.3%)	41.7 (4.8%)

Table L.1-171. Percent of months outside the 45°F to 52°F optimal egg incubation water temperature range steelhead by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	14.3	28.6	0.0	7.1	3.6	3.6	3.6
W	1	92.9	0.0	0.0	0.0	0.0	0.0	0.0
W	2	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	3	10.7	35.7	35.7	35.7	35.7	35.7	35.7
W	4	100.0	92.9	96.4	96.4	96.4	96.4	96.4
W	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	35.7	28.6	0.0	0.0	0.0	0.0	0.0
AN	1	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	7.7	46.2	46.2	46.2	46.2	46.2	46.2
AN	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	12	50.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	88.9	0.0	0.0	0.0	5.6	5.6	5.6
BN	2	0.0	11.1	5.6	11.1	11.1	11.1	11.1
BN	3	33.3	83.3	77.8	83.3	77.8	77.8	77.8
BN	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
BN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	12	29.2	0.0	4.2	4.2	4.2	4.2	4.2
D	1	62.5	0.0	0.0	0.0	0.0	0.0	0.0
D	2	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	3	50.0	87.5	87.5	87.5	87.5	87.5	87.5
D	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	12	40.0	6.7	0.0	0.0	0.0	0.0	0.0
C	1	31.3	0.0	0.0	6.3	0.0	0.0	0.0
C	2	0.0	43.8	25.0	31.3	31.3	31.3	31.3
C	3	75.0	100.0	100.0	100.0	100.0	100.0	100.0
C	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	12	31.3	13.1	1.0	3.0	2.0	2.0	2.0
All	1	74.7	0.0	0.0	1.0	1.0	1.0	1.0
All	2	7.1	9.1	5.1	7.1	7.1	7.1	7.1
All	3	34.3	68.7	67.7	68.7	67.7	67.7	67.7
All	4	100.0	98.0	99.0	99.0	99.0	99.0	99.0
All	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	62.2	51.0	47.4	51.0	48.5	48.0	48.0
AN	All	63.0	53.3	48.9	50.0	48.9	48.9	48.9
BN	All	67.5	56.3	54.8	55.6	56.3	56.3	56.3

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	All	63.7	55.4	56.0	58.9	56.0	56.0	56.0
C	All	64.0	64.9	61.3	63.1	63.1	62.2	62.2
All	All	63.9	55.6	53.2	55.6	54.1	53.8	53.8

Table L.1-172. Percent (difference in percent relative to NAA) of months outside the 45°F to 52°F optimal egg incubation water temperature range steelhead by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	0.0	25.0 (25.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	14.3 (14.3%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	35.7	35.7 (0.0%)	35.7 (0.0%)	35.7 (0.0%)	35.7 (0.0%)	35.7 (0.0%)	32.1 (-3.6%)	35.7 (0.0%)
W	4	96.4	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	0.0	7.1 (7.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	46.2	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)
BN	1	0.0	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	2	5.6	5.6 (0.0%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)
BN	3	77.8	83.3 (5.6%)	77.8 (0.0%)	83.3 (5.6%)	77.8 (0.0%)	77.8 (0.0%)	83.3 (5.6%)	83.3 (5.6%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	4.2	16.7 (12.5%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	16.7 (12.5%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	87.5	95.8 (8.3%)	87.5 (0.0%)	87.5 (0.0%)	87.5 (0.0%)	87.5 (0.0%)	87.5 (0.0%)	87.5 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	0.0	6.7 (6.7%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.7 (6.7%)	6.7 (6.7%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	25.0	31.3 (6.3%)	31.3 (6.3%)	31.3 (6.3%)	31.3 (6.3%)	31.3 (6.3%)	37.5 (12.5%)	31.3 (6.3%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	1.0	13.1 (12.1%)	2.0 (1.0%)	2.0 (1.0%)	2.0 (1.0%)	2.0 (1.0%)	3.0 (2.0%)	11.1 (10.1%)
All	1	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	5.1	6.1 (1.0%)	7.1 (2.0%)	7.1 (2.0%)	7.1 (2.0%)	7.1 (2.0%)	7.1 (2.0%)	6.1 (1.0%)
All	3	67.7	70.7 (3.0%)	67.7 (0.0%)	68.7 (1.0%)	67.7 (0.0%)	67.7 (0.0%)	67.7 (0.0%)	68.7 (1.0%)
All	4	99.0	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	47.4	51.0 (3.6%)	48.0 (0.5%)	48.0 (0.5%)	48.0 (0.5%)	48.0 (0.5%)	47.4 (0.0%)	49.5 (2.0%)
AN	All	48.9	50.0 (1.1%)	48.9 (0.0%)	48.9 (0.0%)	48.9 (0.0%)	48.9 (0.0%)	48.9 (0.0%)	50.0 (1.1%)
BN	All	54.8	55.6 (0.8%)	56.3 (1.6%)	57.1 (2.4%)	56.3 (1.6%)	56.3 (1.6%)	55.6 (0.8%)	56.3 (1.6%)
D	All	56.0	58.9 (3.0%)	56.0 (0.0%)	56.0 (0.0%)	56.0 (0.0%)	56.0 (0.0%)	56.0 (0.0%)	57.7 (1.8%)
C	All	61.3	63.1 (1.8%)	62.2 (0.9%)	62.2 (0.9%)	62.2 (0.9%)	62.2 (0.9%)	64.0 (2.7%)	63.1 (1.8%)
All	All	53.2	55.6 (2.3%)	53.8 (0.6%)	54.0 (0.7%)	53.8 (0.6%)	53.8 (0.6%)	53.8 (0.6%)	55.0 (1.7%)

Table L.1-173. Percent of months outside the 45°F to 52°F optimal egg incubation water temperature range steelhead by water year type and for all years combined, Clear Creek below Whiskeytown, December through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	92.9	0.0	3.6	3.6	3.6	3.6	3.6
W	1	100.0	14.3	53.6	53.6	57.1	57.1	57.1
W	2	67.9	35.7	57.1	57.1	60.7	60.7	60.7
W	3	0.0	25.0	21.4	21.4	21.4	21.4	21.4
W	4	39.3	7.1	0.0	0.0	0.0	0.0	0.0
W	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	100.0	0.0	7.1	14.3	14.3	14.3	14.3
AN	12	100.0	7.1	7.1	7.1	7.1	7.1	7.1
AN	1	100.0	15.4	23.1	38.5	38.5	38.5	38.5
AN	2	76.9	15.4	46.2	53.8	53.8	53.8	53.8
AN	3	0.0	7.7	0.0	7.7	0.0	7.7	7.7
AN	4	61.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	6	100.0	0.0	15.4	7.7	7.7	7.7	7.7
BN	12	94.4	5.6	0.0	5.6	5.6	5.6	11.1
BN	1	100.0	50.0	55.6	38.9	38.9	38.9	38.9
BN	2	61.1	38.9	44.4	38.9	38.9	38.9	38.9
BN	3	0.0	11.1	5.6	11.1	11.1	11.1	11.1
BN	4	72.2	5.6	0.0	0.0	0.0	0.0	0.0
BN	5	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	11.1	5.6	5.6	0.0	0.0	0.0
D	12	83.3	0.0	0.0	0.0	0.0	0.0	0.0
D	1	95.8	41.7	37.5	33.3	33.3	33.3	33.3
D	2	62.5	12.5	12.5	12.5	12.5	12.5	12.5
D	3	0.0	0.0	0.0	4.2	4.2	4.2	0.0
D	4	79.2	0.0	0.0	0.0	0.0	0.0	0.0
D	5	100.0	8.3	0.0	0.0	0.0	4.2	4.2
D	6	100.0	12.5	0.0	4.2	4.2	8.3	8.3
C	12	66.7	0.0	0.0	0.0	0.0	0.0	0.0
C	1	100.0	18.8	18.8	18.8	18.8	18.8	18.8
C	2	56.3	12.5	6.3	12.5	12.5	12.5	12.5
C	3	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	4	87.5	0.0	0.0	0.0	0.0	0.0	0.0
C	5	100.0	12.5	6.3	6.3	6.3	6.3	6.3
C	6	100.0	25.0	12.5	18.8	12.5	12.5	12.5
All	12	87.9	2.0	2.0	3.0	3.0	3.0	4.0
All	1	99.0	28.3	40.4	38.4	39.4	39.4	39.4
All	2	64.6	24.2	34.3	35.4	36.4	36.4	36.4
All	3	1.0	10.1	7.1	10.1	9.1	10.1	9.1

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	4	65.7	3.0	0.0	0.0	0.0	0.0	0.0
All	5	100.0	5.1	1.0	1.0	1.0	2.0	2.0
All	6	100.0	9.1	7.1	10.1	8.1	9.1	9.1
W	All	71.4	26.0	33.7	26.0	33.7	34.7	34.7
AN	All	77.2	20.7	25.0	23.9	29.3	28.3	29.3
BN	All	75.4	31.0	29.4	30.2	27.8	27.8	27.8
D	All	74.4	23.2	21.4	23.2	21.4	21.4	22.0
C	All	73.9	20.7	18.9	20.7	19.8	19.8	19.8
All	All	74.0	11.7	13.1	11.3	14.0	13.9	14.3

Table L.1-174. Percent (difference in percent relative to NAA) of months outside the 45°F to 52°F optimal egg incubation water temperature range steelhead by water year type and for all years combined, Clear Creek below Whiskeytown, December through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	3.6	0.0 (-3.6%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	0.0 (-3.6%)	0.0 (-3.6%)
W	1	53.6	46.4 (-7.1%)	53.6 (0.0%)	53.6 (0.0%)	53.6 (0.0%)	53.6 (0.0%)	53.6 (0.0%)	53.6 (0.0%)
W	2	57.1	32.1 (-25.0%)	57.1 (0.0%)	57.1 (0.0%)	57.1 (0.0%)	57.1 (0.0%)	60.7 (3.6%)	57.1 (0.0%)
W	3	21.4	3.6 (-17.9%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	17.9 (-3.6%)	21.4 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	3.6 (3.6%)
W	6	7.1	0.0 (-7.1%)	14.3 (7.1%)	14.3 (7.1%)	14.3 (7.1%)	14.3 (7.1%)	25.0 (17.9%)	17.9 (10.7%)
AN	12	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)
AN	1	23.1	30.8 (7.7%)	38.5 (15.4%)	38.5 (15.4%)	38.5 (15.4%)	38.5 (15.4%)	46.2 (23.1%)	38.5 (15.4%)
AN	2	46.2	30.8 (-15.4%)	53.8 (7.7%)	53.8 (7.7%)	53.8 (7.7%)	53.8 (7.7%)	53.8 (7.7%)	53.8 (7.7%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	15.4	0.0 (-15.4%)	7.7 (-7.7%)	7.7 (-7.7%)	7.7 (-7.7%)	7.7 (-7.7%)	15.4 (0.0%)	7.7 (-7.7%)
BN	12	0.0	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)
BN	1	55.6	55.6 (0.0%)	38.9 (-16.7%)	38.9 (-16.7%)	38.9 (-16.7%)	38.9 (-16.7%)	38.9 (-16.7%)	38.9 (-16.7%)
BN	2	44.4	50.0 (5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)	38.9 (-5.6%)
BN	3	5.6	0.0 (-5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	5.6	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	37.5	45.8 (8.3%)	33.3 (-4.2%)	33.3 (-4.2%)	33.3 (-4.2%)	33.3 (-4.2%)	33.3 (-4.2%)	37.5 (0.0%)
D	2	12.5	16.7 (4.2%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)
D	3	0.0	0.0 (0.0%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	0.0 (0.0%)	4.2 (4.2%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)	4.2 (4.2%)
D	6	0.0	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	8.3 (8.3%)	4.2 (4.2%)	12.5 (12.5%)	8.3 (8.3%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	18.8	25.0 (6.3%)	18.8 (0.0%)	18.8 (0.0%)	18.8 (0.0%)	18.8 (0.0%)	18.8 (0.0%)	18.8 (0.0%)
C	2	6.3	12.5 (6.3%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)	6.3 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	6.3 (0.0%)	6.3 (0.0%)
C	6	12.5	12.5 (0.0%)	12.5 (0.0%)	18.8 (6.3%)	6.3 (-6.3%)	18.8 (6.3%)	12.5 (0.0%)	18.8 (6.3%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	12	2.0	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	2.0 (0.0%)	3.0 (1.0%)	2.0 (0.0%)	2.0 (0.0%)
All	1	40.4	42.4 (2.0%)	38.4 (-2.0%)	38.4 (-2.0%)	38.4 (-2.0%)	38.4 (-2.0%)	39.4 (-1.0%)	39.4 (-1.0%)
All	2	34.3	28.3 (-6.1%)	34.3 (0.0%)	34.3 (0.0%)	35.4 (1.0%)	34.3 (0.0%)	36.4 (2.0%)	34.3 (0.0%)
All	3	7.1	1.0 (-6.1%)	9.1 (2.0%)	9.1 (2.0%)	9.1 (2.0%)	10.1 (3.0%)	7.1 (0.0%)	9.1 (2.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	1.0	1.0 (0.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)	3.0 (2.0%)	2.0 (1.0%)	3.0 (2.0%)
All	6	7.1	4.0 (-3.0%)	9.1 (2.0%)	10.1 (3.0%)	9.1 (2.0%)	10.1 (3.0%)	15.2 (8.1%)	12.1 (5.1%)
W	All	33.7	26.0 (-7.7%)	34.2 (0.5%)	33.7 (0.0%)	34.2 (0.5%)	34.2 (0.5%)	33.2 (-0.5%)	33.7 (0.0%)
AN	All	25.0	23.9 (-1.1%)	28.3 (3.3%)	28.3 (3.3%)	28.3 (3.3%)	29.3 (4.3%)	29.3 (4.3%)	28.3 (3.3%)
BN	All	29.4	30.2 (0.8%)	27.8 (-1.6%)	27.8 (-1.6%)	27.0 (-2.4%)	27.8 (-1.6%)	27.8 (-1.6%)	27.8 (-1.6%)
D	All	21.4	23.2 (1.8%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	22.6 (1.2%)
C	All	18.9	20.7 (1.8%)	18.9 (0.0%)	18.9 (0.0%)	19.8 (0.9%)	19.8 (0.9%)	19.8 (0.9%)	18.9 (0.0%)
All	All	13.1	11.3 (-1.9%)	13.7 (0.6%)	13.7 (0.6%)	13.7 (0.6%)	14.1 (1.0%)	14.6 (1.4%)	14.3 (1.2%)

Table L.1-175. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead fry by water year type and for all years combined, Sacramento River at Keswick, December through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	64.3	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	5	50.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	24.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	86.9	0.0	0.0	0.0	0.0	0.0	0.0
W	All	9.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	13.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	19.8	0.0	0.0	0.0	0.0	0.0	0.0
D	All	18.5	0.0	0.0	0.0	0.0	0.0	0.0
C	All	21.6	0.0	0.0	0.0	0.0	0.0	0.0
All	All	15.9	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-176. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead fry by water year type and for all years combined, Sacramento River at Keswick, December through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-177. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead fry by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	3.6	0.0	0.0	0.0	0.0	0.0
W	5	60.7	67.9	75.0	42.9	42.9	42.9	42.9
W	6	100.0	92.9	60.7	46.4	46.4	46.4	46.4
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	7.7	7.7	7.7	7.7	0.0
AN	5	92.3	76.9	69.2	53.8	53.8	53.8	46.2
AN	6	100.0	69.2	46.2	30.8	30.8	30.8	46.2
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	33.3	11.1	11.1	11.1	11.1	5.6
BN	5	94.4	44.4	44.4	16.7	27.8	27.8	22.2
BN	6	100.0	66.7	44.4	33.3	33.3	33.3	44.4
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	8.3	54.2	20.8	20.8	20.8	16.7	16.7
D	5	95.8	66.7	70.8	54.2	54.2	45.8	58.3
D	6	100.0	45.8	29.2	16.7	12.5	20.8	25.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	50.0	62.5	37.5	43.8	6.3	6.3	6.3
C	5	100.0	56.3	56.3	43.8	50.0	50.0	56.3
C	6	100.0	93.8	68.8	62.5	50.0	50.0	43.8
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	10.1	33.3	14.1	15.2	9.1	8.1	6.1
All	5	85.9	62.6	64.6	42.4	45.5	43.4	45.5
All	6	100.0	73.7	49.5	37.4	34.3	36.4	40.4
W	All	23.0	23.5	19.4	10.2	12.8	12.8	12.8
AN	All	27.2	23.9	17.4	3.3	13.0	13.0	13.0
BN	All	27.8	20.6	14.3	4.8	8.7	10.3	10.3
D	All	29.2	23.8	17.3	7.1	13.1	12.5	11.9
C	All	36.0	30.6	23.4	16.2	21.6	15.3	15.3
All	All	28.0	24.2	18.3	8.5	13.6	12.7	12.6

Table L.1-178. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead fry by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	75.0	32.1 (-42.9%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	32.1 (-42.9%)	50.0 (-25.0%)
W	6	60.7	39.3 (-21.4%)	46.4 (-14.3%)	42.9 (-17.9%)	42.9 (-17.9%)	46.4 (-14.3%)	78.6 (17.9%)	60.7 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)
AN	5	69.2	15.4 (-53.8%)	53.8 (-15.4%)	53.8 (-15.4%)	53.8 (-15.4%)	46.2 (-23.1%)	15.4 (-53.8%)	53.8 (-15.4%)
AN	6	46.2	7.7 (-38.5%)	30.8 (-15.4%)	30.8 (-15.4%)	38.5 (-7.7%)	46.2 (0.0%)	61.5 (15.4%)	53.8 (7.7%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	11.1	0.0 (-11.1%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	5	44.4	5.6 (-38.9%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	22.2 (-22.2%)	27.8 (-16.7%)	38.9 (-5.6%)
BN	6	44.4	27.8 (-16.7%)	33.3 (-11.1%)	38.9 (-5.6%)	38.9 (-5.6%)	44.4 (0.0%)	50.0 (5.6%)	50.0 (5.6%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	8.3 (-12.5%)	20.8 (0.0%)	20.8 (0.0%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)	20.8 (0.0%)
D	5	70.8	20.8 (-50.0%)	58.3 (-12.5%)	58.3 (-12.5%)	45.8 (-25.0%)	58.3 (-12.5%)	33.3 (-37.5%)	62.5 (-8.3%)
D	6	29.2	20.8 (-8.3%)	12.5 (-16.7%)	12.5 (-16.7%)	20.8 (-8.3%)	25.0 (-4.2%)	20.8 (-8.3%)	25.0 (-4.2%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	37.5	25.0 (-12.5%)	6.3 (-31.3%)	37.5 (0.0%)	6.3 (-31.3%)	6.3 (-31.3%)	37.5 (0.0%)	43.8 (6.3%)
C	5	56.3	37.5 (-18.8%)	56.3 (0.0%)	43.8 (-12.5%)	56.3 (0.0%)	56.3 (0.0%)	56.3 (0.0%)	68.8 (12.5%)
C	6	68.8	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	81.3 (12.5%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	14.1	6.1 (-8.1%)	9.1 (-5.1%)	14.1 (0.0%)	8.1 (-6.1%)	7.1 (-7.1%)	12.1 (-2.0%)	15.2 (1.0%)
All	5	64.6	23.2 (-41.4%)	47.5 (-17.2%)	45.5 (-19.2%)	44.4 (-20.2%)	45.5 (-19.2%)	33.3 (-31.3%)	54.5 (-10.1%)
All	6	49.5	30.3 (-19.2%)	34.3 (-15.2%)	35.4 (-14.1%)	37.4 (-12.1%)	41.4 (-8.1%)	53.5 (4.0%)	52.5 (3.0%)
W	All	19.4	10.2 (-9.2%)	12.8 (-6.6%)	12.2 (-7.1%)	12.2 (-7.1%)	12.8 (-6.6%)	15.8 (-3.6%)	15.8 (-3.6%)
AN	All	17.4	3.3 (-14.1%)	13.0 (-4.3%)	13.0 (-4.3%)	14.1 (-3.3%)	13.0 (-4.3%)	12.0 (-5.4%)	16.3 (-1.1%)
BN	All	14.3	4.8 (-9.5%)	10.3 (-4.0%)	11.1 (-3.2%)	11.1 (-3.2%)	11.1 (-3.2%)	12.7 (-1.6%)	14.3 (0.0%)
D	All	17.3	7.1 (-10.1%)	13.1 (-4.2%)	13.1 (-4.2%)	11.9 (-5.4%)	14.3 (-3.0%)	9.5 (-7.7%)	15.5 (-1.8%)
C	All	23.4	16.2 (-7.2%)	16.2 (-7.2%)	19.8 (-3.6%)	16.2 (-7.2%)	16.2 (-7.2%)	21.6 (-1.8%)	27.9 (4.5%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	All	18.3	8.5 (-9.8%)	13.0 (-5.3%)	13.6 (-4.8%)	12.8 (-5.5%)	13.4 (-4.9%)	14.1 (-4.2%)	17.5 (-0.9%)

Table L.1-179. Percent of months above the 59.9°F pathogen virulence water temperature threshold for steelhead fry by water year type and for all years combined, Clear Creek below Whiskeytown, December through June.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	100.0	0.0	0.0	3.6	3.6	3.6	3.6
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
BN	5	5.6	5.6	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	8.3	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	18.8	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	18.8	0.0	6.3	6.3	6.3	6.3
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	6.1	1.0	0.0	0.0	0.0	0.0	0.0
All	6	100.0	5.1	0.0	2.0	2.0	2.0	2.0
W	All	14.3	0.0	0.0	0.0	0.5	0.5	0.5
AN	All	14.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	15.1	1.6	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	All	15.5	0.6	0.0	0.0	0.0	0.0	0.0
C	All	18.0	2.7	0.0	0.0	0.9	0.9	0.9
All	All	15.3	0.9	0.0	0.0	0.3	0.3	0.3

Table L.1-180. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for steelhead fry by water year type and for all years combined, Clear Creek below Whiskeytown, December through June.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	7.1 (7.1%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	6	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	2.0 (2.0%)
W	All	0.0	0.0 (0.0%)	0.5 (0.5%)	0.5 (0.5%)	0.5 (0.5%)	0.5 (0.5%)	0.0 (0.0%)	1.0 (1.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.1 (0.1%)	0.1 (0.1%)	0.1 (0.1%)	0.1 (0.1%)	0.0 (0.0%)	0.3 (0.3%)

L.1.3.4.5 Juvenile Rearing and Outmigration

Water temperature-related effects on juvenile steelhead rearing and outmigration were evaluated by assessing: (1) the percent of months with water temperature above the 66.2°F upper limit of optimal growth without food limitation (Myrick 1998; Myrick and Cech 2001); (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999); and (3) the percent of months with water temperatures above the 55°F limit of successful smoltification in the Sacramento River at Keswick, Red Bluff Diversion Dam, and Hamilton City (for migration-related temperature values only), and in Clear Creek below Whiskeytown (Table L.1-1).

Results for the 66.2°F upper optimal limit for rearing steelhead juveniles are presented in Table L.1-181 and Table L.1-182 for the Sacramento River at Keswick, Table L.1-183 and Table L.1-184 for Red Bluff Diversion Dam, and Table L.1-185 and Table L.1-186 Clear Creek below Whiskeytown.

- At Keswick, water temperatures were predominantly below the upper optimal limit for rearing steelhead juveniles in all months, water year types, and alternatives, except August of critical water years (6.3% of months exceeding the threshold) under Alt 2 With TUCP without VA, Alt 2 without TUCP Delta VA and Alt 2 Without TUCP Systemwide VA and September of critical years (6.3 to 12.5% of months exceeding the threshold) under the NAA, Alt 1, Alt 2 Without TUCP Without VA, Alt 2 Without TUCP Delta VA and Alt 2 Without TUCP Systemwide VA (Table L.1-181 and Table L.1-182).
- At Red Bluff Diversion Dam, water temperatures were predominantly below the upper optimal limit for rearing steelhead juveniles in all months, water year types, and alternatives, except in June of above normal water years under Alt 3; August of critical water years under the NAA, Alt 1, Alt 2 Without TUCP Without VA, Alt 2 Without TUCP Delta VA, Alt 2 Without TUCP Systemwide VA, and Alt 4; and September of critical years under the NAA and all alternatives (Table L.1-183 and Table L.1-184).
- In Clear Creek below Whiskeytown, water temperatures were predominantly below the upper optimal limit for rearing steelhead juveniles in all months, water year types, and alternatives, except during September of below normal water years under all alternatives except Alt 3 and during June through October of critical water years under at least one alternative (Table L.1-185 and Table L.1-186).

Results for the 59.9°F pathogen virulence threshold for juvenile steelhead rearing and outmigration are presented in Table L.1-187 and Table L.1-188 for Keswick, Table L.1-189 and Table L.1-190 for Red Bluff Diversion Dam, Table L.1-191 and Table L.1-192 for Hamilton City, and Table L.1-193 and Table L.1-194 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were predominantly below the pathogen virulence threshold for juvenile steelhead reading and outmigration in all months, water year types, and alternatives, except during August through October of critical water years under the NAA and all alternatives (Table L.1-187 and Table L.1-188).

- At Red Bluff Diversion Dam, the highest percent of months above the pathogen virulence threshold for juvenile steelhead rearing and outmigration was 100% and occurred during September of critical water years under Alt 1, Alt 2 with TUCP without VA, and Alt 2 without TUCP Systemwide VAs, (Table L.1-189 and Table L.1-190). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during September through April of at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold was highest during May and June depending on alternatives and lowest during November through March under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months above the pathogen virulence threshold for juvenile steelhead rearing and outmigration was 100% and occurred during May through September during a critical water year type under the NAA and all alternatives (Table L.1-191 and Table L.1-192). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during October through March of at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold was highest during June through August for the NAA and all water year types and lowest during November through March under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, the highest percent of months above the pathogen virulence threshold for juvenile steelhead rearing and outmigration was 13.3% and occurred during October and November of critical water years under Alt 1(Table L.1-193 and Table L.1-194). The lowest percent of months above the pathogen virulence threshold was 0% and occurred during most months and water year types except critical water years for the NAA and all alternatives. Combining all water year types, the percent of months above the pathogen virulence threshold was highest during Augst through October for the NAA and all water year types and lowest during December through May under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Results for the 55°F successful steelhead smoltification limit are presented in Table L.1-195 and Table L.1-196 for in the Sacramento River at Keswick, Table L.1-197 and Table L.1-198 at Red Bluff Diversion Dam, Table L.1-199 and Table L.1-200 at Hamilton City, and Table L.1-201 and Table L.1-202 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months above the successful steelhead smoltification limit was 58.3% and occurred during May of dry water years under the NAA (Table L.1-195 and Table L.1-196). The lowest percent of months above the smoltification limit was 0% and occurred during January through March in one or more water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the smoltification limit was highest during April or May depending on alternative and lowest during January through March under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

- At Red Bluff Diversion Dam, the highest percent of months above the successful steelhead smoltification limit was 100% and occurred during April of critical water years and May of all water year types under the NAA and all alternatives (Table L.1-197 and Table L.1-198). The lowest percent of months above the smoltification limit was 0% and occurred during January and February of all water year types under the NAA and all alternatives. Combining all water year types, the percent of months above the smoltification limit was highest during May and lowest during January and February under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months above the successful steelhead smoltification limit was 100% and occurred during April of above normal, below normal, dry and critical water years and May of all water year types under the NAA and all alternatives (Table L.1-199 and Table L.1-200). The lowest percent of months above the smoltification limit was 0% and occurred during January of all water year types and during February of wet, above normal, below normal, and dry water years under the NAA and all alternatives. Combining all water year types, the percent of months above the smoltification limit was highest during May and lowest during January under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- In Clear Creek below Whiskeytown, water temperatures would be below the 55°F limit for successful steelhead smoltification in all months of all water types during the period under the NAA and all alternatives.

Table L.1-181. Percent of months above the 66.2°F upper optimal limit for rearing steelhead juveniles by water year type and for all years combined, Sacramento River at Keswick, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	7	17.9	0.0	0.0	0.0	0.0	0.0	0.0
W	8	57.1	0.0	0.0	0.0	0.0	0.0	0.0
W	9	10.7	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	30.8	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	66.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	61.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	16.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	4.2	0.0	0.0	0.0	0.0	0.0	0.0
D	7	58.3	0.0	0.0	0.0	0.0	0.0	0.0
D	8	54.2	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	9	25.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	6	12.5	0.0	0.0	0.0	0.0	0.0	0.0
C	7	81.3	0.0	0.0	0.0	0.0	0.0	0.0
C	8	93.8	0.0	0.0	0.0	0.0	6.3	6.3
C	9	31.3	0.0	6.3	0.0	6.3	12.5	12.5
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	4.0	0.0	0.0	0.0	0.0	0.0	0.0
All	7	48.5	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	8	65.7	0.0	0.0	0.0	0.0	1.0	1.0
All	9	17.2	0.0	1.0	0.0	1.0	2.0	2.0
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	7.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	9.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	12.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	11.8	0.0	0.0	0.0	0.0	0.0	0.0
C	All	18.5	0.0	0.5	0.5	0.0	0.5	1.6
All	All	11.3	0.0	0.1	0.1	0.0	0.1	0.3

Table L.1-182. Percent (difference in percent relative to NAA) of months above the 66.2°F upper optimal limit for rearing steelhead juveniles by water year type and for all years combined, Sacramento River at Keswick, Year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	6.3 (0.0%)	6.3 (0.0%)	0.0 (-6.3%)	12.5 (6.3%)	12.5 (6.3%)	0.0 (-6.3%)	0.0 (-6.3%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	1.0 (0.0%)	1.0 (0.0%)	0.0 (-1.0%)	2.0 (1.0%)	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	All	0.5	0.5 (0.0%)	1.1 (0.5%)	0.0 (-0.5%)	1.6 (1.1%)	1.6 (1.1%)	0.0 (-0.5%)	0.0 (-0.5%)
All	All	0.1	0.1 (0.0%)	0.2 (0.1%)	0.0 (-0.1%)	0.3 (0.2%)	0.3 (0.2%)	0.0 (-0.1%)	0.0 (-0.1%)

Table L.1-183. Percent of months above the 66.2°F upper optimal limit for rearing steelhead juveniles by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	82.1	3.6	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	92.9	0.0	0.0	0.0	0.0	0.0	0.0
W	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	84.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	16.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	20.8	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	37.5	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	6.3	0.0	12.5	12.5	12.5
C	9	100.0	0.0	31.3	6.3	31.3	31.3	31.3
C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	16.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	93.9	1.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	1.0	0.0	2.0	2.0	2.0
All	9	96.0	0.0	5.1	1.0	5.1	5.1	5.1
All	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	31.3	0.3	0.0	0.0	0.0	0.0	0.0
AN	All	32.3	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	34.7	0.0	0.0	0.0	0.0	0.0	0.0
D	All	35.1	0.0	0.0	0.0	0.0	0.0	0.0
C	All	37.0	0.0	3.2	4.2	0.5	3.7	3.7
All	All	33.9	0.1	0.5	0.7	0.1	0.6	0.6

Table L.1-184. Percent (difference in percent relative to NAA) of months above the 66.2°F upper optimal limit for rearing steelhead juveniles by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, Year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	1.0	3.0 (2.0%)	2.0 (1.0%)	0.0 (-1.0%)	2.0 (1.0%)	3.0 (2.0%)	0.0 (-1.0%)	1.0 (0.0%)
C	9	5.1	5.1 (0.0%)	6.1 (1.0%)	1.0 (-4.0%)	6.1 (1.0%)	6.1 (1.0%)	2.0 (-3.0%)	2.0 (-3.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	1.0 (0.0%)	1.0 (0.0%)	0.0 (-1.0%)	2.0 (1.0%)	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.6 (0.6%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	3.2	4.2 (1.1%)	4.2 (1.1%)	0.5 (-2.6%)	4.2 (1.1%)	4.8 (1.6%)	1.1 (-2.1%)	1.6 (-1.6%)
All	All	0.5	0.7 (0.2%)	0.7 (0.2%)	0.1 (-0.4%)	0.7 (0.2%)	0.8 (0.3%)	0.3 (-0.3%)	0.3 (-0.3%)

Table L.1-185. Percent of months above the 66.2°F upper optimal growth limit for rearing steelhead juveniles by water year type and for all years combined, Clear Creek below Whiskeytown, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	7	57.1	0.0	0.0	0.0	0.0	0.0	0.0
W	8	67.9	0.0	0.0	0.0	0.0	0.0	0.0
W	9	21.4	0.0	0.0	0.0	0.0	0.0	0.0
W	10	7.1	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	69.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	69.2	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	5.6	5.6	0.0	0.0	0.0	0.0	0.0
BN	7	72.2	5.6	0.0	0.0	0.0	0.0	0.0
BN	8	83.3	5.6	0.0	0.0	0.0	0.0	0.0
BN	9	66.7	16.7	5.6	0.0	11.1	11.1	11.1
BN	10	44.4	11.1	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	6	8.3	4.2	0.0	0.0	0.0	0.0	0.0
D	7	87.5	20.8	0.0	0.0	0.0	0.0	0.0
D	8	91.7	37.5	0.0	0.0	0.0	0.0	0.0
D	9	75.0	37.5	0.0	0.0	0.0	0.0	0.0
D	10	54.2	29.2	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	18.8	18.8	0.0	6.3	6.3	6.3	6.3
C	7	93.8	31.3	0.0	12.5	12.5	12.5	12.5
C	8	87.5	37.5	6.3	18.8	25.0	18.8	18.8
C	9	87.5	43.8	6.3	18.8	25.0	25.0	25.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	10	66.7	26.7	0.0	13.3	13.3	13.3	13.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	6	6.1	5.1	0.0	1.0	1.0	1.0	1.0
All	7	74.7	11.1	0.0	2.0	2.0	2.0	2.0
All	8	79.8	16.2	1.0	3.0	4.0	3.0	3.0
All	9	51.5	19.2	2.0	3.0	6.1	6.1	6.1
All	10	34.7	13.3	0.0	2.0	2.0	2.0	2.0
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	12.8	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	12.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	22.7	3.7	0.5	0.5	0.0	0.9	0.9
D	All	26.4	10.8	0.0	0.0	0.0	0.0	0.0
C	All	30.2	13.2	1.1	2.6	5.8	6.9	6.3
All	All	20.6	5.4	0.3	0.5	0.9	1.3	1.2

Table L.1-186. Percent (difference in percent relative to NAA) of months above the 66.2°F upper optimal growth limit for rearing steelhead juveniles by water year type and for all years combined, Clear Creek below Whiskeytown, Year-round.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.5	0.5 (0.0%)	0.9 (0.5%)	0.5 (0.0%)	0.5 (0.0%)	0.5 (0.0%)	0.0 (-0.5%)	0.5 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.1	2.6 (1.6%)	2.1 (1.1%)	2.6 (1.6%)	2.6 (1.6%)	2.6 (1.6%)	2.1 (1.1%)	3.2 (2.1%)
All	All	0.3	0.5 (0.3%)	0.5 (0.3%)	0.5 (0.3%)	0.5 (0.3%)	0.5 (0.3%)	0.3 (0.1%)	0.6 (0.3%)

Table L.1-187. Percent of months above the 59.9°F pathogen virulence water temperature threshold for juvenile steelhead rearing and outmigration by water year type and for all years combined, Sacramento River at Keswick, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	64.3	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	57.1	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	76.9	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	38.5	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	33.3	0.0	0.0	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	10	12.5	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	50.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	25.0	6.3	18.8	18.8	18.8
C	9	100.0	6.3	37.5	18.8	50.0	50.0	50.0
C	10	46.7	33.3	46.7	33.3	53.3	53.3	53.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	24.2	0.0	0.0	0.0	0.0	0.0	0.0
All	6	86.9	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	4.0	1.0	3.0	3.0	3.0
All	9	100.0	1.0	6.1	3.0	8.1	8.1	8.1
All	10	37.8	5.1	7.1	5.1	8.2	8.2	8.2
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	35.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	35.4	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	39.4	0.0	0.0	0.0	0.0	0.0	0.0
D	All	36.8	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	All	41.8	3.2	9.0	9.5	4.8	10.1	10.1
All	All	37.4	0.5	1.4	1.5	0.8	1.6	1.6

Table L.1-188. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile steelhead rearing and outmigration by water year type and for all years combined, Sacramento River at Keswick, Year-round.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	25.0	31.3 (6.3%)	25.0 (0.0%)	6.3 (-18.8%)	25.0 (0.0%)	25.0 (0.0%)	0.0 (-25.0%)	6.3 (-18.8%)
C	9	37.5	37.5 (0.0%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	50.0 (12.5%)	12.5 (-25.0%)	18.8 (-18.8%)
C	10	46.7	46.7 (0.0%)	53.3 (6.7%)	33.3 (-13.3%)	53.3 (6.7%)	53.3 (6.7%)	20.0 (-26.7%)	33.3 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	4.0	5.1 (1.0%)	4.0 (0.0%)	1.0 (-3.0%)	4.0 (0.0%)	4.0 (0.0%)	0.0 (-4.0%)	1.0 (-3.0%)
All	9	6.1	6.1 (0.0%)	7.1 (1.0%)	4.0 (-2.0%)	7.1 (1.0%)	8.1 (2.0%)	2.0 (-4.0%)	3.0 (-3.0%)
All	10	7.1	7.1 (0.0%)	8.2 (1.0%)	5.1 (-2.0%)	8.2 (1.0%)	8.2 (1.0%)	3.1 (-4.1%)	5.1 (-2.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	9.0	9.5 (0.5%)	10.1 (1.1%)	5.3 (-3.7%)	10.1 (1.1%)	10.6 (1.6%)	2.6 (-6.3%)	4.8 (-4.2%)
All	All	1.4	1.5 (0.1%)	1.6 (0.2%)	0.8 (-0.6%)	1.6 (0.2%)	1.7 (0.3%)	0.4 (-1.0%)	0.8 (-0.7%)

Table L.1-189. Percent of months above the 59.9°F pathogen virulence water temperature threshold for juvenile steelhead rearing and outmigration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	3.6	0.0	0.0	0.0	0.0	0.0
W	5	60.7	67.9	75.0	42.9	42.9	42.9	42.9
W	6	100.0	92.9	60.7	46.4	46.4	46.4	46.4
W	7	100.0	67.9	10.7	10.7	10.7	10.7	10.7
W	8	100.0	50.0	14.3	7.1	7.1	7.1	7.1
W	9	100.0	42.9	0.0	0.0	0.0	0.0	0.0
W	10	89.3	0.0	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	7.7	7.7	7.7	7.7	0.0
AN	5	92.3	76.9	69.2	53.8	53.8	53.8	46.2
AN	6	100.0	69.2	46.2	30.8	30.8	30.8	46.2
AN	7	100.0	30.8	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	46.2	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	9	100.0	23.1	0.0	0.0	0.0	0.0	0.0
AN	10	84.6	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	33.3	11.1	11.1	11.1	11.1	5.6
BN	5	94.4	44.4	44.4	16.7	27.8	27.8	22.2
BN	6	100.0	66.7	44.4	33.3	33.3	33.3	44.4
BN	7	100.0	33.3	16.7	16.7	11.1	16.7	16.7
BN	8	100.0	38.9	22.2	5.6	5.6	5.6	16.7
BN	9	100.0	38.9	33.3	22.2	22.2	22.2	16.7
BN	10	72.2	0.0	5.6	0.0	0.0	0.0	0.0
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	8.3	54.2	20.8	20.8	20.8	16.7	16.7
D	5	95.8	66.7	70.8	54.2	54.2	45.8	58.3
D	6	100.0	45.8	29.2	16.7	12.5	20.8	25.0
D	7	100.0	33.3	16.7	4.2	4.2	4.2	8.3

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	8	100.0	20.8	25.0	8.3	8.3	8.3	12.5
D	9	100.0	20.8	33.3	33.3	33.3	33.3	33.3
D	10	75.0	0.0	0.0	0.0	0.0	0.0	0.0
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	50.0	62.5	37.5	43.8	6.3	6.3	6.3
C	5	100.0	56.3	56.3	43.8	50.0	50.0	56.3
C	6	100.0	93.8	68.8	62.5	50.0	50.0	43.8
C	7	100.0	81.3	81.3	81.3	68.8	68.8	62.5
C	8	100.0	93.8	81.3	81.3	87.5	81.3	81.3
C	9	100.0	62.5	93.8	75.0	93.8	93.8	87.5
C	10	100.0	40.0	60.0	60.0	60.0	53.3	53.3
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	10.1	33.3	14.1	15.2	9.1	8.1	6.1
All	5	85.9	62.6	64.6	42.4	45.5	43.4	45.5
All	6	100.0	73.7	49.5	37.4	34.3	36.4	40.4

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	7	100.0	50.5	23.2	20.2	17.2	18.2	18.2
All	8	100.0	47.5	27.3	18.2	19.2	18.2	21.2
All	9	100.0	37.4	29.3	24.2	27.3	27.3	25.3
All	10	83.7	6.1	10.2	9.2	9.2	8.2	8.2
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	45.8	27.1	13.4	7.4	8.9	8.9	8.9
AN	All	47.5	22.2	10.1	1.9	7.6	7.6	7.6
BN	All	47.2	21.3	14.8	7.9	8.8	9.3	9.7
D	All	48.3	20.1	16.3	10.4	11.5	11.1	10.8
C	All	54.5	41.3	40.2	37.0	37.6	34.9	33.9
All	All	48.3	25.9	18.2	12.2	13.9	13.5	13.3

Table L.1-190. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile steelhead rearing and outmigration by water year type and for all years combined, Sacramento River at Red Bluff Diversion Dam, Year-round.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	75.0	32.1 (-42.9%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	32.1 (-42.9%)	50.0 (-25.0%)
W	6	60.7	39.3 (-21.4%)	46.4 (-14.3%)	42.9 (-17.9%)	42.9 (-17.9%)	46.4 (-14.3%)	78.6 (17.9%)	60.7 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	7	10.7	7.1 (-3.6%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	14.3 (3.6%)	10.7 (0.0%)
W	8	14.3	10.7 (-3.6%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	14.3 (0.0%)	14.3 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)
AN	5	69.2	15.4 (-53.8%)	53.8 (-15.4%)	53.8 (-15.4%)	53.8 (-15.4%)	46.2 (-23.1%)	15.4 (-53.8%)	53.8 (-15.4%)
AN	6	46.2	7.7 (-38.5%)	30.8 (-15.4%)	30.8 (-15.4%)	38.5 (-7.7%)	46.2 (0.0%)	61.5 (15.4%)	53.8 (7.7%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	11.1	0.0 (-11.1%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	5	44.4	5.6 (-38.9%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	22.2 (-22.2%)	27.8 (-16.7%)	38.9 (-5.6%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	6	44.4	27.8 (-16.7%)	33.3 (-11.1%)	38.9 (-5.6%)	38.9 (-5.6%)	44.4 (0.0%)	50.0 (5.6%)	50.0 (5.6%)
BN	7	16.7	11.1 (-5.6%)	11.1 (-5.6%)	11.1 (-5.6%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)
BN	8	22.2	27.8 (5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	16.7 (-5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	11.1 (-11.1%)
BN	9	33.3	22.2 (-11.1%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	27.8 (-5.6%)	27.8 (-5.6%)
BN	10	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	8.3 (-12.5%)	20.8 (0.0%)	20.8 (0.0%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)	20.8 (0.0%)
D	5	70.8	20.8 (-50.0%)	58.3 (-12.5%)	58.3 (-12.5%)	45.8 (-25.0%)	58.3 (-12.5%)	33.3 (-37.5%)	62.5 (-8.3%)
D	6	29.2	20.8 (-8.3%)	12.5 (-16.7%)	12.5 (-16.7%)	20.8 (-8.3%)	25.0 (-4.2%)	20.8 (-8.3%)	25.0 (-4.2%)
D	7	16.7	16.7 (0.0%)	4.2 (-12.5%)	4.2 (-12.5%)	4.2 (-12.5%)	4.2 (-12.5%)	8.3 (-8.3%)	8.3 (-8.3%)
D	8	25.0	25.0 (0.0%)	12.5 (-12.5%)	12.5 (-12.5%)	12.5 (-12.5%)	8.3 (-16.7%)	4.2 (-20.8%)	8.3 (-16.7%)
D	9	33.3	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	29.2 (-4.2%)	20.8 (-12.5%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	37.5	25.0 (-12.5%)	6.3 (-31.3%)	37.5 (0.0%)	6.3 (-31.3%)	6.3 (-31.3%)	37.5 (0.0%)	43.8 (6.3%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
C	5	56.3	37.5 (-18.8%)	56.3 (0.0%)	43.8 (-12.5%)	56.3 (0.0%)	56.3 (0.0%)	56.3 (0.0%)	68.8 (12.5%)
C	6	68.8	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	81.3 (12.5%)
C	7	81.3	81.3 (0.0%)	68.8 (-12.5%)	81.3 (0.0%)	68.8 (-12.5%)	68.8 (-12.5%)	62.5 (-18.8%)	93.8 (12.5%)
C	8	81.3	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	81.3 (0.0%)	62.5 (-18.8%)	81.3 (0.0%)
C	9	93.8	100.0 (6.3%)	100.0 (6.3%)	87.5 (-6.3%)	93.8 (0.0%)	100.0 (6.3%)	75.0 (-18.8%)	81.3 (-12.5%)
C	10	60.0	60.0 (0.0%)	66.7 (6.7%)	60.0 (0.0%)	53.3 (-6.7%)	66.7 (6.7%)	40.0 (-20.0%)	46.7 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	14.1	6.1 (-8.1%)	9.1 (-5.1%)	14.1 (0.0%)	8.1 (-6.1%)	7.1 (-7.1%)	12.1 (-2.0%)	15.2 (1.0%)
All	5	64.6	23.2 (-41.4%)	47.5 (-17.2%)	45.5 (-19.2%)	44.4 (-20.2%)	45.5 (-19.2%)	33.3 (-31.3%)	54.5 (-10.1%)
All	6	49.5	30.3 (-19.2%)	34.3 (-15.2%)	35.4 (-14.1%)	37.4 (-12.1%)	41.4 (-8.1%)	53.5 (4.0%)	52.5 (3.0%)
All	7	23.2	21.2 (-2.0%)	17.2 (-6.1%)	19.2 (-4.0%)	18.2 (-5.1%)	18.2 (-5.1%)	19.2 (-4.0%)	23.2 (0.0%)
All	8	27.3	28.3 (1.0%)	22.2 (-5.1%)	20.2 (-7.1%)	22.2 (-5.1%)	20.2 (-7.1%)	16.2 (-11.1%)	21.2 (-6.1%)
All	9	29.3	28.3 (-1.0%)	27.3 (-2.0%)	25.3 (-4.0%)	26.3 (-3.0%)	27.3 (-2.0%)	25.3 (-4.0%)	23.2 (-6.1%)
All	10	10.2	9.2 (-1.0%)	10.2 (0.0%)	9.2 (-1.0%)	9.2 (-1.0%)	10.2 (0.0%)	6.1 (-4.1%)	7.1 (-3.1%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	13.4	7.4 (-6.0%)	8.9 (-4.5%)	8.6 (-4.8%)	8.6 (-4.8%)	8.9 (-4.5%)	11.9 (-1.5%)	11.3 (-2.1%)
AN	All	10.1	1.9 (-8.2%)	7.6 (-2.5%)	7.6 (-2.5%)	8.2 (-1.9%)	7.6 (-2.5%)	7.0 (-3.2%)	9.5 (-0.6%)
BN	All	14.8	7.9 (-6.9%)	9.7 (-5.1%)	9.3 (-5.6%)	11.1 (-3.7%)	10.6 (-4.2%)	11.6 (-3.2%)	13.0 (-1.9%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	All	16.3	10.4 (-5.9%)	11.8 (-4.5%)	11.8 (-4.5%)	11.1 (-5.2%)	12.2 (-4.2%)	9.0 (-7.3%)	12.2 (-4.2%)
C	All	40.2	37.0 (-3.2%)	36.5 (-3.7%)	38.1 (-2.1%)	34.9 (-5.3%)	36.0 (-4.2%)	32.8 (-7.4%)	41.8 (1.6%)
All	All	18.2	12.2 (-6.0%)	14.0 (-4.2%)	14.1 (-4.1%)	13.8 (-4.4%)	14.2 (-4.0%)	13.8 (-4.4%)	16.4 (-1.8%)

Table L.1-191. Percent of months above the 59.9°F pathogen virulence water temperature threshold for juvenile steelhead rearing and outmigration by water year type and for all years combined, Sacramento River at Hamilton City, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	3.6	21.4	17.9	17.9	17.9	17.9	14.3
W	5	92.9	92.9	92.9	92.9	92.9	92.9	92.9
W	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	7	100.0	100.0	92.9	92.9	92.9	92.9	92.9
W	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	9	100.0	100.0	75.0	71.4	71.4	71.4	67.9
W	10	100.0	35.7	0.0	0.0	0.0	0.0	0.0
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	4	15.4	46.2	38.5	38.5	38.5	38.5	38.5
AN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	7	100.0	100.0	76.9	92.3	84.6	92.3	92.3
AN	8	100.0	100.0	100.0	92.3	92.3	92.3	92.3
AN	9	100.0	100.0	76.9	76.9	76.9	76.9	76.9
AN	10	100.0	53.8	0.0	0.0	0.0	0.0	0.0
AN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	38.9	66.7	77.8	66.7	66.7	72.2	61.1
BN	5	100.0	94.4	100.0	94.4	94.4	94.4	94.4
BN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	7	100.0	100.0	88.9	88.9	94.4	88.9	94.4
BN	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	10	100.0	61.1	27.8	27.8	27.8	27.8	27.8
BN	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	3	0.0	4.2	0.0	0.0	0.0	0.0	0.0
D	4	58.3	87.5	66.7	66.7	66.7	75.0	75.0
D	5	100.0	100.0	100.0	100.0	100.0	95.8	100.0
D	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	10	91.7	50.0	45.8	54.2	54.2	54.2	54.2
D	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	6.3	0.0	6.3	0.0	0.0	0.0
C	4	81.3	100.0	93.8	93.8	87.5	87.5	87.5
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	10	100.0	80.0	93.3	100.0	93.3	86.7	86.7
C	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	2.0	0.0	1.0	0.0	0.0	0.0
All	4	37.4	61.6	55.6	53.5	52.5	55.6	52.5
All	5	98.0	97.0	98.0	97.0	97.0	96.0	97.0
All	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	7	100.0	100.0	92.9	94.9	94.9	94.9	96.0
All	8	100.0	100.0	100.0	99.0	99.0	99.0	99.0
All	9	100.0	100.0	89.9	88.9	88.9	88.9	87.9
All	10	98.0	53.1	30.6	33.7	32.7	31.6	31.6
All	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	49.7	45.8	39.9	41.7	39.6	39.6	39.6
AN	All	50.6	49.4	40.5	43.7	41.1	40.5	41.1
BN	All	53.2	51.9	49.5	49.1	48.1	48.6	48.6
D	All	54.2	53.5	51.0	52.1	51.7	51.7	52.1
C	All	57.1	57.7	57.7	57.1	58.7	57.1	56.6
All	All	52.7	51.1	47.3	48.3	47.3	47.1	47.2

Table L.1-192. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile steelhead rearing and outmigration by water year type and for all years combined, Sacramento River at Hamilton City, Year-round.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	17.9	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	14.3 (-3.6%)	14.3 (-3.6%)	17.9 (0.0%)
W	5	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	89.3 (-3.6%)	92.9 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	100.0 (7.1%)	92.9 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	75.0	96.4 (21.4%)	67.9 (-7.1%)	67.9 (-7.1%)	67.9 (-7.1%)	64.3 (-10.7%)	78.6 (3.6%)	82.1 (7.1%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	38.5	46.2 (7.7%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)
AN	5	100.0	84.6 (-15.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	76.9	100.0 (23.1%)	84.6 (7.7%)	84.6 (7.7%)	76.9 (0.0%)	84.6 (7.7%)	100.0 (23.1%)	76.9 (0.0%)
AN	8	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	76.9	100.0 (23.1%)	76.9 (0.0%)	76.9 (0.0%)	69.2 (-7.7%)	76.9 (0.0%)	92.3 (15.4%)	100.0 (23.1%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	77.8	61.1 (-16.7%)	72.2 (-5.6%)	72.2 (-5.6%)	77.8 (0.0%)	61.1 (-16.7%)	66.7 (-11.1%)	66.7 (-11.1%)
BN	5	100.0	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	88.9	94.4 (5.6%)	88.9 (0.0%)	88.9 (0.0%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	88.9 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)
BN	10	27.8	38.9 (11.1%)	22.2 (-5.6%)	16.7 (-11.1%)	22.2 (-5.6%)	27.8 (0.0%)	27.8 (0.0%)	27.8 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	66.7	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	70.8 (4.2%)	66.7 (0.0%)	87.5 (20.8%)	66.7 (0.0%)
D	5	100.0	91.7 (-8.3%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	45.8	66.7 (20.8%)	54.2 (8.3%)	54.2 (8.3%)	58.3 (12.5%)	54.2 (8.3%)	45.8 (0.0%)	45.8 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)
C	4	93.8	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	93.8 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	93.3	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
All	4	55.6	52.5 (-3.0%)	53.5 (-2.0%)	54.5 (-1.0%)	55.6 (0.0%)	50.5 (-5.1%)	57.6 (2.0%)	53.5 (-2.0%)
All	5	98.0	92.9 (-5.1%)	97.0 (-1.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	92.9	97.0 (4.0%)	93.9 (1.0%)	93.9 (1.0%)	93.9 (1.0%)	94.9 (2.0%)	99.0 (6.1%)	92.9 (0.0%)
All	8	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	89.9	99.0 (9.1%)	87.9 (-2.0%)	87.9 (-2.0%)	86.9 (-3.0%)	86.9 (-3.0%)	91.9 (2.0%)	94.9 (5.1%)
All	10	30.6	37.8 (7.1%)	31.6 (1.0%)	30.6 (0.0%)	32.7 (2.0%)	32.7 (2.0%)	31.6 (1.0%)	30.6 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	39.9	41.7 (1.8%)	39.3 (-0.6%)	39.3 (-0.6%)	39.3 (-0.6%)	38.7 (-1.2%)	40.5 (0.6%)	40.5 (0.6%)
AN	All	40.5	43.7 (3.2%)	40.5 (0.0%)	40.5 (0.0%)	39.2 (-1.3%)	41.1 (0.6%)	43.7 (3.2%)	42.4 (1.9%)
BN	All	49.5	49.1 (-0.5%)	48.1 (-1.4%)	47.7 (-1.9%)	49.1 (-0.5%)	48.1 (-1.4%)	48.1 (-1.4%)	48.1 (-1.4%)
D	All	51.0	52.1 (1.0%)	51.7 (0.7%)	51.7 (0.7%)	52.1 (1.0%)	51.7 (0.7%)	52.8 (1.7%)	51.0 (0.0%)
C	All	57.7	57.1 (-0.5%)	57.1 (-0.5%)	57.7 (0.0%)	57.1 (-0.5%)	57.1 (-0.5%)	57.7 (0.0%)	58.2 (0.5%)
All	All	47.3	48.3 (1.0%)	46.9 (-0.3%)	46.9 (-0.3%)	47.0 (-0.3%)	46.8 (-0.4%)	48.0 (0.8%)	47.5 (0.3%)

Table L.1-193. Percent of months above the 59.9°F pathogen virulence water temperature threshold for juvenile steelhead rearing and outmigration by water year type and for all years combined, Clear Creek below Whiskeytown, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	100.0	0.0	0.0	3.6	3.6	3.6	3.6
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	3.6
W	9	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	10	25.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	10	7.7	0.0	0.0	0.0	0.0	0.0	0.0
AN	11	7.1	0.0	0.0	0.0	0.0	0.0	0.0
AN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	5.6	5.6	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	9	100.0	16.7	5.6	0.0	11.1	11.1	11.1

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
BN	10	50.0	11.1	0.0	0.0	0.0	0.0	0.0
BN	11	11.1	0.0	0.0	0.0	0.0	0.0	0.0
BN	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	8.3	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
D	7	100.0	20.8	0.0	0.0	0.0	0.0	0.0
D	8	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	9	100.0	37.5	0.0	0.0	0.0	0.0	0.0
D	10	54.2	29.2	0.0	0.0	0.0	0.0	0.0
D	11	20.8	8.3	0.0	0.0	0.0	0.0	0.0
D	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	18.8	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	18.8	0.0	6.3	6.3	6.3	6.3
C	7	100.0	37.5	0.0	12.5	12.5	12.5	12.5
C	8	100.0	37.5	6.3	18.8	25.0	18.8	18.8

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
C	9	100.0	43.8	6.3	18.8	25.0	25.0	25.0
C	10	73.3	26.7	0.0	13.3	13.3	13.3	13.3
C	11	20.0	6.7	6.7	6.7	6.7	6.7	6.7
C	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	6.1	1.0	0.0	0.0	0.0	0.0	0.0
All	6	100.0	5.1	0.0	2.0	2.0	2.0	2.0
All	7	100.0	12.1	0.0	2.0	2.0	2.0	2.0
All	8	100.0	16.2	1.0	3.0	4.0	3.0	4.0
All	9	99.0	19.2	2.0	3.0	6.1	6.1	6.1
All	10	41.8	13.3	0.0	2.0	2.0	2.0	2.0
All	11	11.1	3.0	1.0	1.0	1.0	1.0	1.0
All	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	35.4	0.0	0.0	0.0	0.3	0.3	0.3
AN	All	33.5	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	38.9	4.2	0.5	0.5	0.0	0.9	0.9
D	All	40.3	11.5	0.0	0.0	0.0	0.0	0.0
C	All	43.4	14.3	1.6	3.7	6.3	7.4	6.9
All	All	38.2	5.8	0.3	0.7	1.1	1.4	1.3

Table L.1-194. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile steelhead rearing and outmigration by water year type and for all years combined, Clear Creek below Whiskeytown, Year-round.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	7.1 (7.1%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	6.7	13.3 (6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	2.0 (2.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	3.0 (2.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	1.0	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.3 (0.3%)	0.6 (0.6%)	0.6 (0.6%)	0.3 (0.3%)	0.0 (0.0%)	0.6 (0.6%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.5	0.5 (0.0%)	0.9 (0.5%)	0.5 (0.0%)	0.5 (0.0%)	0.5 (0.0%)	0.0 (-0.5%)	0.5 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.6	3.7 (2.1%)	2.1 (0.5%)	2.6 (1.1%)	2.6 (1.1%)	2.6 (1.1%)	2.1 (0.5%)	3.2 (1.6%)
All	All	0.3	0.7 (0.3%)	0.6 (0.3%)	0.7 (0.3%)	0.7 (0.3%)	0.6 (0.3%)	0.3 (0.0%)	0.8 (0.4%)

Table L.1-195. Percent of months above the 55°F successful smoltification water temperature limit for steelhead by water year type and for all years combined, Sacramento River at Keswick, January through May.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	7.1	0.0	0.0	0.0	0.0	0.0
W	5	25.0	10.7	14.3	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	23.1	0.0	0.0	0.0	0.0	0.0
AN	5	53.8	0.0	15.4	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	5.6	22.2	16.7	11.1	16.7	22.2	16.7
BN	5	100.0	5.6	33.3	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	12.5	20.8	20.8	29.2	33.3	25.0	29.2
D	5	100.0	8.3	58.3	4.2	0.0	8.3	8.3
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	37.5	25.0	12.5	6.3	6.3	6.3	6.3
C	5	100.0	18.8	25.0	6.3	12.5	6.3	6.3
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	10.1	18.2	10.1	10.1	12.1	11.1	11.1

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	5	72.7	9.1	30.3	2.0	2.0	3.0	3.0
W	All	5.0	3.6	2.9	0.0	0.0	0.0	0.0
AN	All	10.8	4.6	3.1	0.0	0.0	0.0	0.0
BN	All	21.1	5.6	10.0	0.0	2.2	3.3	4.4
D	All	22.5	5.8	15.8	0.0	6.7	6.7	6.7
C	All	27.5	8.8	7.5	0.0	2.5	3.8	2.5
All	All	16.6	5.5	8.1	0.0	2.4	2.8	2.8

Table L.1-196. Percent (difference in percent relative to NAA) of months above the 55°F successful smoltification water temperature limit for steelhead by water year type and for all years combined, Sacramento River at Keswick, January through May.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	14.3	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	0.0 (-14.3%)	7.1 (-7.1%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	15.4	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)	0.0 (-15.4%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	16.7 (0.0%)	5.6 (-11.1%)	16.7 (0.0%)
BN	5	33.3	0.0 (-33.3%)	5.6 (-27.8%)	0.0 (-33.3%)	0.0 (-33.3%)	5.6 (-27.8%)	0.0 (-33.3%)	22.2 (-11.1%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	0.0 (-20.8%)	33.3 (12.5%)	33.3 (12.5%)	25.0 (4.2%)	25.0 (4.2%)	4.2 (-16.7%)	25.0 (4.2%)
D	5	58.3	0.0 (-58.3%)	4.2 (-54.2%)	0.0 (-58.3%)	8.3 (-50.0%)	4.2 (-54.2%)	0.0 (-58.3%)	37.5 (-20.8%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	12.5	0.0 (-12.5%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	0.0 (-12.5%)	18.8 (6.3%)
C	5	25.0	0.0 (-25.0%)	6.3 (-18.8%)	6.3 (-18.8%)	6.3 (-18.8%)	6.3 (-18.8%)	0.0 (-25.0%)	18.8 (-6.3%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	10.1	0.0 (-10.1%)	11.1 (1.0%)	11.1 (1.0%)	11.1 (1.0%)	10.1 (0.0%)	2.0 (-8.1%)	12.1 (2.0%)
All	5	30.3	0.0 (-30.3%)	3.0 (-27.3%)	1.0 (-29.3%)	3.0 (-27.3%)	3.0 (-27.3%)	0.0 (-30.3%)	18.2 (-12.1%)
W	All	2.9	0.0 (-2.9%)	0.0 (-2.9%)	0.0 (-2.9%)	0.0 (-2.9%)	0.0 (-2.9%)	0.0 (-2.9%)	1.4 (-1.4%)
AN	All	3.1	0.0 (-3.1%)	0.0 (-3.1%)	0.0 (-3.1%)	0.0 (-3.1%)	0.0 (-3.1%)	0.0 (-3.1%)	0.0 (-3.1%)
BN	All	10.0	0.0 (-10.0%)	3.3 (-6.7%)	2.2 (-7.8%)	4.4 (-5.6%)	4.4 (-5.6%)	1.1 (-8.9%)	7.8 (-2.2%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	All	15.8	0.0 (-15.8%)	7.5 (-8.3%)	6.7 (-9.2%)	6.7 (-9.2%)	5.8 (-10.0%)	0.8 (-15.0%)	12.5 (-3.3%)
C	All	7.5	0.0 (-7.5%)	2.5 (-5.0%)	2.5 (-5.0%)	2.5 (-5.0%)	2.5 (-5.0%)	0.0 (-7.5%)	7.5 (0.0%)
All	All	8.1	0.0 (-8.1%)	2.8 (-5.3%)	2.4 (-5.7%)	2.8 (-5.3%)	2.6 (-5.5%)	0.4 (-7.7%)	6.1 (-2.0%)

Table L.1-197. Percent of months above the 55°F successful smoltification water temperature limit for steelhead by water year type for all years combined, Sacramento River at Red Bluff Diversion Dam, January through May.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	7.1	7.1	7.1	7.1	7.1	7.1
W	4	28.6	71.4	75.0	75.0	75.0	75.0	75.0
W	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	7.7	7.7	7.7	7.7	7.7	7.7
AN	4	76.9	92.3	92.3	92.3	92.3	92.3	92.3
AN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	0.0	22.2	16.7	16.7	16.7	16.7	16.7
BN	4	83.3	100.0	94.4	94.4	94.4	94.4	94.4
BN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	4.2	29.2	8.3	12.5	12.5	12.5	12.5
D	4	91.7	95.8	91.7	91.7	91.7	95.8	95.8
D	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	3	25.0	62.5	50.0	56.3	37.5	37.5	37.5
C	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	3	5.1	24.2	16.2	18.2	15.2	15.2	15.2
All	4	71.7	89.9	88.9	88.9	88.9	89.9	89.9
All	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	25.7	35.7	36.4	35.7	36.4	36.4	36.4
AN	All	35.4	40.0	40.0	40.0	40.0	40.0	40.0
BN	All	36.7	44.4	42.2	42.2	42.2	42.2	42.2
D	All	39.2	45.0	40.0	44.2	40.8	40.8	41.7
C	All	45.0	52.5	50.0	47.5	51.3	47.5	47.5
All	All	35.4	42.8	41.0	41.4	41.4	40.8	41.0

Table L.1-198. Percent (difference in percent relative to NAA) of months above the 55°F successful smoltification water temperature limit for steelhead by water year type for all years combined, Sacramento River at Red Bluff Diversion Dam, January through May.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	7.1	3.6 (-3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)
W	4	75.0	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	7.7	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)
AN	4	92.3	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	84.6 (-7.7%)	92.3 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	16.7	11.1 (-5.6%)	11.1 (-5.6%)	16.7 (0.0%)	11.1 (-5.6%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)
BN	4	94.4	100.0 (5.6%)	100.0 (5.6%)	100.0 (5.6%)	94.4 (0.0%)	94.4 (0.0%)	100.0 (5.6%)	94.4 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	8.3	25.0 (16.7%)	12.5 (4.2%)	12.5 (4.2%)	12.5 (4.2%)	12.5 (4.2%)	25.0 (16.7%)	8.3 (0.0%)
D	4	91.7	95.8 (4.2%)	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	100.0 (8.3%)	95.8 (4.2%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	50.0	37.5 (-12.5%)	37.5 (-12.5%)	56.3 (6.3%)	31.3 (-18.8%)	37.5 (-12.5%)	56.3 (6.3%)	56.3 (6.3%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	16.2	16.2 (0.0%)	14.1 (-2.0%)	18.2 (2.0%)	13.1 (-3.0%)	15.2 (-1.0%)	21.2 (5.1%)	17.2 (1.0%)
All	4	88.9	90.9 (2.0%)	89.9 (1.0%)	89.9 (1.0%)	88.9 (0.0%)	88.9 (0.0%)	90.9 (2.0%)	89.9 (1.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	36.4	35.7 (-0.7%)	36.4 (0.0%)	36.4 (0.0%)	36.4 (0.0%)	36.4 (0.0%)	36.4 (0.0%)	36.4 (0.0%)
AN	All	40.0	40.0 (0.0%)	40.0 (0.0%)	40.0 (0.0%)	40.0 (0.0%)	40.0 (0.0%)	38.5 (-1.5%)	40.0 (0.0%)
BN	All	42.2	42.2 (0.0%)	42.2 (0.0%)	43.3 (1.1%)	41.1 (-1.1%)	42.2 (0.0%)	43.3 (1.1%)	42.2 (0.0%)
D	All	40.0	44.2 (4.2%)	40.8 (0.8%)	40.8 (0.8%)	40.8 (0.8%)	40.8 (0.8%)	45.0 (5.0%)	40.8 (0.8%)
C	All	50.0	47.5 (-2.5%)	47.5 (-2.5%)	51.3 (1.3%)	46.3 (-3.8%)	47.5 (-2.5%)	51.3 (1.3%)	51.3 (1.3%)
All	All	41.0	41.4 (0.4%)	40.8 (-0.2%)	41.6 (0.6%)	40.4 (-0.6%)	40.8 (-0.2%)	42.4 (1.4%)	41.4 (0.4%)

Table L.1-199. Percent of months above the 55°F successful smoltification water temperature limit for steelhead by water year type for all years combined, Sacramento River at Hamilton City, January through May.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	3	7.1	10.7	7.1	7.1	7.1	7.1	7.1
W	4	64.3	85.7	85.7	85.7	85.7	85.7	85.7
W	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	23.1	23.1	23.1	23.1	23.1	23.1
AN	4	92.3	100.0	100.0	100.0	100.0	100.0	100.0
AN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	3	22.2	44.4	55.6	55.6	55.6	55.6	55.6
BN	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	12.5	58.3	54.2	58.3	58.3	58.3	62.5
D	4	95.8	95.8	100.0	100.0	100.0	100.0	100.0
D	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	2	0.0	12.5	12.5	12.5	6.3	12.5	12.5
C	3	56.3	93.8	87.5	93.8	93.8	93.8	93.8
C	4	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	2	0.0	2.0	2.0	2.0	1.0	2.0	2.0
All	3	18.2	43.4	42.4	44.4	44.4	44.4	45.5
All	4	87.9	94.9	96.0	96.0	96.0	96.0	96.0
All	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	34.3	39.3	38.6	39.3	38.6	38.6	38.6
AN	All	38.5	44.6	44.6	44.6	44.6	44.6	44.6
BN	All	44.4	48.9	51.1	51.1	51.1	51.1	51.1
D	All	41.7	50.8	50.8	50.8	51.7	51.7	51.7
C	All	51.3	61.3	60.0	58.8	61.3	60.0	61.3
All	All	41.2	48.1	48.1	48.1	48.5	48.3	48.5

Table L.1-200. Percent (difference in percent relative to NAA) of months above the 55°F successful smoltification water temperature limit for steelhead by water year type for all years combined, Sacramento River at Hamilton City, January through May.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	7.1	10.7 (3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)
W	4	85.7	85.7 (0.0%)	85.7 (0.0%)	85.7 (0.0%)	85.7 (0.0%)	85.7 (0.0%)	85.7 (0.0%)	85.7 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
AN	3	23.1	23.1 (0.0%)	23.1 (0.0%)	23.1 (0.0%)	23.1 (0.0%)	23.1 (0.0%)	15.4 (-7.7%)	23.1 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	55.6	55.6 (0.0%)	55.6 (0.0%)	55.6 (0.0%)	55.6 (0.0%)	55.6 (0.0%)	44.4 (-11.1%)	55.6 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	54.2	54.2 (0.0%)	58.3 (4.2%)	58.3 (4.2%)	58.3 (4.2%)	62.5 (8.3%)	62.5 (8.3%)	54.2 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	12.5	0.0 (-12.5%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)
C	3	87.5	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	87.5 (0.0%)	87.5 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	2.0	0.0 (-2.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)
All	3	42.4	44.4 (2.0%)	44.4 (2.0%)	44.4 (2.0%)	44.4 (2.0%)	45.5 (3.0%)	41.4 (-1.0%)	42.4 (0.0%)
All	4	96.0	96.0 (0.0%)	96.0 (0.0%)	96.0 (0.0%)	96.0 (0.0%)	96.0 (0.0%)	96.0 (0.0%)	96.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	All	38.6	39.3 (0.7%)	38.6 (0.0%)	38.6 (0.0%)	38.6 (0.0%)	38.6 (0.0%)	38.6 (0.0%)	38.6 (0.0%)
AN	All	44.6	44.6 (0.0%)	44.6 (0.0%)	44.6 (0.0%)	44.6 (0.0%)	44.6 (0.0%)	43.1 (-1.5%)	44.6 (0.0%)
BN	All	51.1	51.1 (0.0%)	51.1 (0.0%)	51.1 (0.0%)	51.1 (0.0%)	51.1 (0.0%)	48.9 (-2.2%)	51.1 (0.0%)
D	All	50.8	50.8 (0.0%)	51.7 (0.8%)	51.7 (0.8%)	51.7 (0.8%)	52.5 (1.7%)	52.5 (1.7%)	50.8 (0.0%)
C	All	60.0	58.8 (-1.3%)	61.3 (1.3%)	61.3 (1.3%)	61.3 (1.3%)	61.3 (1.3%)	60.0 (0.0%)	60.0 (0.0%)
All	All	48.1	48.1 (0.0%)	48.5 (0.4%)	48.5 (0.4%)	48.5 (0.4%)	48.7 (0.6%)	47.9 (-0.2%)	48.1 (0.0%)

Table L.1-201. Percent of months above the 55°F successful smoltification water temperature limit for steelhead by water year type for all years combined, Clear Creek below Whiskeytown, January through May.

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
W	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	2	0.0	5.6	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
BN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	5.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	100.0	5.6	0.0	0.0	0.0	0.0	0.0
D	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	1	0.0	6.3	0.0	0.0	0.0	0.0	0.0
C	2	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1	0.0	1.0	0.0	0.0	0.0	0.0	0.0
All	2	1.0	1.0	0.0	0.0	0.0	0.0	0.0
All	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	1.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	100.0	1.0	0.0	0.0	0.0	0.0	0.0
W	All	20.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	20.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	21.1	2.2	0.0	0.0	0.0	0.0	0.0
D	All	20.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	21.3	1.3	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA
All	All	20.4	0.6	0.0	0.0	0.0	0.0	0.0

Table L.1-202. Percent (difference in percent relative to NAA) of months above the 55°F successful smoltification water temperature limit for steelhead by water year type for all years combined, Clear Creek below Whiskeytown, January through May.

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2TUCP woVA	Alt2oTUCP woVA	Alt2oTUCP DeltaVA	Alt2oTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.5 Green Sturgeon

L.1.3.5.1 Adult Migration, River Spawning, and Holding

Water temperature-related effects on green sturgeon adult migration, river spawning, and holding in the Sacramento River were evaluated by assessing: (1) the percent of months with water temperature outside the 52°F to 69.4°F range of observed migration (Kelly et al. 2007, Colborne et al. 2022); (2) the percent of months with water temperature outside the 49.3°F to 63.7°F range of observed spawning (Poytress et al. 2015); and (3) the percent of months with water temperatures outside the 59°F to 73.4°F range of observed holding (Erickson et al. 2002) at Bend Bridge and Hamilton City (Table L.1-1).

Results for the 52°F to 69.4°F range of observed green sturgeon migration are presented in Table L.1-203 and Table L.1-204 for the Sacramento River at Bend Bridge, Table L.1-205 and Table L.1-206 for Hamilton City.

- At Bend Bridge, water temperatures were predominantly within the range of observed green sturgeon adult migration, except during April of wet water years under the NAA and all alternatives (7.1% of months outside the range; Table L.1-203 and Table L.1-204).
- At Hamilton City, water temperatures were predominantly within the range of observed green sturgeon adult migration, except during May of critical water years under Alt 3 (6.3% of months outside the range; Table L.1-205 and Table L.1-206).

Results for the 49.3°F to 63.7°F range of observed green sturgeon spawning are presented in Table L.1-207 and Table L.1-208 for the Sacramento River at Bend Bridge, Table L.1-209 and Table L.1-210 for Hamilton City.

- At Bend Bridge, water temperatures were predominantly within the observed green sturgeon spawning range, except during June of above normal water years under Alt 3 (7.7% of months outside the range; Table L.1-207 and Table L.1-208).
- At Hamilton City, the highest percent of months outside the observed green sturgeon spawning range was 93.8% and occurred during July of critical water years under Alt 4 (Table L.1-209 and Table L.1-210). The lowest percent of months outside the observed spawning range was 0% and occurred during April of at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months outside the observed spawning range was highest during June and lowest during April under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Results for the 59°F to 73.4°F range of observed green sturgeon holding are presented in Table L.1-211 and Table L.1-212 for the Sacramento River at Bend Bridge, Table L.1-213 and Table L.1-214 for Hamilton City.

- At Bend Bridge, the highest percent of months outside the observed green sturgeon holding range was 100% and occurred during July through April of at least one water year type under the NAA and all alternatives (Table L.1-211 and Table L.1-212). The lowest percent of months outside the observed holding range was 18.8% and occurred during August of critical water years under the NAA. Combining all water year types, the percent of months outside the observed holding range was highest during November through March and lowest during May under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months outside the observed green sturgeon holding range was 100% and occurred during November through February of all water year types under the NAA and all alternatives (Table L.1-213 and Table L.1-214). The lowest percent of months outside the observed holding range was 0% and occurred during April through September of at least one water year type under the NAA and all alternatives. Combining all water year types, the percent of months outside the observed holding range was highest during November through February and lowest during June through August under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Table L.1-203. Percent of months outside the 52°F to 69.4°F water temperature range of observed green sturgeon adult migration by month and water year type and for all years combined, Sacramento River at Bend Bridge, April through May.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	7.1	7.1	7.1	7.1	7.1	7.1
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	2.0	2.0	2.0	2.0	2.0	2.0
All	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	3.6	3.6	3.6	3.6	3.6	3.6
AN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	0.0	1.0	1.0	1.0	1.0	1.0	1.0

Table L.1-204. Percent (difference in percent relative to NAA) of months outside the 52°F to 69.4°F water temperature range of observed green sturgeon adult migration by month and water year type and for all years combined, Sacramento River at Bend Bridge, April through May.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	2.0	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	3.6	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)

Table L.1-205. Percent of months outside the 52°F to 69.4°F water temperature range of observed green sturgeon adult migration by month and water year type and for all years combined, Sacramento River at Hamilton City, April through May.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	22.2	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	50.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	5	21.2	0.0	0.0	0.0	0.0	0.0	0.0
W	All	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	7.7	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	11.1	0.0	0.0	0.0	0.0	0.0	0.0
D	All	14.6	0.0	0.0	0.0	0.0	0.0	0.0
C	All	25.0	0.0	0.0	0.0	0.0	0.0	0.0
All	All	10.6	0.0	0.0	0.0	0.0	0.0	0.0

Table L.1-206. Percent (difference in percent relative to NAA) of months outside the 52°F to 69.4°F water temperature range of observed green sturgeon adult migration by month and water year type and for all years combined, Sacramento River at Hamilton City, April through May.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.1 (3.1%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.5 (0.5%)	0.0 (0.0%)

Table L.1-207. Percent of months outside the 49.3°F to 63.7°F water temperature range of observed green sturgeon spawning by month and water year type and for all years combined, Sacramento River at Bend Bridge, April through July.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	96.4	3.6	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	38.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	41.7	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	56.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	5	28.3	0.0	0.0	0.0	0.0	0.0	0.0
All	6	98.0	1.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	All	49.1	0.9	0.0	0.0	0.0	0.0	0.0
AN	All	51.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	59.7	0.0	0.0	0.0	0.0	0.0	0.0
D	All	60.4	0.0	0.0	0.0	0.0	0.0	0.0
C	All	64.1	0.0	0.0	0.0	0.0	0.0	0.0
All	All	56.6	0.3	0.0	0.0	0.0	0.0	0.0

Table L.1-208. Percent (difference in percent relative to NAA) of months outside the 49.3°F to 63.7°F water temperature range of observed green sturgeon spawning by month and water year type and for all years combined, Sacramento River at Bend Bridge, April through July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.9 (1.9%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.3 (0.3%)	0.0 (0.0%)

Table L.1-209. Percent of months outside the 49.3°F to 63.7°F water temperature range of observed green sturgeon spawning by month and water year type and for all years combined, Sacramento River at Hamilton City, April through July.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	5	39.3	71.4	60.7	50.0	50.0	50.0	50.0
W	6	100.0	96.4	82.1	82.1	82.1	82.1	82.1
W	7	100.0	100.0	35.7	28.6	28.6	32.1	32.1
AN	4	0.0	7.7	0.0	0.0	0.0	0.0	0.0
AN	5	69.2	76.9	69.2	61.5	61.5	61.5	61.5
AN	6	100.0	100.0	69.2	53.8	53.8	61.5	69.2
AN	7	100.0	100.0	7.7	7.7	7.7	7.7	7.7
BN	4	0.0	11.1	0.0	0.0	0.0	0.0	0.0
BN	5	83.3	55.6	44.4	22.2	22.2	27.8	27.8
BN	6	100.0	94.4	50.0	50.0	50.0	50.0	55.6
BN	7	100.0	94.4	33.3	33.3	38.9	38.9	38.9
D	4	4.2	12.5	0.0	0.0	0.0	4.2	4.2
D	5	95.8	66.7	66.7	50.0	54.2	45.8	70.8
D	6	100.0	83.3	37.5	37.5	37.5	37.5	41.7
D	7	100.0	87.5	25.0	20.8	20.8	20.8	20.8
C	4	31.3	37.5	31.3	31.3	6.3	0.0	0.0
C	5	87.5	68.8	62.5	68.8	75.0	75.0	68.8
C	6	100.0	93.8	68.8	75.0	75.0	68.8	62.5
C	7	100.0	93.8	87.5	87.5	75.0	75.0	68.8
All	4	6.1	12.1	5.1	5.1	1.0	1.0	1.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	5	72.7	67.7	60.6	49.5	51.5	50.5	55.6
All	6	100.0	92.9	61.6	60.6	60.6	60.6	62.6
All	7	100.0	94.9	37.4	34.3	33.3	34.3	33.3
W	All	59.8	67.0	44.6	40.2	40.2	41.1	41.1
AN	All	67.3	71.2	36.5	30.8	30.8	32.7	34.6
BN	All	70.8	63.9	31.9	26.4	27.8	29.2	30.6
D	All	75.0	62.5	32.3	27.1	28.1	27.1	34.4
C	All	79.7	73.4	62.5	65.6	57.8	54.7	50.0
All	All	69.7	66.9	41.2	37.4	36.6	36.6	38.1

Table L.1-210. Percent (difference in percent relative to NAA) of months outside the 49.3°F to 63.7°F water temperature range of observed green sturgeon spawning by month and water year type and for all years combined, Sacramento River at Hamilton City, April through July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	60.7	28.6 (-32.1%)	50.0 (-10.7%)	50.0 (-10.7%)	50.0 (-10.7%)	50.0 (-10.7%)	32.1 (-28.6%)	50.0 (-10.7%)
W	6	82.1	64.3 (-17.9%)	82.1 (0.0%)	82.1 (0.0%)	82.1 (0.0%)	82.1 (0.0%)	89.3 (7.1%)	85.7 (3.6%)
W	7	35.7	35.7 (0.0%)	32.1 (-3.6%)	32.1 (-3.6%)	32.1 (-3.6%)	32.1 (-3.6%)	35.7 (0.0%)	42.9 (7.1%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	5	69.2	30.8 (-38.5%)	61.5 (-7.7%)	61.5 (-7.7%)	61.5 (-7.7%)	61.5 (-7.7%)	30.8 (-38.5%)	69.2 (0.0%)
AN	6	69.2	38.5 (-30.8%)	53.8 (-15.4%)	53.8 (-15.4%)	61.5 (-7.7%)	69.2 (0.0%)	76.9 (7.7%)	69.2 (0.0%)
AN	7	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	30.8 (23.1%)	7.7 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	5	44.4	16.7 (-27.8%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	38.9 (-5.6%)
BN	6	50.0	38.9 (-11.1%)	50.0 (0.0%)	50.0 (0.0%)	50.0 (0.0%)	55.6 (5.6%)	55.6 (5.6%)	50.0 (0.0%)
BN	7	33.3	38.9 (5.6%)	38.9 (5.6%)	27.8 (-5.6%)	38.9 (5.6%)	38.9 (5.6%)	27.8 (-5.6%)	27.8 (-5.6%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)	4.2 (4.2%)	8.3 (8.3%)	0.0 (0.0%)
D	5	66.7	37.5 (-29.2%)	62.5 (-4.2%)	58.3 (-8.3%)	50.0 (-16.7%)	70.8 (4.2%)	45.8 (-20.8%)	66.7 (0.0%)
D	6	37.5	37.5 (0.0%)	37.5 (0.0%)	37.5 (0.0%)	37.5 (0.0%)	41.7 (4.2%)	45.8 (8.3%)	37.5 (0.0%)
D	7	25.0	29.2 (4.2%)	20.8 (-4.2%)	20.8 (-4.2%)	20.8 (-4.2%)	20.8 (-4.2%)	16.7 (-8.3%)	25.0 (0.0%)
C	4	31.3	12.5 (-18.8%)	6.3 (-25.0%)	31.3 (0.0%)	0.0 (-31.3%)	0.0 (-31.3%)	25.0 (-6.3%)	31.3 (0.0%)
C	5	62.5	50.0 (-12.5%)	81.3 (18.8%)	75.0 (12.5%)	81.3 (18.8%)	75.0 (12.5%)	68.8 (6.3%)	75.0 (12.5%)
C	6	68.8	75.0 (6.3%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)	62.5 (-6.3%)	75.0 (6.3%)	87.5 (18.8%)
C	7	87.5	87.5 (0.0%)	81.3 (-6.3%)	87.5 (0.0%)	75.0 (-12.5%)	75.0 (-12.5%)	75.0 (-12.5%)	93.8 (6.3%)
All	4	5.1	2.0 (-3.0%)	1.0 (-4.0%)	5.1 (0.0%)	1.0 (-4.0%)	1.0 (-4.0%)	8.1 (3.0%)	5.1 (0.0%)
All	5	60.6	32.3 (-28.3%)	55.6 (-5.1%)	53.5 (-7.1%)	52.5 (-8.1%)	56.6 (-4.0%)	40.4 (-20.2%)	58.6 (-2.0%)
All	6	61.6	51.5 (-10.1%)	59.6 (-2.0%)	59.6 (-2.0%)	60.6 (-1.0%)	62.6 (1.0%)	68.7 (7.1%)	65.7 (4.0%)
All	7	37.4	38.4 (1.0%)	35.4 (-2.0%)	34.3 (-3.0%)	34.3 (-3.0%)	34.3 (-3.0%)	35.4 (-2.0%)	39.4 (2.0%)
W	All	44.6	32.1 (-12.5%)	41.1 (-3.6%)	41.1 (-3.6%)	41.1 (-3.6%)	41.1 (-3.6%)	39.3 (-5.4%)	44.6 (0.0%)
AN	All	36.5	17.3 (-19.2%)	30.8 (-5.8%)	30.8 (-5.8%)	32.7 (-3.8%)	34.6 (-1.9%)	36.5 (0.0%)	36.5 (0.0%)
BN	All	31.9	23.6 (-8.3%)	29.2 (-2.8%)	26.4 (-5.6%)	29.2 (-2.8%)	30.6 (-1.4%)	29.2 (-2.8%)	29.2 (-2.8%)
D	All	32.3	26.0 (-6.3%)	30.2 (-2.1%)	29.2 (-3.1%)	28.1 (-4.2%)	34.4 (2.1%)	29.2 (-3.1%)	32.3 (0.0%)
C	All	62.5	56.3 (-6.3%)	59.4 (-3.1%)	65.6 (3.1%)	56.3 (-6.3%)	53.1 (-9.4%)	60.9 (-1.6%)	71.9 (9.4%)
All	All	41.2	31.1 (-10.1%)	37.9 (-3.3%)	38.1 (-3.0%)	37.1 (-4.0%)	38.6 (-2.5%)	38.1 (-3.0%)	42.2 (1.0%)

Table L.1-211. Percent of months outside the 59°F to 73.4°F water temperature range of observed green sturgeon holding by month and water year type and for all years combined, Sacramento River at Bend Bridge, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	4	100.0	96.4	100.0	100.0	100.0	100.0	100.0
W	5	46.4	42.9	32.1	64.3	64.3	64.3	64.3
W	6	0.0	39.3	64.3	85.7	85.7	85.7	85.7
W	7	3.6	71.4	96.4	100.0	100.0	100.0	100.0
W	8	3.6	82.1	96.4	100.0	100.0	100.0	100.0
W	9	0.0	82.1	100.0	100.0	100.0	100.0	100.0
W	10	7.1	100.0	100.0	100.0	100.0	100.0	100.0
W	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	4	100.0	84.6	100.0	100.0	100.0	100.0	100.0
AN	5	15.4	23.1	30.8	61.5	61.5	61.5	69.2
AN	6	0.0	61.5	84.6	92.3	92.3	92.3	84.6
AN	7	7.7	92.3	100.0	100.0	100.0	100.0	100.0
AN	8	0.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	9	0.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
AN	10	15.4	100.0	100.0	100.0	100.0	100.0	100.0
AN	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	4	100.0	72.2	88.9	94.4	88.9	88.9	94.4
BN	5	0.0	66.7	72.2	100.0	88.9	88.9	88.9
BN	6	0.0	66.7	77.8	83.3	83.3	83.3	77.8
BN	7	22.2	83.3	100.0	100.0	100.0	100.0	100.0
BN	8	11.1	94.4	88.9	94.4	94.4	94.4	94.4
BN	9	0.0	94.4	83.3	88.9	88.9	94.4	94.4
BN	10	22.2	100.0	100.0	100.0	100.0	100.0	100.0
BN	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	4	91.7	54.2	83.3	79.2	79.2	83.3	83.3
D	5	0.0	41.7	37.5	70.8	70.8	66.7	58.3
D	6	4.2	83.3	83.3	95.8	95.8	95.8	95.8
D	7	4.2	91.7	95.8	95.8	95.8	95.8	95.8
D	8	4.2	91.7	83.3	95.8	95.8	95.8	95.8

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	9	0.0	91.7	79.2	91.7	91.7	87.5	87.5
D	10	16.7	100.0	100.0	100.0	100.0	100.0	100.0
D	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	4	50.0	68.8	68.8	81.3	93.8	93.8	93.8
C	5	0.0	56.3	50.0	62.5	62.5	62.5	75.0
C	6	0.0	75.0	62.5	75.0	62.5	62.5	62.5
C	7	43.8	68.8	37.5	50.0	62.5	62.5	62.5
C	8	18.8	62.5	18.8	56.3	37.5	43.8	43.8
C	9	0.0	56.3	31.3	43.8	31.3	25.0	25.0
C	10	0.0	60.0	40.0	40.0	40.0	46.7	46.7
C	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	4	89.9	75.8	88.9	90.9	91.9	92.9	93.9
All	5	15.2	46.5	43.4	71.7	69.7	68.7	69.7
All	6	1.0	63.6	73.7	86.9	84.8	84.8	82.8
All	7	14.1	80.8	87.9	90.9	92.9	92.9	92.9

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	8	7.1	85.9	79.8	90.9	87.9	88.9	88.9
All	9	0.0	84.8	80.8	86.9	84.8	83.8	83.8
All	10	12.2	93.9	90.8	90.8	90.8	91.8	91.8
All	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	55.1	84.5	90.8	96.1	95.8	95.8	95.8
AN	All	53.8	88.6	93.0	100.0	96.2	96.2	96.2
BN	All	54.6	89.8	92.6	95.4	96.8	95.4	95.8
D	All	51.7	87.8	88.5	94.8	94.1	94.1	93.8
C	All	50.8	78.8	67.2	73.0	75.7	74.1	74.6
All	All	53.3	85.9	87.1	92.5	92.4	91.9	92.0

Table L.1-212. Percent (difference in percent relative to NAA) of months outside the 59°F to 73.4°F water temperature range of observed green sturgeon holding by month and water year type and for all years combined, Sacramento River at Bend Bridge, Year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	32.1	71.4 (39.3%)	60.7 (28.6%)	60.7 (28.6%)	64.3 (32.1%)	64.3 (32.1%)	75.0 (42.9%)	57.1 (25.0%)
W	6	64.3	85.7 (21.4%)	85.7 (21.4%)	85.7 (21.4%)	85.7 (21.4%)	82.1 (17.9%)	50.0 (-14.3%)	60.7 (-3.6%)
W	7	96.4	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	92.9 (-3.6%)	96.4 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	96.4	96.4 (0.0%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	92.9 (-3.6%)	92.9 (-3.6%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	96.4 (-3.6%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	30.8	100.0 (69.2%)	61.5 (30.8%)	61.5 (30.8%)	61.5 (30.8%)	69.2 (38.5%)	100.0 (69.2%)	53.8 (23.1%)
AN	6	84.6	100.0 (15.4%)	92.3 (7.7%)	92.3 (7.7%)	92.3 (7.7%)	84.6 (0.0%)	76.9 (-7.7%)	84.6 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	88.9	100.0 (11.1%)	88.9 (0.0%)	88.9 (0.0%)	88.9 (0.0%)	88.9 (0.0%)	88.9 (0.0%)	88.9 (0.0%)
BN	5	72.2	100.0 (27.8%)	83.3 (11.1%)	88.9 (16.7%)	83.3 (11.1%)	88.9 (16.7%)	83.3 (11.1%)	72.2 (0.0%)
BN	6	77.8	83.3 (5.6%)	83.3 (5.6%)	83.3 (5.6%)	83.3 (5.6%)	77.8 (0.0%)	88.9 (11.1%)	77.8 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	7	100.0	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	88.9	83.3 (-5.6%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)
BN	9	83.3	83.3 (0.0%)	94.4 (11.1%)	94.4 (11.1%)	94.4 (11.1%)	100.0 (16.7%)	94.4 (11.1%)	94.4 (11.1%)
BN	10	100.0	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	83.3	100.0 (16.7%)	83.3 (0.0%)	83.3 (0.0%)	83.3 (0.0%)	87.5 (4.2%)	87.5 (4.2%)	79.2 (-4.2%)
D	5	37.5	83.3 (45.8%)	62.5 (25.0%)	62.5 (25.0%)	66.7 (29.2%)	66.7 (29.2%)	83.3 (45.8%)	45.8 (8.3%)
D	6	83.3	91.7 (8.3%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)
D	7	95.8	91.7 (-4.2%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	100.0 (4.2%)	95.8 (0.0%)
D	8	83.3	87.5 (4.2%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	91.7 (8.3%)
D	9	79.2	83.3 (4.2%)	87.5 (8.3%)	87.5 (8.3%)	83.3 (4.2%)	83.3 (4.2%)	83.3 (4.2%)	87.5 (8.3%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	68.8	93.8 (25.0%)	93.8 (25.0%)	81.3 (12.5%)	93.8 (25.0%)	93.8 (25.0%)	93.8 (25.0%)	68.8 (0.0%)
C	5	50.0	87.5 (37.5%)	62.5 (12.5%)	62.5 (12.5%)	62.5 (12.5%)	68.8 (18.8%)	62.5 (12.5%)	43.8 (-6.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	6	62.5	62.5 (0.0%)	68.8 (6.3%)	75.0 (12.5%)	68.8 (6.3%)	68.8 (6.3%)	75.0 (12.5%)	43.8 (-18.8%)
C	7	37.5	43.8 (6.3%)	50.0 (12.5%)	50.0 (12.5%)	62.5 (25.0%)	56.3 (18.8%)	50.0 (12.5%)	31.3 (-6.3%)
C	8	18.8	25.0 (6.3%)	43.8 (25.0%)	56.3 (37.5%)	43.8 (25.0%)	43.8 (25.0%)	62.5 (43.8%)	18.8 (0.0%)
C	9	31.3	25.0 (-6.3%)	25.0 (-6.3%)	37.5 (6.3%)	25.0 (-6.3%)	18.8 (-12.5%)	43.8 (12.5%)	43.8 (12.5%)
C	10	40.0	40.0 (0.0%)	33.3 (-6.7%)	40.0 (0.0%)	46.7 (6.7%)	33.3 (-6.7%)	60.0 (20.0%)	53.3 (13.3%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	88.9	99.0 (10.1%)	92.9 (4.0%)	90.9 (2.0%)	92.9 (4.0%)	93.9 (5.1%)	93.9 (5.1%)	87.9 (-1.0%)
All	5	43.4	85.9 (42.4%)	65.7 (22.2%)	66.7 (23.2%)	67.7 (24.2%)	70.7 (27.3%)	79.8 (36.4%)	54.5 (11.1%)
All	6	73.7	84.8 (11.1%)	85.9 (12.1%)	86.9 (13.1%)	85.9 (12.1%)	82.8 (9.1%)	75.8 (2.0%)	72.7 (-1.0%)
All	7	87.9	87.9 (0.0%)	90.9 (3.0%)	90.9 (3.0%)	92.9 (5.1%)	91.9 (4.0%)	89.9 (2.0%)	86.9 (-1.0%)
All	8	79.8	80.8 (1.0%)	88.9 (9.1%)	90.9 (11.1%)	88.9 (9.1%)	88.9 (9.1%)	89.9 (10.1%)	81.8 (2.0%)
All	9	80.8	80.8 (0.0%)	83.8 (3.0%)	85.9 (5.1%)	82.8 (2.0%)	82.8 (2.0%)	84.8 (4.0%)	86.9 (6.1%)
All	10	90.8	90.8 (0.0%)	88.8 (-2.0%)	90.8 (0.0%)	90.8 (0.0%)	89.8 (-1.0%)	92.9 (2.0%)	92.9 (2.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	90.8	96.1 (5.4%)	95.5 (4.8%)	95.5 (4.8%)	95.8 (5.1%)	95.5 (4.8%)	92.3 (1.5%)	92.3 (1.5%)
AN	All	93.0	100.0 (7.0%)	96.2 (3.2%)	96.2 (3.2%)	96.2 (3.2%)	96.2 (3.2%)	98.1 (5.1%)	94.9 (1.9%)
BN	All	92.6	95.4 (2.8%)	94.9 (2.3%)	95.8 (3.2%)	94.9 (2.3%)	95.8 (3.2%)	95.8 (3.2%)	94.0 (1.4%)
D	All	88.5	94.8 (6.3%)	93.4 (4.9%)	93.4 (4.9%)	93.4 (4.9%)	93.8 (5.2%)	95.1 (6.6%)	91.3 (2.8%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	All	67.2	73.0 (5.8%)	73.0 (5.8%)	75.1 (7.9%)	75.1 (7.9%)	73.5 (6.3%)	78.8 (11.6%)	66.7 (-0.5%)
All	All	87.1	92.5 (5.4%)	91.4 (4.3%)	91.9 (4.8%)	91.8 (4.7%)	91.7 (4.6%)	92.2 (5.1%)	88.6 (1.5%)

Table L.1-213. Percent of months outside the 59°F to 73.4°F water temperature range of observed green sturgeon holding by month and water year type and for all years combined, Sacramento River at Hamilton City, Year-round.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	4	96.4	71.4	75.0	75.0	75.0	75.0	75.0
W	5	3.6	3.6	3.6	3.6	3.6	3.6	3.6
W	6	3.6	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	9	3.6	0.0	0.0	10.7	10.7	10.7	14.3
W	10	0.0	25.0	96.4	96.4	96.4	92.9	92.9
W	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	4	76.9	38.5	46.2	46.2	46.2	46.2	46.2

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
AN	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	53.8	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	9	7.7	0.0	0.0	0.0	0.0	0.0	7.7
AN	10	0.0	23.1	76.9	84.6	84.6	84.6	84.6
AN	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	4	55.6	22.2	16.7	16.7	16.7	16.7	16.7
BN	5	0.0	0.0	0.0	5.6	5.6	0.0	0.0
BN	6	55.6	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	5.6	5.6	5.6	5.6	5.6
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	9	27.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	10	0.0	16.7	50.0	44.4	44.4	44.4	44.4
BN	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	3	100.0	95.8	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
D	4	12.5	8.3	12.5	12.5	12.5	12.5	12.5
D	5	8.3	0.0	0.0	0.0	0.0	0.0	0.0
D	6	62.5	0.0	0.0	0.0	0.0	0.0	0.0
D	7	95.8	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	9	37.5	0.0	0.0	0.0	0.0	0.0	0.0
D	10	0.0	29.2	29.2	37.5	37.5	37.5	33.3
D	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	3	93.8	75.0	81.3	81.3	87.5	87.5	87.5
C	4	18.8	0.0	0.0	0.0	0.0	0.0	0.0
C	5	6.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	87.5	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	0.0	0.0	6.3	6.3	6.3
C	9	43.8	0.0	0.0	0.0	0.0	0.0	0.0
C	10	0.0	6.7	6.7	0.0	0.0	0.0	0.0
C	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	3	99.0	94.9	97.0	97.0	98.0	98.0	98.0
All	4	53.5	31.3	33.3	33.3	33.3	33.3	33.3
All	5	4.0	1.0	1.0	2.0	2.0	1.0	1.0
All	6	47.5	0.0	0.0	0.0	0.0	0.0	0.0
All	7	99.0	0.0	1.0	1.0	1.0	1.0	1.0
All	8	99.0	0.0	0.0	0.0	1.0	1.0	1.0
All	9	23.2	0.0	0.0	3.0	3.0	3.0	5.1
All	10	0.0	21.4	55.1	56.1	56.1	55.1	54.1
All	11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W	All	67.3	50.0	56.3	55.7	57.1	57.1	56.8
AN	All	69.6	47.5	52.5	48.7	53.2	53.2	53.2
BN	All	69.9	44.9	47.7	48.1	47.7	47.7	47.2
D	All	68.1	44.4	45.1	44.8	45.8	45.8	45.8
C	All	70.9	39.7	40.2	43.4	39.7	40.7	40.7
All	All	68.8	45.7	48.9	48.8	49.4	49.5	49.4

Table L.1-214. Percent (difference in percent relative to NAA) of months outside the 59°F to 73.4°F water temperature range of observed green sturgeon holding by month and water year type and for all years combined, Sacramento River at Hamilton City, Year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	75.0	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)
W	5	3.6	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	10.7 (10.7%)	10.7 (10.7%)	10.7 (10.7%)	10.7 (10.7%)	3.6 (3.6%)	3.6 (3.6%)
W	10	96.4	89.3 (-7.1%)	92.9 (-3.6%)	92.9 (-3.6%)	92.9 (-3.6%)	92.9 (-3.6%)	96.4 (0.0%)	92.9 (-3.6%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	46.2	38.5 (-7.7%)	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)	46.2 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	76.9	38.5 (-38.5%)	92.3 (15.4%)	92.3 (15.4%)	84.6 (7.7%)	84.6 (7.7%)	92.3 (15.4%)	61.5 (-15.4%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	16.7	27.8 (11.1%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	22.2 (5.6%)	16.7 (0.0%)
BN	5	0.0	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	5.6	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)
BN	10	50.0	38.9 (-11.1%)	44.4 (-5.6%)	44.4 (-5.6%)	44.4 (-5.6%)	44.4 (-5.6%)	38.9 (-11.1%)	55.6 (5.6%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	12.5	20.8 (8.3%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	16.7 (4.2%)	8.3 (-4.2%)	20.8 (8.3%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	100.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	100.0 (0.0%)
D	10	29.2	16.7 (-12.5%)	33.3 (4.2%)	33.3 (4.2%)	33.3 (4.2%)	37.5 (8.3%)	29.2 (0.0%)	75.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	3.6 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	0.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	0.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	0.0 (0.0%)
C	3	81.3	93.8 (12.5%)	87.5 (6.3%)	81.3 (0.0%)	87.5 (6.3%)	87.5 (6.3%)	81.3 (0.0%)	3.6 (3.6%)
C	4	0.0	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	92.9 (-3.6%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	100.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	100.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	100.0 (0.0%)
C	8	0.0	18.8 (18.8%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	100.0 (0.0%)
C	9	0.0	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	100.0 (0.0%)
C	10	6.7	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	46.2 (0.0%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	0.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	0.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	0.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	0.0 (0.0%)
All	3	97.0	99.0 (2.0%)	98.0 (1.0%)	97.0 (0.0%)	98.0 (1.0%)	98.0 (1.0%)	97.0 (0.0%)	0.0 (0.0%)
All	4	33.3	37.4 (4.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	34.3 (1.0%)	33.3 (0.0%)	61.5 (-15.4%)
All	5	1.0	2.0 (1.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	100.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	0.0 (-1.0%)	100.0 (0.0%)
All	8	0.0	3.0 (3.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	100.0 (0.0%)
All	9	0.0	1.0 (1.0%)	3.0 (3.0%)	3.0 (3.0%)	4.0 (4.0%)	3.0 (3.0%)	2.0 (2.0%)	100.0 (0.0%)
All	10	55.1	41.8 (-13.3%)	55.1 (0.0%)	55.1 (0.0%)	54.1 (-1.0%)	55.1 (0.0%)	54.1 (-1.0%)	75.0 (0.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	3.6 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	0.0 (0.0%)
W	All	56.3	55.7 (-0.6%)	56.8 (0.6%)	56.8 (0.6%)	56.8 (0.6%)	56.8 (0.6%)	56.5 (0.3%)	0.0 (0.0%)
AN	All	52.5	48.7 (-3.8%)	53.8 (1.3%)	53.8 (1.3%)	53.8 (1.3%)	53.2 (0.6%)	53.8 (1.3%)	0.0 (0.0%)
BN	All	47.7	48.1 (0.5%)	47.2 (-0.5%)	47.2 (-0.5%)	47.2 (-0.5%)	47.2 (-0.5%)	47.2 (-0.5%)	3.6 (3.6%)
D	All	45.1	44.8 (-0.3%)	45.5 (0.3%)	45.5 (0.3%)	45.5 (0.3%)	46.2 (1.0%)	44.8 (-0.3%)	92.9 (-3.6%)
C	All	40.2	43.4 (3.2%)	40.7 (0.5%)	39.7 (-0.5%)	40.7 (0.5%)	40.7 (0.5%)	39.7 (-0.5%)	100.0 (0.0%)
All	All	48.9	48.8 (-0.2%)	49.4 (0.4%)	49.2 (0.3%)	49.4 (0.4%)	49.5 (0.5%)	48.9 (0.0%)	100.0 (0.0%)

L.1.3.5.2 Egg Incubation

Water temperature-related effects on green sturgeon egg incubation in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 52.3°F to 60.8°F range supporting egg incubation (Van Eenennaam et al. 2005, Brown 2007, Rodgers et al. 2019) at Bend Bridge and Hamilton City (Table L.1-1).

Results are presented in Table L.1-215 and Table L.1-216 for the Sacramento River at Bend Bridge and Table L.1-217 and Table L.1-218 for Hamilton City.

- At Bend Bridge, the highest percent of months outside the green sturgeon egg incubation water temperature range was 25% and occurred during May of wet water years under the NAA and Alt 4 (Table L.1-215 and Table L.1-216). The lowest percent of months outside the egg incubation range was 0% and occurred during all months of at least one water year type, except during May under the NAA. Combining all water year types, the percent of months outside the egg incubation range was highest during May and lowest during April or July depending on alternative. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months outside the green sturgeon egg incubation water temperature range was 100% and occurred during June of an above normal and critical water year type under the NAA and all alternatives (Table L.1-217 and Table L.1-218). The lowest percent of months outside the egg incubation range was 3.6% and occurred during April of wet water years under the NAA, all four components of Alt 2, and Alt 4. Combining all water year types, the percent of months outside the egg incubation range was highest during June and lowest during April under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Table L.1-215. Percent of months outside the 52.3°F to 60.8°F water temperature range supporting green sturgeon egg incubation by month and water year type and for all years combined, Sacramento River at Bend Bridge, April through July.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	7.1	14.3	7.1	7.1	7.1	7.1	10.7
W	5	10.7	32.1	25.0	21.4	21.4	21.4	21.4
W	6	100.0	14.3	7.1	7.1	7.1	7.1	7.1
W	7	100.0	10.7	0.0	0.0	0.0	0.0	0.0
AN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	46.2	7.7	7.7	0.0	0.0	0.0	0.0
AN	6	100.0	7.7	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	83.3	5.6	5.6	0.0	0.0	0.0	0.0
BN	6	100.0	5.6	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	75.0	8.3	12.5	4.2	4.2	8.3	8.3
D	6	100.0	4.2	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	4	18.8	0.0	0.0	0.0	0.0	0.0	0.0
C	5	87.5	12.5	12.5	6.3	6.3	6.3	6.3
C	6	100.0	0.0	0.0	6.3	0.0	6.3	12.5
C	7	100.0	6.3	6.3	12.5	0.0	6.3	6.3
All	4	5.1	4.0	2.0	2.0	2.0	2.0	3.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	5	56.6	15.2	14.1	8.1	8.1	9.1	9.1
All	6	100.0	7.1	2.0	3.0	2.0	3.0	4.0
All	7	100.0	4.0	1.0	2.0	0.0	1.0	1.0
W	All	54.5	17.9	9.8	8.0	8.9	8.9	8.9
AN	All	61.5	3.8	1.9	0.0	0.0	0.0	0.0
BN	All	70.8	2.8	1.4	0.0	0.0	0.0	0.0
D	All	68.8	3.1	3.1	0.0	1.0	1.0	2.1
C	All	76.6	4.7	4.7	0.0	6.3	1.6	4.7
All	All	65.4	7.6	4.8	2.3	3.8	3.0	3.8

Table L.1-216. Percent (difference in percent relative to NAA) of months outside the 52.3°F to 60.8°F water temperature range supporting green sturgeon egg incubation by month and water year type and for all years combined, Sacramento River at Bend Bridge, April through July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	10.7 (3.6%)	7.1 (0.0%)	7.1 (0.0%)
W	5	25.0	17.9 (-7.1%)	21.4 (-3.6%)	21.4 (-3.6%)	21.4 (-3.6%)	21.4 (-3.6%)	7.1 (-17.9%)	25.0 (0.0%)
W	6	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	14.3 (7.1%)	7.1 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	7.7	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)	0.0 (-7.7%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	5	5.6	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	12.5	0.0 (-12.5%)	4.2 (-8.3%)	4.2 (-8.3%)	4.2 (-8.3%)	4.2 (-8.3%)	0.0 (-12.5%)	4.2 (-8.3%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	12.5	0.0 (-12.5%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	12.5 (12.5%)
C	7	6.3	0.0 (-6.3%)	0.0 (-6.3%)	12.5 (6.3%)	0.0 (-6.3%)	6.3 (0.0%)	0.0 (-6.3%)	12.5 (6.3%)
All	4	2.0	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	2.0 (0.0%)	3.0 (1.0%)	2.0 (0.0%)	2.0 (0.0%)
All	5	14.1	5.1 (-9.1%)	9.1 (-5.1%)	8.1 (-6.1%)	8.1 (-6.1%)	8.1 (-6.1%)	3.0 (-11.1%)	9.1 (-5.1%)
All	6	2.0	2.0 (0.0%)	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	2.0 (0.0%)	5.1 (3.0%)	4.0 (2.0%)
All	7	1.0	0.0 (-1.0%)	0.0 (-1.0%)	2.0 (1.0%)	0.0 (-1.0%)	1.0 (0.0%)	0.0 (-1.0%)	2.0 (1.0%)
W	All	9.8	8.0 (-1.8%)	8.9 (-0.9%)	8.9 (-0.9%)	8.9 (-0.9%)	9.8 (0.0%)	7.1 (-2.7%)	9.8 (0.0%)
AN	All	1.9	0.0 (-1.9%)	0.0 (-1.9%)	0.0 (-1.9%)	0.0 (-1.9%)	0.0 (-1.9%)	1.9 (0.0%)	0.0 (-1.9%)
BN	All	1.4	0.0 (-1.4%)	1.4 (0.0%)	0.0 (-1.4%)	0.0 (-1.4%)	0.0 (-1.4%)	0.0 (-1.4%)	0.0 (-1.4%)
D	All	3.1	0.0 (-3.1%)	1.0 (-2.1%)	1.0 (-2.1%)	1.0 (-2.1%)	1.0 (-2.1%)	0.0 (-3.1%)	1.0 (-2.1%)
C	All	4.7	0.0 (-4.7%)	1.6 (-3.1%)	6.3 (1.6%)	3.1 (-1.6%)	3.1 (-1.6%)	1.6 (-3.1%)	7.8 (3.1%)
All	All	4.8	2.3 (-2.5%)	3.3 (-1.5%)	3.8 (-1.0%)	3.3 (-1.5%)	3.5 (-1.3%)	2.5 (-2.3%)	4.3 (-0.5%)

Table L.1-217. Percent of months outside the 52.3°F to 60.8°F water temperature range supporting green sturgeon egg incubation by month and water year type and for all years combined, Sacramento River at Hamilton City, April through July.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	4	0.0	17.9	3.6	3.6	3.6	3.6	3.6
W	5	85.7	89.3	92.9	85.7	85.7	85.7	85.7
W	6	100.0	100.0	96.4	96.4	96.4	96.4	96.4
W	7	100.0	100.0	82.1	82.1	82.1	78.6	78.6
AN	4	7.7	38.5	30.8	30.8	30.8	30.8	23.1
AN	5	92.3	92.3	92.3	92.3	92.3	92.3	92.3
AN	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
AN	7	100.0	100.0	53.8	53.8	53.8	53.8	53.8
BN	4	22.2	61.1	27.8	27.8	27.8	38.9	22.2
BN	5	100.0	88.9	88.9	88.9	88.9	88.9	88.9
BN	6	100.0	100.0	94.4	94.4	94.4	94.4	100.0
BN	7	100.0	100.0	72.2	72.2	72.2	72.2	77.8
D	4	45.8	87.5	54.2	54.2	54.2	62.5	62.5
D	5	100.0	95.8	91.7	87.5	87.5	91.7	91.7
D	6	100.0	100.0	95.8	100.0	100.0	100.0	100.0
D	7	100.0	100.0	83.3	83.3	83.3	87.5	87.5
C	4	68.8	87.5	87.5	75.0	75.0	68.8	62.5
C	5	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C	7	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	4	27.3	56.6	37.4	35.4	35.4	38.4	33.3
All	5	94.9	92.9	92.9	89.9	89.9	90.9	90.9
All	6	100.0	100.0	97.0	98.0	98.0	98.0	99.0
All	7	100.0	100.0	79.8	79.8	79.8	79.8	80.8
W	All	71.4	76.8	68.8	67.9	67.0	67.0	66.1
AN	All	75.0	82.7	69.2	71.2	69.2	69.2	69.2
BN	All	80.6	87.5	70.8	70.8	70.8	70.8	73.6
D	All	86.5	95.8	81.3	83.3	81.3	81.3	85.4
C	All	92.2	96.9	96.9	95.3	93.8	93.8	92.2
All	All	80.6	87.4	76.8	77.0	75.8	75.8	76.8

Table L.1-218. Percent (difference in percent relative to NAA) of months outside the 52.3°F to 60.8°F water temperature range supporting green sturgeon egg incubation by month and water year type and for all years combined, Sacramento River at Hamilton City, April through July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	3.6	10.7 (7.1%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	10.7 (7.1%)	3.6 (0.0%)
W	5	92.9	75.0 (-17.9%)	85.7 (-7.1%)	85.7 (-7.1%)	85.7 (-7.1%)	85.7 (-7.1%)	71.4 (-21.4%)	89.3 (-3.6%)
W	6	96.4	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	100.0 (3.6%)	96.4 (0.0%)
W	7	82.1	89.3 (7.1%)	82.1 (0.0%)	82.1 (0.0%)	82.1 (0.0%)	78.6 (-3.6%)	96.4 (14.3%)	85.7 (3.6%)
AN	4	30.8	38.5 (7.7%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)	23.1 (-7.7%)	38.5 (7.7%)	30.8 (0.0%)
AN	5	92.3	84.6 (-7.7%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	53.8	61.5 (7.7%)	53.8 (0.0%)	53.8 (0.0%)	53.8 (0.0%)	53.8 (0.0%)	100.0 (46.2%)	53.8 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	27.8	22.2 (-5.6%)	27.8 (0.0%)	27.8 (0.0%)	38.9 (11.1%)	22.2 (-5.6%)	50.0 (22.2%)	27.8 (0.0%)
BN	5	88.9	88.9 (0.0%)	88.9 (0.0%)	88.9 (0.0%)	88.9 (0.0%)	88.9 (0.0%)	83.3 (-5.6%)	83.3 (-5.6%)
BN	6	94.4	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	100.0 (5.6%)	100.0 (5.6%)	94.4 (0.0%)
BN	7	72.2	77.8 (5.6%)	77.8 (5.6%)	77.8 (5.6%)	77.8 (5.6%)	77.8 (5.6%)	94.4 (22.2%)	72.2 (0.0%)
D	4	54.2	54.2 (0.0%)	54.2 (0.0%)	54.2 (0.0%)	62.5 (8.3%)	58.3 (4.2%)	79.2 (25.0%)	58.3 (4.2%)
D	5	91.7	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	91.7 (0.0%)	100.0 (8.3%)	91.7 (0.0%)
D	6	95.8	100.0 (4.2%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	100.0 (4.2%)	95.8 (0.0%)	100.0 (4.2%)
D	7	83.3	87.5 (4.2%)	83.3 (0.0%)	83.3 (0.0%)	83.3 (0.0%)	87.5 (4.2%)	87.5 (4.2%)	83.3 (0.0%)
C	4	87.5	81.3 (-6.3%)	81.3 (-6.3%)	81.3 (-6.3%)	68.8 (-18.8%)	68.8 (-18.8%)	81.3 (-6.3%)	87.5 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	37.4	38.4 (1.0%)	36.4 (-1.0%)	36.4 (-1.0%)	38.4 (1.0%)	33.3 (-4.0%)	49.5 (12.1%)	38.4 (1.0%)
All	5	92.9	86.9 (-6.1%)	90.9 (-2.0%)	90.9 (-2.0%)	90.9 (-2.0%)	89.9 (-3.0%)	87.9 (-5.1%)	90.9 (-2.0%)
All	6	97.0	98.0 (1.0%)	97.0 (0.0%)	97.0 (0.0%)	97.0 (0.0%)	99.0 (2.0%)	99.0 (2.0%)	98.0 (1.0%)
All	7	79.8	84.8 (5.1%)	80.8 (1.0%)	80.8 (1.0%)	80.8 (1.0%)	80.8 (1.0%)	94.9 (15.2%)	80.8 (1.0%)
W	All	68.8	67.9 (-0.9%)	67.0 (-1.8%)	67.0 (-1.8%)	67.0 (-1.8%)	66.1 (-2.7%)	69.6 (0.9%)	68.8 (0.0%)
AN	All	69.2	71.2 (1.9%)	69.2 (0.0%)	69.2 (0.0%)	69.2 (0.0%)	67.3 (-1.9%)	82.7 (13.5%)	69.2 (0.0%)
BN	All	70.8	70.8 (0.0%)	72.2 (1.4%)	72.2 (1.4%)	75.0 (4.2%)	72.2 (1.4%)	81.9 (11.1%)	69.4 (-1.4%)
D	All	81.3	83.3 (2.1%)	81.3 (0.0%)	81.3 (0.0%)	83.3 (2.1%)	84.4 (3.1%)	90.6 (9.4%)	83.3 (2.1%)
C	All	96.9	95.3 (-1.6%)	95.3 (-1.6%)	95.3 (-1.6%)	92.2 (-4.7%)	90.6 (-6.3%)	95.3 (-1.6%)	96.9 (0.0%)
All	All	76.8	77.0 (0.3%)	76.3 (-0.5%)	76.3 (-0.5%)	76.8 (0.0%)	75.8 (-1.0%)	82.8 (6.1%)	77.0 (0.3%)

L.1.3.5.3 Larvae

Water temperature-related effects on green sturgeon larvae in the Sacramento River were evaluated by assessing the percent of months above the 64.4°F upper limit for newly hatched larvae (Linares-Casenave et al. 2013; Rodgers et al. 2019) at Bend Bridge and Hamilton City (Table L.1-1).

Results are presented in Table L.1-219 and Table L.1-220 for the Sacramento River at Bend Bridge and Table L.1-221 and Table L.1-222 for Hamilton City.

- At Bend Bridge, water temperatures were predominantly below the upper limit for green sturgeon larvae in all months, water year types, and alternatives, except June of above normal water years under Alt 3 and August of critical water years under the NAA, Alt 1, all components of Alt 2, and Alt 4. (Table L.1-219 and Table L.1-220).
- At Hamilton City, the highest percent of months outside the green sturgeon egg incubation water temperature range was 87.5% and occurred during July of critical water year under Alt 4, and August of a critical water year type under Alt 2 with TUCP without VA, Alt 2 without TUCP without VA, Alt 2 without TUCP Delva VA, and Alt 4 (Table L.1-221 and Table L.1-222). The lowest percent of months outside the egg incubation range was 0 % and occurred during July of above normal water years under all alternatives except Alt 3. Combining all water year types, the percent of months outside the egg incubation range was highest during June and lowest during May under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.

Table L.1-219. Percent of months above the 64.4°F upper water temperature limit for newly hatched green sturgeon larvae by month and water year type and for all years combined, Sacramento River at Bend Bridge, May through August.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	6	85.7	0.0	0.0	0.0	0.0	0.0	0.0
W	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	5	15.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	6	92.3	0.0	0.0	0.0	0.0	0.0	0.0
AN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	5	27.8	0.0	0.0	0.0	0.0	0.0	0.0
BN	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
BN	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	5	29.2	0.0	0.0	0.0	0.0	0.0	0.0
D	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D	8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	5	56.3	0.0	0.0	0.0	0.0	0.0	0.0
C	6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
C	8	100.0	0.0	18.8	0.0	18.8	18.8	18.8
All	5	23.2	0.0	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	6	94.9	0.0	0.0	0.0	0.0	0.0	0.0
All	7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
All	8	100.0	0.0	3.0	0.0	3.0	3.0	3.0
W	All	71.4	0.0	0.0	0.0	0.0	0.0	0.0
AN	All	76.9	0.0	0.0	0.0	0.0	0.0	0.0
BN	All	81.9	0.0	0.0	0.0	0.0	0.0	0.0
D	All	82.3	0.0	0.0	0.0	0.0	0.0	0.0
C	All	89.1	0.0	4.7	4.7	0.0	4.7	4.7
All	All	79.5	0.0	0.8	0.8	0.0	0.8	0.8

Table L.1-220. Percent (difference in percent relative to NAA) of months above the 64.4°F upper water temperature limit for newly hatched green sturgeon larvae by month and water year type and for all years combined, Sacramento River at Bend Bridge, May through August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	18.8	18.8 (0.0%)	18.8 (0.0%)	0.0 (-18.8%)	25.0 (6.3%)	25.0 (6.3%)	0.0 (-18.8%)	6.3 (-12.5%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	3.0	3.0 (0.0%)	3.0 (0.0%)	0.0 (-3.0%)	4.0 (1.0%)	4.0 (1.0%)	0.0 (-3.0%)	1.0 (-2.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.9 (1.9%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	4.7	4.7 (0.0%)	4.7 (0.0%)	0.0 (-4.7%)	6.3 (1.6%)	6.3 (1.6%)	0.0 (-4.7%)	1.6 (-3.1%)
All	All	0.8	0.8 (0.0%)	0.8 (0.0%)	0.0 (-0.8%)	1.0 (0.3%)	1.0 (0.3%)	0.3 (-0.5%)	0.3 (-0.5%)

Table L.1-221. Percent of months above the 64.4°F upper water temperature limit for newly hatched green sturgeon larvae by month and water year type and for all years combined, Sacramento River at Hamilton City, May through August.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	5	17.9	50.0	50.0	35.7	32.1	32.1	32.1
W	6	100.0	92.9	75.0	71.4	71.4	67.9	71.4
W	7	100.0	100.0	21.4	21.4	21.4	21.4	21.4
W	8	100.0	75.0	17.9	17.9	17.9	17.9	17.9
AN	5	69.2	69.2	53.8	46.2	46.2	46.2	30.8
AN	6	100.0	100.0	53.8	53.8	53.8	53.8	61.5
AN	7	100.0	84.6	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	61.5	7.7	7.7	7.7	7.7	7.7
BN	5	83.3	44.4	22.2	16.7	22.2	22.2	16.7
BN	6	100.0	83.3	50.0	38.9	38.9	38.9	44.4
BN	7	100.0	72.2	16.7	22.2	27.8	33.3	33.3
BN	8	100.0	72.2	27.8	5.6	16.7	16.7	16.7
D	5	83.3	58.3	45.8	41.7	37.5	37.5	41.7
D	6	100.0	66.7	37.5	37.5	37.5	37.5	37.5
D	7	100.0	62.5	16.7	20.8	20.8	20.8	20.8
D	8	100.0	58.3	20.8	8.3	8.3	12.5	16.7
C	5	87.5	43.8	50.0	50.0	50.0	43.8	31.3
C	6	100.0	93.8	68.8	62.5	56.3	56.3	50.0
C	7	100.0	93.8	81.3	81.3	68.8	68.8	62.5
C	8	100.0	93.8	81.3	87.5	87.5	81.3	81.3
All	5	63.6	52.5	44.4	37.4	36.4	35.4	31.3

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
All	6	100.0	85.9	57.6	53.5	52.5	51.5	53.5
All	7	100.0	82.8	26.3	28.3	27.3	28.3	27.3
All	8	100.0	71.7	29.3	23.2	25.3	25.3	26.3
W	All	79.5	79.5	41.1	32.1	36.6	35.7	34.8
AN	All	92.3	78.8	28.8	11.5	26.9	26.9	26.9
BN	All	95.8	68.1	29.2	26.4	20.8	26.4	27.8
D	All	95.8	61.5	30.2	24.0	27.1	26.0	27.1
C	All	96.9	81.3	70.3	59.4	70.3	65.6	62.5
All	All	90.9	73.2	39.4	30.8	35.6	35.4	35.1

Table L.1-222. Percent (difference in percent relative to NAA) of months above the 64.4°F upper water temperature limit for newly hatched green sturgeon larvae by month and water year type and for all years combined, Sacramento River at Hamilton City, May through August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	50.0	25.0 (-25.0%)	32.1 (-17.9%)	32.1 (-17.9%)	32.1 (-17.9%)	32.1 (-17.9%)	17.9 (-32.1%)	35.7 (-14.3%)
W	6	75.0	60.7 (-14.3%)	71.4 (-3.6%)	71.4 (-3.6%)	67.9 (-7.1%)	71.4 (-3.6%)	85.7 (10.7%)	75.0 (0.0%)
W	7	21.4	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	28.6 (7.1%)	25.0 (3.6%)
W	8	17.9	21.4 (3.6%)	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	21.4 (3.6%)	17.9 (0.0%)
AN	5	53.8	7.7 (-46.2%)	53.8 (0.0%)	53.8 (0.0%)	46.2 (-7.7%)	38.5 (-15.4%)	7.7 (-46.2%)	53.8 (0.0%)
AN	6	53.8	30.8 (-23.1%)	53.8 (0.0%)	53.8 (0.0%)	53.8 (0.0%)	61.5 (7.7%)	76.9 (23.1%)	53.8 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	15.4 (15.4%)	0.0 (0.0%)
AN	8	7.7	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)
BN	5	22.2	16.7 (-5.6%)	22.2 (0.0%)	22.2 (0.0%)	22.2 (0.0%)	16.7 (-5.6%)	22.2 (0.0%)	22.2 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	50.0	33.3 (-16.7%)	38.9 (-11.1%)	38.9 (-11.1%)	38.9 (-11.1%)	44.4 (-5.6%)	50.0 (0.0%)	50.0 (0.0%)
BN	7	16.7	27.8 (11.1%)	27.8 (11.1%)	16.7 (0.0%)	22.2 (5.6%)	38.9 (22.2%)	22.2 (5.6%)	11.1 (-5.6%)
BN	8	27.8	27.8 (0.0%)	16.7 (-11.1%)	11.1 (-16.7%)	16.7 (-11.1%)	22.2 (-5.6%)	5.6 (-22.2%)	22.2 (-5.6%)
D	5	45.8	16.7 (-29.2%)	41.7 (-4.2%)	41.7 (-4.2%)	33.3 (-12.5%)	37.5 (-8.3%)	33.3 (-12.5%)	50.0 (4.2%)
D	6	37.5	37.5 (0.0%)	33.3 (-4.2%)	33.3 (-4.2%)	37.5 (0.0%)	37.5 (0.0%)	37.5 (0.0%)	37.5 (0.0%)
D	7	16.7	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	20.8 (4.2%)	16.7 (0.0%)	12.5 (-4.2%)
D	8	20.8	25.0 (4.2%)	12.5 (-8.3%)	12.5 (-8.3%)	16.7 (-4.2%)	12.5 (-8.3%)	4.2 (-16.7%)	12.5 (-8.3%)
C	5	50.0	31.3 (-18.8%)	50.0 (0.0%)	43.8 (-6.3%)	50.0 (0.0%)	37.5 (-12.5%)	62.5 (12.5%)	56.3 (6.3%)
C	6	68.8	50.0 (-18.8%)	50.0 (-18.8%)	62.5 (-6.3%)	56.3 (-12.5%)	56.3 (-12.5%)	62.5 (-6.3%)	68.8 (0.0%)
C	7	81.3	75.0 (-6.3%)	68.8 (-12.5%)	81.3 (0.0%)	62.5 (-18.8%)	62.5 (-18.8%)	68.8 (-12.5%)	87.5 (6.3%)
C	8	81.3	81.3 (0.0%)	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	75.0 (-6.3%)	62.5 (-18.8%)	87.5 (6.3%)
All	5	44.4	20.2 (-24.2%)	38.4 (-6.1%)	37.4 (-7.1%)	35.4 (-9.1%)	32.3 (-12.1%)	28.3 (-16.2%)	42.4 (-2.0%)
All	6	57.6	44.4 (-13.1%)	50.5 (-7.1%)	52.5 (-5.1%)	51.5 (-6.1%)	54.5 (-3.0%)	62.6 (5.1%)	57.6 (0.0%)
All	7	26.3	27.3 (1.0%)	26.3 (0.0%)	26.3 (0.0%)	24.2 (-2.0%)	28.3 (2.0%)	29.3 (3.0%)	26.3 (0.0%)
All	8	29.3	31.3 (2.0%)	26.3 (-3.0%)	25.3 (-4.0%)	27.3 (-2.0%)	25.3 (-4.0%)	19.2 (-10.1%)	27.3 (-2.0%)
W	All	41.1	32.1 (-8.9%)	35.7 (-5.4%)	35.7 (-5.4%)	34.8 (-6.3%)	35.7 (-5.4%)	38.4 (-2.7%)	38.4 (-2.7%)
AN	All	28.8	11.5 (-17.3%)	28.8 (0.0%)	28.8 (0.0%)	26.9 (-1.9%)	26.9 (-1.9%)	26.9 (-1.9%)	28.8 (0.0%)
BN	All	29.2	26.4 (-2.8%)	26.4 (-2.8%)	22.2 (-6.9%)	25.0 (-4.2%)	30.6 (1.4%)	25.0 (-4.2%)	26.4 (-2.8%)
D	All	30.2	24.0 (-6.3%)	26.0 (-4.2%)	26.0 (-4.2%)	26.0 (-4.2%)	27.1 (-3.1%)	22.9 (-7.3%)	28.1 (-2.1%)
C	All	70.3	59.4 (-10.9%)	64.1 (-6.3%)	68.8 (-1.6%)	64.1 (-6.3%)	57.8 (-12.5%)	64.1 (-6.3%)	75.0 (4.7%)
All	All	39.4	30.8 (-8.6%)	35.4 (-4.0%)	35.4 (-4.0%)	34.6 (-4.8%)	35.1 (-4.3%)	34.8 (-4.5%)	38.4 (-1.0%)

L.1.3.5.4 Juveniles

Water temperature-related effects on green sturgeon juveniles in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 59°F to 66.2°F range of optimal bioenergetic performance (Van Eenennaam et al. 2005, Brown 2007, Rodgers et al. 2019) at Bend Bridge and Hamilton City (Table L.1-1).

Results are presented in Table L.1-223 and Table L.1-224 for the Sacramento River at Bend Bridge and Table L.1-225 and Table L.1-226 for Hamilton City.

- At Bend Bridge, the highest percent of months outside range of optimal bioenergetic performance for green sturgeon juveniles was 100% and occurred primarily during July and August of wet, above normal, and below normal water years, depending on alternative (Table L.1-223 and Table L.1-224). The lowest percent of months outside the optimal range was 18.8% and occurred during August of critical water years under the NAA. Combining all water year types, the percent of months outside the optimal range was highest during July and August and lowest during June under the NAA and all alternatives. Air temperatures and operations drove these temporal patterns.
- At Hamilton City, the highest percent of months outside range of optimal bioenergetic performance for green sturgeon juveniles was 68.8% and occurred during August of critical water years under Alt 2 with TUCP without VA, Alt 2 without TUCP Delva VA, and Alt 4 (Table L.1-225 and Table L.1-226). The lowest percent of months outside the optimal range was 0% and occurred during June of above normal years under Alt 1, July and August of above normal years under the NAA and all alternatives, August of below normal years under the NAA, Alt 1, Alt 3, and Alt 4, and July of dry years under the NAA and Alt 3. Combining all water year types, the percent of months outside the optimal range was highest during June under the NAA and all alternatives, and lowest during July or August depending on alternative. Air temperatures and operations drove these temporal patterns.

Table L.1-223. Percent of months outside the 59°F to 66.2°F water temperature range for optimal bioenergetic performance of green sturgeon juveniles by month and water year type and for all years combined, Sacramento River at Bend Bridge, June through August.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	6	39.3	39.3	64.3	85.7	85.7	85.7	85.7
W	7	100.0	71.4	96.4	100.0	100.0	100.0	100.0
W	8	100.0	82.1	96.4	100.0	100.0	100.0	100.0
AN	6	76.9	61.5	84.6	92.3	92.3	92.3	84.6
AN	7	100.0	92.3	100.0	100.0	100.0	100.0	100.0
AN	8	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BN	6	88.9	66.7	77.8	83.3	83.3	83.3	77.8
BN	7	100.0	83.3	100.0	100.0	100.0	100.0	100.0
BN	8	100.0	94.4	88.9	94.4	94.4	94.4	94.4
D	6	91.7	83.3	83.3	95.8	95.8	95.8	95.8
	7	100.0	91.7	95.8	95.8	95.8	95.8	95.8
D	8	100.0	91.7	83.3	95.8	95.8	95.8	95.8
C	6	100.0	75.0	62.5	75.0	62.5	62.5	62.5
C	7	100.0	68.8	37.5	50.0	62.5	62.5	62.5
C	8	100.0	62.5	18.8	56.3	43.8	56.3	50.0
All	6	75.8	63.6	73.7	86.9	84.8	84.8	82.8
All	7	100.0	80.8	87.9	90.9	92.9	92.9	92.9
All	8	100.0	85.9	79.8	90.9	88.9	90.9	89.9
W	All	79.8	64.3	85.7	94.0	95.2	95.2	95.2
AN	All	92.3	84.6	94.9	100.0	97.4	97.4	97.4

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	All	96.3	81.5	88.9	87.0	92.6	92.6	92.6
D	All	97.2	88.9	87.5	90.3	95.8	95.8	95.8
C	All	100.0	68.8	39.6	50.0	60.4	56.3	60.4
All	All	91.9	76.8	80.5	85.5	89.6	88.9	89.6

Table L.1-224. Percent (difference in percent relative to NAA) of months outside the 59°F to 66.2°F water temperature range for optimal bioenergetic performance of green sturgeon juveniles by month and water year type and for all years combined, Sacramento River at Bend Bridge, June through August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	6	64.3	85.7 (21.4%)	85.7 (21.4%)	85.7 (21.4%)	85.7 (21.4%)	82.1 (17.9%)	50.0 (-14.3%)	60.7 (-3.6%)
W	7	96.4	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	92.9 (-3.6%)	96.4 (0.0%)
W	8	96.4	96.4 (0.0%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	92.9 (-3.6%)	92.9 (-3.6%)
AN	6	84.6	100.0 (15.4%)	92.3 (7.7%)	92.3 (7.7%)	92.3 (7.7%)	84.6 (0.0%)	76.9 (-7.7%)	84.6 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	77.8	83.3 (5.6%)	83.3 (5.6%)	83.3 (5.6%)	83.3 (5.6%)	77.8 (0.0%)	88.9 (11.1%)	77.8 (0.0%)
BN	7	100.0	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	88.9	83.3 (-5.6%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)
D	6	83.3	91.7 (8.3%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)
D	7	95.8	91.7 (-4.2%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	100.0 (4.2%)	95.8 (0.0%)
D	8	83.3	87.5 (4.2%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	95.8 (12.5%)	91.7 (8.3%)
C	6	62.5	62.5 (0.0%)	68.8 (6.3%)	75.0 (12.5%)	68.8 (6.3%)	68.8 (6.3%)	75.0 (12.5%)	43.8 (-18.8%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	37.5	43.8 (6.3%)	50.0 (12.5%)	50.0 (12.5%)	62.5 (25.0%)	56.3 (18.8%)	50.0 (12.5%)	31.3 (-6.3%)
C	8	18.8	43.8 (25.0%)	50.0 (31.3%)	56.3 (37.5%)	50.0 (31.3%)	50.0 (31.3%)	62.5 (43.8%)	25.0 (6.3%)
All	6	73.7	84.8 (11.1%)	85.9 (12.1%)	86.9 (13.1%)	85.9 (12.1%)	82.8 (9.1%)	75.8 (2.0%)	72.7 (-1.0%)
All	7	87.9	87.9 (0.0%)	90.9 (3.0%)	90.9 (3.0%)	92.9 (5.1%)	91.9 (4.0%)	89.9 (2.0%)	86.9 (-1.0%)
All	8	79.8	83.8 (4.0%)	89.9 (10.1%)	90.9 (11.1%)	89.9 (10.1%)	89.9 (10.1%)	89.9 (10.1%)	82.8 (3.0%)
W	All	85.7	94.0 (8.3%)	95.2 (9.5%)	95.2 (9.5%)	95.2 (9.5%)	94.0 (8.3%)	78.6 (-7.1%)	83.3 (-2.4%)
AN	All	94.9	100.0 (5.1%)	97.4 (2.6%)	97.4 (2.6%)	97.4 (2.6%)	94.9 (0.0%)	92.3 (-2.6%)	94.9 (0.0%)
BN	All	88.9	87.0 (-1.9%)	92.6 (3.7%)	92.6 (3.7%)	92.6 (3.7%)	90.7 (1.9%)	94.4 (5.6%)	90.7 (1.9%)
D	All	87.5	90.3 (2.8%)	95.8 (8.3%)	95.8 (8.3%)	95.8 (8.3%)	95.8 (8.3%)	97.2 (9.7%)	94.4 (6.9%)
C	All	39.6	50.0 (10.4%)	56.3 (16.7%)	60.4 (20.8%)	60.4 (20.8%)	58.3 (18.8%)	62.5 (22.9%)	33.3 (-6.3%)
All	All	80.5	85.5 (5.1%)	88.9 (8.4%)	89.6 (9.1%)	89.6 (9.1%)	88.2 (7.7%)	85.2 (4.7%)	80.8 (0.3%)

Table L.1-225. Percent of months outside the 59°F to 66.2°F water temperature range for optimal bioenergetic performance of green sturgeon juveniles by month and water year type and for all years combined, Sacramento River at Hamilton City, June through August.

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
W	6	100.0	67.9	35.7	32.1	32.1	32.1	32.1
W	7	100.0	46.4	7.1	3.6	3.6	7.1	7.1
W	8	100.0	28.6	7.1	7.1	7.1	7.1	7.1
AN	6	100.0	53.8	23.1	7.7	7.7	15.4	30.8
AN	7	100.0	30.8	0.0	0.0	0.0	0.0	0.0
AN	8	100.0	15.4	0.0	0.0	0.0	0.0	0.0

WYT	Month	EXP1	EXP3	NAA	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA
BN	6	100.0	33.3	33.3	22.2	22.2	22.2	33.3
BN	7	100.0	22.2	11.1	11.1	11.1	11.1	11.1
BN	8	100.0	16.7	0.0	5.6	5.6	5.6	5.6
D	6	100.0	29.2	12.5	8.3	8.3	8.3	12.5
D	7	100.0	16.7	0.0	4.2	4.2	4.2	4.2
D	8	100.0	8.3	8.3	4.2	4.2	4.2	4.2
C	6	100.0	37.5	37.5	31.3	37.5	37.5	37.5
C	7	100.0	31.3	50.0	62.5	50.0	50.0	31.3
C	8	100.0	43.8	62.5	62.5	68.8	68.8	62.5
All	6	100.0	45.5	28.3	21.2	22.2	23.2	28.3
All	7	100.0	30.3	12.1	14.1	12.1	13.1	10.1
All	8	100.0	22.2	14.1	14.1	15.2	15.2	14.1
W	All	100.0	47.6	16.7	11.9	14.3	14.3	15.5
AN	All	100.0	33.3	7.7	0.0	2.6	2.6	5.1
BN	All	100.0	24.1	14.8	9.3	13.0	13.0	13.0
D	All	100.0	18.1	6.9	6.9	5.6	5.6	5.6
C	All	100.0	37.5	50.0	43.8	52.1	52.1	52.1
All	All	100.0	32.7	18.2	13.8	16.5	16.5	17.2

Table L.1-226. Percent (difference in percent relative to NAA) of months outside the 59°F to 66.2°F water temperature range for optimal bioenergetic performance of green sturgeon juveniles by month and water year type and for all years combined, Sacramento River at Hamilton City, June through August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	6	35.7	21.4 (-14.3%)	32.1 (-3.6%)	32.1 (-3.6%)	32.1 (-3.6%)	32.1 (-3.6%)	71.4 (35.7%)	35.7 (0.0%)
W	7	7.1	3.6 (-3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	3.6 (-3.6%)	14.3 (7.1%)	3.6 (-3.6%)
W	8	7.1	10.7 (3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	10.7 (3.6%)	10.7 (3.6%)
AN	6	23.1	0.0 (-23.1%)	15.4 (-7.7%)	15.4 (-7.7%)	15.4 (-7.7%)	30.8 (7.7%)	46.2 (23.1%)	7.7 (-15.4%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	33.3	22.2 (-11.1%)	27.8 (-5.6%)	22.2 (-11.1%)	22.2 (-11.1%)	22.2 (-11.1%)	27.8 (-5.6%)	22.2 (-11.1%)
BN	7	11.1	5.6 (-5.6%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	8	0.0	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
D	6	12.5	8.3 (-4.2%)	8.3 (-4.2%)	8.3 (-4.2%)	8.3 (-4.2%)	16.7 (4.2%)	8.3 (-4.2%)	12.5 (0.0%)
D	7	0.0	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)
D	8	8.3	8.3 (0.0%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	8.3 (0.0%)
C	6	37.5	31.3 (-6.3%)	31.3 (-6.3%)	31.3 (-6.3%)	31.3 (-6.3%)	31.3 (-6.3%)	37.5 (0.0%)	56.3 (18.8%)
C	7	50.0	37.5 (-12.5%)	31.3 (-18.8%)	56.3 (6.3%)	43.8 (-6.3%)	50.0 (0.0%)	50.0 (0.0%)	62.5 (12.5%)
C	8	62.5	62.5 (0.0%)	68.8 (6.3%)	62.5 (0.0%)	68.8 (6.3%)	62.5 (0.0%)	50.0 (-12.5%)	68.8 (6.3%)
All	6	28.3	17.2 (-11.1%)	23.2 (-5.1%)	22.2 (-6.1%)	22.2 (-6.1%)	26.3 (-2.0%)	39.4 (11.1%)	27.3 (-1.0%)
All	7	12.1	9.1 (-3.0%)	10.1 (-2.0%)	14.1 (2.0%)	12.1 (0.0%)	12.1 (0.0%)	14.1 (2.0%)	13.1 (1.0%)
All	8	14.1	15.2 (1.0%)	15.2 (1.0%)	14.1 (0.0%)	15.2 (1.0%)	14.1 (0.0%)	12.1 (-2.0%)	16.2 (2.0%)
W	All	16.7	11.9 (-4.8%)	15.5 (-1.2%)	15.5 (-1.2%)	15.5 (-1.2%)	14.3 (-2.4%)	32.1 (15.5%)	16.7 (0.0%)
AN	All	7.7	0.0 (-7.7%)	5.1 (-2.6%)	5.1 (-2.6%)	5.1 (-2.6%)	10.3 (2.6%)	15.4 (7.7%)	2.6 (-5.1%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	14.8	9.3 (-5.6%)	14.8 (0.0%)	13.0 (-1.9%)	13.0 (-1.9%)	13.0 (-1.9%)	13.0 (-1.9%)	11.1 (-3.7%)
D	All	6.9	6.9 (0.0%)	5.6 (-1.4%)	5.6 (-1.4%)	5.6 (-1.4%)	8.3 (1.4%)	4.2 (-2.8%)	6.9 (0.0%)
C	All	50.0	43.8 (-6.3%)	43.8 (-6.3%)	50.0 (0.0%)	47.9 (-2.1%)	47.9 (-2.1%)	45.8 (-4.2%)	62.5 (12.5%)
All	All	18.2	13.8 (-4.4%)	16.2 (-2.0%)	16.8 (-1.3%)	16.5 (-1.7%)	17.5 (-0.7%)	21.9 (3.7%)	18.9 (0.7%)

L.1.3.6 Fall-Run Chinook Salmon

L.1.3.6.1 Adult Migration

Water temperature-related effects on fall-run Chinook salmon adult migration were evaluated by assessing: (1) the percent of months with water temperature outside the 37.9°F to 68°F successful migration range (Reiser and Bjornn 1979, Goniea et al. 2006); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999 in the Sacramento River) at Keswick, Red Bluff Diversion Dam, and Hamilton City and in Clear Creek below Whiskeytown (Table L.1-2).

Results for the 37.9°F to 68°F successful migration range are presented in Table L.1-227 for Keswick, Table L.1-228 for Red Bluff Diversion Dam, Table L.1-229 for Hamilton City, and Table L.1-230 in Clear Creek below Whiskeytown.

- At Keswick, water temperatures were within the range for successful migration in all months and water year types under the NAA and all alternatives (Table L.1-227).
- At Red Bluff Diversion Dam, water temperatures were predominantly within the range for successful migration in all months, water year types, and alternatives, except August and September in critical water years under the NAA, Alt 1, Alt 2 with TUCP without VA, Alt 2 without TUCP Delta VA, and Alt 2 without TUCP Systemwide VAs.(Table L.1-228). Similarly, when combining water year types, the only months with water temperatures outside the range were August and September.
- At Hamilton City, the highest percent of months with water temperature outside the range for successful migration was 50% and occurred in August of a critical water year under Alternative 2 with TUCP without VA, Alternative 2 without TUCP DeltaVA and Alternative 2 without TUCP Sytemwide VA (Table L.1-229). The lowest percent of months with water temperature outside the range was 0% and occurred October through December in all water years under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range occurred in August and the lowest occurred during October through December under the NAA and all alternatives.
- In Clear Creek below Whiskeytown, the highest percent of months with water temperature outside the range was 13.3% and occurred in October of a critical water year type under Alternative 1 (Table L.1-230). Water temperatures were predominantly within the range under the NAA and all alternatives except in July through September of a critical water year, and September of a below normal water year. Combining water year types, the highest percent of months with water temperature outside the range occurred July through September under the NAA and all alternatives, all other months were within range under the NAA and all alternatives.

Results for the 59.9°F pathogen virulence water temperature threshold for adult fall-run Chinook salmon migration are presented in Table L.1-231 for Keswick, Table L.1-232 for Red Bluff Diversion Dam, Table L.1-233 for Hamilton City, and Table L.1-234 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were predominantly below the pathogen virulence threshold for adult fall-run Chinook salmon migration in all months, water year types, and alternatives, except during August through October of critical water years under the NAA and all alternatives (Table L.1-231). Similarly, combining water year types, the only months above the threshold were August through October under the NAA and all alternatives.
- At Red Bluff Diversion Dam, the highest percent of months with water temperature above the pathogen virulence threshold was 100% and occurred during September of a critical water year type under Alternative 1 (Table L.1-232). The lowest percent of months with water temperature above the threshold was 0% in November and December in each water year type under the NAA and all alternatives. All months in an above normal water year type were also below the threshold under the NAA and all alternatives. Combining water year types, the highest percent of months above the limit occurred in July and August and the lowest percent occurred in November and December under the NAA and all alternatives.
- At Hamilton City, the highest percent of months with water temperatures above the pathogen virulence threshold was 100% and occurred in July through September in dry and critical water year types under the NAA and all alternatives (Table L.1-233). The lowest percent of months above the water temperature threshold was 0% in November and December of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months above the threshold was between 99-100% in August and the lowest was 0% in November and December under the NAA and all alternatives.
- In Clear Creek below Whiskeytown, the highest percent of months with water temperatures above the pathogen virulence threshold was 13.3% and occurred in October and November of a critical water year type under Alternative 1 (Table L.1-234). Water temperatures were predominantly below the pathogen virulence threshold in all water year types except critical years under the NAA and all alternatives. Combining water year types, the highest percent of months above the threshold was in September and the lowest was in December.

Table L.1-227. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, July through December.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-228. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through December.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	18.8 (18.8%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	25.0 (18.8%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (-6.3%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	3.0 (3.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	4.0 (3.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (-1.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.1	7.5 (6.5%)	1.1 (1.1%)	0.0 (0.0%)	1.1 (1.1%)	1.1 (1.1%)	0.0 (-1.1%)	0.0 (0.0%)
All	All	0.2	1.2 (1.0%)	0.2 (0.2%)	0.0 (0.0%)	0.2 (0.2%)	0.2 (0.2%)	0.0 (-0.2%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-229. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, July through December.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	0.0 (-4.2%)	4.2 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	6.3	0.0 (-6.3%)	0.0 (-6.3%)	18.8 (12.5%)	0.0 (-6.3%)	6.3 (0.0%)	6.3 (0.0%)	18.8 (12.5%)
C	8	37.5	37.5 (0.0%)	50.0 (12.5%)	31.3 (-6.3%)	50.0 (12.5%)	50.0 (12.5%)	18.8 (-18.8%)	25.0 (-12.5%)
C	9	37.5	31.3 (-6.3%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	43.8 (6.3%)	25.0 (-12.5%)	12.5 (-25.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	1.0	0.0 (-1.0%)	0.0 (-1.0%)	3.0 (2.0%)	0.0 (-1.0%)	1.0 (0.0%)	4.0 (3.0%)	3.0 (2.0%)
All	8	7.1	7.1 (0.0%)	9.1 (2.0%)	6.1 (-1.0%)	9.1 (2.0%)	9.1 (2.0%)	5.1 (-2.0%)	5.1 (-2.0%)
All	9	7.1	6.1 (-1.0%)	8.1 (1.0%)	5.1 (-2.0%)	8.1 (1.0%)	8.1 (1.0%)	5.1 (-2.0%)	3.0 (-4.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	2.4 (2.4%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.9 (0.9%)	0.0 (0.0%)
D	All	1.4	1.4 (0.0%)	1.4 (0.0%)	1.4 (0.0%)	1.4 (0.0%)	1.4 (0.0%)	0.7 (-0.7%)	1.4 (0.0%)
C	All	14.0	11.8 (-2.2%)	16.1 (2.2%)	12.9 (-1.1%)	16.1 (2.2%)	17.2 (3.2%)	8.6 (-5.4%)	9.7 (-4.3%)
All	All	2.5	2.2 (-0.3%)	2.9 (0.3%)	2.4 (-0.2%)	2.9 (0.3%)	3.0 (0.5%)	2.4 (-0.2%)	1.9 (-0.7%)

Table L.1-230. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, July through December.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.9	0.9 (0.0%)	1.9 (0.9%)	0.9 (0.0%)	0.9 (0.0%)	0.9 (0.0%)	0.0 (-0.9%)	0.9 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	2.2	5.4 (3.2%)	4.3 (2.2%)	5.4 (3.2%)	5.4 (3.2%)	5.4 (3.2%)	4.3 (2.2%)	6.5 (4.3%)
All	All	0.5	1.0 (0.5%)	1.0 (0.5%)	1.0 (0.5%)	1.0 (0.5%)	1.0 (0.5%)	0.7 (0.2%)	1.2 (0.7%)

Table L.1-231. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult fall-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Keswick, July through December.

WYT	Month	NAA	Alt1	Alt2wTUCP wo VA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP wo VA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	25.0	31.3 (6.3%)	25.0 (0.0%)	6.3 (-18.8%)	25.0 (0.0%)	25.0 (0.0%)	0.0 (-25.0%)	6.3 (-18.8%)
C	9	37.5	37.5 (0.0%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	50.0 (12.5%)	12.5 (-25.0%)	18.8 (-18.8%)
C	10	46.7	46.7 (0.0%)	53.3 (6.7%)	33.3 (-13.3%)	53.3 (6.7%)	53.3 (6.7%)	20.0 (-26.7%)	33.3 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	4.0	5.1 (1.0%)	4.0 (0.0%)	1.0 (-3.0%)	4.0 (0.0%)	4.0 (0.0%)	0.0 (-4.0%)	1.0 (-3.0%)
All	9	6.1	6.1 (0.0%)	7.1 (1.0%)	4.0 (-2.0%)	7.1 (1.0%)	8.1 (2.0%)	2.0 (-4.0%)	3.0 (-3.0%)
All	10	7.1	7.1 (0.0%)	8.2 (1.0%)	5.1 (-2.0%)	8.2 (1.0%)	8.2 (1.0%)	3.1 (-4.1%)	5.1 (-2.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	18.3	19.4 (1.1%)	20.4 (2.2%)	10.8 (-7.5%)	20.4 (2.2%)	21.5 (3.2%)	5.4 (-12.9%)	9.7 (-8.6%)
All	All	2.9	3.0 (0.2%)	3.2 (0.3%)	1.7 (-1.2%)	3.2 (0.3%)	3.4 (0.5%)	0.8 (-2.0%)	1.5 (-1.3%)

Table L.1-232. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult fall-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, July through December.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	10.7	7.1 (-3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	14.3 (3.6%)	0.0 (0.0%)
W	8	14.3	10.7 (-3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	14.3 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	16.7	11.1 (-5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	16.7 (0.0%)	0.0 (0.0%)
BN	8	22.2	27.8 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (-16.7%)	0.0 (0.0%)
BN	9	33.3	22.2 (-11.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	27.8 (-5.6%)	0.0 (0.0%)
BN	10	5.6	0.0 (-5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (-5.6%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	16.7	16.7 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	8.3 (-8.3%)	0.0 (0.0%)
D	8	25.0	25.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (-20.8%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	33.3	33.3 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	29.2 (-4.2%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	81.3	81.3 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	62.5 (-18.8%)	0.0 (0.0%)
C	8	81.3	87.5 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	62.5 (-18.8%)	0.0 (0.0%)
C	9	93.8	100.0 (6.3%)	25.0 (18.8%)	0.0 (-6.3%)	25.0 (18.8%)	25.0 (18.8%)	75.0 (-18.8%)	6.3 (0.0%)
C	10	60.0	60.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	40.0 (-20.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	23.2	21.2 (-2.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	19.2 (-4.0%)	0.0 (0.0%)
All	8	27.3	28.3 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	16.2 (-11.1%)	0.0 (0.0%)
All	9	29.3	28.3 (-1.0%)	4.0 (3.0%)	0.0 (-1.0%)	4.0 (3.0%)	4.0 (3.0%)	25.3 (-4.0%)	1.0 (0.0%)
All	10	10.2	9.2 (-1.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.1 (-4.1%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	4.2	3.0 (-1.2%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.4 (1.2%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	13.0	10.2 (-2.8%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	8.3 (-4.6%)	0.0 (0.0%)
D	All	12.5	12.5 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.9 (-5.6%)	0.0 (0.0%)
C	All	53.8	55.9 (2.2%)	5.4 (4.3%)	0.0 (-1.1%)	5.4 (4.3%)	5.4 (4.3%)	40.9 (-12.9%)	1.1 (0.0%)
All	All	15.0	14.5 (-0.5%)	0.8 (0.7%)	0.0 (-0.2%)	0.8 (0.7%)	0.8 (0.7%)	11.1 (-3.9%)	0.2 (0.0%)

Table L.1-233. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult fall-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Hamilton City, July through December.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	100.0 (7.1%)	92.9 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	75.0	96.4 (21.4%)	67.9 (-7.1%)	67.9 (-7.1%)	67.9 (-7.1%)	64.3 (-10.7%)	78.6 (3.6%)	82.1 (7.1%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	76.9	100.0 (23.1%)	84.6 (7.7%)	84.6 (7.7%)	76.9 (0.0%)	84.6 (7.7%)	100.0 (23.1%)	76.9 (0.0%)
AN	8	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	76.9	100.0 (23.1%)	76.9 (0.0%)	76.9 (0.0%)	69.2 (-7.7%)	76.9 (0.0%)	92.3 (15.4%)	100.0 (23.1%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	88.9	94.4 (5.6%)	88.9 (0.0%)	88.9 (0.0%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	88.9 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)
BN	10	27.8	38.9 (11.1%)	22.2 (-5.6%)	16.7 (-11.1%)	22.2 (-5.6%)	27.8 (0.0%)	27.8 (0.0%)	27.8 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	45.8	66.7 (20.8%)	54.2 (8.3%)	54.2 (8.3%)	58.3 (12.5%)	54.2 (8.3%)	45.8 (0.0%)	45.8 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	93.3	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	92.9	97.0 (4.0%)	93.9 (1.0%)	93.9 (1.0%)	93.9 (1.0%)	94.9 (2.0%)	99.0 (6.1%)	92.9 (0.0%)
All	8	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	89.9	99.0 (9.1%)	87.9 (-2.0%)	87.9 (-2.0%)	86.9 (-3.0%)	86.9 (-3.0%)	91.9 (2.0%)	94.9 (5.1%)
All	10	30.6	37.8 (7.1%)	31.6 (1.0%)	30.6 (0.0%)	32.7 (2.0%)	32.7 (2.0%)	31.6 (1.0%)	30.6 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	44.6	48.2 (3.6%)	43.5 (-1.2%)	43.5 (-1.2%)	43.5 (-1.2%)	42.9 (-1.8%)	47.0 (2.4%)	45.8 (1.2%)
AN	All	41.3	48.8 (7.5%)	41.3 (0.0%)	41.3 (0.0%)	38.8 (-2.5%)	42.5 (1.3%)	47.5 (6.3%)	45.0 (3.8%)
BN	All	52.8	55.6 (2.8%)	51.9 (-0.9%)	50.9 (-1.9%)	52.8 (0.0%)	53.7 (0.9%)	52.8 (0.0%)	52.8 (0.0%)
D	All	57.6	61.1 (3.5%)	59.0 (1.4%)	59.0 (1.4%)	59.7 (2.1%)	59.0 (1.4%)	57.6 (0.0%)	57.6 (0.0%)
C	All	66.7	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)
All	All	52.3	55.6 (3.4%)	52.1 (-0.2%)	51.9 (-0.3%)	52.1 (-0.2%)	52.4 (0.2%)	53.8 (1.5%)	53.1 (0.8%)

Table L.1-234. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult fall-run Chinook salmon migration by water year type and month, and for all years combined, Clear Creek below Whiskeytown, July through December.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	6.7	13.3 (6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	3.0 (2.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	1.0	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.6 (0.6%)	0.6 (0.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.9	0.9 (0.0%)	1.9 (0.9%)	0.9 (0.0%)	0.9 (0.0%)	0.9 (0.0%)	0.0 (-0.9%)	0.9 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	3.2	7.5 (4.3%)	4.3 (1.1%)	5.4 (2.2%)	5.4 (2.2%)	5.4 (2.2%)	4.3 (1.1%)	6.5 (3.2%)
All	All	0.7	1.3 (0.7%)	1.0 (0.3%)	1.2 (0.5%)	1.2 (0.5%)	1.0 (0.3%)	0.7 (0.0%)	1.2 (0.5%)

L.1.3.6.2 Adult Holding and Spawning

Water temperature-related effects on fall-run Chinook salmon adult holding and spawning were evaluated by assessing: (1) the percent of months with water temperature outside the 42.1°F to 55°F range for spawning initiation (McCullough 1999); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick and at Red Bluff Diversion Dam, and in Clear Creek below Whiskeytown (Table L.1-2).

Results evaluating the 42.1°F to 55°F range for spawning initiation are presented in Table L.1-235 for Keswick, Table L.1-236 for Red Bluff Diversion Dam, and Table L.1-237 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months with water temperatures outside the range was 93.3% and occurred in October of a critical year under Alternative 2 with TUCP Without VA and November of a critical year under Alternative 1 (Table L.1-235). The lowest percent of months with water temperatures outside the range was 0% and occurred in December and January of at least one water year type under the NAA and all alternatives. Comparing water year types, the highest percent of months outside the range was in November and the lowest was in January under the NAA and all alternatives.
- At Red Bluff Diversion Dam, the highest percent of months with water temperatures outside the range for spawning initiation was 100% and occurred in October for all water year types in at least one alternative (Table L.1-236). October in a critical water year was 100% outside the water temperature range under the NAA and all alternatives. The lowest percent of months outside the range was 0% and occurred in December and January of all water year types under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in October and the lowest was in December and January.
- In Clear Creek below Whiskeytown, the highest percent of months with water temperature range for spawning initiation of fall-run Chinook salmon was 20.0% and occurred during October and November of a critical water year type under Alternative 1 (Table L.1-237). The lowest percent of months with water temperature outside the range was 0% and occurred during December and January of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months with water temperature outside the range was in October, the lowest was in December and January.

Results evaluating the 59.9°F pathogen virulence for adult holding and spawning fall-run Chinook salmon are presented in Table L.1-238 for the Sacramento River at Keswick, Table L.1-239 for Red Bluff Diversion Dam, and Table L.1-240 for Clear Creek below Whiskeytown.

- At Keswick, the only month with water temperatures that exceeded the pathogen virulence threshold was October of a critical water year under the NAA and all alternatives (Table L.1-238).Water temperatures were below the pathogen virulence threshold during all other months of each water year type. Combining water year types, the highest percent of months above the threshold occurred in October and the lowest percent occurred in November through January.
- At Red Bluff Diversion Dam, water temperatures were predominantly below the pathogen virulence threshold for adult holding and spawning fall-run Chinook salmon in all months, water year types, and alternatives except October of a below normal and critical water year type under the NAA and all alternatives (Table L.1-239).
- In Clear Creek below Whiskeytown, water temperatures were predominantly below the pathogen virulence threshold for adult holding and spawning fall-run Chinook salmon during all months, water year types, and alternatives except October and November during critical water year types under the NAA and all alternatives (Table L.1-240).

Table L.1-235. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, October through January.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	21.4 (21.4%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	57.1 (57.1%)	14.3 (14.3%)	14.3 (14.3%)	14.3 (14.3%)	14.3 (14.3%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)	11.1 (11.1%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	27.8 (27.8%)	11.1 (11.1%)	5.6 (5.6%)	11.1 (11.1%)	11.1 (11.1%)	5.6 (5.6%)	5.6 (5.6%)
BN	12	0.0	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	8.3 (8.3%)	8.3 (8.3%)	4.2 (4.2%)	4.2 (4.2%)	8.3 (8.3%)	0.0 (0.0%)
D	11	12.5	50.0 (37.5%)	16.7 (4.2%)	16.7 (4.2%)	20.8 (8.3%)	12.5 (0.0%)	8.3 (-4.2%)	8.3 (-4.2%)
D	12	0.0	8.3 (8.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	66.7	66.7 (0.0%)	93.3 (26.7%)	80.0 (13.3%)	80.0 (13.3%)	86.7 (20.0%)	66.7 (0.0%)	46.7 (-20.0%)
C	11	66.7	93.3 (26.7%)	80.0 (13.3%)	66.7 (0.0%)	86.7 (20.0%)	80.0 (13.3%)	66.7 (0.0%)	66.7 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.7 (6.7%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	10	10.2	10.2 (0.0%)	17.3 (7.1%)	14.3 (4.1%)	15.3 (5.1%)	15.3 (5.1%)	12.2 (2.0%)	7.1 (-3.1%)
All	11	13.1	45.5 (32.3%)	20.2 (7.1%)	17.2 (4.0%)	22.2 (9.1%)	19.2 (6.1%)	13.1 (0.0%)	13.1 (0.0%)
All	12	0.0	4.0 (4.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.1 (5.1%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.8 (1.8%)
AN	All	0.0	14.8 (14.8%)	3.7 (3.7%)	3.7 (3.7%)	3.7 (3.7%)	3.7 (3.7%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	8.3 (8.3%)	4.2 (4.2%)	1.4 (1.4%)	5.6 (5.6%)	4.2 (4.2%)	1.4 (1.4%)	2.8 (2.8%)
D	All	3.1	14.6 (11.5%)	6.3 (3.1%)	6.3 (3.1%)	6.3 (3.1%)	4.2 (1.0%)	4.2 (1.0%)	3.1 (0.0%)
C	All	32.8	39.3 (6.6%)	42.6 (9.8%)	36.1 (3.3%)	41.0 (8.2%)	41.0 (8.2%)	32.8 (0.0%)	29.5 (-3.3%)
All	All	5.8	14.9 (9.1%)	9.4 (3.5%)	7.8 (2.0%)	9.4 (3.5%)	8.6 (2.8%)	6.3 (0.5%)	6.3 (0.5%)

Table L.1-236. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, October through January.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	64.3	100.0 (35.7%)	53.6 (-10.7%)	53.6 (-10.7%)	57.1 (-7.1%)	53.6 (-10.7%)	71.4 (7.1%)	82.1 (17.9%)
W	11	0.0	17.9 (17.9%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	84.6	100.0 (15.4%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	92.3 (7.7%)
AN	11	0.0	7.1 (7.1%)	7.1 (7.1%)	7.1 (7.1%)	7.1 (7.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	94.4	100.0 (5.6%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	88.9 (-5.6%)
BN	11	0.0	33.3 (33.3%)	11.1 (11.1%)	5.6 (5.6%)	11.1 (11.1%)	11.1 (11.1%)	5.6 (5.6%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	100.0	100.0 (0.0%)	91.7 (-8.3%)	91.7 (-8.3%)	91.7 (-8.3%)	95.8 (-4.2%)	100.0 (0.0%)	100.0 (0.0%)
D	11	12.5	29.2 (16.7%)	16.7 (4.2%)	16.7 (4.2%)	16.7 (4.2%)	16.7 (4.2%)	8.3 (-4.2%)	8.3 (-4.2%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	53.3	66.7 (13.3%)	60.0 (6.7%)	60.0 (6.7%)	60.0 (6.7%)	60.0 (6.7%)	66.7 (13.3%)	53.3 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	86.7	100.0 (13.3%)	81.6 (-5.1%)	81.6 (-5.1%)	82.7 (-4.1%)	82.7 (-4.1%)	88.8 (2.0%)	91.8 (5.1%)
All	11	11.1	29.3 (18.2%)	16.2 (5.1%)	15.2 (4.0%)	16.2 (5.1%)	15.2 (4.0%)	13.1 (2.0%)	10.1 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	16.1	29.5 (13.4%)	13.4 (-2.7%)	13.4 (-2.7%)	14.3 (-1.8%)	13.4 (-2.7%)	17.9 (1.8%)	20.5 (4.5%)
AN	All	20.4	25.9 (5.6%)	22.2 (1.9%)	22.2 (1.9%)	22.2 (1.9%)	20.4 (0.0%)	20.4 (0.0%)	22.2 (1.9%)
BN	All	23.6	33.3 (9.7%)	26.4 (2.8%)	25.0 (1.4%)	26.4 (2.8%)	26.4 (2.8%)	25.0 (1.4%)	22.2 (-1.4%)
D	All	28.1	32.3 (4.2%)	27.1 (-1.0%)	27.1 (-1.0%)	27.1 (-1.0%)	28.1 (0.0%)	27.1 (-1.0%)	27.1 (-1.0%)
C	All	37.7	41.0 (3.3%)	39.3 (1.6%)	39.3 (1.6%)	39.3 (1.6%)	39.3 (1.6%)	41.0 (3.3%)	37.7 (0.0%)
All	All	24.3	32.2 (7.8%)	24.3 (0.0%)	24.1 (-0.3%)	24.6 (0.3%)	24.3 (0.0%)	25.3 (1.0%)	25.3 (1.0%)

Table L.1-237. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, October through January.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	6.7	20.0 (13.3%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)
C	11	13.3	20.0 (6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	13.3 (0.0%)	6.7 (-6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	10	1.0	3.1 (2.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)
All	11	2.0	3.0 (1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	2.0 (0.0%)	1.0 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	4.9	9.8 (4.9%)	3.3 (-1.6%)	3.3 (-1.6%)	3.3 (-1.6%)	3.3 (-1.6%)	4.9 (0.0%)	3.3 (-1.6%)
All	All	0.8	1.5 (0.8%)	0.5 (-0.3%)	0.5 (-0.3%)	0.5 (-0.3%)	0.5 (-0.3%)	0.8 (0.0%)	0.5 (-0.3%)

Table L.1-238. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, October through January.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	46.7	46.7 (0.0%)	53.3 (6.7%)	33.3 (-13.3%)	53.3 (6.7%)	53.3 (6.7%)	20.0 (-26.7%)	33.3 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	7.1	7.1 (0.0%)	8.2 (1.0%)	5.1 (-2.0%)	8.2 (1.0%)	8.2 (1.0%)	3.1 (-4.1%)	5.1 (-2.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	11.5	11.5 (0.0%)	13.1 (1.6%)	8.2 (-3.3%)	13.1 (1.6%)	13.1 (1.6%)	4.9 (-6.6%)	8.2 (-3.3%)
All	All	1.8	1.8 (0.0%)	2.0 (0.3%)	1.3 (-0.5%)	2.0 (0.3%)	2.0 (0.3%)	0.8 (-1.0%)	1.3 (-0.5%)

Table L.1-239. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, October through January.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	60.0	60.0 (0.0%)	66.7 (6.7%)	60.0 (0.0%)	53.3 (-6.7%)	66.7 (6.7%)	40.0 (-20.0%)	46.7 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	10	10.2	9.2 (-1.0%)	10.2 (0.0%)	9.2 (-1.0%)	9.2 (-1.0%)	10.2 (0.0%)	6.1 (-4.1%)	7.1 (-3.1%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	1.4	0.0 (-1.4%)	0.0 (-1.4%)	0.0 (-1.4%)	1.4 (0.0%)	0.0 (-1.4%)	0.0 (-1.4%)	0.0 (-1.4%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	14.8	14.8 (0.0%)	16.4 (1.6%)	14.8 (0.0%)	13.1 (-1.6%)	16.4 (1.6%)	9.8 (-4.9%)	11.5 (-3.3%)
All	All	2.5	2.3 (-0.3%)	2.5 (0.0%)	2.3 (-0.3%)	2.3 (-0.3%)	2.5 (0.0%)	1.5 (-1.0%)	1.8 (-0.8%)

Table L.1-240. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, October through January.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	6.7	13.3 (6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	1.0	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.6	6.6 (4.9%)	1.6 (0.0%)	1.6 (0.0%)	1.6 (0.0%)	1.6 (0.0%)	1.6 (0.0%)	1.6 (0.0%)
All	All	0.3	1.0 (0.8%)	0.3 (0.0%)	0.3 (0.0%)	0.3 (0.0%)	0.3 (0.0%)	0.3 (0.0%)	0.3 (0.0%)

L.1.3.6.3 Egg Incubation and Fry Emergence

Water temperature-related effects on fall-run Chinook salmon egg incubation and fry emergence were evaluated by assessing (1) the percent of months with water temperature outside the 42.8°F to 56°F range (Slater 1963, USFWS 1999, Myrick and Cech 2004, Bratovich et al. 2012, Martin et al. 2017); and (2) the percent of months with water temperature above the 59°F pathogen virulence threshold for fall-run Chinook salmon fry (McCullough 1999) in the Sacramento River at Keswick and Red Bluff Diversion Dam, and in Clear Creek below Whiskeytown (Table L.1-2).

Results evaluating the 42.8°F to 56°F range are presented in Table L.1-241 for Keswick, Table L.1-242 for Red Bluff Diversion Dam, and Table L.1-243 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were predominantly within range for fall-run Chinook salmon egg incubation and fry emergence in all months, water year types, and alternatives except Alternative 4, which occurred during December of a dry water year type (Table L.1-241).
- At Red Bluff Diversion Dam, water temperatures were predominantly within range for fall-run Chinook salmon egg incubation and fry emergence during all months, water year types, and alternatives except during March of a wet, below normal, dry, and critical water year type under the NAA and all alternatives (Table L.1-242).
- At Clear Creek below Whiskeytown, water temperatures were predominantly within range for fall-run Chinook salmon egg incubation and fry emergence during all months, water year types, and alternatives except February of a below normal water year type under each Alternative 2 component, Alternative 3, and Alternative 4 (Table L.1-243).

Results evaluating the 59.9°F pathogen virulence for fall-run Chinook salmon egg incubation and fry emergence are presented in Table L.1-244 for Keswick, Table L.1-245 for Red Bluff Diversion Dam, and Table L.1-246 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were below the pathogen virulence for fall-run Chinook salmon egg incubation and fry emergence threshold in all months, water year types, and alternatives (Table L.1-244).
- At Red Bluff Diversion Dam, water temperatures were below the pathogen virulence for fall-run Chinook salmon egg incubation and fry emergence during all months of each water year type under the NAA and all alternatives (Table L.1-245).
- In Clear Creek below Whiskeytown, water temperatures were below the pathogen virulence for fall-run Chinook salmon egg incubation and fry emergence during all months of each water year type under the NAA and all alternatives (Table L.1-246).

Table L.1-241. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for fall-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Keswick, December through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-242. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for fall-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	11.1	5.6 (-5.6%)	5.6 (-5.6%)	11.1 (0.0%)	5.6 (-5.6%)	5.6 (-5.6%)	0.0 (-11.1%)	5.6 (-5.6%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	8.3 (8.3%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	25.0	6.3 (-18.8%)	12.5 (-12.5%)	25.0 (0.0%)	12.5 (-12.5%)	12.5 (-12.5%)	25.0 (0.0%)	25.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	6.1	4.0 (-2.0%)	3.0 (-3.0%)	6.1 (0.0%)	3.0 (-3.0%)	3.0 (-3.0%)	7.1 (1.0%)	5.1 (-1.0%)
W	All	0.0	0.9 (0.9%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.9 (0.9%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	2.8	1.4 (-1.4%)	1.4 (-1.4%)	2.8 (0.0%)	1.4 (-1.4%)	1.4 (-1.4%)	0.0 (-2.8%)	1.4 (-1.4%)
D	All	0.0	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	2.1 (2.1%)	0.0 (0.0%)
C	All	6.3	1.6 (-4.8%)	3.2 (-3.2%)	6.3 (0.0%)	3.2 (-3.2%)	3.2 (-3.2%)	6.3 (0.0%)	6.3 (0.0%)
All	All	1.5	1.0 (-0.5%)	0.8 (-0.8%)	1.5 (0.0%)	0.8 (-0.8%)	0.8 (-0.8%)	1.8 (0.3%)	1.3 (-0.3%)

Table L.1-243. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for fall-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Clear Creek below Whiskeytown, December through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	1.4 (1.4%)	1.4 (1.4%)	1.4 (1.4%)	1.4 (1.4%)	1.4 (1.4%)	1.4 (1.4%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.3 (0.3%)	0.3 (0.3%)	0.3 (0.3%)	0.3 (0.3%)	0.3 (0.3%)	0.3 (0.3%)

Table L.1-244. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for fall-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Keswick, December through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-245. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, December through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-246. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, December through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.6.4 Juvenile Rearing and Outmigration

Water temperature-related effects on fall-run Chinook salmon juvenile rearing and outmigration in the Sacramento River were evaluated by assessing: (1) the percent of months with water temperature outside the 55.4°F to 68°F optimum temperature for juvenile growth, smoltification, and predation vulnerability (Myrick and Cech 2002, Marine and Cech 2004); (2) the percent of months with water temperature above the 75.2°F upper incipient lethal temperature (UILT) for juveniles (Brett 1952, Brett et al. 1982, Myrick and Cech 2004); and (3) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick, Red Bluff Diversion Dam, and Hamilton City, and in Clear Creek below Whiskeytown (Table L.1-2).

Results evaluating the 55.4°F to 68°F optimum temperature for juvenile growth, smoltification, and predation vulnerability are presented in Table L.1-247 for Keswick, Table L.1-248 for Red Bluff Diversion Dam, Table L.1-249 for Hamilton City, and Table L.1-250 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months with water temperature outside the range was 100% and occurred in March and June of all water year types under the NAA and all alternatives. The lowest percent of months outside the range was 70.8% and occurred in May of a dry water year under the NAA. Combining all water year types, the highest percent of months outside the range occurred in March and December and the lowest was in May.
- At Red Bluff Diversion Dam, the highest percent of months with water temperature outside the range was 100% and occurred in March of an above normal water year type under the NAA and all alternatives (Table L.1-248). The lowest percent of months with water temperature outside the range was 0% and occurred in May through June of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months with water temperature outside the range was in March, and the lowest was in May and June.
- At Hamilton City, the highest percent of months with water temperature outside the optimal range was 92.9% and occurred in March of a wet water year type under the NAA and all alternatives (Table L.1-249). The lowest percent of months with water temperature outside the range was 0% and occurred in April and May of each water year type, except wet water years under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in March, the lowest was in May.
- In Clear Creek below Whiskeytown, water temperatures were predominantly outside the range for juvenile fall-run Chinook salmon growth, smoltification, and predation vulnerability during all months except June of a wet water year type under the NAA and all alternatives and June of an above normal water year type under each Alternative 2 component, Alternative 3, and Alternative 4 (Table L.1-250). The lowest percent of months outside the range was 89.3%, which occurred during June of a wet water year type under Alternative 4. Combining water year types, all months excluding June were

100% outside the optimal temperature range for growth, smoltification and predation vulnerability.

Results evaluating the 75.2°F upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon are presented in Table L.1-251 for Keswick, Table L.1-252 for Red Bluff Diversion Dam, Table L.1-253 for Hamilton City, and Table L.1-254 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were below the upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon threshold during all months of each water year types under all alternatives (Table L.1-251).
- At Red Bluff Diversion Dam, water temperatures were below the upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon threshold during all months of each water year type under the NAA and all alternatives (Table L.1-252)
- At Hamilton City, water temperatures were below the upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon threshold during all months of each water year type under the NAA and all alternatives (Table L.1-253).
- At Clear Creek below Whiskeytown, water temperatures were below the upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon threshold during all months of each water year type under the NAA and all alternatives (Table L.1-254).

Results evaluating the 59.9°F pathogen virulence for fall-run Chinook salmon juveniles are presented in Table L.1-255 for Keswick, Table L.1-256 for Red Bluff Diversion Dam, Table L.1-257 for Hamilton City, and Table L.1-257 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were below pathogen virulence threshold for juvenile fall-run Chinook salmon threshold during all months of each water year types under the NAA and all alternatives (Table L.1-255).
- At Red Bluff Diversion Dam, the highest percent of months with water temperature above the pathogen virulence threshold was 81.3% and occurred during June of a critical water year under Alternative 4 (Table L.1-256). The lowest percent of months above the limit was 0% which occurred during March of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months with water temperature above the threshold was 64.6% in May under the NAA and the lowest percent occurred in March under the NAA and all alternatives.
- At Hamilton City, the highest percent of months with water temperature above the limit was 100% and occurred in June of each water year type under the NAA and all alternatives (Table L.1-257). The lowest percent of months above the limit was 0% and occurred during March of each water year type under the NAA and all alternatives. Similarly, when combining water year types, the highest percent of months above the range was during June, and the lowest was during March.

- In Clear Creek below Whiskeytown, water temperatures were predominantly below the water temperature threshold during all months, of each water year type and under the NAA and all alternatives except June during a wet water year type which exceeded the water temperature threshold between 3.6% and 7.1% of the months under Alternative 2 components and Alternative 4.

Table L.1-247. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile fall-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Keswick, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	92.3	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	88.9	100.0 (11.1%)	94.4 (5.6%)	94.4 (5.6%)	88.9 (0.0%)	88.9 (0.0%)	100.0 (11.1%)	94.4 (5.6%)
BN	5	83.3	100.0 (16.7%)	94.4 (11.1%)	100.0 (16.7%)	100.0 (16.7%)	94.4 (11.1%)	100.0 (16.7%)	94.4 (11.1%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	79.2	100.0 (20.8%)	83.3 (4.2%)	87.5 (8.3%)	87.5 (8.3%)	83.3 (4.2%)	95.8 (16.7%)	79.2 (0.0%)
D	5	70.8	100.0 (29.2%)	100.0 (29.2%)	100.0 (29.2%)	100.0 (29.2%)	95.8 (25.0%)	100.0 (29.2%)	75.0 (4.2%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	87.5	100.0 (12.5%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	100.0 (12.5%)	87.5 (0.0%)
C	5	75.0	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	87.5 (12.5%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	90.9	100.0 (9.1%)	93.9 (3.0%)	94.9 (4.0%)	93.9 (3.0%)	92.9 (2.0%)	99.0 (8.1%)	91.9 (1.0%)
All	5	84.8	100.0 (15.2%)	99.0 (14.1%)	100.0 (15.2%)	100.0 (15.2%)	98.0 (13.1%)	100.0 (15.2%)	90.9 (6.1%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	98.1	100.0 (1.9%)	100.0 (1.9%)	100.0 (1.9%)	100.0 (1.9%)	100.0 (1.9%)	100.0 (1.9%)	100.0 (1.9%)
BN	All	93.1	100.0 (6.9%)	97.2 (4.2%)	98.6 (5.6%)	97.2 (4.2%)	95.8 (2.8%)	100.0 (6.9%)	97.2 (4.2%)
D	All	87.5	100.0 (12.5%)	95.8 (8.3%)	96.9 (9.4%)	96.9 (9.4%)	94.8 (7.3%)	99.0 (11.5%)	88.5 (1.0%)
C	All	90.6	100.0 (9.4%)	98.4 (7.8%)	98.4 (7.8%)	98.4 (7.8%)	98.4 (7.8%)	100.0 (9.4%)	93.8 (3.1%)
All	All	93.9	100.0 (6.1%)	98.2 (4.3%)	98.7 (4.8%)	98.5 (4.5%)	97.7 (3.8%)	99.7 (5.8%)	95.7 (1.8%)

Table L.1-248. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile fall-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	92.9	96.4 (3.6%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	96.4 (3.6%)
W	4	32.1	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	35.7 (3.6%)	32.1 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	7.7	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	15.4 (7.7%)	7.7 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	88.9	94.4 (5.6%)	88.9 (0.0%)	83.3 (-5.6%)	88.9 (0.0%)	88.9 (0.0%)	83.3 (-5.6%)	83.3 (-5.6%)
BN	4	11.1	5.6 (-5.6%)	5.6 (-5.6%)	5.6 (-5.6%)	11.1 (0.0%)	11.1 (0.0%)	5.6 (-5.6%)	11.1 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	91.7	91.7 (0.0%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	87.5 (-4.2%)	95.8 (4.2%)
D	4	8.3	4.2 (-4.2%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	12.5 (4.2%)	8.3 (0.0%)	8.3 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	62.5	75.0 (12.5%)	68.8 (6.3%)	56.3 (-6.3%)	81.3 (18.8%)	75.0 (12.5%)	50.0 (-12.5%)	62.5 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	87.9	91.9 (4.0%)	89.9 (2.0%)	86.9 (-1.0%)	91.9 (4.0%)	90.9 (3.0%)	83.8 (-4.0%)	88.9 (1.0%)
All	4	14.1	12.1 (-2.0%)	13.1 (-1.0%)	13.1 (-1.0%)	14.1 (0.0%)	15.2 (1.0%)	15.2 (1.0%)	14.1 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	31.3	32.1 (0.9%)	31.3 (0.0%)	31.3 (0.0%)	31.3 (0.0%)	31.3 (0.0%)	32.1 (0.9%)	32.1 (0.9%)
AN	All	26.9	26.9 (0.0%)	26.9 (0.0%)	26.9 (0.0%)	26.9 (0.0%)	26.9 (0.0%)	28.8 (1.9%)	26.9 (0.0%)
BN	All	25.0	25.0 (0.0%)	23.6 (-1.4%)	22.2 (-2.8%)	25.0 (0.0%)	25.0 (0.0%)	22.2 (-2.8%)	23.6 (-1.4%)
D	All	25.0	24.0 (-1.0%)	26.0 (1.0%)	26.0 (1.0%)	26.0 (1.0%)	27.1 (2.1%)	24.0 (-1.0%)	26.0 (1.0%)
C	All	15.6	18.8 (3.1%)	17.2 (1.6%)	14.1 (-1.6%)	20.3 (4.7%)	18.8 (3.1%)	12.5 (-3.1%)	15.6 (0.0%)
All	All	25.5	26.0 (0.5%)	25.8 (0.3%)	25.0 (-0.5%)	26.5 (1.0%)	26.5 (1.0%)	24.7 (-0.8%)	25.8 (0.3%)

Table L.1-249. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile fall-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Hamilton City, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)
W	4	21.4	17.9 (-3.6%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	17.9 (-3.6%)	14.3 (-7.1%)	17.9 (-3.6%)
W	5	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	0.0 (-7.1%)	7.1 (0.0%)
W	6	14.3	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	21.4 (7.1%)	14.3 (0.0%)
AN	3	84.6	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	92.3 (7.7%)	84.6 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	15.4 (15.4%)	0.0 (0.0%)
BN	3	61.1	55.6 (-5.6%)	61.1 (0.0%)	61.1 (0.0%)	61.1 (0.0%)	61.1 (0.0%)	66.7 (5.6%)	61.1 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	5.6	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
D	3	54.2	54.2 (0.0%)	50.0 (-4.2%)	45.8 (-8.3%)	50.0 (-4.2%)	45.8 (-8.3%)	50.0 (-4.2%)	50.0 (-4.2%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	25.0	25.0 (0.0%)	31.3 (6.3%)	18.8 (-6.3%)	31.3 (6.3%)	31.3 (6.3%)	25.0 (0.0%)	25.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)
C	6	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	12.5 (12.5%)	6.3 (6.3%)	12.5 (12.5%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	65.7	64.6 (-1.0%)	65.7 (0.0%)	62.6 (-3.0%)	65.7 (0.0%)	64.6 (-1.0%)	66.7 (1.0%)	64.6 (-1.0%)
All	4	6.1	5.1 (-1.0%)	6.1 (0.0%)	6.1 (0.0%)	6.1 (0.0%)	5.1 (-1.0%)	4.0 (-2.0%)	5.1 (-1.0%)
All	5	2.0	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	6	5.1	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	5.1 (0.0%)	9.1 (4.0%)	6.1 (1.0%)
W	All	33.9	32.1 (-1.8%)	33.0 (-0.9%)	33.0 (-0.9%)	33.0 (-0.9%)	32.1 (-1.8%)	32.1 (-1.8%)	33.0 (-0.9%)
AN	All	21.2	21.2 (0.0%)	21.2 (0.0%)	21.2 (0.0%)	21.2 (0.0%)	21.2 (0.0%)	26.9 (5.8%)	21.2 (0.0%)
BN	All	16.7	15.3 (-1.4%)	15.3 (-1.4%)	15.3 (-1.4%)	15.3 (-1.4%)	15.3 (-1.4%)	16.7 (0.0%)	15.3 (-1.4%)
D	All	13.5	13.5 (0.0%)	12.5 (-1.0%)	11.5 (-2.1%)	12.5 (-1.0%)	11.5 (-2.1%)	12.5 (-1.0%)	12.5 (-1.0%)
C	All	6.3	6.3 (0.0%)	10.9 (4.7%)	7.8 (1.6%)	10.9 (4.7%)	12.5 (6.3%)	9.4 (3.1%)	10.9 (4.7%)
All	All	19.7	18.9 (-0.8%)	19.7 (0.0%)	18.9 (-0.8%)	19.7 (0.0%)	19.4 (-0.3%)	20.2 (0.5%)	19.7 (0.0%)

Table L.1-250. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile fall-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Clear Creek below Whiskeytown, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	92.9	100.0 (7.1%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	89.3 (-3.6%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	6	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	98.0	100.0 (2.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	97.0 (-1.0%)	96.0 (-2.0%)
W	All	98.2	100.0 (1.8%)	99.1 (0.9%)	99.1 (0.9%)	99.1 (0.9%)	99.1 (0.9%)	99.1 (0.9%)	97.3 (-0.9%)
AN	All	100.0	100.0 (0.0%)	98.1 (-1.9%)	98.1 (-1.9%)	98.1 (-1.9%)	98.1 (-1.9%)	98.1 (-1.9%)	98.1 (-1.9%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.4 (-1.6%)	100.0 (0.0%)
All	All	99.5	100.0 (0.5%)	99.5 (0.0%)	99.5 (0.0%)	99.5 (0.0%)	99.5 (0.0%)	99.2 (-0.3%)	99.0 (-0.5%)

Table L.1-251. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-252. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-253. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-254. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-255. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-256. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	75.0	32.1 (-42.9%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	32.1 (-42.9%)	50.0 (-25.0%)
W	6	60.7	39.3 (-21.4%)	46.4 (-14.3%)	42.9 (-17.9%)	42.9 (-17.9%)	46.4 (-14.3%)	78.6 (17.9%)	60.7 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)
AN	5	69.2	15.4 (-53.8%)	53.8 (-15.4%)	53.8 (-15.4%)	53.8 (-15.4%)	46.2 (-23.1%)	15.4 (-53.8%)	53.8 (-15.4%)
AN	6	46.2	7.7 (-38.5%)	30.8 (-15.4%)	30.8 (-15.4%)	38.5 (-7.7%)	46.2 (0.0%)	61.5 (15.4%)	53.8 (7.7%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	11.1	0.0 (-11.1%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	5	44.4	5.6 (-38.9%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	22.2 (-22.2%)	27.8 (-16.7%)	38.9 (-5.6%)
BN	6	44.4	27.8 (-16.7%)	33.3 (-11.1%)	38.9 (-5.6%)	38.9 (-5.6%)	44.4 (0.0%)	50.0 (5.6%)	50.0 (5.6%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	8.3 (-12.5%)	20.8 (0.0%)	20.8 (0.0%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)	20.8 (0.0%)
D	5	70.8	20.8 (-50.0%)	58.3 (-12.5%)	58.3 (-12.5%)	45.8 (-25.0%)	58.3 (-12.5%)	33.3 (-37.5%)	62.5 (-8.3%)
D	6	29.2	20.8 (-8.3%)	12.5 (-16.7%)	12.5 (-16.7%)	20.8 (-8.3%)	25.0 (-4.2%)	20.8 (-8.3%)	25.0 (-4.2%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	37.5	25.0 (-12.5%)	6.3 (-31.3%)	37.5 (0.0%)	6.3 (-31.3%)	6.3 (-31.3%)	37.5 (0.0%)	43.8 (6.3%)
C	5	56.3	37.5 (-18.8%)	56.3 (0.0%)	43.8 (-12.5%)	56.3 (0.0%)	56.3 (0.0%)	56.3 (0.0%)	68.8 (12.5%)
C	6	68.8	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	81.3 (12.5%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	14.1	6.1 (-8.1%)	9.1 (-5.1%)	14.1 (0.0%)	8.1 (-6.1%)	7.1 (-7.1%)	12.1 (-2.0%)	15.2 (1.0%)
All	5	64.6	23.2 (-41.4%)	47.5 (-17.2%)	45.5 (-19.2%)	44.4 (-20.2%)	45.5 (-19.2%)	33.3 (-31.3%)	54.5 (-10.1%)
All	6	49.5	30.3 (-19.2%)	34.3 (-15.2%)	35.4 (-14.1%)	37.4 (-12.1%)	41.4 (-8.1%)	53.5 (4.0%)	52.5 (3.0%)
W	All	33.9	17.9 (-16.1%)	22.3 (-11.6%)	21.4 (-12.5%)	21.4 (-12.5%)	22.3 (-11.6%)	27.7 (-6.3%)	27.7 (-6.3%)
AN	All	30.8	5.8 (-25.0%)	23.1 (-7.7%)	23.1 (-7.7%)	25.0 (-5.8%)	23.1 (-7.7%)	21.2 (-9.6%)	28.8 (-1.9%)
BN	All	25.0	8.3 (-16.7%)	18.1 (-6.9%)	19.4 (-5.6%)	19.4 (-5.6%)	19.4 (-5.6%)	22.2 (-2.8%)	25.0 (0.0%)
D	All	30.2	12.5 (-17.7%)	22.9 (-7.3%)	22.9 (-7.3%)	20.8 (-9.4%)	25.0 (-5.2%)	16.7 (-13.5%)	27.1 (-3.1%)
C	All	40.6	28.1 (-12.5%)	28.1 (-12.5%)	34.4 (-6.3%)	28.1 (-12.5%)	28.1 (-12.5%)	37.5 (-3.1%)	48.4 (7.8%)
All	All	32.1	14.9 (-17.2%)	22.7 (-9.3%)	23.7 (-8.3%)	22.5 (-9.6%)	23.5 (-8.6%)	24.7 (-7.3%)	30.6 (-1.5%)

Table L.1-257. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	17.9	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	14.3 (-3.6%)	14.3 (-3.6%)	17.9 (0.0%)
W	5	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	89.3 (-3.6%)	92.9 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	38.5	46.2 (7.7%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)
AN	5	100.0	84.6 (-15.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	77.8	61.1 (-16.7%)	72.2 (-5.6%)	72.2 (-5.6%)	77.8 (0.0%)	61.1 (-16.7%)	66.7 (-11.1%)	66.7 (-11.1%)
BN	5	100.0	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	66.7	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	70.8 (4.2%)	66.7 (0.0%)	87.5 (20.8%)	66.7 (0.0%)
D	5	100.0	91.7 (-8.3%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)
C	4	93.8	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	93.8 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
All	4	55.6	52.5 (-3.0%)	53.5 (-2.0%)	54.5 (-1.0%)	55.6 (0.0%)	50.5 (-5.1%)	57.6 (2.0%)	53.5 (-2.0%)
All	5	98.0	92.9 (-5.1%)	97.0 (-1.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	52.7	52.7 (0.0%)	52.7 (0.0%)	52.7 (0.0%)	52.7 (0.0%)	51.8 (-0.9%)	50.9 (-1.8%)	52.7 (0.0%)
AN	All	59.6	57.7 (-1.9%)	59.6 (0.0%)	59.6 (0.0%)	59.6 (0.0%)	59.6 (0.0%)	59.6 (0.0%)	59.6 (0.0%)
BN	All	69.4	63.9 (-5.6%)	66.7 (-2.8%)	66.7 (-2.8%)	68.1 (-1.4%)	63.9 (-5.6%)	65.3 (-4.2%)	65.3 (-4.2%)
D	All	66.7	64.6 (-2.1%)	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	71.9 (5.2%)	66.7 (0.0%)
C	All	73.4	71.9 (-1.6%)	71.9 (-1.6%)	73.4 (0.0%)	71.9 (-1.6%)	71.9 (-1.6%)	73.4 (0.0%)	75.0 (1.6%)
All	All	63.4	61.4 (-2.0%)	62.6 (-0.8%)	62.9 (-0.5%)	62.9 (-0.5%)	61.9 (-1.5%)	63.4 (0.0%)	62.9 (-0.5%)

Table L.1-258. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	7.1 (7.1%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	2.0 (2.0%)
W	All	0.0	0.0 (0.0%)	0.9 (0.9%)	0.9 (0.9%)	0.9 (0.9%)	0.9 (0.9%)	0.0 (0.0%)	1.8 (1.8%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.7 Late Fall-Run Chinook Salmon

L.1.3.7.1 Adult Migration

Water temperature-related effects on late fall-run Chinook salmon adult migration were evaluated by assessing: (1) the percent of months with water temperature outside the 37.9°F to 68°F successful migration range (Reiser and Bjornn 1979, Goniea et al. 2006); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999 in the Sacramento River) at Keswick, Red Bluff Diversion Dam, and Hamilton City, and in Clear Creek below Whiskeytown (Table L.1-2).

Results for the 37.9°F to 68°F successful migration range are presented in Table L.1-259 for the Sacramento River at Keswick, Table L.1-260 for the Sacramento River at Red Bluff Diversion Dam, Table L.1-261 for the Sacramento River at Hamilton City, and Table L.1-262 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were within range for successful migration during all months of each water year type, under the NAA and all alternatives except August of a critical water year type under Alternative 2 with TUCP without VA, Alt 2 without TUCP Delva VA, and Alt 2 without TUCP Systemwide VAs (Table L.1-259).
- At Red Bluff Diversion Dam, water temperatures were predominantly within range for successful migration of adult late fall-run Chinook salmon during all months of each water year type under the NAA and all alternatives, except August and September during a critical water year type under the NAA and all alternatives (Table L.1-260).
- At Hamilton City, water temperatures were predominantly within range for successful migration of adult salmon during all months of each water year type under the NAA and all alternatives (Table L.1-261). The exceptions were August of a wet year under Alternative 3 (7.1%), August and September in a dry year under all alternatives (0-4.2%), and August and September of a critical year under all alternatives (18.8-50%). Combining water years, the highest percent of months outside the range was in August and September under the NAA and all alternatives, all other months and alternatives had water temperatures within range.
- In Clear Creek below Whiskeytown, water temperatures were predominantly within range for successful migration of adult salmon during all months of each water year type under the NAA and all alternatives (Table L.1-262). The exceptions were September of a below normal year under the NAA and each alternative (5.6-11.1%), excluding Alt 3 and August through October in a critical dry year under all alternatives (0-12.5%). Combining water years, the highest percent of months outside the range was in August through October under the NAA and all alternatives, all other months and alternatives had water temperatures within range.

Results for the 59.9°F pathogen virulence water temperature threshold for adult late fall-run Chinook salmon migration are presented in Table L.1-263 for the Sacramento River at Keswick, Table L.1-264 for the Sacramento River at Red Bluff Diversion Dam, Table L.1-265 for the Sacramento River at Hamilton City, and Table L.1-266 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were predominantly below the pathogen virulence threshold for adult late fall-run Chinook salmon migration during all months of each water year type under the NAA and all alternatives, except during August through October of critical water years under the NAA and all alternatives (Table L.1-263). Combining water year types, all months were below the threshold except August through October under the NAA and all alternatives.
- At Red Bluff Diversion Dam, the highest percent of months with water temperatures above the threshold was 100% and occurred during September of a critical water year type under Alternative 1, Alternative 2 with TUCP without VA and Alt 2 without TUCP Systemwide VAs (Table L.1-264). The lowest percent of months with water temperatures above the threshold was 0% and occurred during November through March of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months with water temperature above the threshold occurred between August and October under the NAA and all alternatives, all other months were below the threshold under the NAA and all alternatives.
- At Hamilton City, the highest percent of months with water temperature above the limit was 100% and occurred during August and September of at least one water year type under the NAA and all alternatives (Table L.1-265). The lowest percent of months with water temperature above the limit was 0% and occurred during November through February of all water year types under the NAA and all alternatives. Combining water year types, the highest percent of months above the limit was in August (99-100%) and the lowest was 0% in November through February under the NAA and all alternatives.
- In Clear Creek below Whiskeytown, water temperatures were predominantly below the pathogen virulence threshold for adult salmon migration during all months of each water year type under the NAA and all alternatives (Table L.1-266). The exceptions were September of a below normal year under the NAA and each alternative (5.6-11.1%), excluding Alt 3 (0.0%), and August through November in a critical year under all alternatives (0-13.3%). Combining water years, the highest percent of months outside the range was in August through November under the NAA and all alternatives, all other months and alternatives had water temperatures within range.

Table L.1-259. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, August through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.8 (0.8%)	0.0 (0.0%)	0.8 (0.8%)	0.8 (0.8%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.1 (0.1%)	0.0 (0.0%)	0.1 (0.1%)	0.1 (0.1%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-260. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, August through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	18.8 (18.8%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	6.3 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	3.0 (3.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	1.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.8	5.6 (4.8%)	4.0 (3.2%)	0.0 (-0.8%)	4.0 (3.2%)	4.0 (3.2%)	0.0 (-0.8%)	0.8 (0.0%)
All	All	0.1	0.9 (0.8%)	0.6 (0.5%)	0.0 (-0.1%)	0.6 (0.5%)	0.6 (0.5%)	0.0 (-0.1%)	0.1 (0.0%)

Table L.1-261. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, August through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	0.0 (-4.2%)	4.2 (0.0%)
D	9	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	37.5	37.5 (0.0%)	50.0 (12.5%)	31.3 (-6.3%)	50.0 (12.5%)	50.0 (12.5%)	18.8 (-18.8%)	25.0 (-12.5%)
C	9	37.5	31.3 (-6.3%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	43.8 (6.3%)	25.0 (-12.5%)	12.5 (-25.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	7.1	7.1 (0.0%)	9.1 (2.0%)	6.1 (-1.0%)	9.1 (2.0%)	9.1 (2.0%)	5.1 (-2.0%)	5.1 (-2.0%)
All	9	7.1	6.1 (-1.0%)	8.1 (1.0%)	5.1 (-2.0%)	8.1 (1.0%)	8.1 (1.0%)	5.1 (-2.0%)	3.0 (-4.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.9 (0.9%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	All	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	0.5 (-0.5%)	1.0 (0.0%)
C	All	9.6	8.8 (-0.8%)	12.0 (2.4%)	7.2 (-2.4%)	12.0 (2.4%)	12.0 (2.4%)	5.6 (-4.0%)	4.8 (-4.8%)
All	All	1.8	1.6 (-0.1%)	2.1 (0.4%)	1.4 (-0.4%)	2.1 (0.4%)	2.1 (0.4%)	1.3 (-0.5%)	1.0 (-0.8%)

Table L.1-262. Percent (difference in percent relative to NAA) of months outside the 37.9°F to 68°F water temperature range for successful migration of adult late fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, August through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.7	0.7 (0.0%)	1.4 (0.7%)	0.7 (0.0%)	0.7 (0.0%)	0.7 (0.0%)	0.0 (-0.7%)	0.7 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.6	4.0 (2.4%)	3.2 (1.6%)	3.2 (1.6%)	4.0 (2.4%)	4.0 (2.4%)	2.4 (0.8%)	4.0 (2.4%)
All	All	0.4	0.8 (0.4%)	0.8 (0.4%)	0.6 (0.3%)	0.8 (0.4%)	0.8 (0.4%)	0.4 (0.0%)	0.8 (0.4%)

Table L.1-263. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult late fall-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Keswick, August through March.

WYT	Month	NAA	Alt 1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP Delta VA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt 1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP Delta VA	Alt2woTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt 1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP Delta VA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	25.0	31.3 (6.3%)	25.0 (0.0%)	6.3 (-18.8%)	25.0 (0.0%)	25.0 (0.0%)	0.0 (-25.0%)	6.3 (-18.8%)
C	9	37.5	37.5 (0.0%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	50.0 (12.5%)	12.5 (-25.0%)	18.8 (-18.8%)
C	10	46.7	46.7 (0.0%)	53.3 (6.7%)	33.3 (-13.3%)	53.3 (6.7%)	53.3 (6.7%)	20.0 (-26.7%)	33.3 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	4.0	5.1 (1.0%)	4.0 (0.0%)	1.0 (-3.0%)	4.0 (0.0%)	4.0 (0.0%)	0.0 (-4.0%)	1.0 (-3.0%)
All	9	6.1	6.1 (0.0%)	7.1 (1.0%)	4.0 (-2.0%)	7.1 (1.0%)	8.1 (2.0%)	2.0 (-4.0%)	3.0 (-3.0%)
All	10	7.1	7.1 (0.0%)	8.2 (1.0%)	5.1 (-2.0%)	8.2 (1.0%)	8.2 (1.0%)	3.1 (-4.1%)	5.1 (-2.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	13.6	14.4 (0.8%)	15.2 (1.6%)	8.0 (-5.6%)	15.2 (1.6%)	16.0 (2.4%)	4.0 (-9.6%)	7.2 (-6.4%)
All	All	2.1	2.3 (0.1%)	2.4 (0.3%)	1.3 (-0.9%)	2.4 (0.3%)	2.5 (0.4%)	0.6 (-1.5%)	1.1 (-1.0%)

Table L.1-264. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult late fall-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, August through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	14.3	10.7 (-3.6%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	14.3 (0.0%)	14.3 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	22.2	27.8 (5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	16.7 (-5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	11.1 (-11.1%)
BN	9	33.3	22.2 (-11.1%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	27.8 (-5.6%)	27.8 (-5.6%)
BN	10	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	25.0	25.0 (0.0%)	12.5 (-12.5%)	12.5 (-12.5%)	12.5 (-12.5%)	8.3 (-16.7%)	4.2 (-20.8%)	8.3 (-16.7%)
D	9	33.3	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	29.2 (-4.2%)	20.8 (-12.5%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	81.3	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	81.3 (0.0%)	62.5 (-18.8%)	81.3 (0.0%)
C	9	93.8	100.0 (6.3%)	100.0 (6.3%)	87.5 (-6.3%)	93.8 (0.0%)	100.0 (6.3%)	75.0 (-18.8%)	81.3 (-12.5%)
C	10	60.0	60.0 (0.0%)	66.7 (6.7%)	60.0 (0.0%)	53.3 (-6.7%)	66.7 (6.7%)	40.0 (-20.0%)	46.7 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	27.3	28.3 (1.0%)	22.2 (-5.1%)	20.2 (-7.1%)	22.2 (-5.1%)	20.2 (-7.1%)	16.2 (-11.1%)	21.2 (-6.1%)
All	9	29.3	28.3 (-1.0%)	27.3 (-2.0%)	25.3 (-4.0%)	26.3 (-3.0%)	27.3 (-2.0%)	25.3 (-4.0%)	23.2 (-6.1%)
All	10	10.2	9.2 (-1.0%)	10.2 (0.0%)	9.2 (-1.0%)	9.2 (-1.0%)	10.2 (0.0%)	6.1 (-4.1%)	7.1 (-3.1%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	1.8	1.3 (-0.4%)	0.9 (-0.9%)	0.9 (-0.9%)	0.9 (-0.9%)	0.9 (-0.9%)	2.2 (0.4%)	1.8 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	7.6	6.3 (-1.4%)	4.2 (-3.5%)	2.8 (-4.9%)	4.9 (-2.8%)	4.2 (-3.5%)	4.2 (-3.5%)	4.9 (-2.8%)
D	All	7.3	7.3 (0.0%)	5.7 (-1.6%)	5.7 (-1.6%)	5.7 (-1.6%)	5.2 (-2.1%)	4.2 (-3.1%)	3.6 (-3.6%)
C	All	29.6	31.2 (1.6%)	32.0 (2.4%)	29.6 (0.0%)	29.6 (0.0%)	31.2 (1.6%)	22.4 (-7.2%)	26.4 (-3.2%)
All	All	8.3	8.2 (-0.1%)	7.5 (-0.9%)	6.8 (-1.5%)	7.2 (-1.1%)	7.2 (-1.1%)	5.9 (-2.4%)	6.4 (-1.9%)

Table L.1-265. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult late fall-run Chinook salmon migration by water year type and month, and for all years combined, Sacramento River at Hamilton City, August through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	75.0	96.4 (21.4%)	67.9 (-7.1%)	67.9 (-7.1%)	67.9 (-7.1%)	64.3 (-10.7%)	78.6 (3.6%)	82.1 (7.1%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	76.9	100.0 (23.1%)	76.9 (0.0%)	76.9 (0.0%)	69.2 (-7.7%)	76.9 (0.0%)	92.3 (15.4%)	100.0 (23.1%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)
BN	10	27.8	38.9 (11.1%)	22.2 (-5.6%)	16.7 (-11.1%)	22.2 (-5.6%)	27.8 (0.0%)	27.8 (0.0%)	27.8 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	45.8	66.7 (20.8%)	54.2 (8.3%)	54.2 (8.3%)	58.3 (12.5%)	54.2 (8.3%)	45.8 (0.0%)	45.8 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	93.3	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)
All	8	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	89.9	99.0 (9.1%)	87.9 (-2.0%)	87.9 (-2.0%)	86.9 (-3.0%)	86.9 (-3.0%)	91.9 (2.0%)	94.9 (5.1%)
All	10	30.6	37.8 (7.1%)	31.6 (1.0%)	30.6 (0.0%)	32.7 (2.0%)	32.7 (2.0%)	31.6 (1.0%)	30.6 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
W	All	21.9	24.6 (2.7%)	21.0 (-0.9%)	21.0 (-0.9%)	21.0 (-0.9%)	20.5 (-1.3%)	22.8 (0.9%)	22.8 (0.9%)
AN	All	21.7	24.5 (2.8%)	20.8 (-0.9%)	20.8 (-0.9%)	19.8 (-1.9%)	21.7 (0.0%)	23.6 (1.9%)	24.5 (2.8%)
BN	All	28.5	29.9 (1.4%)	27.8 (-0.7%)	27.1 (-1.4%)	27.8 (-0.7%)	28.5 (0.0%)	27.8 (-0.7%)	28.5 (0.0%)
D	All	30.7	33.3 (2.6%)	31.8 (1.0%)	31.8 (1.0%)	32.3 (1.6%)	31.8 (1.0%)	30.7 (0.0%)	30.7 (0.0%)
C	All	36.8	36.8 (0.0%)	36.8 (0.0%)	36.8 (0.0%)	36.8 (0.0%)	36.8 (0.0%)	36.8 (0.0%)	37.6 (0.8%)
All	All	27.6	29.6 (2.0%)	27.3 (-0.3%)	27.2 (-0.4%)	27.3 (-0.3%)	27.4 (-0.1%)	27.9 (0.4%)	28.3 (0.8%)

Table L.1-266. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult late fall-run Chinook salmon migration by water year type and month, and for all years combined, Clear Creek below Whiskeytown, August through March.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	6.7	13.3 (6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	3.0 (2.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	1.0	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.4 (0.4%)	0.4 (0.4%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.7	0.7 (0.0%)	1.4 (0.7%)	0.7 (0.0%)	0.7 (0.0%)	0.7 (0.0%)	0.0 (-0.7%)	0.7 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2wo TUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	All	2.4	5.6 (3.2%)	3.2 (0.8%)	3.2 (0.8%)	4.0 (1.6%)	4.0 (1.6%)	2.4 (0.0%)	4.0 (1.6%)
All	All	0.5	1.0 (0.5%)	0.8 (0.3%)	0.8 (0.3%)	0.9 (0.4%)	0.8 (0.3%)	0.4 (-0.1%)	0.8 (0.3%)

L.1.3.7.2 Adult Holding and Spawning

Water temperature-related effects on late fall-run Chinook salmon adult holding and spawning were evaluated by assessing: (1) the percent of months with water temperature outside the 42.1°F to 55°F range for spawning initiation (McCullough 1999); and (2) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick and below Clear Creek, and in Clear Creek below Whiskeytown (Table L.1-2).

Results evaluating the 42.1°F to 55°F range for spawning initiation are presented in Table L.1-267 for the Sacramento River at Keswick, Table L.1-268 for the Sacramento River below Clear Creek, and Table L.1-269 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were predominantly within the range for spawning initiation during all months of each water year type under the NAA and all alternatives except April during below normal, dry, and critical water year types under the NAA and all alternatives (Table L.1-267). Combining water year types, the highest percent of months with water temperature outside the range occurred during April and the lowest was in January through March.
- Below Clear Creek, water temperatures were predominantly within range for spawning initiation during all months of each water year type, and under all alternatives except April (Table L.1-268). In April, the highest percent of months with water temperatures outside range for spawning initiation was 54.2% which occurred during a dry water year type under Alternative 2 without TUCP without VA. The lowest percent in April was 3.6% which occurred during a wet water year type under Alternative 1. Combining water year types, all months except April were within range under the NAA and all alternatives.
- In Clear Creek below Whiskeytown water temperatures were within the range for spawning initiation of late fall-run Chinook salmon during all months, of each water year types, under the NAA and all alternatives (Table L.1-269).

Results evaluating the 59.9°F pathogen virulence for adult holding and spawning late fall-run Chinook salmon are presented in Table L.1-270 for the Sacramento River at Keswick, Table L.1-271 for the Sacramento River below Clear Creek, and Table L.1-272 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were below the pathogen virulence threshold for adult holding and spawning during all months of each water year type under all alternatives (Table L.1-270).
- At the Sacramento River below Clear Creek, water temperatures were below the pathogen virulence threshold for adult holding and spawning during all months of each water year type under all alternatives (Table L.1-271).
- In Clear Creek below Whiskeytown water temperatures water temperatures were below the pathogen virulence threshold for late fall-run Chinook salmon adult holding and spawning, during all months of each water year type under the NAA and all alternatives (Table L.1-272).

Table L.1-267. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, January through April.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	16.7 (0.0%)	5.6 (-11.1%)	16.7 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	0.0 (-20.8%)	33.3 (12.5%)	33.3 (12.5%)	25.0 (4.2%)	25.0 (4.2%)	4.2 (-16.7%)	25.0 (4.2%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	12.5	0.0 (-12.5%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	6.3 (-6.3%)	0.0 (-12.5%)	18.8 (6.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	10.1	0.0 (-10.1%)	11.1 (1.0%)	11.1 (1.0%)	11.1 (1.0%)	10.1 (0.0%)	2.0 (-8.1%)	12.1 (2.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	4.2	0.0 (-4.2%)	2.8 (-1.4%)	2.8 (-1.4%)	5.6 (1.4%)	4.2 (0.0%)	1.4 (-2.8%)	4.2 (0.0%)
D	All	5.2	0.0 (-5.2%)	8.3 (3.1%)	8.3 (3.1%)	6.3 (1.0%)	6.3 (1.0%)	1.0 (-4.2%)	6.3 (1.0%)
C	All	3.1	0.0 (-3.1%)	1.6 (-1.6%)	1.6 (-1.6%)	1.6 (-1.6%)	1.6 (-1.6%)	0.0 (-3.1%)	4.7 (1.6%)
All	All	2.5	0.0 (-2.5%)	2.8 (0.3%)	2.8 (0.3%)	2.8 (0.3%)	2.5 (0.0%)	0.5 (-2.0%)	3.0 (0.5%)

Table L.1-268. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River below Clear Creek, January through April.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	7.1	3.6 (-3.6%)	7.1 (3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	10.7 (3.6%)	7.1 (-3.6%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	4	30.8	7.7 (-23.1%)	30.8 (23.1%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	44.4	16.7 (-27.8%)	38.9 (22.2%)	38.9 (0.0%)	38.9 (0.0%)	27.8 (-11.1%)	27.8 (-5.6%)	38.9 (11.1%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	45.8	12.5 (-33.3%)	50.0 (37.5%)	54.2 (4.2%)	50.0 (-4.2%)	50.0 (0.0%)	41.7 (-12.5%)	45.8 (4.2%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	43.8	37.5 (-6.3%)	25.0 (-12.5%)	25.0 (0.0%)	18.8 (-6.3%)	12.5 (-6.3%)	12.5 (0.0%)	43.8 (31.3%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	32.3	14.1 (-18.2%)	29.3 (15.2%)	30.3 (1.0%)	28.3 (-2.0%)	25.3 (-3.0%)	24.2 (-3.0%)	31.3 (7.1%)
W	All	1.8	0.9 (-0.9%)	1.8 (0.9%)	1.8 (0.0%)	1.8 (0.0%)	1.8 (0.0%)	2.7 (0.9%)	1.8 (-0.9%)
AN	All	7.7	1.9 (-5.8%)	7.7 (5.8%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)
BN	All	11.1	4.2 (-6.9%)	9.7 (5.6%)	9.7 (0.0%)	9.7 (0.0%)	6.9 (-2.8%)	6.9 (-1.4%)	9.7 (2.8%)
D	All	11.5	3.1 (-8.3%)	12.5 (9.4%)	13.5 (1.0%)	12.5 (-1.0%)	12.5 (0.0%)	10.4 (-3.1%)	11.5 (1.0%)
C	All	10.9	9.4 (-1.6%)	6.3 (-3.1%)	6.3 (0.0%)	4.7 (-1.6%)	3.1 (-1.6%)	3.1 (0.0%)	10.9 (7.8%)
All	All	8.1	3.5 (-4.5%)	7.3 (3.8%)	7.6 (0.3%)	7.1 (-0.5%)	6.3 (-0.8%)	6.1 (-0.8%)	7.8 (1.8%)

Table L.1-269. Percent (difference in percent relative to NAA) of months outside the 42.1°F to 55°F water temperature range for spawning initiation of late fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, January through April.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-270. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, January through April.

WYT	Month	NAA	Alt1	Alt2w TUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2w TUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-271. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River below Clear Creek, January through April.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-272. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning late fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, January through April.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.7.3 Egg Incubation and Fry Emergence

Water temperature-related effects on late fall-run Chinook salmon egg incubation and fry emergence were evaluated by assessing (1) the percent of months with water temperature outside the 42.8°F to 56°F range (Slater 1963, USFWS 1999, Myrick and Cech 2004, Bratovich et al. 2012, Martin et al. 2017); and (2) the percent of months with water temperature above the 59°F pathogen virulence threshold for late fall-run Chinook salmon fry (McCullough 1999) in the Sacramento River at Keswick and below Clear Creek, and in Clear Creek below Whiskeytown (Table L.1-2).

Results evaluating the 42.8°F to 56°F range are presented in Table L.1-273 for the Sacramento River at Keswick, Table L.1-274 for the Sacramento River below Clear Creek, and Table L.1-275 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were predominantly within range for salmon egg incubation and fry emergence during all months of each water year type except April and May of below normal, dry, and critical water year types under the NAA and all alternatives (Table L.1-273).
- Below Clear Creek, the highest percent of months with water temperature outside the range was 58.3% and occurred during May of a dry water year type under the NAA (Table L.1-274). The lowest percent of months outside the range was 0% and occurred during March of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months with water temperature outside the range was in May and the lowest was in March under the NAA and all alternatives.
- In Clear Creek below Whiskeytown water temperatures were predominantly within range for egg incubation and fry emergence during all months of each water year type under the NAA and all alternatives (Table L.1-275). The exceptions were June of a wet, above normal, and critical water year. The highest percent of water temperatures outside the range occurred under Alternative 4 during a wet water-year type (10.7%), and the lowest percent of months outside the range was 3.6% under all Alternative 2 combinations, and Alternative 3, during a wet water-year type. Combining water years, the highest percent of months outside the range was in June, all other months were within the temperature range.

Results evaluating the 59.9°F pathogen virulence for late fall-run Chinook salmon fry are presented in Table L.1-276 for the Sacramento River at Keswick, Table L.1-277 for the Sacramento River below Clear Creek, and Table L.1-278 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were below the pathogen virulence threshold for late fall-run Chinook salmon fry during all months of each water year type under the NAA and all alternatives (Table L.1-276).
- At the Sacramento River below Clear Creek, water temperatures were below the pathogen virulence threshold for late fall-run Chinook salmon fry during all months of each water year type under the NAA and all alternatives (Table L.1-277).
- In Clear Creek below Whiskeytown water temperatures were predominantly below the pathogen virulence threshold for egg incubation and fry emergence during all months of each water year type under the NAA and all alternatives, except June of a wet water year type under each component of Alt 2 and Alt 4. (Table L.1-278).

Table L.1-273. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for late fall-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River at Keswick, March through June.

WYT	Month	NAA	Alt1	Alt2w TUCP woVA	Alt2wo TUCP woVA	Alt2wo TUCP DeltaVA	Alt2wo TUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	5	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	0.0 (-20.8%)	8.3 (-12.5%)	8.3 (-12.5%)	8.3 (-12.5%)	8.3 (-12.5%)	0.0 (-20.8%)	4.2 (-16.7%)
D	5	12.5	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	12.5 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	12.5	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	12.5 (0.0%)
C	5	12.5	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)	0.0 (-12.5%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2w TUCP woVA	Alt2wo TUCP woVA	Alt2wo TUCP DeltaVA	Alt2wo TUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	8.1	0.0 (-8.1%)	2.0 (-6.1%)	2.0 (-6.1%)	2.0 (-6.1%)	3.0 (-5.1%)	0.0 (-8.1%)	3.0 (-5.1%)
All	5	6.1	0.0 (-6.1%)	0.0 (-6.1%)	0.0 (-6.1%)	0.0 (-6.1%)	0.0 (-6.1%)	0.0 (-6.1%)	4.0 (-2.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	2.8	0.0 (-2.8%)	0.0 (-2.8%)	0.0 (-2.8%)	0.0 (-2.8%)	1.4 (-1.4%)	0.0 (-2.8%)	1.4 (-1.4%)
D	All	8.3	0.0 (-8.3%)	2.1 (-6.3%)	2.1 (-6.3%)	2.1 (-6.3%)	2.1 (-6.3%)	0.0 (-8.3%)	4.2 (-4.2%)
C	All	6.3	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	3.1 (-3.1%)
All	All	3.5	0.0 (-3.5%)	0.5 (-3.0%)	0.5 (-3.0%)	0.5 (-3.0%)	0.8 (-2.8%)	0.0 (-3.5%)	1.8 (-1.8%)

Table L.1-274. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for late fall-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Sacramento River below Clear Creek, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	3.6	0.0 (-3.6%)	3.6 (3.6%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	0.0 (-3.6%)	3.6 (3.6%)
W	5	42.9	0.0 (-42.9%)	17.9 (17.9%)	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	3.6 (-14.3%)	25.0 (21.4%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	38.5	0.0 (-38.5%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (-7.7%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	16.7	0.0 (-16.7%)	16.7 (16.7%)	16.7 (0.0%)	22.2 (5.6%)	16.7 (-5.6%)	11.1 (-5.6%)	16.7 (5.6%)
BN	5	44.4	0.0 (-44.4%)	5.6 (5.6%)	0.0 (-5.6%)	5.6 (5.6%)	5.6 (0.0%)	0.0 (-5.6%)	22.2 (22.2%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	29.2	0.0 (-29.2%)	33.3 (33.3%)	33.3 (0.0%)	25.0 (-8.3%)	37.5 (12.5%)	8.3 (-20.8%)	25.0 (16.7%)
D	5	58.3	0.0 (-58.3%)	12.5 (12.5%)	8.3 (-4.2%)	12.5 (4.2%)	12.5 (0.0%)	0.0 (-20.8%)	37.5 (37.5%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	12.5	0.0 (-12.5%)	6.3 (6.3%)	12.5 (6.3%)	6.3 (-6.3%)	6.3 (0.0%)	0.0 (-6.3%)	18.8 (18.8%)
C	5	37.5	6.3 (-31.3%)	18.8 (12.5%)	6.3 (-12.5%)	18.8 (12.5%)	18.8 (0.0%)	12.5 (-6.3%)	37.5 (25.0%)
C	6	6.3	6.3 (0.0%)	0.0 (-6.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	12.5 (12.5%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	13.1	0.0 (-13.1%)	13.1 (13.1%)	14.1 (1.0%)	12.1 (-2.0%)	14.1 (2.0%)	4.0 (-8.1%)	13.1 (9.1%)
All	5	45.5	1.0 (-44.4%)	12.1 (11.1%)	8.1 (-4.0%)	12.1 (4.0%)	12.1 (0.0%)	3.0 (-11.1%)	27.3 (24.2%)
All	6	1.0	1.0 (0.0%)	0.0 (-1.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	2.0 (1.0%)
W	All	11.6	0.0 (-11.6%)	5.4 (5.4%)	5.4 (0.0%)	5.4 (0.0%)	5.4 (0.0%)	0.9 (-4.5%)	7.1 (6.3%)
AN	All	9.6	0.0 (-9.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.9 (1.9%)	1.9 (0.0%)
BN	All	15.3	0.0 (-15.3%)	5.6 (5.6%)	4.2 (-1.4%)	6.9 (2.8%)	5.6 (-1.4%)	2.8 (-2.8%)	9.7 (6.9%)
D	All	21.9	0.0 (-21.9%)	11.5 (11.5%)	10.4 (-1.0%)	9.4 (-1.0%)	12.5 (3.1%)	2.1 (-10.4%)	15.6 (13.5%)
C	All	14.1	3.1 (-10.9%)	6.3 (3.1%)	4.7 (-1.6%)	6.3 (1.6%)	6.3 (0.0%)	3.1 (-3.1%)	17.2 (14.1%)
All	All	14.9	0.5 (-14.4%)	6.3 (5.8%)	5.6 (-0.8%)	6.1 (0.5%)	6.6 (0.5%)	2.0 (-4.5%)	10.6 (8.6%)

Table L.1-275. Percent (difference in percent relative to NAA) of months outside the 42.8°F to 56°F water temperature range for late fall-run Chinook salmon egg incubation and fry emergence by water year type and month, and for all years combined, Clear Creek below Whiskeytown, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	7.1	0.0 (-7.1%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	10.7 (3.6%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	2.0	0.0 (-2.0%)	1.0 (-1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	1.0 (-1.0%)	2.0 (0.0%)	3.0 (1.0%)
W	All	1.8	0.0 (-1.8%)	0.9 (-0.9%)	0.9 (-0.9%)	0.9 (-0.9%)	0.9 (-0.9%)	0.9 (-0.9%)	2.7 (0.9%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.9 (1.9%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.5	0.0 (-0.5%)	0.3 (-0.3%)	0.3 (-0.3%)	0.3 (-0.3%)	0.3 (-0.3%)	0.5 (0.0%)	0.8 (0.3%)

Table L.1-276. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-277. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for adult holding and spawning late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River below Clear Creek, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-278. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for egg incubation and fry emergence of late fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	7.1 (7.1%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	2.0 (2.0%)
W	All	0.0	0.0 (0.0%)	0.9 (0.9%)	0.9 (0.9%)	0.9 (0.9%)	0.9 (0.9%)	0.0 (0.0%)	1.8 (1.8%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.3 (0.3%)	0.3 (0.3%)	0.3 (0.3%)	0.3 (0.3%)	0.0 (0.0%)	0.5 (0.5%)

L.1.3.7.4 Juvenile Rearing and Outmigration

Water temperature-related effects on late fall-run Chinook salmon juvenile rearing and outmigration in the Sacramento River were evaluated by assessing: (1) the percent of months with water temperature outside the 55.4°F to 68°F optimum temperature for juvenile growth, smoltification, and predation vulnerability (Myrick and Cech 2002, Marine and Cech 2004); (2) the percent of months with water temperature above the 75.2°F upper incipient lethal temperature (UILT) for juveniles (Brett 1952, Brett et al. 1982, Myrick and Cech 2004); and (3) the percent of months with water temperature above the 59.9°F pathogen virulence threshold (McCullough 1999) in the Sacramento River at Keswick, Red Bluff Diversion Dam, and Hamilton City, and in Clear Creek below Whiskeytown (Table L.1-2).

Results evaluating the 55.4°F to 68°F optimum temperature for juvenile growth, smoltification, and predation vulnerability are presented in Table L.1-279 for the Sacramento River at Keswick, Table L.1-280 for the Sacramento River at Red Bluff Diversion Dam, and Table L.1-281 for the Sacramento River at Hamilton City, and Table L.1-282 for Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months with water temperatures outside the optimal range for juvenile late fall-run Chinook salmon growth, smoltification, and predation vulnerability was 100%, which occurred in June, January and February of each water year type under the NAA and all alternatives (Table L.1-279). The lowest percent of months with water temperature outside the range was 13.3% which occurred during October of a critical water year type under Alternative 2 without TUCP AllVA. Combining water year types, the highest percent of months with water temperature outside the range was in June, January and February under the NAA and all alternatives, the lowest percent was in November under Alternative 1.
- At Red Bluff Diversion Dam, the highest percent of months with water temperature outside the range for juvenile late fall-run Chinook salmon growth, smoltification, and predation vulnerability was 100% and occurred during December through February of all water year types under the NAA and all alternatives (Table L.1-280). The lowest percent of months outside the range was 0% and occurred in May and June, as well as August and September of at least one water year type under the NAA and all alternatives. Combining water types, the highest percent of months outside the range was 100% and occurred between December and February under the NAA and all alternatives. The lowest percent of months outside the range was 0% and occurred between May and June.
- At Hamilton City, the highest percent of months with water temperatures outside the range was 100% and occurred during December through January of all water year types under the NAA and all alternatives (Table L.1-281). The lowest percent of months with water temperatures outside the range was 0% which predominantly occurred in April, May, and October of each water year type under the NAA and all alternatives, however several other months in at least one water year type were also within the temperature range under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in December and January, the lowest percent was between 0% - 1% which occurred during October under the NAA and all alternatives.

- In Clear Creek below Whiskeytown the highest percent of months with water temperatures outside the optimal range for juvenile late fall-run Chinook salmon growth, smoltification, and predation vulnerability was 100%, which occurred in April, May, December, January and February of each water year type under the NAA and all alternatives (Table L.1-282). The lowest percent of months with water temperature outside the optimal range was 80%, which occurred in November of a critical water year type under Alternative 1. Combining water year types, the highest percent of months outside the range was April, May, December, January and February under the NAA and all alternative, the lowest percent occurred in September under Alternative 4.

Results evaluating the 75.2°F upper incipient lethal temperature (UILT) for juvenile late fall-run Chinook salmon are presented in Table L.1-283 for the Sacramento River at Keswick, Table L.1-284 for the Sacramento River at Red Bluff Diversion Dam, Table L.1-285 for the Sacramento River at Hamilton City, and Table L.1-286 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were below the upper incipient lethal temperature during all months of each water year type under the NAA and all alternatives (Table L.1-283).
- At Red Bluff Diversion Dam, water temperatures were below the upper incipient lethal temperature for juvenile late fall-run Chinook salmon during all months of each water year type under the NAA and all alternatives (Table L.1-284).
- At Hamilton City, water temperatures were predominantly below the upper incipient lethal temperature during all months of each water year types under the NAA and all alternatives (Table L.1-285), except during August of a critical water year type under Alternative 2 without TUCP DeltaVA, which was 6.3% above the limit.
- In Clear Creek below Whiskeytown water temperatures were predominantly below the upper incipient lethal temperature during all months of each water year types under the NAA and all alternatives, except during September of a below normal water year type under each alternative except Alternative 3, and July through September of a critical water year type under the NAA and all alternative (0% - 12.5%). Combining water year types, all months were below the threshold except June through September under the NAA and all alternatives.

Results evaluating the 59.9°F pathogen virulence for late fall-run Chinook salmon juveniles are presented in Table L.1-287 for the Sacramento River at Keswick, Table L.1-288 for the Sacramento River at Red Bluff Diversion Dam, Table L.1-289 for the Sacramento River at Hamilton City, and Table L.1-290 for Clear Creek below Whiskeytown.

- At Keswick, water temperatures were predominantly below the pathogen virulence threshold for late fall-run Chinook salmon juveniles during all months of each water year types under the NAA and all alternatives except August through October of a critical water year type under the NAA and all alternatives, which ranged between 0% during August under Alternative 3 to 53.3% which occurred in October under the Alternative 2 with TUCP without VA, Alternative 2 without TUCP Delta VA, and Alternative 2 without TUCP Systemwide VAs (Table L.1-287). Combining water year types, the highest percent of months with water temperatures above the threshold was 8.2% and occurred in October, the lowest percent was 0% and occurred in all other months except August through October.
- At Red Bluff Diversion Dam, the highest percent of months with water temperatures above the threshold was 100% and occurred in September of a critical water year type under Alternative 1, Alternative with TUCP Without VA, and Alternative 2 without TUCP Systemwide VAs (Table L.1-288). The lowest percent of months with water temperatures above the limit was 0% and occurred November through February in all water year types under the NAA and all alternatives. Combining water year types, the highest percent of months above the threshold was in May and June and the lowest was in November through February.
- At Hamilton City, the highest percent of months with water temperatures above the threshold was 100% and occurred in June of each water year type under the NAA and all alternatives (Table L.1-289). The lowest percent of months with water temperatures above the threshold was 0% and occurred during November through February of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months above the limit was in June, and the lowest was November through February.
- In Clear Creek below Whiskeytown, the highest percent of months with water temperatures above the threshold was 13.3% and occurred in October and November of critical water year type under Alternative 1 (Table L.1-290). The lowest percent of months with water temperatures above the threshold was 0% and occurred during April, May and December through February of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months above the limit was in September, and the lowest was in April, May, and December through February.

Table L.1-279. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile late fall-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Keswick, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	96.4 (-3.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	96.4 (-3.6%)
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	92.3	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	85.7 (-14.3%)	92.9 (-7.1%)	92.9 (-7.1%)	85.7 (-14.3%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	88.9	100.0 (11.1%)	94.4 (5.6%)	94.4 (5.6%)	88.9 (0.0%)	88.9 (0.0%)	100.0 (11.1%)	94.4 (5.6%)
BN	5	83.3	100.0 (16.7%)	94.4 (11.1%)	100.0 (16.7%)	100.0 (16.7%)	94.4 (11.1%)	100.0 (16.7%)	94.4 (11.1%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	83.3 (-16.7%)	88.9 (-11.1%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	79.2	100.0 (20.8%)	83.3 (4.2%)	87.5 (8.3%)	87.5 (8.3%)	83.3 (4.2%)	95.8 (16.7%)	79.2 (0.0%)
D	5	70.8	100.0 (29.2%)	100.0 (29.2%)	100.0 (29.2%)	100.0 (29.2%)	95.8 (25.0%)	100.0 (29.2%)	75.0 (4.2%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	95.8 (-4.2%)	95.8 (-4.2%)	95.8 (-4.2%)	95.8 (-4.2%)	91.7 (-8.3%)	100.0 (0.0%)
D	11	95.8	91.7 (-4.2%)	87.5 (-8.3%)	83.3 (-12.5%)	91.7 (-4.2%)	95.8 (0.0%)	91.7 (-4.2%)	95.8 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	87.5	100.0 (12.5%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	93.8 (6.3%)	100.0 (12.5%)	87.5 (0.0%)
C	5	75.0	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	100.0 (25.0%)	87.5 (12.5%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	93.8	87.5 (-6.3%)	87.5 (-6.3%)	100.0 (6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	100.0 (6.3%)	100.0 (6.3%)
C	8	62.5	62.5 (0.0%)	68.8 (6.3%)	81.3 (18.8%)	68.8 (6.3%)	68.8 (6.3%)	87.5 (25.0%)	87.5 (25.0%)
C	9	50.0	50.0 (0.0%)	43.8 (-6.3%)	62.5 (12.5%)	43.8 (-6.3%)	37.5 (-12.5%)	62.5 (12.5%)	68.8 (18.8%)
C	10	40.0	33.3 (-6.7%)	20.0 (-20.0%)	26.7 (-13.3%)	20.0 (-20.0%)	13.3 (-26.7%)	33.3 (-6.7%)	53.3 (13.3%)
C	11	40.0	46.7 (6.7%)	46.7 (6.7%)	33.3 (-6.7%)	46.7 (6.7%)	46.7 (6.7%)	40.0 (0.0%)	46.7 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	90.9	100.0 (9.1%)	93.9 (3.0%)	94.9 (4.0%)	93.9 (3.0%)	92.9 (2.0%)	99.0 (8.1%)	91.9 (1.0%)
All	5	84.8	100.0 (15.2%)	99.0 (14.1%)	100.0 (15.2%)	100.0 (15.2%)	98.0 (13.1%)	100.0 (15.2%)	90.9 (6.1%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	99.0	98.0 (-1.0%)	98.0 (-1.0%)	100.0 (1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	100.0 (1.0%)	100.0 (1.0%)
All	8	93.9	93.9 (0.0%)	94.9 (1.0%)	97.0 (3.0%)	94.9 (1.0%)	94.9 (1.0%)	98.0 (4.0%)	98.0 (4.0%)
All	9	91.9	91.9 (0.0%)	90.9 (-1.0%)	93.9 (2.0%)	90.9 (-1.0%)	89.9 (-2.0%)	93.9 (2.0%)	94.9 (3.0%)
All	10	90.8	89.8 (-1.0%)	85.7 (-5.1%)	87.8 (-3.1%)	84.7 (-6.1%)	84.7 (-6.1%)	87.8 (-3.1%)	92.9 (2.0%)
All	11	89.9	83.8 (-6.1%)	85.9 (-4.0%)	84.8 (-5.1%)	85.9 (-4.0%)	88.9 (-1.0%)	88.9 (-1.0%)	90.9 (1.0%)
All	12	100.0	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.0 (-2.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	99.7 (-0.3%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	99.7 (-0.3%)
AN	All	99.3	98.6 (-0.7%)	99.3 (0.0%)	99.3 (0.0%)	98.6 (-0.7%)	99.3 (0.0%)	100.0 (0.7%)	100.0 (0.7%)
BN	All	97.5	98.0 (0.5%)	97.5 (0.0%)	99.5 (2.0%)	97.0 (-0.5%)	97.5 (0.0%)	100.0 (2.5%)	99.0 (1.5%)
D	All	95.1	99.2 (4.2%)	97.0 (1.9%)	97.0 (1.9%)	97.7 (2.7%)	97.3 (2.3%)	98.1 (3.0%)	95.1 (0.0%)
C	All	77.5	80.3 (2.9%)	78.6 (1.2%)	82.1 (4.6%)	78.6 (1.2%)	77.5 (0.0%)	84.4 (6.9%)	85.0 (7.5%)
All	All	94.7	97.3 (2.6%)	96.1 (1.5%)	97.6 (3.0%)	96.3 (1.6%)	95.6 (1.0%)	98.5 (3.8%)	96.0 (1.3%)

Table L.1-280. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile late fall-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, March through June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	32.1	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	32.1 (0.0%)	35.7 (3.6%)	32.1 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	7.1	0.0 (-7.1%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	3.6 (-3.6%)	0.0 (-7.1%)	3.6 (-3.6%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	60.7	3.6 (-57.1%)	71.4 (10.7%)	71.4 (10.7%)	67.9 (7.1%)	71.4 (10.7%)	57.1 (-3.6%)	53.6 (-7.1%)
W	11	100.0	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	7.7	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	15.4 (7.7%)	7.7 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	30.8	0.0 (-30.8%)	30.8 (0.0%)	30.8 (0.0%)	38.5 (7.7%)	30.8 (0.0%)	23.1 (-7.7%)	23.1 (-7.7%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	11.1	5.6 (-5.6%)	5.6 (-5.6%)	5.6 (-5.6%)	11.1 (0.0%)	11.1 (0.0%)	5.6 (-5.6%)	11.1 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	5.6	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	16.7	0.0 (-16.7%)	11.1 (-5.6%)	11.1 (-5.6%)	11.1 (-5.6%)	22.2 (5.6%)	11.1 (-5.6%)	11.1 (-5.6%)
BN	11	100.0	94.4 (-5.6%)	94.4 (-5.6%)	100.0 (0.0%)	88.9 (-11.1%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	8.3	4.2 (-4.2%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	12.5 (4.2%)	8.3 (0.0%)	8.3 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	12.5	0.0 (-12.5%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	12.5 (0.0%)	8.3 (-4.2%)	12.5 (0.0%)
D	11	91.7	79.2 (-12.5%)	83.3 (-8.3%)	83.3 (-8.3%)	87.5 (-4.2%)	87.5 (-4.2%)	91.7 (0.0%)	95.8 (4.2%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	18.8 (18.8%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	6.3	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	6.3 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	53.3 (6.7%)	53.3 (6.7%)	53.3 (6.7%)	46.7 (0.0%)	60.0 (13.3%)	46.7 (0.0%)	53.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	14.1	12.1 (-2.0%)	13.1 (-1.0%)	13.1 (-1.0%)	14.1 (0.0%)	15.2 (1.0%)	15.2 (1.0%)	14.1 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	3.0	1.0 (-2.0%)	2.0 (-1.0%)	2.0 (-1.0%)	2.0 (-1.0%)	2.0 (-1.0%)	0.0 (-3.0%)	2.0 (-1.0%)
All	8	0.0	3.0 (3.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	1.0	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	4.0 (3.0%)	4.0 (3.0%)	0.0 (-1.0%)	1.0 (0.0%)
All	10	27.6	1.0 (-26.5%)	29.6 (2.0%)	29.6 (2.0%)	29.6 (2.0%)	31.6 (4.1%)	23.5 (-4.1%)	23.5 (-4.1%)
All	11	89.9	84.8 (-5.1%)	87.9 (-2.0%)	88.9 (-1.0%)	86.9 (-3.0%)	89.9 (0.0%)	89.9 (0.0%)	91.9 (2.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	45.5	39.0 (-6.5%)	46.1 (0.6%)	46.1 (0.6%)	45.8 (0.3%)	46.1 (0.6%)	44.8 (-0.6%)	44.5 (-1.0%)
AN	All	40.7	37.9 (-2.8%)	40.7 (0.0%)	40.7 (0.0%)	41.4 (0.7%)	40.7 (0.0%)	40.7 (0.0%)	40.0 (-0.7%)
BN	All	39.4	36.9 (-2.5%)	37.9 (-1.5%)	38.4 (-1.0%)	37.9 (-1.5%)	39.4 (0.0%)	37.9 (-1.5%)	38.9 (-0.5%)
D	All	37.5	34.8 (-2.7%)	36.7 (-0.8%)	36.7 (-0.8%)	37.1 (-0.4%)	37.5 (0.0%)	37.1 (-0.4%)	37.9 (0.4%)
C	All	31.8	35.8 (4.0%)	34.7 (2.9%)	31.8 (0.0%)	34.1 (2.3%)	35.3 (3.5%)	31.2 (-0.6%)	32.4 (0.6%)
All	All	39.6	3.4 (-36.2%)	3.4 (-36.2%)	2.5 (-37.1%)	3.5 (-36.1%)	3.7 (-35.9%)	2.5 (-37.1%)	2.9 (-36.8%)

Table L.1-281. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile late fall-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Sacramento River at Hamilton City, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	21.4	17.9 (-3.6%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	17.9 (-3.6%)	14.3 (-7.1%)	17.9 (-3.6%)
W	5	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	0.0 (-7.1%)	7.1 (0.0%)
W	6	14.3	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	10.7 (-3.6%)	21.4 (7.1%)	14.3 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)
W	11	100.0	78.6 (-21.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	15.4 (15.4%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	100.0	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	5.6	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	94.4	55.6 (-38.9%)	83.3 (-11.1%)	88.9 (-5.6%)	83.3 (-11.1%)	83.3 (-11.1%)	88.9 (-5.6%)	94.4 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	0.0 (-4.2%)	4.2 (0.0%)
D	9	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	83.3	58.3 (-25.0%)	75.0 (-8.3%)	79.2 (-4.2%)	75.0 (-8.3%)	79.2 (-4.2%)	83.3 (0.0%)	83.3 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)
C	6	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	12.5 (12.5%)	6.3 (6.3%)	12.5 (12.5%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	6.3	0.0 (-6.3%)	0.0 (-6.3%)	18.8 (12.5%)	0.0 (-6.3%)	6.3 (0.0%)	6.3 (0.0%)	18.8 (12.5%)
C	8	37.5	37.5 (0.0%)	50.0 (12.5%)	31.3 (-6.3%)	50.0 (12.5%)	50.0 (12.5%)	18.8 (-18.8%)	25.0 (-12.5%)
C	9	37.5	31.3 (-6.3%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	43.8 (6.3%)	25.0 (-12.5%)	12.5 (-25.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	46.7	33.3 (-13.3%)	40.0 (-6.7%)	33.3 (-13.3%)	40.0 (-6.7%)	40.0 (-6.7%)	26.7 (-20.0%)	46.7 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	93.8	100.0 (6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	87.5 (-6.3%)	87.5 (-6.3%)
All	4	6.1	5.1 (-1.0%)	6.1 (0.0%)	6.1 (0.0%)	6.1 (0.0%)	5.1 (-1.0%)	4.0 (-2.0%)	5.1 (-1.0%)
All	5	2.0	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	6	5.1	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	4.0 (-1.0%)	5.1 (0.0%)	9.1 (4.0%)	6.1 (1.0%)
All	7	1.0	0.0 (-1.0%)	0.0 (-1.0%)	3.0 (2.0%)	0.0 (-1.0%)	1.0 (0.0%)	4.0 (3.0%)	3.0 (2.0%)
All	8	7.1	7.1 (0.0%)	9.1 (2.0%)	6.1 (-1.0%)	9.1 (2.0%)	9.1 (2.0%)	5.1 (-2.0%)	5.1 (-2.0%)
All	9	7.1	6.1 (-1.0%)	8.1 (1.0%)	5.1 (-2.0%)	8.1 (1.0%)	8.1 (1.0%)	5.1 (-2.0%)	3.0 (-4.0%)
All	10	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	86.9	64.6 (-22.2%)	80.8 (-6.1%)	81.8 (-5.1%)	80.8 (-6.1%)	82.8 (-4.0%)	82.8 (-4.0%)	86.9 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	99.0	100.0 (1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	98.0 (-1.0%)	98.0 (-1.0%)
W	All	40.3	37.7 (-2.6%)	40.3 (0.0%)	40.3 (0.0%)	40.3 (0.0%)	39.9 (-0.3%)	40.9 (0.6%)	39.9 (-0.3%)
AN	All	37.2	36.6 (-0.7%)	36.6 (-0.7%)	36.6 (-0.7%)	36.6 (-0.7%)	37.2 (0.0%)	38.6 (1.4%)	37.2 (0.0%)
BN	All	36.4	32.8 (-3.5%)	34.8 (-1.5%)	35.4 (-1.0%)	34.8 (-1.5%)	34.8 (-1.5%)	35.9 (-0.5%)	35.9 (-0.5%)
D	All	35.6	33.3 (-2.3%)	34.8 (-0.8%)	35.2 (-0.4%)	34.8 (-0.8%)	35.2 (-0.4%)	35.2 (-0.4%)	35.6 (0.0%)
C	All	38.2	36.4 (-1.7%)	39.3 (1.2%)	37.0 (-1.2%)	39.3 (1.2%)	40.5 (2.3%)	34.1 (-4.0%)	37.0 (-1.2%)
All	All	37.7	4.0 (-33.6%)	5.1 (-32.6%)	4.5 (-33.1%)	5.1 (-32.6%)	5.2 (-32.5%)	4.7 (-33.0%)	4.2 (-33.5%)

Table L.1-282. Percent (difference in percent relative to NAA) of months outside the 55.4°F to 68°F optimal water temperature range for juvenile late fall-run Chinook salmon growth, smoltification, and predation vulnerability by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	92.9	100.0 (7.1%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	89.3 (-3.6%)
W	7	100.0	100.0 (0.0%)	96.4 (-3.6%)	96.4 (-3.6%)	92.9 (-7.1%)	96.4 (-3.6%)	100.0 (0.0%)	96.4 (-3.6%)
W	8	96.4	100.0 (3.6%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	100.0 (3.6%)	96.4 (0.0%)
W	9	96.4	100.0 (3.6%)	100.0 (3.6%)	96.4 (0.0%)	96.4 (0.0%)	100.0 (3.6%)	100.0 (3.6%)	96.4 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	93.8 (-6.3%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	93.8	87.5 (-6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)
C	10	93.3	93.3 (0.0%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)	100.0 (6.7%)
C	11	86.7	80.0 (-6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	98.0	100.0 (2.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	97.0 (-1.0%)	96.0 (-2.0%)
All	7	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	97.0 (-3.0%)	99.0 (-1.0%)	100.0 (0.0%)	99.0 (-1.0%)
All	8	99.0	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	98.0 (-1.0%)	99.0 (0.0%)	100.0 (1.0%)	99.0 (0.0%)
All	9	98.0	98.0 (0.0%)	100.0 (2.0%)	99.0 (1.0%)	99.0 (1.0%)	100.0 (2.0%)	100.0 (2.0%)	99.0 (1.0%)
All	10	99.0	99.0 (0.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)	100.0 (1.0%)
All	11	98.0	97.0 (-1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	98.7	100.0 (1.3%)	99.0 (0.3%)	98.7 (0.0%)	98.4 (-0.3%)	99.0 (0.3%)	99.7 (1.0%)	98.1 (-0.6%)
AN	All	100.0	100.0 (0.0%)	99.3 (-0.7%)	99.3 (-0.7%)	99.3 (-0.7%)	99.3 (-0.7%)	99.3 (-0.7%)	99.3 (-0.7%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	97.7	96.0 (-1.7%)	99.4 (1.7%)	99.4 (1.7%)	99.4 (1.7%)	99.4 (1.7%)	98.8 (1.2%)	99.4 (1.7%)
All	All	99.3	99.5 (0.2%)	99.3 (0.1%)	99.2 (-0.1%)	98.7 (-0.6%)	99.3 (0.1%)	99.5 (0.2%)	98.8 (-0.4%)

Table L.1-283. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-284. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-285. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.1 (0.1%)	0.0 (0.0%)	0.1 (0.1%)	0.1 (0.1%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-286. Percent (difference in percent relative to NAA) of months above the 75.2°F upper incipient lethal temperature (UILT) for juvenile late fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.5	0.9 (0.4%)	1.9 (1.3%)	0.9 (0.4%)	0.9 (0.4%)	0.9 (0.4%)	0.0 (-0.5%)	0.9 (0.4%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.2	3.1 (2.0%)	3.1 (2.0%)	4.2 (3.0%)	4.2 (3.0%)	4.2 (3.0%)	3.1 (2.0%)	5.2 (4.1%)
All	All	0.3	0.4 (0.1%)	0.5 (0.2%)	0.5 (0.2%)	0.5 (0.2%)	0.5 (0.2%)	0.3 (0.0%)	0.6 (0.3%)

Table L.1-287. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Keswick, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	25.0	31.3 (6.3%)	25.0 (0.0%)	6.3 (-18.8%)	25.0 (0.0%)	25.0 (0.0%)	0.0 (-25.0%)	6.3 (-18.8%)
C	9	37.5	37.5 (0.0%)	43.8 (6.3%)	25.0 (-12.5%)	43.8 (6.3%)	50.0 (12.5%)	12.5 (-25.0%)	18.8 (-18.8%)
C	10	46.7	46.7 (0.0%)	53.3 (6.7%)	33.3 (-13.3%)	53.3 (6.7%)	53.3 (6.7%)	20.0 (-26.7%)	33.3 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	4.0	5.1 (1.0%)	4.0 (0.0%)	1.0 (-3.0%)	4.0 (0.0%)	4.0 (0.0%)	0.0 (-4.0%)	1.0 (-3.0%)
All	9	6.1	6.1 (0.0%)	7.1 (1.0%)	4.0 (-2.0%)	7.1 (1.0%)	8.1 (2.0%)	2.0 (-4.0%)	3.0 (-3.0%)
All	10	7.1	7.1 (0.0%)	8.2 (1.0%)	5.1 (-2.0%)	8.2 (1.0%)	8.2 (1.0%)	3.1 (-4.1%)	5.1 (-2.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	9.8	10.4 (0.6%)	11.0 (1.2%)	5.8 (-4.0%)	11.0 (1.2%)	11.6 (1.7%)	2.9 (-6.9%)	5.2 (-4.6%)
All	All	1.6	1.7 (0.1%)	1.7 (0.2%)	0.9 (-0.6%)	1.7 (0.2%)	1.8 (0.3%)	0.5 (-1.1%)	0.8 (-0.7%)

Table L.1-288. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Red Bluff Diversion Dam, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	75.0	32.1 (-42.9%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	42.9 (-32.1%)	32.1 (-42.9%)	50.0 (-25.0%)
W	6	60.7	39.3 (-21.4%)	46.4 (-14.3%)	42.9 (-17.9%)	42.9 (-17.9%)	46.4 (-14.3%)	78.6 (17.9%)	60.7 (0.0%)
W	7	10.7	7.1 (-3.6%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	14.3 (3.6%)	10.7 (0.0%)
W	8	14.3	10.7 (-3.6%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	7.1 (-7.1%)	14.3 (0.0%)	14.3 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	7.7	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	0.0 (-7.7%)	7.7 (0.0%)	7.7 (0.0%)
AN	5	69.2	15.4 (-53.8%)	53.8 (-15.4%)	53.8 (-15.4%)	53.8 (-15.4%)	46.2 (-23.1%)	15.4 (-53.8%)	53.8 (-15.4%)
AN	6	46.2	7.7 (-38.5%)	30.8 (-15.4%)	30.8 (-15.4%)	38.5 (-7.7%)	46.2 (0.0%)	61.5 (15.4%)	53.8 (7.7%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	11.1	0.0 (-11.1%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)
BN	5	44.4	5.6 (-38.9%)	27.8 (-16.7%)	27.8 (-16.7%)	27.8 (-16.7%)	22.2 (-22.2%)	27.8 (-16.7%)	38.9 (-5.6%)
BN	6	44.4	27.8 (-16.7%)	33.3 (-11.1%)	38.9 (-5.6%)	38.9 (-5.6%)	44.4 (0.0%)	50.0 (5.6%)	50.0 (5.6%)
BN	7	16.7	11.1 (-5.6%)	11.1 (-5.6%)	11.1 (-5.6%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)
BN	8	22.2	27.8 (5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	16.7 (-5.6%)	16.7 (-5.6%)	5.6 (-16.7%)	11.1 (-11.1%)
BN	9	33.3	22.2 (-11.1%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	16.7 (-16.7%)	27.8 (-5.6%)	27.8 (-5.6%)
BN	10	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	20.8	8.3 (-12.5%)	20.8 (0.0%)	20.8 (0.0%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)	20.8 (0.0%)
D	5	70.8	20.8 (-50.0%)	58.3 (-12.5%)	58.3 (-12.5%)	45.8 (-25.0%)	58.3 (-12.5%)	33.3 (-37.5%)	62.5 (-8.3%)
D	6	29.2	20.8 (-8.3%)	12.5 (-16.7%)	12.5 (-16.7%)	20.8 (-8.3%)	25.0 (-4.2%)	20.8 (-8.3%)	25.0 (-4.2%)
D	7	16.7	16.7 (0.0%)	4.2 (-12.5%)	4.2 (-12.5%)	4.2 (-12.5%)	4.2 (-12.5%)	8.3 (-8.3%)	8.3 (-8.3%)
D	8	25.0	25.0 (0.0%)	12.5 (-12.5%)	12.5 (-12.5%)	12.5 (-12.5%)	8.3 (-16.7%)	4.2 (-20.8%)	8.3 (-16.7%)
D	9	33.3	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	29.2 (-4.2%)	20.8 (-12.5%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	37.5	25.0 (-12.5%)	6.3 (-31.3%)	37.5 (0.0%)	6.3 (-31.3%)	6.3 (-31.3%)	37.5 (0.0%)	43.8 (6.3%)
C	5	56.3	37.5 (-18.8%)	56.3 (0.0%)	43.8 (-12.5%)	56.3 (0.0%)	56.3 (0.0%)	56.3 (0.0%)	68.8 (12.5%)
C	6	68.8	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	50.0 (-18.8%)	50.0 (-18.8%)	56.3 (-12.5%)	81.3 (12.5%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	81.3	81.3 (0.0%)	68.8 (-12.5%)	81.3 (0.0%)	68.8 (-12.5%)	68.8 (-12.5%)	62.5 (-18.8%)	93.8 (12.5%)
C	8	81.3	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	81.3 (0.0%)	62.5 (-18.8%)	81.3 (0.0%)
C	9	93.8	100.0 (6.3%)	100.0 (6.3%)	87.5 (-6.3%)	93.8 (0.0%)	100.0 (6.3%)	75.0 (-18.8%)	81.3 (-12.5%)
C	10	60.0	60.0 (0.0%)	66.7 (6.7%)	60.0 (0.0%)	53.3 (-6.7%)	66.7 (6.7%)	40.0 (-20.0%)	46.7 (-13.3%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	14.1	6.1 (-8.1%)	9.1 (-5.1%)	14.1 (0.0%)	8.1 (-6.1%)	7.1 (-7.1%)	12.1 (-2.0%)	15.2 (1.0%)
All	5	64.6	23.2 (-41.4%)	47.5 (-17.2%)	45.5 (-19.2%)	44.4 (-20.2%)	45.5 (-19.2%)	33.3 (-31.3%)	54.5 (-10.1%)
All	6	49.5	30.3 (-19.2%)	34.3 (-15.2%)	35.4 (-14.1%)	37.4 (-12.1%)	41.4 (-8.1%)	53.5 (4.0%)	52.5 (3.0%)
All	7	23.2	21.2 (-2.0%)	17.2 (-6.1%)	19.2 (-4.0%)	18.2 (-5.1%)	18.2 (-5.1%)	19.2 (-4.0%)	23.2 (0.0%)
All	8	27.3	28.3 (1.0%)	22.2 (-5.1%)	20.2 (-7.1%)	22.2 (-5.1%)	20.2 (-7.1%)	16.2 (-11.1%)	21.2 (-6.1%)
All	9	29.3	28.3 (-1.0%)	27.3 (-2.0%)	25.3 (-4.0%)	26.3 (-3.0%)	27.3 (-2.0%)	25.3 (-4.0%)	23.2 (-6.1%)
All	10	10.2	9.2 (-1.0%)	10.2 (0.0%)	9.2 (-1.0%)	9.2 (-1.0%)	10.2 (0.0%)	6.1 (-4.1%)	7.1 (-3.1%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	14.6	8.1 (-6.5%)	9.7 (-4.9%)	9.4 (-5.2%)	9.4 (-5.2%)	9.7 (-4.9%)	13.0 (-1.6%)	12.3 (-2.3%)
AN	All	11.0	2.1 (-9.0%)	8.3 (-2.8%)	8.3 (-2.8%)	9.0 (-2.1%)	8.3 (-2.8%)	7.6 (-3.4%)	10.3 (-0.7%)
BN	All	16.2	8.6 (-7.6%)	10.6 (-5.6%)	10.1 (-6.1%)	12.1 (-4.0%)	11.6 (-4.5%)	12.6 (-3.5%)	14.1 (-2.0%)
D	All	17.8	11.4 (-6.4%)	12.9 (-4.9%)	12.9 (-4.9%)	12.1 (-5.7%)	13.3 (-4.5%)	9.8 (-8.0%)	13.3 (-4.5%)
C	All	43.9	40.5 (-3.5%)	39.9 (-4.0%)	41.6 (-2.3%)	38.2 (-5.8%)	39.3 (-4.6%)	35.8 (-8.1%)	45.7 (1.7%)
All	All	19.9	13.3 (-6.5%)	15.3 (-4.6%)	15.3 (-4.5%)	15.1 (-4.8%)	15.4 (-4.4%)	15.1 (-4.8%)	17.9 (-1.9%)

Table L.1-289. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile late fall-run Chinook salmon by water year type and month, and for all years combined, Sacramento River at Hamilton City, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	17.9	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	17.9 (0.0%)	14.3 (-3.6%)	14.3 (-3.6%)	17.9 (0.0%)
W	5	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	89.3 (-3.6%)	92.9 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	100.0 (7.1%)	92.9 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	75.0	96.4 (21.4%)	67.9 (-7.1%)	67.9 (-7.1%)	67.9 (-7.1%)	64.3 (-10.7%)	78.6 (3.6%)	82.1 (7.1%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	38.5	46.2 (7.7%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)
AN	5	100.0	84.6 (-15.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	76.9	100.0 (23.1%)	84.6 (7.7%)	84.6 (7.7%)	76.9 (0.0%)	84.6 (7.7%)	100.0 (23.1%)	76.9 (0.0%)
AN	8	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	76.9	100.0 (23.1%)	76.9 (0.0%)	76.9 (0.0%)	69.2 (-7.7%)	76.9 (0.0%)	92.3 (15.4%)	100.0 (23.1%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	77.8	61.1 (-16.7%)	72.2 (-5.6%)	72.2 (-5.6%)	77.8 (0.0%)	61.1 (-16.7%)	66.7 (-11.1%)	66.7 (-11.1%)
BN	5	100.0	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	88.9	94.4 (5.6%)	88.9 (0.0%)	88.9 (0.0%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	88.9 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)
BN	10	27.8	38.9 (11.1%)	22.2 (-5.6%)	16.7 (-11.1%)	22.2 (-5.6%)	27.8 (0.0%)	27.8 (0.0%)	27.8 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	66.7	66.7 (0.0%)	66.7 (0.0%)	66.7 (0.0%)	70.8 (4.2%)	66.7 (0.0%)	87.5 (20.8%)	66.7 (0.0%)
D	5	100.0	91.7 (-8.3%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	45.8	66.7 (20.8%)	54.2 (8.3%)	54.2 (8.3%)	58.3 (12.5%)	54.2 (8.3%)	45.8 (0.0%)	45.8 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	93.8	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	93.8 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	93.3	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)	93.3 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	55.6	52.5 (-3.0%)	53.5 (-2.0%)	54.5 (-1.0%)	55.6 (0.0%)	50.5 (-5.1%)	57.6 (2.0%)	53.5 (-2.0%)
All	5	98.0	92.9 (-5.1%)	97.0 (-1.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)	96.0 (-2.0%)	97.0 (-1.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	92.9	97.0 (4.0%)	93.9 (1.0%)	93.9 (1.0%)	93.9 (1.0%)	94.9 (2.0%)	99.0 (6.1%)	92.9 (0.0%)
All	8	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	89.9	99.0 (9.1%)	87.9 (-2.0%)	87.9 (-2.0%)	86.9 (-3.0%)	86.9 (-3.0%)	91.9 (2.0%)	94.9 (5.1%)
All	10	30.6	37.8 (7.1%)	31.6 (1.0%)	30.6 (0.0%)	32.7 (2.0%)	32.7 (2.0%)	31.6 (1.0%)	30.6 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	43.5	45.5 (1.9%)	42.9 (-0.6%)	42.9 (-0.6%)	42.9 (-0.6%)	42.2 (-1.3%)	44.2 (0.6%)	44.2 (0.6%)
AN	All	44.1	47.6 (3.4%)	44.1 (0.0%)	44.1 (0.0%)	42.8 (-1.4%)	44.8 (0.7%)	47.6 (3.4%)	46.2 (2.1%)
BN	All	54.0	53.5 (-0.5%)	52.5 (-1.5%)	52.0 (-2.0%)	53.5 (-0.5%)	52.5 (-1.5%)	52.5 (-1.5%)	52.5 (-1.5%)
D	All	55.7	56.8 (1.1%)	56.4 (0.8%)	56.4 (0.8%)	56.8 (1.1%)	56.4 (0.8%)	57.6 (1.9%)	55.7 (0.0%)
C	All	63.0	62.4 (-0.6%)	62.4 (-0.6%)	63.0 (0.0%)	62.4 (-0.6%)	62.4 (-0.6%)	63.0 (0.0%)	63.0 (0.0%)
All	All	51.6	52.7 (1.1%)	51.2 (-0.4%)	51.2 (-0.4%)	51.3 (-0.3%)	51.1 (-0.5%)	52.4 (0.8%)	51.7 (0.2%)

Table L.1-290. Percent (difference in percent relative to NAA) of months above the 59.9°F pathogen virulence water temperature threshold for juvenile late fall-run Chinook salmon by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April through February.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	7.1 (7.1%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	13.3 (13.3%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	6.7	13.3 (6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)	0.0 (-6.7%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	2.0 (2.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	3.0 (2.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	2.0 (2.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	1.0	2.0 (1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.3 (0.3%)	0.6 (0.6%)	0.6 (0.6%)	0.3 (0.3%)	0.0 (0.0%)	0.6 (0.6%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.5	0.5 (0.0%)	1.0 (0.5%)	0.5 (0.0%)	0.5 (0.0%)	0.5 (0.0%)	0.0 (-0.5%)	0.5 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.7	4.0 (2.3%)	2.3 (0.6%)	2.9 (1.2%)	2.9 (1.2%)	2.9 (1.2%)	2.3 (0.6%)	3.5 (1.7%)
All	All	0.4	0.7 (0.4%)	0.6 (0.3%)	0.7 (0.4%)	0.7 (0.4%)	0.6 (0.3%)	0.4 (0.0%)	0.8 (0.5%)

L.1.3.8 White Sturgeon

L.1.3.8.1 Spawning and Embryo Incubation

Water temperature related effects on white sturgeon spawning and embryo incubation in the Sacramento River were evaluated by assessing: (1) the percent of months with water temperature above the 61°F optimal egg incubation range upper limit (Israel et al. 2009); and (2) the percent months with water temperature above the 68°F embryo hatching upper limit (Israel et al. 2009) at Hamilton City (Table L.1-2).

Results evaluating the 61°F optimal egg incubation range upper limit are presented in Table L.1-291 and results for the 68°F embryo hatching upper limit are presented in Table L.1-292 for Hamilton City.

- At Hamilton City, the highest percent of months with water temperatures above the optimal egg incubation range upper limit was 100% and occurred in May of a critical water year type under Alternative 2 with TUCP woVA, Alternative 2 without TUCP woVA, and Alternative 2 without TUCP DeltaVA, Alternative 3 and Alternative 4 (Table L.1-291). The lowest percent of months with water temperatures above the upper limit was 0% and occurred in February and March in all water year types under the NAA and all alternatives. Combining water year types, the highest percent of months above the upper limit was in May and the lowest was in February and March.
- At Hamilton City, the highest percent of months with water temperatures above the water temperature for embryo hatching upper limit was 7.1% which occurred in May of a wet water year type under each alternative except Alternative 3 (Table L.1-292). The lowest percent of months with water temperatures above the limit was 0% which occurred during February through April of each water year type under the NAA and all alternatives. Combining water year types, only May had water temperatures above the upper limit, all other months were below the limit.

Table L.1-1. Percent (difference in percent relative to NAA) of months above the 61°F water temperature for optimal egg incubation range upper limit of white sturgeon by water year type and month, and for all years combined, Sacramento River at Hamilton City, February through May.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	3.6	7.1 (3.6%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	10.7 (7.1%)	3.6 (0.0%)
W	5	89.3	75.0 (-14.3%)	82.1 (-7.1%)	82.1 (-7.1%)	82.1 (-7.1%)	82.1 (-7.1%)	71.4 (-17.9%)	85.7 (-3.6%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	23.1	23.1 (0.0%)	23.1 (0.0%)	23.1 (0.0%)	23.1 (0.0%)	23.1 (0.0%)	38.5 (15.4%)	23.1 (0.0%)
AN	5	92.3	84.6 (-7.7%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	92.3 (0.0%)	84.6 (-7.7%)	92.3 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	22.2	16.7 (-5.6%)	27.8 (5.6%)	27.8 (5.6%)	33.3 (11.1%)	22.2 (0.0%)	44.4 (22.2%)	22.2 (0.0%)
BN	5	88.9	88.9 (0.0%)	88.9 (0.0%)	88.9 (0.0%)	83.3 (-5.6%)	83.3 (-5.6%)	83.3 (-5.6%)	83.3 (-5.6%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	50.0	50.0 (0.0%)	54.2 (4.2%)	54.2 (4.2%)	54.2 (4.2%)	58.3 (8.3%)	70.8 (20.8%)	58.3 (8.3%)
D	5	91.7	87.5 (-4.2%)	87.5 (-4.2%)	87.5 (-4.2%)	91.7 (0.0%)	91.7 (0.0%)	95.8 (4.2%)	87.5 (-4.2%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	87.5	68.8 (-18.8%)	75.0 (-12.5%)	68.8 (-18.8%)	68.8 (-18.8%)	62.5 (-25.0%)	81.3 (-6.3%)	87.5 (0.0%)
C	5	93.8	93.8 (0.0%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	93.8 (0.0%)	100.0 (6.3%)	100.0 (6.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	34.3	31.3 (-3.0%)	34.3 (0.0%)	33.3 (-1.0%)	34.3 (0.0%)	32.3 (-2.0%)	46.5 (12.1%)	36.4 (2.0%)
All	5	90.9	84.8 (-6.1%)	88.9 (-2.0%)	88.9 (-2.0%)	88.9 (-2.0%)	87.9 (-3.0%)	85.9 (-5.1%)	88.9 (-2.0%)
W	All	23.2	20.5 (-2.7%)	21.4 (-1.8%)	21.4 (-1.8%)	21.4 (-1.8%)	21.4 (-1.8%)	20.5 (-2.7%)	22.3 (-0.9%)
AN	All	28.8	26.9 (-1.9%)	28.8 (0.0%)	28.8 (0.0%)	28.8 (0.0%)	28.8 (0.0%)	30.8 (1.9%)	28.8 (0.0%)
BN	All	27.8	26.4 (-1.4%)	29.2 (1.4%)	29.2 (1.4%)	29.2 (1.4%)	26.4 (-1.4%)	31.9 (4.2%)	26.4 (-1.4%)
D	All	35.4	34.4 (-1.0%)	35.4 (0.0%)	35.4 (0.0%)	36.5 (1.0%)	37.5 (2.1%)	41.7 (6.3%)	36.5 (1.0%)
C	All	45.3	40.6 (-4.7%)	43.8 (-1.6%)	42.2 (-3.1%)	42.2 (-3.1%)	39.1 (-6.3%)	45.3 (0.0%)	46.9 (1.6%)
All	All	31.3	29.0 (-2.3%)	30.8 (-0.5%)	30.6 (-0.8%)	30.8 (-0.5%)	30.1 (-1.3%)	33.1 (1.8%)	31.3 (0.0%)

Table L.1-2. Percent (difference in percent relative to NAA) of months above the 68°F water temperature for embryo hatching upper limit of white sturgeon by water year type and month, and for all years combined, Sacramento River at Hamilton City, February through May.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	0.0 (-7.1%)	7.1 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	2.0	2.0 (0.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
W	All	1.8	1.8 (0.0%)	1.8 (0.0%)	1.8 (0.0%)	1.8 (0.0%)	1.8 (0.0%)	0.0 (-1.8%)	1.8 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	1.6 (1.6%)	1.6 (1.6%)	1.6 (1.6%)	1.6 (1.6%)	1.6 (1.6%)	1.6 (1.6%)
All	All	0.5	0.5 (0.0%)	0.8 (0.3%)	0.8 (0.3%)	0.8 (0.3%)	0.8 (0.3%)	0.3 (-0.3%)	0.8 (0.3%)

L.1.3.8.2 Juvenile Rearing and Emigration

Water temperature related effects on white sturgeon juvenile rearing and emigration in the Sacramento River were evaluated by assessing the percent of months with water temperature above the 66°F when stress is observed in juvenile white sturgeon (Israel et al. 2009) at Hamilton City (Table L.1-2).

Results above 66°F when stress is observed in juvenile white sturgeon are presented in Table L.1-293 for Hamilton City.

- The highest percent of months with water temperatures above the limit was 75% which occurred in August of a critical water year under the NAA and Alternative 4 (Table L.1-293). The lowest percent of months with water temperatures above the limit was 0%, which occurred in January through April, and November through December in each water year types under the NAA and all alternatives. Combining water year types, the highest percent of months above the limit was 42.4% and occurred in June under Alternative 3, and the lowest was 0% in January through April, November and December under the NAA and all alternatives.

Table L.1-3. Percent (difference in percent relative to NAA) of months above 66°F water temperature when stress is observed in juvenile white sturgeon by water year type and month, and for all years combined, Sacramento River at Hamilton City, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	21.4	14.3 (-7.1%)	21.4 (0.0%)	21.4 (0.0%)	21.4 (0.0%)	17.9 (-3.6%)	7.1 (-14.3%)	21.4 (0.0%)
W	6	42.9	25.0 (-17.9%)	35.7 (-7.1%)	35.7 (-7.1%)	35.7 (-7.1%)	35.7 (-7.1%)	71.4 (28.6%)	39.3 (-3.6%)
W	7	7.1	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	14.3 (7.1%)	3.6 (-3.6%)
W	8	7.1	10.7 (3.6%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	7.1 (0.0%)	14.3 (7.1%)	14.3 (7.1%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	38.5	0.0 (-38.5%)	15.4 (-23.1%)	15.4 (-23.1%)	15.4 (-23.1%)	38.5 (0.0%)	46.2 (7.7%)	23.1 (-15.4%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	5.6	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	6	33.3	27.8 (-5.6%)	27.8 (-5.6%)	22.2 (-11.1%)	27.8 (-5.6%)	33.3 (0.0%)	38.9 (5.6%)	27.8 (-5.6%)
BN	7	5.6	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	16.7 (11.1%)	5.6 (0.0%)
BN	8	0.0	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	16.7	8.3 (-8.3%)	8.3 (-8.3%)	8.3 (-8.3%)	12.5 (-4.2%)	16.7 (0.0%)	8.3 (-8.3%)	16.7 (0.0%)
D	6	16.7	12.5 (-4.2%)	8.3 (-8.3%)	8.3 (-8.3%)	8.3 (-8.3%)	20.8 (4.2%)	12.5 (-4.2%)	12.5 (-4.2%)
D	7	8.3	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	0.0 (-8.3%)	0.0 (-8.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	8.3	8.3 (0.0%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	8.3 (0.0%)
D	9	8.3	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	12.5 (4.2%)	12.5 (4.2%)	12.5 (4.2%)	8.3 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	18.8	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	18.8 (0.0%)	6.3 (-12.5%)
C	6	37.5	31.3 (-6.3%)	37.5 (0.0%)	31.3 (-6.3%)	37.5 (0.0%)	37.5 (0.0%)	37.5 (0.0%)	56.3 (18.8%)
C	7	62.5	37.5 (-25.0%)	50.0 (-12.5%)	56.3 (-6.3%)	50.0 (-12.5%)	50.0 (-12.5%)	50.0 (-12.5%)	68.8 (6.3%)
C	8	75.0	68.8 (-6.3%)	68.8 (-6.3%)	62.5 (-12.5%)	68.8 (-6.3%)	62.5 (-12.5%)	56.3 (-18.8%)	75.0 (0.0%)
C	9	50.0	50.0 (0.0%)	62.5 (12.5%)	43.8 (-6.3%)	62.5 (12.5%)	62.5 (12.5%)	43.8 (-6.3%)	37.5 (-12.5%)
C	10	13.3	13.3 (0.0%)	13.3 (0.0%)	6.7 (-6.7%)	13.3 (0.0%)	13.3 (0.0%)	0.0 (-13.3%)	6.7 (-6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	14.1	7.1 (-7.1%)	10.1 (-4.0%)	9.1 (-5.1%)	11.1 (-3.0%)	10.1 (-4.0%)	7.1 (-7.1%)	11.1 (-3.0%)
All	6	33.3	20.2 (-13.1%)	25.3 (-8.1%)	23.2 (-10.1%)	25.3 (-8.1%)	32.3 (-1.0%)	42.4 (9.1%)	31.3 (-2.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	15.2	10.1 (-5.1%)	12.1 (-3.0%)	13.1 (-2.0%)	12.1 (-3.0%)	12.1 (-3.0%)	15.2 (0.0%)	13.1 (-2.0%)
All	8	16.2	17.2 (1.0%)	15.2 (-1.0%)	14.1 (-2.0%)	15.2 (-1.0%)	14.1 (-2.0%)	14.1 (-2.0%)	18.2 (2.0%)
All	9	10.1	10.1 (0.0%)	12.1 (2.0%)	9.1 (-1.0%)	13.1 (3.0%)	13.1 (3.0%)	11.1 (1.0%)	8.1 (-2.0%)
All	10	2.0	2.0 (0.0%)	2.0 (0.0%)	1.0 (-1.0%)	2.0 (0.0%)	2.0 (0.0%)	0.0 (-2.0%)	1.0 (-1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	6.5	4.8 (-1.8%)	6.0 (-0.6%)	6.0 (-0.6%)	6.0 (-0.6%)	5.7 (-0.9%)	9.2 (2.7%)	6.5 (0.0%)
AN	All	3.2	0.0 (-3.2%)	1.3 (-1.9%)	1.3 (-1.9%)	1.3 (-1.9%)	3.2 (0.0%)	3.8 (0.6%)	1.9 (-1.3%)
BN	All	3.7	3.2 (-0.5%)	3.7 (0.0%)	2.8 (-0.9%)	3.7 (0.0%)	3.7 (0.0%)	4.6 (0.9%)	2.8 (-0.9%)
D	All	4.9	3.5 (-1.4%)	2.8 (-2.1%)	2.8 (-2.1%)	3.5 (-1.4%)	4.9 (0.0%)	3.1 (-1.7%)	3.8 (-1.0%)
C	All	21.7	17.5 (-4.2%)	20.1 (-1.6%)	17.5 (-4.2%)	20.1 (-1.6%)	19.6 (-2.1%)	17.5 (-4.2%)	21.2 (-0.5%)
All	All	7.6	5.6 (-2.0%)	6.4 (-1.2%)	5.8 (-1.8%)	6.6 (-1.0%)	7.0 (-0.6%)	7.5 (-0.1%)	6.9 (-0.7%)

L.1.3.8.3 Adult Immigration and Holding

Water temperature related effects on white sturgeon adult immigration and holding were evaluated by assessing the percent of months with water temperature above the 77°F upper limit of suitable water temperatures for adult white sturgeon (Israel et al. 2009) at Hamilton City (Table L.1-2).

Results above the 77°F upper limit of suitable water temperatures for adult white sturgeon are presented in Table L.1-294 for Hamilton City.

- At Hamilton City, water temperatures were below the upper limit suitable for adult white sturgeon during all months of each water year type under the NAA and all alternatives (Table L.1-294).

Table L.1-4. Percent of months above the 77°F upper limit of suitable water temperatures for adult white sturgeon by water year type and month, and for all years combined, Sacramento River at Hamilton City, November - May.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.9 Pacific Lamprey

L.1.3.9.1 Spawning and Egg Incubation

Water temperature related effects on Pacific lamprey spawning and egg incubation were evaluated by assessing the percent of months with water temperature outside the 50°F - 64°F observed range for high survival and low occurrences of embryonic developmental abnormalities (Meeuwig et al. 2003, 2005) in the Sacramento River at Keswick and Red Bluff Diversion Dam (RBDD), and in Clear Creek below Whiskeytown (Table L.1-2).

Results outside the 50°F - 64°F observed range of high survival and low occurrences of embryonic developmental abnormalities in Pacific lamprey are presented in Table L.1-295 for Keswick, Table L.1-296 at RBDD, and Table L.1-297 in Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months with water temperature outside the range of high survival and low occurrences of embryonic developmental abnormalities was 23.1%, which occurred during May of an above normal water year type under Alternative 1 (Table L.1-295). The lowest percent of months with water temperature outside the range was 0% and occurred in May through July of at least one water year type under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was 7.1% in June under Alternative 1. The lowest percent was 0%, which occurred during May and June under all alternatives, excluding Alternative 1.
- At Red Bluff Diversion Dam, the highest percent of months outside the range was 43.8% which occurred during August of a critical water year type under Alternative 2 without TUCP Systemwide VAs (Table L.1-296). Most months (excluding a few exceptions) were within range under the NAA and all alternatives during wet, above normal, below normal, and dry water year types under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in August and the lowest was in April.
- In Clear Creek below Whiskeytown, the highest percent of months with water temperatures outside the observed range for high survival and low occurrences of embryonic developmental abnormalities was 100% which occurred in April of at least one water year type under the NAA and all alternatives (Table L.1-297). The lowest percent of months with water temperature outside the range was 0% which occurred in July of a dry water year under Alternative 1. Combining water year types, the highest percent of months outside the range was in April, and the lowest was in July.

Table L.1-5. Percent (difference in percent relative to NAA) of months outside the 50°F - 64°F water temperature for the observed range for high survival and low occurrences of embryonic developmental abnormalities of Pacific lamprey by water year type and month, and for all years combined, Sacramento River at Keswick, April to August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	10.7	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)
W	5	0.0	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	14.3 (14.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	3.6	0.0 (-3.6%)	0.0 (-3.6%)	3.6 (0.0%)	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	3.6 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	7.7 (7.7%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	23.1 (23.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	8.3	4.2 (-4.2%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	0.0 (-8.3%)	12.5 (4.2%)
D	5	0.0	8.3 (8.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	12.5 (12.5%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
All	4	5.1	4.0 (-1.0%)	5.1 (0.0%)	5.1 (0.0%)	5.1 (0.0%)	5.1 (0.0%)	3.0 (-2.0%)	6.1 (1.0%)
All	5	0.0	4.0 (4.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	7.1 (7.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	2.0	0.0 (-2.0%)	0.0 (-2.0%)	1.0 (-1.0%)	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	1.0 (-1.0%)
All	8	0.0	2.0 (2.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	2.9	5.7 (2.9%)	2.1 (-0.7%)	2.9 (0.0%)	2.1 (-0.7%)	2.1 (-0.7%)	2.1 (-0.7%)	2.9 (0.0%)
AN	All	0.0	6.2 (6.2%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	1.1	0.0 (-1.1%)	0.0 (-1.1%)	0.0 (-1.1%)	0.0 (-1.1%)	0.0 (-1.1%)	0.0 (-1.1%)	0.0 (-1.1%)
D	All	1.7	2.5 (0.8%)	1.7 (0.0%)	1.7 (0.0%)	1.7 (0.0%)	1.7 (0.0%)	0.0 (-1.7%)	2.5 (0.8%)
C	All	0.0	2.5 (2.5%)	1.3 (1.3%)	0.0 (0.0%)	1.3 (1.3%)	1.3 (1.3%)	0.0 (0.0%)	0.0 (0.0%)
All	All	1.4	3.4 (2.0%)	1.2 (-0.2%)	1.2 (-0.2%)	1.2 (-0.2%)	1.2 (-0.2%)	0.6 (-0.8%)	1.4 (0.0%)

Table L.1-6. Percent (difference in percent relative to NAA) of months outside the 50°F - 64°F water temperature for the observed range for high survival and low occurrences of embryonic developmental abnormalities of Pacific lamprey by water year type and month, and for all years combined, Sacramento River at RBDD, April to August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	10.7	3.6 (-7.1%)	10.7 (0.0%)	10.7 (0.0%)	7.1 (-3.6%)	10.7 (0.0%)	0.0 (-10.7%)	10.7 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	14.3 (14.3%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	6.3	0.0 (-6.3%)	0.0 (-6.3%)	6.3 (0.0%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	6.3 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	8	25.0	37.5 (12.5%)	37.5 (12.5%)	25.0 (0.0%)	37.5 (12.5%)	43.8 (18.8%)	12.5 (-12.5%)	6.3 (-18.8%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	3.0	1.0 (-2.0%)	3.0 (0.0%)	3.0 (0.0%)	3.0 (0.0%)	4.0 (1.0%)	1.0 (-2.0%)	3.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.1 (5.1%)	0.0 (0.0%)
All	7	1.0	0.0 (-1.0%)	0.0 (-1.0%)	1.0 (0.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	1.0 (0.0%)
All	8	4.0	6.1 (2.0%)	6.1 (2.0%)	4.0 (0.0%)	6.1 (2.0%)	8.1 (4.0%)	2.0 (-2.0%)	1.0 (-3.0%)
W	All	2.9	5.7 (2.9%)	2.1 (0.0%)	2.1 (0.0%)	1.4 (-0.7%)	2.1 (0.0%)	2.1 (-0.7%)	2.1 (0.0%)
AN	All	0.0	6.2 (6.2%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	1.1	0.0 (-1.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (-1.1%)	0.0 (0.0%)
D	All	1.7	2.5 (0.8%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.8 (0.8%)	0.0 (-1.7%)	0.0 (0.0%)
C	All	0.0	2.5 (2.5%)	7.5 (1.3%)	6.3 (0.0%)	8.8 (2.5%)	10.0 (3.8%)	0.0 (0.0%)	2.5 (-3.8%)
All	All	1.4	3.4 (2.0%)	1.8 (0.2%)	1.6 (0.0%)	1.8 (0.2%)	2.4 (0.8%)	0.6 (-0.8%)	1.0 (-0.6%)

Table L.1-7. Percent (difference in percent relative to NAA) of months outside the 50°F - 64°F water temperature for the observed range for high survival and low occurrences of embryonic developmental abnormalities of Pacific lamprey by water year type and month, and for all years combined, Clear Creek below Whiskeytown, April to August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	96.4 (-3.6%)	92.9 (-7.1%)	96.4 (-3.6%)	92.9 (-7.1%)
W	6	85.7	53.6 (-32.1%)	67.9 (-17.9%)	67.9 (-17.9%)	67.9 (-17.9%)	67.9 (-17.9%)	60.7 (-25.0%)	71.4 (-14.3%)
W	7	46.4	32.1 (-14.3%)	42.9 (-3.6%)	42.9 (-3.6%)	39.3 (-7.1%)	42.9 (-3.6%)	39.3 (-7.1%)	42.9 (-3.6%)
W	8	57.1	10.7 (-46.4%)	39.3 (-17.9%)	39.3 (-17.9%)	39.3 (-17.9%)	39.3 (-17.9%)	46.4 (-10.7%)	39.3 (-17.9%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	84.6 (-15.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	84.6	46.2 (-38.5%)	76.9 (-7.7%)	76.9 (-7.7%)	84.6 (0.0%)	92.3 (7.7%)	69.2 (-15.4%)	84.6 (0.0%)
AN	7	38.5	7.7 (-30.8%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	30.8 (-7.7%)	38.5 (0.0%)
AN	8	61.5	7.7 (-53.8%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	46.2 (-15.4%)	53.8 (-7.7%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	94.4	77.8 (-16.7%)	100.0 (5.6%)	100.0 (5.6%)	100.0 (5.6%)	100.0 (5.6%)	94.4 (0.0%)	94.4 (0.0%)
BN	6	72.2	27.8 (-44.4%)	77.8 (5.6%)	77.8 (5.6%)	77.8 (5.6%)	77.8 (5.6%)	55.6 (-16.7%)	61.1 (-11.1%)
BN	7	27.8	22.2 (-5.6%)	27.8 (0.0%)	27.8 (0.0%)	22.2 (-5.6%)	22.2 (-5.6%)	22.2 (-5.6%)	22.2 (-5.6%)
BN	8	38.9	5.6 (-33.3%)	33.3 (-5.6%)	33.3 (-5.6%)	27.8 (-11.1%)	33.3 (-5.6%)	27.8 (-11.1%)	33.3 (-5.6%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	91.7	66.7 (-25.0%)	95.8 (4.2%)	95.8 (4.2%)	87.5 (-4.2%)	91.7 (0.0%)	87.5 (-4.2%)	91.7 (0.0%)
D	6	70.8	20.8 (-50.0%)	70.8 (0.0%)	70.8 (0.0%)	70.8 (0.0%)	70.8 (0.0%)	62.5 (-8.3%)	70.8 (0.0%)
D	7	29.2	0.0 (-29.2%)	20.8 (-8.3%)	20.8 (-8.3%)	20.8 (-8.3%)	16.7 (-12.5%)	8.3 (-20.8%)	12.5 (-16.7%)
D	8	20.8	4.2 (-16.7%)	16.7 (-4.2%)	16.7 (-4.2%)	16.7 (-4.2%)	16.7 (-4.2%)	16.7 (-4.2%)	12.5 (-8.3%)
C	4	81.3	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	93.8 (12.5%)	81.3 (0.0%)	87.5 (6.3%)	87.5 (6.3%)
C	5	68.8	50.0 (-18.8%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)
C	6	43.8	18.8 (-25.0%)	31.3 (-12.5%)	31.3 (-12.5%)	31.3 (-12.5%)	31.3 (-12.5%)	12.5 (-31.3%)	18.8 (-25.0%)
C	7	12.5	6.3 (-6.3%)	12.5 (0.0%)	6.3 (-6.3%)	12.5 (0.0%)	12.5 (0.0%)	6.3 (-6.3%)	6.3 (-6.3%)
C	8	12.5	12.5 (0.0%)	6.3 (-6.3%)	6.3 (-6.3%)	12.5 (0.0%)	12.5 (0.0%)	6.3 (-6.3%)	12.5 (0.0%)
All	4	97.0	98.0 (1.0%)	98.0 (1.0%)	98.0 (1.0%)	99.0 (2.0%)	97.0 (0.0%)	98.0 (1.0%)	98.0 (1.0%)
All	5	91.9	75.8 (-16.2%)	91.9 (0.0%)	91.9 (0.0%)	90.9 (-1.0%)	90.9 (-1.0%)	89.9 (-2.0%)	89.9 (-2.0%)
All	6	72.7	34.3 (-38.4%)	65.7 (-7.1%)	65.7 (-7.1%)	66.7 (-6.1%)	67.7 (-5.1%)	53.5 (-19.2%)	62.6 (-10.1%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	32.3	15.2 (-17.2%)	29.3 (-3.0%)	28.3 (-4.0%)	27.3 (-5.1%)	27.3 (-5.1%)	22.2 (-10.1%)	25.3 (-7.1%)
All	8	38.4	8.1 (-30.3%)	30.3 (-8.1%)	30.3 (-8.1%)	30.3 (-8.1%)	31.3 (-7.1%)	29.3 (-9.1%)	29.3 (-9.1%)
W	All	77.9	57.9 (-20.0%)	68.6 (-9.3%)	68.6 (-9.3%)	68.6 (-9.3%)	68.6 (-9.3%)	68.6 (-9.3%)	69.3 (-8.6%)
AN	All	76.9	49.2 (-27.7%)	75.4 (-1.5%)	75.4 (-1.5%)	76.9 (0.0%)	78.5 (1.5%)	69.2 (-7.7%)	75.4 (-1.5%)
BN	All	66.7	46.7 (-20.0%)	67.8 (1.1%)	67.8 (1.1%)	65.6 (-1.1%)	66.7 (0.0%)	60.0 (-6.7%)	62.2 (-4.4%)
D	All	62.5	38.3 (-24.2%)	60.8 (-1.7%)	60.8 (-1.7%)	59.2 (-3.3%)	59.2 (-3.3%)	55.0 (-7.5%)	57.5 (-5.0%)
C	All	43.8	35.0 (-8.8%)	41.3 (-2.5%)	40.0 (-3.8%)	43.8 (0.0%)	41.3 (-2.5%)	36.3 (-7.5%)	38.8 (-5.0%)
All	All	66.5	46.3 (-20.2%)	63.0 (-3.4%)	62.8 (-3.6%)	62.8 (-3.6%)	62.8 (-3.6%)	58.6 (-7.9%)	61.0 (-5.5%)

L.1.3.9.2 Ammocoete Rearing and Emigration

Water temperature related effects on Pacific lamprey ammocoete rearing and emigration were evaluated by assessing the percent of months with water temperature was above the 72°F upper limit for high survival and low occurrence of developmental abnormalities (Meeuwig et al. 2003, 2005) in the Sacramento River at Keswick and Red Bluff Diversion Dam (RBDD), and in Clear Creek below Whiskeytown (Table L.1-2).

Results above the 72°F upper limit for high survival and low occurrence of developmental abnormalities of Pacific lamprey are presented in Table L.1-298 for Keswick, Table L.1-299 at RBDD, and Table L.1-300 in Clear Creek below Whiskeytown.

- At Keswick, water temperatures were below the upper limit for high survival and low occurrence of developmental abnormalities of Pacific lamprey ammocoete during all months of each water year type under the NAA and all alternatives (Table L.1-298).
- At Red Bluff Diversion Dam, water temperatures were below the upper limit for high survival and low occurrence of developmental abnormalities of Pacific lamprey ammocete during all months of each water year type under the NAA and all alternatives except August of a critical water year type under Alternative 2 with TUCP without VA, Alternative 2 without TUCP Delta VA, and Alternative 2 without TUCP Systemwide VAs, which were each 6.3% above the limit (Table L.1-299).
- At Clear Creek below Whiskeytown, water temperatures were predominantly below the upper limit for high survival and low occurrences of embryonic developmental abnormalities of Pacific lamprey ammocoete rearing and emigration during all months of each water year type under the NAA and all alternatives except during September of a below normal water year and July through October of a critical water year under the NAA and all alternatives (Table L.1-300).

Table L.1-8. Percent (difference in percent relative to NAA) of months outside the 72°F upper limit for high survival and low occurrences of embryonic developmental abnormalities of Pacific lamprey ammocoete rearing and emigration by water year type and month, and for all years combined, Sacramento River at Keswick, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-9. Percent (difference in percent relative to NAA) of months above the 72°F upper limit for high survival and low occurrences of embryonic developmental abnormalities of Pacific lamprey ammocoete rearing and emigration by water year type and month, and for all years combined, Sacramento River at RBDD, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.5 (0.5%)	0.0 (0.0%)	0.5 (0.5%)	0.5 (0.5%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.1 (0.1%)	0.0 (0.0%)	0.1 (0.1%)	0.1 (0.1%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-10. Percent (difference in percent relative to NAA) of months outside the 72°F upper limit for high survival and low occurrences of embryonic developmental abnormalities of Pacific lamprey ammocoete rearing and emigration by water year type and month, and for all years combined, Clear Creek below Whiskeytown, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.5	0.5 (0.0%)	0.9 (0.5%)	0.5 (0.0%)	0.5 (0.0%)	0.5 (0.0%)	0.0 (-0.5%)	0.5 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.1	2.1 (1.1%)	2.1 (1.1%)	2.6 (1.6%)	2.6 (1.6%)	2.6 (1.6%)	2.1 (1.1%)	3.2 (2.1%)
All	All	0.3	0.4 (0.2%)	0.5 (0.3%)	0.5 (0.3%)	0.5 (0.3%)	0.5 (0.3%)	0.3 (0.1%)	0.6 (0.3%)

L.1.3.10 Western River Lamprey

L.1.3.10.1 Spawning and Embryo Incubation

Water temperature related effects on western river lamprey spawning and egg incubation were evaluated by assessing the percent of months with water temperature outside the 50°F - 64°F observed range for high survival and low occurrences of embryonic developmental abnormalities (Meeuwig et al. 2003, 2005) in the Sacramento River at Keswick and Red Bluff Diversion Dam (RBDD), and in Clear Creek below Whiskeytown (Table L.1-2).

Results outside the 50°F - 64°F observed range of high survival and low occurrences of embryonic developmental abnormalities in western river lamprey are presented in Table L.1-301 for Keswick, Table L.1-302 at RBDD, and Table L.1-303 at Clear Creek below Whiskeytown.

- At Keswick, the highest percent of months outside the water temperature range observed for high survival and low occurrences of embryonic developmental abnormalities of western river lamprey spawning and egg incubation was 100% and occurred in February of a wet and above normal water year type under the NAA and all alternatives (Table L.1-301). The lowest percent of months outside the range was 0% and generally occurred during April and July of an above normal water year type, April through June of a below normal year type, June and July in a dry water year type, and April through July of a critical water year type under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in February, and the lowest was in May and July under the NAA and all alternatives.
- At Red Bluff Diversion Dam, the highest percent of months with water temperature outside the range was 92.9% which occurred in February of a wet water year type under Alternative 4 (Table L.1-302). The lowest percent of months with water temperature outside the range was 0% which occurred during April of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in February, and the lowest was in April.
- At Clear Creek below Whiskeytown, the highest percent of months with water temperatures outside the range was 100% which occurred during February through March of each water year type under the NAA and all alternatives (Table L.1-303). The lowest percent of months outside the range was 0% and occurred in July of a dry water year type under Alternative 1. Combining water year types, the highest percent of months outside the range was in February and March, and the lowest was in July under the NAA and all alternatives.

Table L.1-11. Percent (difference in percent relative to NAA) of months outside the 50°F - 64°F water temperature range observed for high survival and low occurrences of embryonic developmental abnormalities of western river lamprey spawning and egg incubation by water year type and month, and for all years combined, Sacramento River at Keswick, February - July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	71.4	75.0 (3.6%)	67.9 (-3.6%)	67.9 (-3.6%)	67.9 (-3.6%)	67.9 (-3.6%)	71.4 (0.0%)	71.4 (0.0%)
W	4	10.7	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)
W	5	0.0	3.6 (3.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	14.3 (14.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	3.6	0.0 (-3.6%)	0.0 (-3.6%)	3.6 (0.0%)	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	3.6 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	61.5	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	7.7 (7.7%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	23.1 (23.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	88.9	88.9 (0.0%)	72.2 (-16.7%)	72.2 (-16.7%)	72.2 (-16.7%)	72.2 (-16.7%)	77.8 (-11.1%)	88.9 (0.0%)
BN	3	38.9	38.9 (0.0%)	38.9 (0.0%)	33.3 (-5.6%)	38.9 (0.0%)	38.9 (0.0%)	27.8 (-11.1%)	33.3 (-5.6%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	5.6	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)	0.0 (-5.6%)
D	2	83.3	87.5 (4.2%)	70.8 (-12.5%)	70.8 (-12.5%)	70.8 (-12.5%)	66.7 (-16.7%)	75.0 (-8.3%)	79.2 (-4.2%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	54.2	45.8 (-8.3%)	41.7 (-12.5%)	37.5 (-16.7%)	41.7 (-12.5%)	41.7 (-12.5%)	25.0 (-29.2%)	37.5 (-16.7%)
D	4	8.3	4.2 (-4.2%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	0.0 (-8.3%)	12.5 (4.2%)
D	5	0.0	8.3 (8.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	68.8	75.0 (6.3%)	62.5 (-6.3%)	62.5 (-6.3%)	62.5 (-6.3%)	62.5 (-6.3%)	56.3 (-12.5%)	68.8 (0.0%)
C	3	31.3	43.8 (12.5%)	37.5 (6.3%)	25.0 (-6.3%)	37.5 (6.3%)	37.5 (6.3%)	18.8 (-12.5%)	31.3 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	88.9	90.9 (2.0%)	81.8 (-7.1%)	81.8 (-7.1%)	81.8 (-7.1%)	80.8 (-8.1%)	82.8 (-6.1%)	87.9 (-1.0%)
All	3	53.5	54.5 (1.0%)	50.5 (-3.0%)	46.5 (-7.1%)	50.5 (-3.0%)	50.5 (-3.0%)	42.4 (-11.1%)	48.5 (-5.1%)
All	4	5.1	4.0 (-1.0%)	5.1 (0.0%)	5.1 (0.0%)	5.1 (0.0%)	5.1 (0.0%)	3.0 (-2.0%)	6.1 (1.0%)
All	5	0.0	4.0 (4.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	7.1 (7.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	2.0	0.0 (-2.0%)	0.0 (-2.0%)	1.0 (-1.0%)	0.0 (-2.0%)	0.0 (-2.0%)	0.0 (-2.0%)	1.0 (-1.0%)
W	All	47.0	50.6 (3.6%)	46.4 (-0.6%)	46.4 (-0.6%)	46.4 (-0.6%)	46.4 (-0.6%)	47.0 (0.0%)	47.0 (0.0%)
AN	All	43.6	48.7 (5.1%)	43.6 (0.0%)	43.6 (0.0%)	43.6 (0.0%)	43.6 (0.0%)	43.6 (0.0%)	43.6 (0.0%)
BN	All	38.0	38.0 (0.0%)	35.2 (-2.8%)	34.3 (-3.7%)	35.2 (-2.8%)	35.2 (-2.8%)	34.3 (-3.7%)	37.0 (-0.9%)
D	All	41.0	41.0 (0.0%)	36.8 (-4.2%)	36.1 (-4.9%)	36.8 (-4.2%)	36.1 (-4.9%)	33.3 (-7.6%)	38.2 (-2.8%)
C	All	33.3	36.5 (3.1%)	33.3 (0.0%)	31.3 (-2.1%)	33.3 (0.0%)	33.3 (0.0%)	29.2 (-4.2%)	33.3 (0.0%)
All	All	24.9	26.8 (1.9%)	22.9 (-2.0%)	22.4 (-2.5%)	22.9 (-2.0%)	22.7 (-2.2%)	21.4 (-3.5%)	23.9 (-1.0%)

Table L.1-12. Percent (difference in percent relative to NAA) of months outside the 50°F - 64°F water temperature range observed for high survival and low occurrences of embryonic developmental abnormalities of western river lamprey spawning and egg incubation by water year type and month, and for all years combined, Sacramento River at RBDD, February - July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	2	89.3	89.3 (0.0%)	85.7 (-3.6%)	85.7 (-3.6%)	85.7 (-3.6%)	85.7 (-3.6%)	89.3 (0.0%)	92.9 (3.6%)
W	3	35.7	35.7 (0.0%)	35.7 (0.0%)	35.7 (0.0%)	35.7 (0.0%)	35.7 (0.0%)	35.7 (0.0%)	35.7 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	10.7	3.6 (-7.1%)	10.7 (0.0%)	10.7 (0.0%)	7.1 (-3.6%)	10.7 (0.0%)	0.0 (-10.7%)	10.7 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	14.3 (14.3%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	84.6	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	92.3 (7.7%)	84.6 (0.0%)
AN	3	15.4	15.4 (0.0%)	15.4 (0.0%)	7.7 (-7.7%)	15.4 (0.0%)	15.4 (0.0%)	15.4 (0.0%)	15.4 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	61.1	66.7 (5.6%)	61.1 (0.0%)	55.6 (-5.6%)	55.6 (-5.6%)	61.1 (0.0%)	61.1 (0.0%)	55.6 (-5.6%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	58.3	62.5 (4.2%)	58.3 (0.0%)	58.3 (0.0%)	58.3 (0.0%)	58.3 (0.0%)	54.2 (-4.2%)	58.3 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	37.5	37.5 (0.0%)	37.5 (0.0%)	31.3 (-6.3%)	31.3 (-6.3%)	37.5 (0.0%)	31.3 (-6.3%)	37.5 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	6.3	0.0 (-6.3%)	0.0 (-6.3%)	6.3 (0.0%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	6.3 (0.0%)
All	2	67.7	69.7 (2.0%)	66.7 (-1.0%)	64.6 (-3.0%)	64.6 (-3.0%)	66.7 (-1.0%)	66.7 (-1.0%)	67.7 (0.0%)
All	3	12.1	12.1 (0.0%)	12.1 (0.0%)	11.1 (-1.0%)	12.1 (0.0%)	12.1 (0.0%)	12.1 (0.0%)	12.1 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	3.0	1.0 (-2.0%)	3.0 (0.0%)	3.0 (0.0%)	3.0 (0.0%)	4.0 (1.0%)	1.0 (-2.0%)	3.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.1 (5.1%)	0.0 (0.0%)
All	7	1.0	0.0 (-1.0%)	0.0 (-1.0%)	1.0 (0.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	1.0 (0.0%)
W	All	39.3	38.1 (-1.2%)	38.7 (-0.6%)	38.7 (-0.6%)	38.1 (-1.2%)	38.7 (-0.6%)	39.9 (0.6%)	39.9 (0.6%)
AN	All	33.3	33.3 (0.0%)	33.3 (0.0%)	32.1 (-1.3%)	33.3 (0.0%)	33.3 (0.0%)	35.9 (2.6%)	33.3 (0.0%)
BN	All	26.9	27.8 (0.9%)	26.9 (0.0%)	25.9 (-0.9%)	25.9 (-0.9%)	26.9 (0.0%)	26.9 (0.0%)	25.9 (-0.9%)
D	All	26.4	27.1 (0.7%)	26.4 (0.0%)	26.4 (0.0%)	26.4 (0.0%)	26.4 (0.0%)	25.7 (-0.7%)	26.4 (0.0%)
C	All	22.9	22.9 (0.0%)	22.9 (0.0%)	21.9 (-1.0%)	22.9 (0.0%)	24.0 (1.0%)	22.9 (0.0%)	22.9 (0.0%)
All	All	14.0	13.8 (-0.2%)	13.6 (-0.3%)	13.3 (-0.7%)	13.3 (-0.7%)	13.8 (-0.2%)	14.1 (0.2%)	14.0 (0.0%)

Table L.1-13. Percent (difference in percent relative to NAA) of months outside the 50°F - 64°F water temperature range observed for high survival and low occurrences of embryonic developmental abnormalities of western river lamprey spawning and egg incubation by water year type and month, and for all years combined, in Clear Creek below Whiskeytown, February - July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	92.9 (-7.1%)	92.9 (-7.1%)	92.9 (-7.1%)	96.4 (-3.6%)	92.9 (-7.1%)	96.4 (-3.6%)	92.9 (-7.1%)
W	6	85.7	53.6 (-32.1%)	67.9 (-17.9%)	67.9 (-17.9%)	67.9 (-17.9%)	67.9 (-17.9%)	60.7 (-25.0%)	71.4 (-14.3%)
W	7	46.4	32.1 (-14.3%)	42.9 (-3.6%)	42.9 (-3.6%)	39.3 (-7.1%)	42.9 (-3.6%)	39.3 (-7.1%)	42.9 (-3.6%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	84.6 (-15.4%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	84.6	46.2 (-38.5%)	76.9 (-7.7%)	76.9 (-7.7%)	84.6 (0.0%)	92.3 (7.7%)	69.2 (-15.4%)	84.6 (0.0%)
AN	7	38.5	7.7 (-30.8%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	30.8 (-7.7%)	38.5 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	94.4	77.8 (-16.7%)	100.0 (5.6%)	100.0 (5.6%)	100.0 (5.6%)	100.0 (5.6%)	94.4 (0.0%)	94.4 (0.0%)
BN	6	72.2	27.8 (-44.4%)	77.8 (5.6%)	77.8 (5.6%)	77.8 (5.6%)	77.8 (5.6%)	55.6 (-16.7%)	61.1 (-11.1%)
BN	7	27.8	22.2 (-5.6%)	27.8 (0.0%)	27.8 (0.0%)	22.2 (-5.6%)	22.2 (-5.6%)	22.2 (-5.6%)	22.2 (-5.6%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	91.7	66.7 (-25.0%)	95.8 (4.2%)	95.8 (4.2%)	87.5 (-4.2%)	91.7 (0.0%)	87.5 (-4.2%)	91.7 (0.0%)
D	6	70.8	20.8 (-50.0%)	70.8 (0.0%)	70.8 (0.0%)	70.8 (0.0%)	70.8 (0.0%)	62.5 (-8.3%)	70.8 (0.0%)
D	7	29.2	0.0 (-29.2%)	20.8 (-8.3%)	20.8 (-8.3%)	20.8 (-8.3%)	16.7 (-12.5%)	8.3 (-20.8%)	12.5 (-16.7%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	81.3	87.5 (6.3%)	87.5 (6.3%)	87.5 (6.3%)	93.8 (12.5%)	81.3 (0.0%)	87.5 (6.3%)	87.5 (6.3%)
C	5	68.8	50.0 (-18.8%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)	68.8 (0.0%)
C	6	43.8	18.8 (-25.0%)	31.3 (-12.5%)	31.3 (-12.5%)	31.3 (-12.5%)	31.3 (-12.5%)	12.5 (-31.3%)	18.8 (-25.0%)
C	7	12.5	6.3 (-6.3%)	12.5 (0.0%)	6.3 (-6.3%)	12.5 (0.0%)	12.5 (0.0%)	6.3 (-6.3%)	6.3 (-6.3%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	97.0	98.0 (1.0%)	98.0 (1.0%)	98.0 (1.0%)	99.0 (2.0%)	97.0 (0.0%)	98.0 (1.0%)	98.0 (1.0%)
All	5	91.9	75.8 (-16.2%)	91.9 (0.0%)	91.9 (0.0%)	90.9 (-1.0%)	90.9 (-1.0%)	89.9 (-2.0%)	89.9 (-2.0%)
All	6	72.7	34.3 (-38.4%)	65.7 (-7.1%)	65.7 (-7.1%)	66.7 (-6.1%)	67.7 (-5.1%)	53.5 (-19.2%)	62.6 (-10.1%)
All	7	32.3	15.2 (-17.2%)	29.3 (-3.0%)	28.3 (-4.0%)	27.3 (-5.1%)	27.3 (-5.1%)	22.2 (-10.1%)	25.3 (-7.1%)
W	All	97.6	91.1 (-6.5%)	93.5 (-4.2%)	93.5 (-4.2%)	94.0 (-3.6%)	93.5 (-4.2%)	92.9 (-4.8%)	94.0 (-3.6%)
AN	All	97.4	88.5 (-9.0%)	96.2 (-1.3%)	96.2 (-1.3%)	97.4 (0.0%)	98.7 (1.3%)	94.9 (-2.6%)	97.4 (0.0%)
BN	All	94.4	84.3 (-10.2%)	96.3 (1.9%)	96.3 (1.9%)	96.3 (1.9%)	96.3 (1.9%)	91.7 (-2.8%)	92.6 (-1.9%)
D	All	93.8	81.3 (-12.5%)	94.4 (0.7%)	94.4 (0.7%)	93.1 (-0.7%)	93.8 (0.0%)	91.7 (-2.1%)	93.8 (0.0%)
C	All	82.3	76.0 (-6.3%)	81.3 (-1.0%)	81.3 (-1.0%)	82.3 (0.0%)	80.2 (-2.1%)	78.1 (-4.2%)	79.2 (-3.1%)
All	All	82.3	70.5 (-11.8%)	80.8 (-1.5%)	80.6 (-1.7%)	80.6 (-1.7%)	80.5 (-1.9%)	77.3 (-5.1%)	79.3 (-3.0%)

L.1.3.10.2 Ammocoete Rearing and Emigration

Water temperature related effects on western river lamprey ammocoete rearing and emigration in the Sacramento River were evaluated by assessing the percent of months with water temperature was above the 72°F upper limit for high survival and low occurrence of developmental abnormalities (Meeuwig et al. 2003, 2005) in the Sacramento River at Keswick and Red Bluff Diversion Dam (RBDD), and in Clear Creek below Whiskeytown (Table L.1-2).

Results above the 72°F water temperature upper limit for high survival and low occurrence of developmental abnormalities of western river lamprey are presented in Table L.1-304 for Keswick, Table L.1-305 at RBDD, and Table L.1-306 at Clear Creek below Whiskeytown.

- At Keswick, water temperatures were below the upper limit for high survival and low occurrence of developmental abnormalities of western river lamprey ammocoete during all months of each water year type under the NAA and all alternatives (Table L.1-304).
- At Red Bluff Diversion Dam, water temperatures were below the upper limit for high survival and low occurrence of developmental abnormalities of western river lamprey ammocoete rearing and emigration during all months of each water year type under the NAA and all alternatives except August of a critical water year type under Alternative 2 with TUCP without VA, Alternative 2 without TUCP Delta VA, and Alternative 2 without TUCP Systemwide VAs which was above the limit 6.3% of the time (Table L.1-305).
- In Clear Creek below Whiskeytown, water temperatures were predominantly below the upper limit for high survival and low occurrence of developmental abnormalities of western river lamprey ammocoete rearing and emigration during all months of each water year type under the NAA and all alternatives except September of a below normal water year type, and July through October during a critical water year under the NAA and all alternatives (Table L.1-306). Combining water year types, the highest percent of months above the limit was in September, the lowest was in January through May, November and December.

Table L.1-14. Percent (difference in percent relative to NAA) of months outside the 72°F water temperature upper limit for high survival and low occurrences of embryonic developmental abnormalities of western river lamprey ammocoete rearing and emigration by water year type and month, and for all years combined, Sacramento River at Keswick, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-15. Percent (difference in percent relative to NAA) of months outside the 72°F water temperature upper limit for high survival and low occurrences of embryonic developmental abnormalities of western river lamprey ammocoete rearing and emigration by water year type and month, and for all years combined, Sacramento River at RBDD, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	8	0.0	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)
All	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

Table L.1-16. Percent (difference in percent relative to NAA) of months outside the 72°F water temperature upper limit for high survival and low occurrences of embryonic developmental abnormalities of western river lamprey ammocoete rearing and emigration by water year type and month, and for all years combined, in Clear Creek below Whiskeytown, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	5.6	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)
C	8	6.3	6.3 (0.0%)	6.3 (0.0%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	9	6.3	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	10	0.0	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)	6.7 (6.7%)
C	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	1	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	1.0 (1.0%)
All	8	1.0	1.0 (0.0%)	1.0 (0.0%)	1.0 (0.0%)	2.0 (1.0%)	2.0 (1.0%)	1.0 (0.0%)	2.0 (1.0%)
All	9	2.0	3.0 (1.0%)	4.0 (2.0%)	3.0 (1.0%)	3.0 (1.0%)	3.0 (1.0%)	1.0 (-1.0%)	3.0 (1.0%)
All	10	0.0	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)	1.0 (1.0%)
All	11	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	12	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.5	0.5 (0.0%)	0.9 (0.5%)	0.5 (0.0%)	0.5 (0.0%)	0.5 (0.0%)	0.0 (-0.5%)	0.5 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	1.1	2.1 (1.1%)	2.1 (1.1%)	2.6 (1.6%)	2.6 (1.6%)	2.6 (1.6%)	2.1 (1.1%)	3.2 (2.1%)
All	All	0.3	0.4 (0.2%)	0.5 (0.3%)	0.5 (0.3%)	0.5 (0.3%)	0.5 (0.3%)	0.3 (0.1%)	0.6 (0.3%)

L.1.3.11 Sacramento Splittail

L.1.3.11.1 Spawning

Water temperature related effects on Sacramento splittail spawning in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 45°F - 75°F observed range of suitable spawning temperatures (DWR 2004) at Hamilton City (Table L.1-2).

Results outside the 45°F - 75°F water temperature range observed for suitable spawning temperatures of Sacramento splittail are presented in Table L.1-307 for Hamilton City.

- At Hamilton City, water temperatures were within the range observed for suitable spawning temperatures during all months of each water year type under the NAA and all alternatives (Table L.1-307).

Table L.1-17. Percent (difference in percent relative to NAA) of months outside the 45°F - 75°F water temperature range observed for suitable spawning temperatures of Sacramento splittail spawning by water year type and month, and for all years combined, Sacramento River at Hamilton City, February - May.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	2	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	3	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

L.1.3.12 Sacramento Hitch

L.1.3.12.1 Non-Spawning Adults

Water temperature related effects on Sacramento hitch non-spawning adults in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 77°F – 84.2°F preferred temperatures in lab and field observations (Moyle 2002, May and Brown 2002, Moyle et al. 2015) at Keswick, Red Bluff Diversion Dam (RBDD), and Hamilton City (Table L.1-2).

Results outside the 77°F – 84.2°F water temperature range preferred in lab and field observations for Sacramento hitch are presented in Table L.1-308 for Keswick, Table L.1-309 at RBDD, and Table L.1-310 at Hamilton City.

- At Keswick, water temperatures were outside the range preferred in lab and field observations for Sacramento hitch non-spawning adults in all months of each water year type under the NAA and all alternatives (Table L.1-308).
- At Red Bluff Diversion Dam, water temperatures were outside the range preferred in lab and field observations for Sacramento hitch non-spawning adults in all months of each water year type under the NAA and all alternatives (Table L.1-309).
- At Hamilton City, water temperatures were outside the range preferred in lab and field observations for Sacramento hitch non-spawning adults in all months of each water year type under the NAA and all alternatives (Table L.1-310).

Table L.1-18. Percent (difference in percent relative to NAA) of months outside the 77°F – 84.2°F water temperature range preferred in lab and field observations for Sacramento hitch non-spawning adults by water year type and month, and for all years combined, Sacramento River at Keswick, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

Table L.1-19. Percent (difference in percent relative to NAA) of months outside the 77°F – 84.4°F water temperature range preferred in lab and field observations for Sacramento hitch non-spawning adults by water year type and month, and for all years combined, Sacramento River at RBDD, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

Table L.1-20. Percent (difference in percent relative to NAA) of months outside the 77°F – 84.4°F water temperature range preferred in lab and field observations for Sacramento hitch non-spawning adults by water year type and month, and for all years combined, Sacramento River at Hamilton City, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

L.1.3.13 Hardhead

L.1.3.13.1 Spawning

Water temperature related effects on hardhead spawning in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 59°F - 64°F optimal range (Wang 1986) at Keswick and RBDD, and in Clear Creek below Whiskeytown (Table L.1-2).

Results outside the outside the 59°F - 64°F water temperature optimal range for hardhead are presented in Table L.1-311 for Keswick, Table L.1-312 for RBDD, and Table L.1-313 in Clear Creek below Whiskeytown.

- At Keswick, water temperatures were outside the optimal range for hardhead spawning during all months of each water year type, under the NAA and all alternatives (Table L.1-311).
- At Red Bluff Diversion Dam, the highest percent of months with water temperature outside the optimal range for spawning was 96.4% which occurred during April of a wet water year type under Alternative 1 (Table L.1-312). The lowest percent of months outside the range was 7.7% and occurred in May of an above normal water year type under the NAA. Combining water year types, the highest percent of months outside the range was in April and the lowest was in May under the NAA and all alternatives.
- In Clear Creek below Whiskeytown, water temperatures were predominantly outside the range for spawning in all months, water year types, and alternatives except June during a wet water year type (Table L.1-313).

Table L.1-1. Percent (difference in percent relative to NAA) of months outside the 59°F - 64°F water temperature optimal range for hardhead spawning by water year type and month, and for all years combined, Sacramento River at Keswick, April - June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

Table L.1-2. Percent (difference in percent relative to NAA) of months outside the 59°F - 64°F water temperature optimal range for hardhead spawning by water year type and month, and for all years combined, Sacramento River at RBDD, April - June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	92.9	96.4 (3.6%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)
W	5	28.6	67.9 (39.3%)	35.7 (7.1%)	35.7 (7.1%)	32.1 (3.6%)	35.7 (7.1%)	53.6 (25.0%)	35.7 (7.1%)
W	6	14.3	39.3 (25.0%)	17.9 (3.6%)	17.9 (3.6%)	21.4 (7.1%)	14.3 (0.0%)	21.4 (7.1%)	14.3 (0.0%)
AN	4	84.6	76.9 (-7.7%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	84.6 (0.0%)	69.2 (-15.4%)	84.6 (0.0%)
AN	5	7.7	69.2 (61.5%)	23.1 (15.4%)	23.1 (15.4%)	23.1 (15.4%)	23.1 (15.4%)	61.5 (53.8%)	15.4 (7.7%)
AN	6	30.8	69.2 (38.5%)	46.2 (15.4%)	46.2 (15.4%)	46.2 (15.4%)	38.5 (7.7%)	30.8 (0.0%)	38.5 (7.7%)
BN	4	77.8	83.3 (5.6%)	77.8 (0.0%)	77.8 (0.0%)	83.3 (5.6%)	83.3 (5.6%)	61.1 (-16.7%)	83.3 (5.6%)
BN	5	22.2	77.8 (55.6%)	55.6 (33.3%)	55.6 (33.3%)	61.1 (38.9%)	61.1 (38.9%)	44.4 (22.2%)	50.0 (27.8%)
BN	6	44.4	55.6 (11.1%)	50.0 (5.6%)	50.0 (5.6%)	50.0 (5.6%)	44.4 (0.0%)	44.4 (0.0%)	50.0 (5.6%)
D	4	54.2	75.0 (20.8%)	50.0 (-4.2%)	50.0 (-4.2%)	54.2 (0.0%)	50.0 (-4.2%)	41.7 (-12.5%)	62.5 (8.3%)
D	5	20.8	50.0 (29.2%)	33.3 (12.5%)	33.3 (12.5%)	29.2 (8.3%)	29.2 (8.3%)	33.3 (12.5%)	25.0 (4.2%)
D	6	62.5	62.5 (0.0%)	62.5 (0.0%)	62.5 (0.0%)	62.5 (0.0%)	62.5 (0.0%)	62.5 (0.0%)	58.3 (-4.2%)
C	4	37.5	50.0 (12.5%)	68.8 (31.3%)	56.3 (18.8%)	68.8 (31.3%)	68.8 (31.3%)	56.3 (18.8%)	43.8 (6.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	5	25.0	31.3 (6.3%)	12.5 (-12.5%)	6.3 (-18.8%)	25.0 (0.0%)	25.0 (0.0%)	31.3 (6.3%)	25.0 (0.0%)
C	6	12.5	12.5 (0.0%)	31.3 (18.8%)	12.5 (0.0%)	31.3 (18.8%)	31.3 (18.8%)	18.8 (6.3%)	12.5 (0.0%)
All	4	70.7	78.8 (8.1%)	74.7 (4.0%)	72.7 (2.0%)	76.8 (6.1%)	75.8 (5.1%)	65.7 (-5.1%)	74.7 (4.0%)
All	5	22.2	59.6 (37.4%)	33.3 (11.1%)	32.3 (10.1%)	34.3 (12.1%)	35.4 (13.1%)	44.4 (22.2%)	31.3 (9.1%)
All	6	33.3	47.5 (14.1%)	40.4 (7.1%)	37.4 (4.0%)	41.4 (8.1%)	37.4 (4.0%)	36.4 (3.0%)	34.3 (1.0%)
W	All	45.2	67.9 (22.6%)	48.8 (3.6%)	48.8 (3.6%)	48.8 (3.6%)	47.6 (2.4%)	56.0 (10.7%)	47.6 (2.4%)
AN	All	41.0	71.8 (30.8%)	51.3 (10.3%)	51.3 (10.3%)	51.3 (10.3%)	48.7 (7.7%)	53.8 (12.8%)	46.2 (5.1%)
BN	All	48.1	72.2 (24.1%)	61.1 (13.0%)	61.1 (13.0%)	64.8 (16.7%)	63.0 (14.8%)	50.0 (1.9%)	61.1 (13.0%)
D	All	45.8	62.5 (16.7%)	48.6 (2.8%)	48.6 (2.8%)	48.6 (2.8%)	47.2 (1.4%)	45.8 (0.0%)	48.6 (2.8%)
C	All	25.0	31.3 (6.3%)	37.5 (12.5%)	25.0 (0.0%)	41.7 (16.7%)	41.7 (16.7%)	35.4 (10.4%)	27.1 (2.1%)
All	All	42.1	62.0 (19.9%)	49.5 (7.4%)	47.5 (5.4%)	50.8 (8.8%)	49.5 (7.4%)	48.8 (6.7%)	46.8 (4.7%)

Table L.1-3. Percent (difference in percent relative to NAA) of months outside the 59°F - 64°F water temperature optimal range for hardhead spawning by water year type and month, and for all years combined, in Clear Creek below Whiskeytown, April - June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	96.4 (-3.6%)	96.4 (-3.6%)	96.4 (-3.6%)	96.4 (-3.6%)	100.0 (0.0%)	92.9 (-7.1%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	100.0 (0.0%)	98.0 (-2.0%)
W	All	100.0	100.0 (0.0%)	98.8 (-1.2%)	98.8 (-1.2%)	98.8 (-1.2%)	98.8 (-1.2%)	100.0 (0.0%)	97.6 (-2.4%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	All	100.0	100.0 (0.0%)	99.7 (-0.3%)	99.7 (-0.3%)	99.7 (-0.3%)	99.7 (-0.3%)	100.0 (0.0%)	99.3 (-0.7%)

L.1.3.13.2 Non-Spawning Adults

Water temperature related effects on non-spawning adult hardhead in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 57.2°F – 78.8°F commonly observed range (Thompson et al. 2012) at Keswick and RBDD, and in Clear Creek below Whiskeytown (Table L.1-2).

Results outside the outside the 59°F - 64°F water temperature commonly observed range for hardhead are presented in Table L.1-314 for Keswick, Table L.1-315 at RBDD, and Table L.1-316 at Clear Creek below Whiskeytown.

- At Keswick, water temperatures were outside the range for adult hardhead in January through March, May through July, November, and December under the NAA and all alternatives (Table L.1-314). The lowest percent of months with water temperatures outside the range was 33.3% which occurred during October of a critical water year under Alternative 2 without TUCP Systemwide VAs. Combining water year types, the highest percent of months outside the range was 100% in January through March, May through July, November and December under the NAA and all alternatives, and the lowest percent was 89.8% in October under Alternative 2 without TUCP Systemwide VAs.
- At Red Bluff Diversion Dam, the highest percent of months outside the range was 100% and occurred in January, February, and December of each water year type under the NAA and all alternatives (Table L.1-315). The lowest percent of months outside the range was in June and September of a critical water year under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in January, February, and December, with the lowest occurred in August under the Alternative 1.
- At Clear Creek below Whiskeytown, the highest percent of months with water temperature outside the range was 100% and occurred during January through May, and December of each water year type under the NAA and all alternatives (Table L.1-316). The lowest percent of months outside the range was 80% and occurred during October of a critical year under Alternative 1. November of a critical year was also 80% outside the range under Alternative 1. Combining water year types, January through May and December were outside the range under the NAA and all alternatives. The lowest percent of months outside the range was 96.9% in October under Alternative 1.

Table L.1-4. Percent (difference in percent relative to NAA) of months outside the 57.2°F – 78.8°F water temperature commonly observed range for non-spawning adult hardhead by water year type and month, and for all years combined, Sacramento River at Keswick, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	95.8	100.0 (4.2%)	100.0 (4.2%)	100.0 (4.2%)	100.0 (4.2%)	100.0 (4.2%)	100.0 (4.2%)	100.0 (4.2%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	93.8	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)	100.0 (6.3%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	68.8	62.5 (-6.3%)	62.5 (-6.3%)	93.8 (25.0%)	62.5 (-6.3%)	62.5 (-6.3%)	87.5 (18.8%)	62.5 (-6.3%)
C	9	56.3	50.0 (-6.3%)	50.0 (-6.3%)	68.8 (12.5%)	50.0 (-6.3%)	50.0 (-6.3%)	81.3 (25.0%)	50.0 (-6.3%)
C	10	46.7	40.0 (-6.7%)	46.7 (0.0%)	46.7 (0.0%)	46.7 (0.0%)	33.3 (-13.3%)	60.0 (13.3%)	46.7 (0.0%)
C	11	100.0	100.0 (0.0%)	86.7 (-13.3%)	93.3 (-6.7%)	86.7 (-13.3%)	93.3 (-6.7%)	80.0 (-20.0%)	86.7 (-13.3%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	98.0	100.0 (2.0%)	100.0 (2.0%)	100.0 (2.0%)	100.0 (2.0%)	100.0 (2.0%)	100.0 (2.0%)	100.0 (2.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	8	94.9	93.9 (-1.0%)	93.9 (-1.0%)	99.0 (4.0%)	93.9 (-1.0%)	93.9 (-1.0%)	98.0 (3.0%)	93.9 (-1.0%)
All	9	92.9	91.9 (-1.0%)	91.9 (-1.0%)	94.9 (2.0%)	91.9 (-1.0%)	91.9 (-1.0%)	97.0 (4.0%)	91.9 (-1.0%)
All	10	91.8	90.8 (-1.0%)	90.8 (-1.0%)	91.8 (0.0%)	91.8 (0.0%)	89.8 (-2.0%)	93.9 (2.0%)	90.8 (-1.0%)
All	11	100.0	100.0 (0.0%)	98.0 (-2.0%)	99.0 (-1.0%)	98.0 (-2.0%)	99.0 (-1.0%)	96.0 (-4.0%)	98.0 (-2.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	99.5 (-0.5%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	99.5 (-0.5%)
D	All	99.7	100.0 (0.3%)	100.0 (0.3%)	100.0 (0.3%)	100.0 (0.3%)	100.0 (0.3%)	99.7 (0.0%)	100.0 (0.3%)
C	All	88.9	87.8 (-1.1%)	87.3 (-1.6%)	92.1 (3.2%)	87.3 (-1.6%)	86.8 (-2.1%)	92.6 (3.7%)	87.3 (-1.6%)
All	All	98.1	98.1 (-0.1%)	97.9 (-0.3%)	98.7 (0.6%)	98.0 (-0.2%)	97.9 (-0.3%)	98.7 (0.6%)	97.9 (-0.3%)

Table L.1-5. Percent (difference in percent relative to NAA) of months outside the 57.2°F – 78.8°F water temperature commonly observed range for non-spawning adult hardhead by water year type and month, and for all years combined, Sacramento River at RBDD, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	75.0	71.4 (-3.6%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	75.0 (0.0%)	78.6 (3.6%)	75.0 (0.0%)
W	5	3.6	17.9 (14.3%)	7.1 (3.6%)	7.1 (3.6%)	7.1 (3.6%)	7.1 (3.6%)	14.3 (10.7%)	3.6 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	6	3.6	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	0.0 (-3.6%)	3.6 (0.0%)
W	7	25.0	21.4 (-3.6%)	32.1 (7.1%)	32.1 (7.1%)	32.1 (7.1%)	35.7 (10.7%)	17.9 (-7.1%)	28.6 (3.6%)
W	8	10.7	0.0 (-10.7%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	14.3 (3.6%)	3.6 (-7.1%)
W	9	42.9	10.7 (-32.1%)	53.6 (10.7%)	53.6 (10.7%)	53.6 (10.7%)	60.7 (17.9%)	39.3 (-3.6%)	28.6 (-14.3%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	38.5	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	38.5 (0.0%)	46.2 (7.7%)	38.5 (0.0%)	38.5 (0.0%)
AN	5	0.0	15.4 (15.4%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	7.7 (7.7%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	61.5	38.5 (-23.1%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	38.5 (-23.1%)	61.5 (0.0%)
AN	8	30.8	0.0 (-30.8%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)	30.8 (0.0%)	38.5 (7.7%)	15.4 (-15.4%)
AN	9	38.5	0.0 (-38.5%)	69.2 (30.8%)	69.2 (30.8%)	61.5 (23.1%)	69.2 (30.8%)	30.8 (-7.7%)	0.0 (-38.5%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	16.7	33.3 (16.7%)	22.2 (5.6%)	22.2 (5.6%)	22.2 (5.6%)	27.8 (11.1%)	22.2 (5.6%)	33.3 (16.7%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	5	0.0	11.1 (11.1%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	5.6 (5.6%)
BN	6	5.6	0.0 (-5.6%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	7	50.0	33.3 (-16.7%)	50.0 (0.0%)	50.0 (0.0%)	50.0 (0.0%)	50.0 (0.0%)	33.3 (-16.7%)	50.0 (0.0%)
BN	8	16.7	0.0 (-16.7%)	22.2 (5.6%)	22.2 (5.6%)	38.9 (22.2%)	22.2 (5.6%)	33.3 (16.7%)	5.6 (-11.1%)
BN	9	0.0	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)
BN	10	77.8	61.1 (-16.7%)	77.8 (0.0%)	83.3 (5.6%)	77.8 (0.0%)	83.3 (5.6%)	83.3 (5.6%)	83.3 (5.6%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	33.3	29.2 (-4.2%)	29.2 (-4.2%)	29.2 (-4.2%)	29.2 (-4.2%)	29.2 (-4.2%)	12.5 (-20.8%)	25.0 (-8.3%)
D	5	8.3	12.5 (4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)	4.2 (-4.2%)
D	6	12.5	16.7 (4.2%)	8.3 (-4.2%)	8.3 (-4.2%)	8.3 (-4.2%)	4.2 (-8.3%)	4.2 (-8.3%)	0.0 (-12.5%)
D	7	25.0	20.8 (-4.2%)	29.2 (4.2%)	25.0 (0.0%)	29.2 (4.2%)	25.0 (0.0%)	29.2 (4.2%)	25.0 (0.0%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	16.7 (16.7%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	50.0	33.3 (-16.7%)	45.8 (-4.2%)	45.8 (-4.2%)	45.8 (-4.2%)	45.8 (-4.2%)	54.2 (4.2%)	54.2 (4.2%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	95.8 (-4.2%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	93.8	100.0 (6.3%)	93.8 (0.0%)	93.8 (0.0%)	93.8 (0.0%)	100.0 (6.3%)	100.0 (6.3%)	93.8 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	4	0.0	25.0 (25.0%)	18.8 (18.8%)	12.5 (12.5%)	25.0 (25.0%)	25.0 (25.0%)	6.3 (6.3%)	6.3 (6.3%)
C	5	6.3	12.5 (6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	6.3 (0.0%)	0.0 (-6.3%)	0.0 (-6.3%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	13.3	0.0 (-13.3%)	6.7 (-6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	6.7 (-6.7%)	0.0 (-13.3%)	13.3 (0.0%)
C	11	100.0	100.0 (0.0%)	93.3 (-6.7%)	93.3 (-6.7%)	93.3 (-6.7%)	93.3 (-6.7%)	93.3 (-6.7%)	93.3 (-6.7%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	99.0	100.0 (1.0%)	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	100.0 (1.0%)	100.0 (1.0%)	99.0 (0.0%)
All	4	37.4	42.4 (5.1%)	40.4 (3.0%)	39.4 (2.0%)	41.4 (4.0%)	43.4 (6.1%)	35.4 (-2.0%)	39.4 (2.0%)
All	5	4.0	14.1 (10.1%)	4.0 (0.0%)	4.0 (0.0%)	4.0 (0.0%)	5.1 (1.0%)	5.1 (1.0%)	3.0 (-1.0%)
All	6	5.1	6.1 (1.0%)	5.1 (0.0%)	5.1 (0.0%)	5.1 (0.0%)	3.0 (-2.0%)	1.0 (-4.0%)	2.0 (-3.0%)
All	7	30.3	22.2 (-8.1%)	33.3 (3.0%)	32.3 (2.0%)	33.3 (3.0%)	33.3 (3.0%)	24.2 (-6.1%)	31.3 (1.0%)
All	8	10.1	0.0 (-10.1%)	11.1 (1.0%)	11.1 (1.0%)	14.1 (4.0%)	11.1 (1.0%)	20.2 (10.1%)	4.0 (-6.1%)
All	9	17.2	3.0 (-14.1%)	25.3 (8.1%)	25.3 (8.1%)	23.2 (6.1%)	27.3 (10.1%)	16.2 (-1.0%)	8.1 (-9.1%)
All	10	70.4	61.2 (-9.2%)	68.4 (-2.0%)	69.4 (-1.0%)	68.4 (-2.0%)	69.4 (-1.0%)	70.4 (0.0%)	72.4 (2.0%)
All	11	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	98.0 (-2.0%)	99.0 (-1.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	63.4	60.4 (-3.0%)	65.2 (1.8%)	65.2 (1.8%)	65.2 (1.8%)	66.1 (2.7%)	63.7 (0.3%)	61.9 (-1.5%)
AN	All	65.2	59.6 (-5.6%)	67.7 (2.5%)	67.7 (2.5%)	67.1 (1.9%)	68.3 (3.1%)	63.4 (-1.9%)	60.9 (-4.3%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	55.6	53.2 (-2.3%)	57.9 (2.3%)	58.3 (2.8%)	58.8 (3.2%)	58.3 (2.8%)	56.5 (0.9%)	56.9 (1.4%)
D	All	52.4	51.0 (-1.4%)	51.4 (-1.0%)	51.0 (-1.4%)	51.4 (-1.0%)	50.7 (-1.7%)	51.4 (-1.0%)	50.7 (-1.7%)
C	All	42.3	44.4 (2.1%)	42.3 (0.0%)	41.8 (-0.5%)	42.9 (0.5%)	43.9 (1.6%)	42.3 (0.0%)	41.8 (-0.5%)
All	All	56.1	54.1 (-2.0%)	57.1 (1.0%)	57.0 (0.9%)	57.3 (1.2%)	57.6 (1.5%)	55.9 (-0.3%)	54.8 (-1.3%)

Table L.1-6. Percent (difference in percent relative to NAA) of months outside the 57.2°F – 78.8°F water temperature commonly observed range for non-spawning adult hardhead spawning by water year type and month, and for all years combined, in Clear Creek below Whiskeytown, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	96.4 (-3.6%)	96.4 (-3.6%)	96.4 (-3.6%)	96.4 (-3.6%)	96.4 (-3.6%)	92.9 (-7.1%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	92.9 (-7.1%)	96.4 (-3.6%)	100.0 (0.0%)	96.4 (-3.6%)
W	8	100.0	100.0 (0.0%)	96.4 (-3.6%)	96.4 (-3.6%)	96.4 (-3.6%)	96.4 (-3.6%)	100.0 (0.0%)	96.4 (-3.6%)
W	9	96.4	100.0 (3.6%)	100.0 (3.6%)	96.4 (0.0%)	100.0 (3.6%)	100.0 (3.6%)	100.0 (3.6%)	96.4 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	94.4	94.4 (0.0%)	88.9 (-5.6%)	94.4 (0.0%)	100.0 (5.6%)	94.4 (0.0%)	100.0 (5.6%)	94.4 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	93.8 (-6.3%)	93.8 (-6.3%)	93.8 (-6.3%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	100.0	80.0 (-20.0%)	93.3 (-6.7%)	93.3 (-6.7%)	93.3 (-6.7%)	93.3 (-6.7%)	93.3 (-6.7%)	93.3 (-6.7%)
C	11	86.7	80.0 (-6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)	93.3 (6.7%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	98.0 (-2.0%)
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.0 (-2.0%)	99.0 (-1.0%)	100.0 (0.0%)	99.0 (-1.0%)
All	8	100.0	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	98.0 (-2.0%)	99.0 (-1.0%)	100.0 (0.0%)	99.0 (-1.0%)
All	9	98.0	98.0 (0.0%)	97.0 (-1.0%)	97.0 (-1.0%)	100.0 (2.0%)	99.0 (1.0%)	100.0 (2.0%)	98.0 (0.0%)
All	10	100.0	96.9 (-3.1%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)	99.0 (-1.0%)
All	11	98.0	97.0 (-1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)	99.0 (1.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	99.7	100.0 (0.3%)	99.4 (-0.3%)	99.1 (-0.6%)	98.8 (-0.9%)	99.1 (-0.6%)	99.7 (0.0%)	98.5 (-1.2%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	99.5	99.5 (0.0%)	99.1 (-0.5%)	99.5 (0.0%)	99.5 (0.0%)	99.5 (0.0%)	100.0 (0.5%)	99.5 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	98.9	96.3 (-2.6%)	98.4 (-0.5%)	98.4 (-0.5%)	98.9 (0.0%)	98.9 (0.0%)	98.9 (0.0%)	98.9 (0.0%)
All	All	99.7	99.3 (-0.3%)	99.4 (-0.3%)	99.4 (-0.3%)	99.4 (-0.3%)	99.5 (-0.2%)	99.7 (0.1%)	99.3 (-0.3%)

L.1.3.14 Striped Bass

L.1.3.14.1 Spawning, Embryo Incubation, and Initial Rearing

Water temperature related effects on striped bass spawning, embryo incubation, and initial rearing in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 59°F - 68°F optimal range (Moyle 2002) at Butte City (Table L.1-2).

Results outside the 59°F - 68°F water temperature optimal range observed for spawning, embryo incubation, and initial rearing of striped bass are presented in Table L.1-317 for Butte City.

- At Butte City, the highest percent of months with water temperatures outside the optimal range observed for spawning was 75% and occurred during April of a wet water year type under Alternative 3. The lowest percent of months with water temperatures outside the range was 0% and occurred during May of an above normal year type and April of a critical water year type under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was in June and the lowest was in May.

Table L.1-7. Percent (difference in percent relative to NAA) of months outside the 59°F - 68°F water temperature optimal range for spawning, embryo incubation, and initial rearing of striped bass by water year type and month, and for all years combined, Sacramento River at Butte City, April - June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	64.3	64.3 (0.0%)	60.7 (-3.6%)	60.7 (-3.6%)	60.7 (-3.6%)	60.7 (-3.6%)	75.0 (10.7%)	64.3 (0.0%)
W	5	14.3	17.9 (3.6%)	17.9 (3.6%)	17.9 (3.6%)	17.9 (3.6%)	17.9 (3.6%)	7.1 (-7.1%)	14.3 (0.0%)
W	6	46.4	32.1 (-14.3%)	46.4 (0.0%)	46.4 (0.0%)	46.4 (0.0%)	50.0 (3.6%)	71.4 (25.0%)	46.4 (0.0%)
AN	4	38.5	38.5 (0.0%)	30.8 (-7.7%)	30.8 (-7.7%)	30.8 (-7.7%)	38.5 (0.0%)	30.8 (-7.7%)	38.5 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	38.5	7.7 (-30.8%)	23.1 (-15.4%)	23.1 (-15.4%)	30.8 (-7.7%)	38.5 (0.0%)	53.8 (15.4%)	30.8 (-7.7%)
BN	4	16.7	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)	16.7 (0.0%)
BN	5	11.1	0.0 (-11.1%)	5.6 (-5.6%)	0.0 (-11.1%)	5.6 (-5.6%)	0.0 (-11.1%)	0.0 (-11.1%)	0.0 (-11.1%)
BN	6	33.3	27.8 (-5.6%)	33.3 (0.0%)	33.3 (0.0%)	33.3 (0.0%)	38.9 (5.6%)	38.9 (5.6%)	33.3 (0.0%)
D	4	8.3	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)
D	5	8.3	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	12.5 (4.2%)	20.8 (12.5%)	8.3 (0.0%)	16.7 (8.3%)
D	6	20.8	8.3 (-12.5%)	16.7 (-4.2%)	16.7 (-4.2%)	16.7 (-4.2%)	20.8 (0.0%)	20.8 (0.0%)	20.8 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	18.8	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	6.3 (-12.5%)	18.8 (0.0%)	12.5 (-6.3%)
C	6	37.5	31.3 (-6.3%)	37.5 (0.0%)	37.5 (0.0%)	37.5 (0.0%)	37.5 (0.0%)	37.5 (0.0%)	56.3 (18.8%)
All	4	28.3	28.3 (0.0%)	26.3 (-2.0%)	26.3 (-2.0%)	26.3 (-2.0%)	27.3 (-1.0%)	30.3 (2.0%)	28.3 (0.0%)
All	5	11.1	8.1 (-3.0%)	9.1 (-2.0%)	8.1 (-3.0%)	10.1 (-1.0%)	11.1 (0.0%)	7.1 (-4.0%)	10.1 (-1.0%)
All	6	35.4	22.2 (-13.1%)	32.3 (-3.0%)	32.3 (-3.0%)	33.3 (-2.0%)	37.4 (2.0%)	45.5 (10.1%)	37.4 (2.0%)
W	All	41.7	38.1 (-3.6%)	41.7 (0.0%)	41.7 (0.0%)	41.7 (0.0%)	42.9 (1.2%)	51.2 (9.5%)	41.7 (0.0%)
AN	All	25.6	15.4 (-10.3%)	17.9 (-7.7%)	17.9 (-7.7%)	20.5 (-5.1%)	25.6 (0.0%)	28.2 (2.6%)	23.1 (-2.6%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	20.4	14.8 (-5.6%)	18.5 (-1.9%)	16.7 (-3.7%)	18.5 (-1.9%)	18.5 (-1.9%)	18.5 (-1.9%)	16.7 (-3.7%)
D	All	12.5	8.3 (-4.2%)	11.1 (-1.4%)	11.1 (-1.4%)	12.5 (0.0%)	16.7 (4.2%)	12.5 (0.0%)	15.3 (2.8%)
C	All	18.8	12.5 (-6.3%)	14.6 (-4.2%)	14.6 (-4.2%)	14.6 (-4.2%)	14.6 (-4.2%)	18.8 (0.0%)	22.9 (4.2%)
All	All	24.9	19.5 (-5.4%)	22.6 (-2.4%)	22.2 (-2.7%)	23.2 (-1.7%)	25.3 (0.3%)	27.6 (2.7%)	25.3 (0.3%)

L.1.3.14.2 Larvae, Fry, and Juvenile Rearing and Emigration

Water temperature related effects on striped bass larvae, fry, and juvenile rearing and emigration in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 61°F - 71°F optimal range (Faye et al. 1983) at Butte City (Table L.1-2).

Results outside the 61°F - 71°F water temperature optimal range for striped bass larvae, fry, and juvenile rearing and emigration are presented in Table L.1-318 for Butte City.

- At Butte City, the highest percent of months with water temperature outside the optimal range for striped bass larvae, fry, and juvenile rearing and emigration was 100% and predominantly occurred January through March, and November through December of each water year type under the NAA and all alternatives (Table L.1-318). The lowest percent of months outside the range was 0% which occurred in August of at least one water year type under the NAA and all alternatives. Combining water years, the highest percent of months outside the range was 100% and occurred in November through February under the NAA and all alternatives. The lowest percent of months outside the range was between 1% and 5.1% which occurred during July under the NAA and all alternatives.

Table L.1-8. Percent (difference in percent relative to NAA) of months outside the 61°F - 71°F water temperature optimal range for striped bass larvae, fry, and juvenile rearing and emigration by water year type and month, and for all years combined, Sacramento River at Butte City, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	82.1	82.1 (0.0%)	82.1 (0.0%)	82.1 (0.0%)	82.1 (0.0%)	85.7 (3.6%)	85.7 (3.6%)	82.1 (0.0%)
W	5	3.6	7.1 (3.6%)	7.1 (3.6%)	7.1 (3.6%)	7.1 (3.6%)	7.1 (3.6%)	10.7 (7.1%)	7.1 (3.6%)
W	6	10.7	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	10.7 (0.0%)	14.3 (3.6%)	14.3 (3.6%)
W	7	3.6	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	7.1 (3.6%)	3.6 (0.0%)
W	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
W	9	25.0	3.6 (-21.4%)	32.1 (7.1%)	32.1 (7.1%)	28.6 (3.6%)	32.1 (7.1%)	14.3 (-10.7%)	14.3 (-10.7%)
W	10	100.0	96.4 (-3.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	96.4 (-3.6%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	61.5	53.8 (-7.7%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)
AN	5	0.0	15.4 (15.4%)	7.7 (7.7%)	7.7 (7.7%)	7.7 (7.7%)	7.7 (7.7%)	7.7 (7.7%)	7.7 (7.7%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	15.4 (15.4%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)
AN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	23.1	0.0 (-23.1%)	23.1 (0.0%)	23.1 (0.0%)	23.1 (0.0%)	23.1 (0.0%)	7.7 (-15.4%)	0.0 (-23.1%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	27.8	38.9 (11.1%)	27.8 (0.0%)	22.2 (-5.6%)	27.8 (0.0%)	55.6 (27.8%)	38.9 (11.1%)	33.3 (5.6%)
BN	5	5.6	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	5.6	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)
BN	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	5.6 (5.6%)	0.0 (0.0%)
BN	10	61.1	61.1 (0.0%)	72.2 (11.1%)	77.8 (16.7%)	72.2 (11.1%)	66.7 (5.6%)	72.2 (11.1%)	66.7 (5.6%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	29.2	33.3 (4.2%)	33.3 (4.2%)	33.3 (4.2%)	29.2 (0.0%)	33.3 (4.2%)	12.5 (-16.7%)	33.3 (4.2%)
D	5	0.0	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	4.2	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	4.2 (0.0%)	0.0 (-4.2%)	0.0 (-4.2%)
D	9	0.0	4.2 (4.2%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	10	50.0	33.3 (-16.7%)	45.8 (-4.2%)	45.8 (-4.2%)	45.8 (-4.2%)	45.8 (-4.2%)	50.0 (0.0%)	54.2 (4.2%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)
C	4	6.3	6.3 (0.0%)	12.5 (6.3%)	6.3 (0.0%)	12.5 (6.3%)	12.5 (6.3%)	6.3 (0.0%)	6.3 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)
C	7	6.3	0.0 (-6.3%)	0.0 (-6.3%)	12.5 (6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	6.3 (0.0%)	12.5 (6.3%)
C	8	25.0	25.0 (0.0%)	25.0 (0.0%)	18.8 (-6.3%)	25.0 (0.0%)	31.3 (6.3%)	0.0 (-25.0%)	18.8 (-6.3%)
C	9	6.3	18.8 (12.5%)	25.0 (18.8%)	0.0 (-6.3%)	25.0 (18.8%)	25.0 (18.8%)	0.0 (-6.3%)	6.3 (0.0%)
C	10	6.7	6.7 (0.0%)	6.7 (0.0%)	6.7 (0.0%)	13.3 (6.7%)	13.3 (6.7%)	6.7 (0.0%)	6.7 (0.0%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	99.0 (-1.0%)
All	4	44.4	46.5 (2.0%)	46.5 (2.0%)	44.4 (0.0%)	45.5 (1.0%)	52.5 (8.1%)	43.4 (-1.0%)	46.5 (2.0%)
All	5	2.0	6.1 (4.0%)	4.0 (2.0%)	4.0 (2.0%)	4.0 (2.0%)	4.0 (2.0%)	6.1 (4.0%)	4.0 (2.0%)
All	6	3.0	3.0 (0.0%)	4.0 (1.0%)	4.0 (1.0%)	4.0 (1.0%)	4.0 (1.0%)	7.1 (4.0%)	4.0 (1.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	3.0	1.0 (-2.0%)	1.0 (-2.0%)	3.0 (0.0%)	1.0 (-2.0%)	1.0 (-2.0%)	5.1 (2.0%)	5.1 (2.0%)
All	8	5.1	5.1 (0.0%)	5.1 (0.0%)	4.0 (-1.0%)	5.1 (0.0%)	6.1 (1.0%)	2.0 (-3.0%)	3.0 (-2.0%)
All	9	11.1	5.1 (-6.1%)	16.2 (5.1%)	12.1 (1.0%)	15.2 (4.0%)	16.2 (5.1%)	6.1 (-5.1%)	5.1 (-6.1%)
All	10	66.3	61.2 (-5.1%)	67.3 (1.0%)	68.4 (2.0%)	68.4 (2.0%)	67.3 (1.0%)	67.3 (1.0%)	68.4 (2.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	60.4	58.3 (-2.1%)	61.0 (0.6%)	61.0 (0.6%)	60.7 (0.3%)	61.3 (0.9%)	61.3 (0.9%)	60.1 (-0.3%)
AN	All	57.6	56.3 (-1.3%)	58.2 (0.6%)	58.2 (0.6%)	58.2 (0.6%)	58.2 (0.6%)	58.2 (0.6%)	57.0 (-0.6%)
BN	All	50.0	50.9 (0.9%)	50.9 (0.9%)	50.9 (0.9%)	50.9 (0.9%)	52.8 (2.8%)	52.8 (2.8%)	50.9 (0.9%)
D	All	48.6	48.3 (-0.3%)	48.6 (0.0%)	48.6 (0.0%)	48.3 (-0.3%)	48.6 (0.0%)	46.9 (-1.7%)	49.0 (0.3%)
C	All	45.5	46.0 (0.5%)	47.6 (2.1%)	45.5 (0.0%)	48.1 (2.6%)	48.7 (3.2%)	43.9 (-1.6%)	45.0 (-0.5%)
All	All	52.9	52.3 (-0.6%)	53.7 (0.8%)	53.3 (0.4%)	53.6 (0.7%)	54.3 (1.3%)	53.1 (0.2%)	52.9 (0.0%)

L.1.3.15 American Shad

L.1.3.15.1 Spawning and Larval Rearing

Water temperature related effects on American shad spawning and larval rearing in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 62°F - 75°F optimal range (Moyle 2002) at Butte City (Table L.1-2).

Results outside the 62°F - 75°F water temperature optimal range for American shad spawning larval rearing are presented in Table L.1-319 for Butte City.

- At Butte City, the highest percent of months with water temperatures outside the range was 96.4% and occurred during April of a wet water year type under the NAA, all alternative 2 components, and Alternative 4 (Table L.1-319). The lowest percent of months outside the range was 0% and occurred in June of at least one water year type under the NAA and all alternatives. Combining water years, the highest percent of months outside the range was in April, the lowest was in June under the NAA and all alternatives.

Table L.1-9. Percent (difference in percent relative to NAA) of months outside the 62°F - 75°F water temperature optimal range for American shad spawning larval rearing by water year type and month, and for all years combined, Sacramento River at Butte City, April - June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	96.4	92.9 (-3.6%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	89.3 (-7.1%)	96.4 (0.0%)
W	5	10.7	25.0 (14.3%)	17.9 (7.1%)	17.9 (7.1%)	17.9 (7.1%)	17.9 (7.1%)	32.1 (21.4%)	14.3 (3.6%)
W	6	0.0	0.0 (0.0%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	3.6 (3.6%)	0.0 (0.0%)	3.6 (3.6%)
AN	4	69.2	61.5 (-7.7%)	76.9 (7.7%)	76.9 (7.7%)	76.9 (7.7%)	76.9 (7.7%)	61.5 (-7.7%)	76.9 (7.7%)
AN	5	7.7	15.4 (7.7%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)	7.7 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	72.2	77.8 (5.6%)	66.7 (-5.6%)	66.7 (-5.6%)	66.7 (-5.6%)	77.8 (5.6%)	55.6 (-16.7%)	72.2 (0.0%)
BN	5	11.1	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	11.1 (0.0%)	16.7 (5.6%)	16.7 (5.6%)
BN	6	0.0	0.0 (0.0%)	5.6 (5.6%)	5.6 (5.6%)	5.6 (5.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	50.0	45.8 (-4.2%)	45.8 (-4.2%)	45.8 (-4.2%)	41.7 (-8.3%)	41.7 (-8.3%)	25.0 (-25.0%)	41.7 (-8.3%)
D	5	4.2	8.3 (4.2%)	4.2 (0.0%)	4.2 (0.0%)	8.3 (4.2%)	4.2 (0.0%)	0.0 (-4.2%)	8.3 (4.2%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	12.5	18.8 (6.3%)	18.8 (6.3%)	18.8 (6.3%)	25.0 (12.5%)	25.0 (12.5%)	18.8 (6.3%)	12.5 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	63.6	62.6 (-1.0%)	63.6 (0.0%)	63.6 (0.0%)	63.6 (0.0%)	65.7 (2.0%)	52.5 (-11.1%)	62.6 (-1.0%)
All	5	7.1	13.1 (6.1%)	9.1 (2.0%)	9.1 (2.0%)	10.1 (3.0%)	9.1 (2.0%)	13.1 (6.1%)	10.1 (3.0%)
All	6	0.0	0.0 (0.0%)	2.0 (2.0%)	2.0 (2.0%)	2.0 (2.0%)	1.0 (1.0%)	0.0 (0.0%)	1.0 (1.0%)
W	All	35.7	39.3 (3.6%)	39.3 (3.6%)	39.3 (3.6%)	39.3 (3.6%)	39.3 (3.6%)	40.5 (4.8%)	38.1 (2.4%)
AN	All	25.6	25.6 (0.0%)	28.2 (2.6%)	28.2 (2.6%)	28.2 (2.6%)	28.2 (2.6%)	23.1 (-2.6%)	28.2 (2.6%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	27.8	29.6 (1.9%)	27.8 (0.0%)	27.8 (0.0%)	27.8 (0.0%)	29.6 (1.9%)	24.1 (-3.7%)	29.6 (1.9%)
D	All	18.1	18.1 (0.0%)	16.7 (-1.4%)	16.7 (-1.4%)	16.7 (-1.4%)	15.3 (-2.8%)	8.3 (-9.7%)	16.7 (-1.4%)
C	All	4.2	6.3 (2.1%)	6.3 (2.1%)	6.3 (2.1%)	8.3 (4.2%)	8.3 (4.2%)	6.3 (2.1%)	4.2 (0.0%)
All	All	23.6	25.3 (1.7%)	24.9 (1.3%)	24.9 (1.3%)	25.3 (1.7%)	25.3 (1.7%)	21.9 (-1.7%)	24.6 (1.0%)

L.1.3.15.2 Juvenile Rearing and Emigration

Water temperature related effects on American shad juvenile rearing and emigration in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 63°F - 77°F optimal range (Moyle 2002) at Butte City (Table L.1-2).

Results outside the 63°F - 77°F water temperature optimal range for American shad juvenile rearing and emigration are presented in Table L.1-320 for Butte City.

- At Butte City, the highest percent of months with water temperatures outside the range was 100% and occurred during October and November of at least one water year type under the NAA and all alternatives (Table L.1-320). The lowest percent of months outside the range was in September of a critical water year type under the NAA and all alternatives. Combining water year types the highest percent of months outside the range was 100% and occurred in November under the NAA and all alternatives. The lowest percent of months outside the range was in August under the NAA and all alternatives.

Table L.1-10. Percent (difference in percent relative to NAA) of months outside the 63°F - 77°F water temperature optimal range for American shad juvenile rearing and emigration by water year type and month, and for all years combined, Sacramento River at Butte City, July - November.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	7	25.0	17.9 (-7.1%)	32.1 (7.1%)	32.1 (7.1%)	32.1 (7.1%)	32.1 (7.1%)	10.7 (-14.3%)	25.0 (0.0%)
W	8	14.3	0.0 (-14.3%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	10.7 (-3.6%)
W	9	71.4	53.6 (-17.9%)	75.0 (3.6%)	75.0 (3.6%)	75.0 (3.6%)	75.0 (3.6%)	64.3 (-7.1%)	53.6 (-17.9%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	61.5	46.2 (-15.4%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	23.1 (-38.5%)	61.5 (0.0%)
AN	8	38.5	7.7 (-30.8%)	38.5 (0.0%)	38.5 (0.0%)	46.2 (7.7%)	38.5 (0.0%)	46.2 (7.7%)	15.4 (-23.1%)
AN	9	76.9	0.0 (-76.9%)	84.6 (7.7%)	84.6 (7.7%)	84.6 (7.7%)	84.6 (7.7%)	61.5 (-15.4%)	7.7 (-69.2%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	44.4	38.9 (-5.6%)	44.4 (0.0%)	44.4 (0.0%)	44.4 (0.0%)	50.0 (5.6%)	22.2 (-22.2%)	50.0 (5.6%)
BN	8	33.3	0.0 (-33.3%)	27.8 (-5.6%)	27.8 (-5.6%)	38.9 (5.6%)	33.3 (0.0%)	38.9 (5.6%)	11.1 (-22.2%)
BN	9	5.6	22.2 (16.7%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)
BN	10	94.4	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	25.0	20.8 (-4.2%)	20.8 (-4.2%)	16.7 (-8.3%)	20.8 (-4.2%)	16.7 (-8.3%)	33.3 (8.3%)	20.8 (-4.2%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	33.3 (33.3%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	8.3 (8.3%)	8.3 (8.3%)	8.3 (8.3%)	12.5 (12.5%)	0.0 (0.0%)	8.3 (8.3%)
D	10	95.8	91.7 (-4.2%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	91.7 (-4.2%)	95.8 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	46.7	33.3 (-13.3%)	33.3 (-13.3%)	40.0 (-6.7%)	40.0 (-6.7%)	33.3 (-13.3%)	46.7 (0.0%)	53.3 (6.7%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	29.3	23.2 (-6.1%)	30.3 (1.0%)	29.3 (0.0%)	30.3 (1.0%)	30.3 (1.0%)	19.2 (-10.1%)	29.3 (0.0%)
All	8	15.2	1.0 (-14.1%)	15.2 (0.0%)	14.1 (-1.0%)	18.2 (3.0%)	16.2 (1.0%)	26.3 (11.1%)	7.1 (-8.1%)
All	9	31.3	19.2 (-12.1%)	35.4 (4.0%)	35.4 (4.0%)	35.4 (4.0%)	36.4 (5.1%)	28.3 (-3.0%)	19.2 (-12.1%)
All	10	89.8	86.7 (-3.1%)	87.8 (-2.0%)	88.8 (-1.0%)	88.8 (-1.0%)	87.8 (-2.0%)	88.8 (-1.0%)	90.8 (1.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	62.1	54.3 (-7.9%)	64.3 (2.1%)	64.3 (2.1%)	64.3 (2.1%)	64.3 (2.1%)	57.9 (-4.3%)	57.9 (-4.3%)
AN	All	70.4	49.3 (-21.1%)	71.8 (1.4%)	71.8 (1.4%)	73.2 (2.8%)	73.2 (2.8%)	63.4 (-7.0%)	54.9 (-15.5%)
BN	All	41.2	43.1 (2.0%)	40.2 (-1.0%)	39.2 (-2.0%)	40.2 (-1.0%)	39.2 (-2.0%)	52.0 (10.8%)	40.2 (-1.0%)
D	All	49.0	47.9 (-1.0%)	50.0 (1.0%)	49.0 (0.0%)	50.0 (1.0%)	50.0 (1.0%)	50.0 (1.0%)	49.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	All	53.0	46.0 (-7.1%)	53.6 (0.6%)	53.4 (0.4%)	54.5 (1.4%)	54.0 (1.0%)	52.4 (-0.6%)	49.2 (-3.8%)

L.1.3.16 Threadfin Shad

L.1.3.16.1 Spawning

Water temperature related effects on threadfin shad spawning in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 63°F - 77°F optimal range (Moyle 2002) at Butte City (Table L.1-2).

Results outside the 63°F - 77°F water temperature optimal range for threadfin shad spawning are presented in Table L.1-321 for Butte City.

- At Butte City, the highest percent of months with water temperatures outside the optimal range for threadfin shad spawning was 96.4% and occurred during April of a wet water year type under the NAA and all alternatives (Table L.1-321). The lowest percent of months outside the range was 0% and occurred in June through August of a critical water year under each alternative excluding Alternative 3, which was outside the range 6.3%. Combining water year types, the highest percent of months outside the range was in April and the lowest was in June.

Table L.1-11. Percent (difference in percent relative to NAA) of months outside the 63°F - 77°F water temperature optimal range for threadfin shad spawning by water year type and month, and for all years combined, Sacramento River at Butte City, April - August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	96.4	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)
W	5	17.9	28.6 (10.7%)	21.4 (3.6%)	21.4 (3.6%)	21.4 (3.6%)	21.4 (3.6%)	46.4 (28.6%)	21.4 (3.6%)
W	6	3.6	10.7 (7.1%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	0.0 (-3.6%)	3.6 (0.0%)
W	7	25.0	17.9 (-7.1%)	32.1 (7.1%)	32.1 (7.1%)	32.1 (7.1%)	32.1 (7.1%)	10.7 (-14.3%)	25.0 (0.0%)
W	8	14.3	0.0 (-14.3%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	10.7 (-3.6%)
AN	4	84.6	76.9 (-7.7%)	76.9 (-7.7%)	76.9 (-7.7%)	76.9 (-7.7%)	84.6 (0.0%)	76.9 (-7.7%)	76.9 (-7.7%)
AN	5	7.7	15.4 (7.7%)	15.4 (7.7%)	15.4 (7.7%)	15.4 (7.7%)	15.4 (7.7%)	30.8 (23.1%)	15.4 (7.7%)
AN	6	0.0	15.4 (15.4%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	61.5	46.2 (-15.4%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	23.1 (-38.5%)	61.5 (0.0%)
AN	8	38.5	7.7 (-30.8%)	38.5 (0.0%)	38.5 (0.0%)	46.2 (7.7%)	38.5 (0.0%)	46.2 (7.7%)	15.4 (-23.1%)
BN	4	77.8	88.9 (11.1%)	77.8 (0.0%)	77.8 (0.0%)	77.8 (0.0%)	94.4 (16.7%)	66.7 (-11.1%)	77.8 (0.0%)
BN	5	16.7	27.8 (11.1%)	22.2 (5.6%)	16.7 (0.0%)	16.7 (0.0%)	27.8 (11.1%)	22.2 (5.6%)	16.7 (0.0%)
BN	6	5.6	22.2 (16.7%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	7	44.4	38.9 (-5.6%)	44.4 (0.0%)	44.4 (0.0%)	44.4 (0.0%)	50.0 (5.6%)	22.2 (-22.2%)	50.0 (5.6%)
BN	8	33.3	0.0 (-33.3%)	27.8 (-5.6%)	27.8 (-5.6%)	38.9 (5.6%)	33.3 (0.0%)	38.9 (5.6%)	11.1 (-22.2%)
D	4	58.3	75.0 (16.7%)	54.2 (-4.2%)	54.2 (-4.2%)	54.2 (-4.2%)	50.0 (-8.3%)	54.2 (-4.2%)	66.7 (8.3%)
D	5	16.7	12.5 (-4.2%)	12.5 (-4.2%)	12.5 (-4.2%)	12.5 (-4.2%)	12.5 (-4.2%)	12.5 (-4.2%)	16.7 (0.0%)
D	6	8.3	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	4.2 (-4.2%)	4.2 (-4.2%)	0.0 (-8.3%)
D	7	25.0	20.8 (-4.2%)	20.8 (-4.2%)	16.7 (-8.3%)	20.8 (-4.2%)	16.7 (-8.3%)	33.3 (8.3%)	20.8 (-4.2%)
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	33.3 (33.3%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	4	31.3	50.0 (18.8%)	56.3 (25.0%)	37.5 (6.3%)	62.5 (31.3%)	62.5 (31.3%)	25.0 (-6.3%)	25.0 (-6.3%)
C	5	6.3	6.3 (0.0%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	6.3 (0.0%)	0.0 (-6.3%)	0.0 (-6.3%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)
All	4	71.7	79.8 (8.1%)	73.7 (2.0%)	70.7 (-1.0%)	74.7 (3.0%)	77.8 (6.1%)	66.7 (-5.1%)	71.7 (0.0%)
All	5	14.1	19.2 (5.1%)	15.2 (1.0%)	14.1 (0.0%)	14.1 (0.0%)	17.2 (3.0%)	24.2 (10.1%)	15.2 (1.0%)
All	6	4.0	11.1 (7.1%)	5.1 (1.0%)	5.1 (1.0%)	5.1 (1.0%)	3.0 (-1.0%)	2.0 (-2.0%)	2.0 (-2.0%)
All	7	29.3	23.2 (-6.1%)	30.3 (1.0%)	29.3 (0.0%)	30.3 (1.0%)	30.3 (1.0%)	19.2 (-10.1%)	29.3 (0.0%)
All	8	15.2	1.0 (-14.1%)	15.2 (0.0%)	14.1 (-1.0%)	18.2 (3.0%)	16.2 (1.0%)	26.3 (11.1%)	7.1 (-8.1%)
W	All	31.4	30.7 (-0.7%)	33.6 (2.1%)	33.6 (2.1%)	33.6 (2.1%)	33.6 (2.1%)	33.6 (2.1%)	31.4 (0.0%)
AN	All	38.5	32.3 (-6.2%)	38.5 (0.0%)	38.5 (0.0%)	40.0 (1.5%)	40.0 (1.5%)	35.4 (-3.1%)	33.8 (-4.6%)
BN	All	35.6	35.6 (0.0%)	36.7 (1.1%)	35.6 (0.0%)	37.8 (2.2%)	42.2 (6.7%)	30.0 (-5.6%)	32.2 (-3.3%)
D	All	21.7	23.3 (1.7%)	19.2 (-2.5%)	18.3 (-3.3%)	19.2 (-2.5%)	16.7 (-5.0%)	27.5 (5.8%)	20.8 (-0.8%)
C	All	7.5	11.3 (3.8%)	12.5 (5.0%)	7.5 (0.0%)	13.8 (6.3%)	15.0 (7.5%)	8.8 (1.3%)	5.0 (-2.5%)
All	All	26.9	26.9 (0.0%)	27.9 (1.0%)	26.7 (-0.2%)	28.5 (1.6%)	28.9 (2.0%)	27.7 (0.8%)	25.1 (-1.8%)

L.1.3.16.2 Non-Spawning Adult

Water temperature related effects on non-spawning adult threadfin shad in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 63°F - 77°F optimal range (Moyle 2002) at Butte City (Table L.1-2).

Results outside the 63°F - 77°F water temperature optimal range for non-spawning adult threadfin shad are presented in Table L.1-322 for Butte City.

- At Butte City, the highest percent of months with water temperatures outside the optimal range for non-spawning adult threadfin shad was 100% and occurred during January through March, November and December of each water year type under the NAA and all alternatives (Table L.1-322). The lowest percent of months with water temperatures outside the range was 0% and occurred during September of a critical water year type under the NAA and all alternatives. Combining water year types, the highest percent of months outside the range was 100% and occurred January through March, November and December. The lowest percent of months outside the range was in June.

Table L.1-12. Percent (difference in percent relative to NAA) of months outside the 63°F - 77°F water temperature optimal range for on-spawning adult threadfin shad by water year type and month, and for all years combined, Sacramento River at Butte City, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	96.4	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)	96.4 (0.0%)
W	5	17.9	28.6 (10.7%)	21.4 (3.6%)	21.4 (3.6%)	21.4 (3.6%)	21.4 (3.6%)	46.4 (28.6%)	21.4 (3.6%)
W	6	3.6	10.7 (7.1%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	3.6 (0.0%)	0.0 (-3.6%)	3.6 (0.0%)
W	7	25.0	17.9 (-7.1%)	32.1 (7.1%)	32.1 (7.1%)	32.1 (7.1%)	32.1 (7.1%)	10.7 (-14.3%)	25.0 (0.0%)
W	8	14.3	0.0 (-14.3%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	14.3 (0.0%)	10.7 (-3.6%)
W	9	71.4	53.6 (-17.9%)	75.0 (3.6%)	75.0 (3.6%)	75.0 (3.6%)	75.0 (3.6%)	64.3 (-7.1%)	53.6 (-17.9%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	84.6	76.9 (-7.7%)	76.9 (-7.7%)	76.9 (-7.7%)	76.9 (-7.7%)	84.6 (0.0%)	76.9 (-7.7%)	76.9 (-7.7%)
AN	5	7.7	15.4 (7.7%)	15.4 (7.7%)	15.4 (7.7%)	15.4 (7.7%)	15.4 (7.7%)	30.8 (23.1%)	15.4 (7.7%)
AN	6	0.0	15.4 (15.4%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	7	61.5	46.2 (-15.4%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	61.5 (0.0%)	23.1 (-38.5%)	61.5 (0.0%)
AN	8	38.5	7.7 (-30.8%)	38.5 (0.0%)	38.5 (0.0%)	46.2 (7.7%)	38.5 (0.0%)	46.2 (7.7%)	15.4 (-23.1%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	76.9	0.0 (-76.9%)	84.6 (7.7%)	84.6 (7.7%)	84.6 (7.7%)	84.6 (7.7%)	61.5 (-15.4%)	7.7 (-69.2%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	77.8	88.9 (11.1%)	77.8 (0.0%)	77.8 (0.0%)	77.8 (0.0%)	94.4 (16.7%)	66.7 (-11.1%)	77.8 (0.0%)
BN	5	16.7	27.8 (11.1%)	22.2 (5.6%)	16.7 (0.0%)	16.7 (0.0%)	27.8 (11.1%)	22.2 (5.6%)	16.7 (0.0%)
BN	6	5.6	22.2 (16.7%)	11.1 (5.6%)	11.1 (5.6%)	11.1 (5.6%)	5.6 (0.0%)	0.0 (-5.6%)	5.6 (0.0%)
BN	7	44.4	38.9 (-5.6%)	44.4 (0.0%)	44.4 (0.0%)	44.4 (0.0%)	50.0 (5.6%)	22.2 (-22.2%)	50.0 (5.6%)
BN	8	33.3	0.0 (-33.3%)	27.8 (-5.6%)	27.8 (-5.6%)	38.9 (5.6%)	33.3 (0.0%)	38.9 (5.6%)	11.1 (-22.2%)
BN	9	5.6	22.2 (16.7%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	5.6 (0.0%)	11.1 (5.6%)	5.6 (0.0%)
BN	10	94.4	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	58.3	75.0 (16.7%)	54.2 (-4.2%)	54.2 (-4.2%)	54.2 (-4.2%)	50.0 (-8.3%)	54.2 (-4.2%)	66.7 (8.3%)
D	5	16.7	12.5 (-4.2%)	12.5 (-4.2%)	12.5 (-4.2%)	12.5 (-4.2%)	12.5 (-4.2%)	12.5 (-4.2%)	16.7 (0.0%)
D	6	8.3	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	4.2 (-4.2%)	4.2 (-4.2%)	0.0 (-8.3%)
D	7	25.0	20.8 (-4.2%)	20.8 (-4.2%)	16.7 (-8.3%)	20.8 (-4.2%)	16.7 (-8.3%)	33.3 (8.3%)	20.8 (-4.2%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	33.3 (33.3%)	0.0 (0.0%)
D	9	0.0	0.0 (0.0%)	8.3 (8.3%)	8.3 (8.3%)	8.3 (8.3%)	12.5 (12.5%)	0.0 (0.0%)	8.3 (8.3%)
D	10	95.8	91.7 (-4.2%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	95.8 (0.0%)	91.7 (-4.2%)	95.8 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	31.3	50.0 (18.8%)	56.3 (25.0%)	37.5 (6.3%)	62.5 (31.3%)	62.5 (31.3%)	25.0 (-6.3%)	25.0 (-6.3%)
C	5	6.3	6.3 (0.0%)	0.0 (-6.3%)	0.0 (-6.3%)	0.0 (-6.3%)	6.3 (0.0%)	0.0 (-6.3%)	0.0 (-6.3%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)
C	8	0.0	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	6.3 (6.3%)	6.3 (6.3%)	6.3 (6.3%)	0.0 (0.0%)
C	9	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	10	46.7	33.3 (-13.3%)	33.3 (-13.3%)	40.0 (-6.7%)	40.0 (-6.7%)	33.3 (-13.3%)	46.7 (0.0%)	53.3 (6.7%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	71.7	79.8 (8.1%)	73.7 (2.0%)	70.7 (-1.0%)	74.7 (3.0%)	77.8 (6.1%)	66.7 (-5.1%)	71.7 (0.0%)
All	5	14.1	19.2 (5.1%)	15.2 (1.0%)	14.1 (0.0%)	14.1 (0.0%)	17.2 (3.0%)	24.2 (10.1%)	15.2 (1.0%)
All	6	4.0	11.1 (7.1%)	5.1 (1.0%)	5.1 (1.0%)	5.1 (1.0%)	3.0 (-1.0%)	2.0 (-2.0%)	2.0 (-2.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	29.3	23.2 (-6.1%)	30.3 (1.0%)	29.3 (0.0%)	30.3 (1.0%)	30.3 (1.0%)	19.2 (-10.1%)	29.3 (0.0%)
All	8	15.2	1.0 (-14.1%)	15.2 (0.0%)	14.1 (-1.0%)	18.2 (3.0%)	16.2 (1.0%)	26.3 (11.1%)	7.1 (-8.1%)
All	9	31.3	19.2 (-12.1%)	35.4 (4.0%)	35.4 (4.0%)	35.4 (4.0%)	36.4 (5.1%)	28.3 (-3.0%)	19.2 (-12.1%)
All	10	89.8	86.7 (-3.1%)	87.8 (-2.0%)	88.8 (-1.0%)	88.8 (-1.0%)	87.8 (-2.0%)	88.8 (-1.0%)	90.8 (1.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	69.0	67.3 (-1.8%)	70.2 (1.2%)	70.2 (1.2%)	70.2 (1.2%)	70.2 (1.2%)	69.3 (0.3%)	67.6 (-1.5%)
AN	All	72.8	63.9 (-8.9%)	73.4 (0.6%)	73.4 (0.6%)	74.1 (1.3%)	74.1 (1.3%)	70.3 (-2.5%)	65.2 (-7.6%)
BN	All	64.8	66.2 (1.4%)	65.3 (0.5%)	64.8 (0.0%)	65.7 (0.9%)	67.6 (2.8%)	63.0 (-1.9%)	63.4 (-1.4%)
D	All	58.7	59.0 (0.3%)	58.3 (-0.3%)	58.0 (-0.7%)	58.3 (-0.3%)	57.6 (-1.0%)	60.8 (2.1%)	59.0 (0.3%)
C	All	48.1	48.7 (0.5%)	49.2 (1.1%)	47.6 (-0.5%)	50.3 (2.1%)	50.3 (2.1%)	48.7 (0.5%)	47.6 (-0.5%)
All	All	62.9	61.7 (-1.3%)	63.5 (0.6%)	63.1 (0.2%)	63.9 (0.9%)	64.0 (1.1%)	62.9 (0.0%)	61.2 (-1.7%)

L.1.3.17 Largemouth Bass

L.1.3.17.1 Spawning

Water temperature related effects on largemouth bass spawning in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 55°F – 79°F optimal range (Stuber et al. 1982) at Butte City (Table L.1-2).

Results outside the 55°F - 79°F water temperature optimal range for largemouth bass spawning are presented in Table L.1-323 for Butte City.

- At Butte City, water temperatures were predominantly within the optimal range for spawning during all months of each water year type, under all alternatives except April during a wet water year type under the NAA and Alternative 1 (Table L.1-323).

Table L.1-13. Percent (difference in percent relative to NAA) of months outside the 55°F - 79°F water temperature optimal range for largemouth bass spawning by water year type and month, and for all years combined, Sacramento River at Butte City, April - June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	3.6	3.6 (0.0%)	0.0 (-3.6%)	0.0 (-3.6%)	0.0 (-3.6%)	3.6 (0.0%)	0.0 (-3.6%)	3.6 (0.0%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	1.0	1.0 (0.0%)	0.0 (-1.0%)	0.0 (-1.0%)	0.0 (-1.0%)	1.0 (0.0%)	0.0 (-1.0%)	1.0 (0.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	All	1.2	1.2 (0.0%)	0.0 (-1.2%)	0.0 (-1.2%)	0.0 (-1.2%)	1.2 (0.0%)	0.0 (-1.2%)	1.2 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	0.3	0.3 (0.0%)	0.0 (-0.3%)	0.0 (-0.3%)	0.0 (-0.3%)	0.3 (0.0%)	0.0 (-0.3%)	0.3 (0.0%)

L.1.3.17.2 Non-Spawning Adult

Water temperature related effects on non-spawning adult largemouth bass in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 77°F - 86°F optimal range for growth (Moyle 2002) at Butte City (Table L.1-2).

Results outside the 77°F - 86°F water temperature optimal range for growth of non-spawning adult largemouth bass are presented in Table L.1-324 for Butte City.

- At Butte City, water temperatures were outside the range for growth of non-spawning adult largemouth bass during all months, of each water year type, under the NAA and all alternatives except during August of a critical water year type under Alternative 2 with TUCP without VA, Alternative 2 without TUCP Delta VA, and Alternative 2 without TUCP Systemwide VAs, which was outside the range 93.8% of the time (Table L.1-324).

Table L.1-14. Percent (difference in percent relative to NAA) of months outside the 77°F - 86°F water temperature optimal range for growth of non-spawning adult largemouth bass by water year type and month, and for all years combined, Sacramento River at Butte City, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)	93.8 (-6.3%)	93.8 (-6.3%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	8	100.0	100.0 (0.0%)	99.0 (-1.0%)	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	99.5 (-0.5%)	100.0 (0.0%)	99.5 (-0.5%)	99.5 (-0.5%)	100.0 (0.0%)	100.0 (0.0%)
All	All	100.0	100.0 (0.0%)	99.9 (-0.1%)	100.0 (0.0%)	99.9 (-0.1%)	99.9 (-0.1%)	100.0 (0.0%)	100.0 (0.0%)

L.1.3.18 Smallmouth Bass

L.1.3.18.1 Spawning

Water temperature related effects on smallmouth bass spawning were evaluated by assessing the percent of months with water temperature outside the 55°F - 70°F optimal range (Brown et al. 2009) in the Sacramento River at Hamilton City and in Clear Creek below Whiskeytown (Table L.1-2).

Results outside the 55°F - 70°F water temperature optimal range for smallmouth bass spawning are presented in Table L.1-325 for Hamilton City and Table L.1-326 for Clear Creek below Whiskeytown.

- At Hamilton City, the highest percent of months with water temperatures outside the optimal range for smallmouth bass spawning was 10.7% and occurred during June of a wet water year type under Alternative 3 (Table L.1-325). The lowest percent of months with water temperatures outside the range was 0%, and generally occurred during May of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months with water temperatures outside the optimal range was in June and the lowest was in May.
- In Clear Creek below Whiskeytown, the highest percent of months with water temperatures outside the optimal range was 100% and occurred during May of each water year type under the NAA and all alternatives (Table L.1-326). Generally, each month regardless of water year type was almost entirely outside the optimal range for smallmouth bass spawning. The lowest percent of months outside the range was 92.3% and occurred in June of an above normal water year type under each alternative except the NAA and Alternative 1 (both of which were 100% outside the range). Combining water year types, the highest percent of months outside the range was 100% in May under the NAA and all alternatives. The lowest percent of months outside the range was 96% in June under Alternative 4.

Table L.1-15. Percent (difference in percent relative to NAA) of months outside the 55°F - 70°F water temperature optimal range for smallmouth bass spawning by water year type and month, and for all years combined, Sacramento River at Hamilton City, May - July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	10.7 (10.7%)	0.0 (0.0%)
W	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
AN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	7	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	7	0.0	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	6.3 (6.3%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	4.0 (4.0%)	0.0 (0.0%)
All	7	0.0	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	1.0 (1.0%)
W	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.6 (3.6%)	0.0 (0.0%)
AN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	2.6 (2.6%)	0.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	2.1 (2.1%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	2.1 (2.1%)
All	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.3 (0.3%)	0.0 (0.0%)	0.0 (0.0%)	1.3 (1.3%)	0.3 (0.3%)

Table L.1-16. Percent (difference in percent relative to NAA) of months outside the 55°F - 70°F water temperature optimal range for smallmouth bass spawning by water year type and month, and for all years combined, Clear Creek below Whiskeytown, May - July.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	92.9	100.0 (7.1%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	96.4 (3.6%)	89.3 (-3.6%)
W	7	96.4	100.0 (3.6%)	96.4 (0.0%)	96.4 (0.0%)	92.9 (-3.6%)	96.4 (0.0%)	100.0 (3.6%)	96.4 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)	92.3 (-7.7%)
AN	7	92.3	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)	100.0 (7.7%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	98.0	100.0 (2.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	98.0 (0.0%)	97.0 (-1.0%)	96.0 (-2.0%)
All	7	98.0	100.0 (2.0%)	99.0 (1.0%)	99.0 (1.0%)	97.0 (-1.0%)	99.0 (1.0%)	100.0 (2.0%)	99.0 (1.0%)
W	All	96.4	100.0 (3.6%)	97.6 (1.2%)	97.6 (1.2%)	96.4 (0.0%)	97.6 (1.2%)	98.8 (2.4%)	95.2 (-1.2%)
AN	All	97.4	100.0 (2.6%)	97.4 (0.0%)	97.4 (0.0%)	97.4 (0.0%)	97.4 (0.0%)	97.4 (0.0%)	97.4 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	98.1 (-1.9%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	97.9 (-2.1%)	100.0 (0.0%)
All	All	98.7	100.0 (1.3%)	99.0 (0.3%)	99.0 (0.3%)	98.3 (-0.3%)	99.0 (0.3%)	99.0 (0.3%)	98.3 (-0.3%)

L.1.3.18.2 Non-Spawning Adult

Water temperature related effects on non-spawning adult smallmouth bass were evaluated by assessing: (1) the percent of months with water temperature above the 66°F lower end of observed summer-time range (Moyle 2002); and (2) the percent of months with water temperature outside the 77°F - 80°F optimal range for growth (Moyle 2002) in the Sacramento River at Hamilton City and in Clear Creek below Whiskeytown (Table L.1-2).

Results above the 66°F water temperature lower end of observed summer-time range of non-spawning adult smallmouth bass are presented in Table L.1-327 for Hamilton City, and Table L.1-328 for Clear Creek below Whiskeytown.

- At Hamilton City, the highest percent of months with water temperatures above the lower end of observed summer-time range of non-spawning adult smallmouth bass was 100% and occurred in July and August during an above normal water year type under the NAA and all alternatives (Table L.1-327). The lowest percent of months with water temperature above the lower end was 25% and occurred during August of a critical water year under the NAA and Alternative 4. Combining water year types, the highest percent of months with water temperature above the limit was in July and the lowest was in June.
- At Clear Creek below Whiskeytown, the highest percent of months with water temperatures above the lower end of observed summer-time range was 100% which generally occurred during all months of each water year type under the NAA and all alternatives except July through August during a critical water year (Table L.1-328). During a critical water year type, July through August ranged between 87.5% to 100% outside the range. The lowest percent of months above the lower end of the range occurred during August of a critical water year type under Alternative 2 without TUCP Delta VA, Alternative 2 without TUCP Systemwide VAs, and Alternative 4. Combining water year types, the highest percent of months above the lower end occurred in June and July, and the lowest was in August.

Results outside the 77°F - 80°F water temperature optimal range for growth of non-spawning adult smallmouth bass are presented in Table L.1-329 for Hamilton City, and Table L.1-330 for Clear Creek below Whiskeytown.

- At Hamilton City water temperatures were outside the optimal range for growth of non-spawning adult smallmouth bass during all months of each water year type under the NAA and all alternatives (Table L.1-329).
- In Clear Creek below Whiskeytown, the highest percent of months with water temperatures outside the optimal range for growth of non-spawning adult smallmouth bass was 100% and occurred during all months of each water year type, under the NAA and all alternatives except September of a below normal and critically dry water year (Table L.1-330). The lowest percent of months with water temperatures outside the range was 87.5% which occurred during September of a critical water year type under Alternative 2 without TUCP without VA. Combining water year types, the highest percent of months outside the range was 100% and occurred during each month except September. September was between 97-99% outside the range.

Table L.1-17. Percent (difference in percent relative to NAA) of months above the 66°F water temperature lower end of observed summer-time range of non-spawning adult smallmouth bass by water year type and month, and for all years combined, Sacramento River at Hamilton City, June - August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	6	57.1	75.0 (17.9%)	64.3 (7.1%)	64.3 (7.1%)	64.3 (7.1%)	64.3 (7.1%)	28.6 (-28.6%)	60.7 (3.6%)
W	7	92.9	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	85.7 (-7.1%)	96.4 (3.6%)
W	8	92.9	89.3 (-3.6%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	92.9 (0.0%)	85.7 (-7.1%)	85.7 (-7.1%)
AN	6	61.5	100.0 (38.5%)	84.6 (23.1%)	84.6 (23.1%)	84.6 (23.1%)	61.5 (0.0%)	53.8 (-7.7%)	76.9 (15.4%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	66.7	72.2 (5.6%)	72.2 (5.6%)	77.8 (11.1%)	72.2 (5.6%)	66.7 (0.0%)	61.1 (-5.6%)	72.2 (5.6%)
BN	7	94.4	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	83.3 (-11.1%)	94.4 (0.0%)
BN	8	100.0	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	94.4 (-5.6%)	100.0 (0.0%)	100.0 (0.0%)
D	6	83.3	87.5 (4.2%)	91.7 (8.3%)	91.7 (8.3%)	91.7 (8.3%)	79.2 (-4.2%)	87.5 (4.2%)	87.5 (4.2%)
D	7	91.7	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	100.0 (8.3%)	100.0 (8.3%)
D	8	91.7	91.7 (0.0%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	95.8 (4.2%)	91.7 (0.0%)
C	6	62.5	68.8 (6.3%)	62.5 (0.0%)	68.8 (6.3%)	62.5 (0.0%)	62.5 (0.0%)	62.5 (0.0%)	43.8 (-18.8%)
C	7	37.5	62.5 (25.0%)	50.0 (12.5%)	43.8 (6.3%)	50.0 (12.5%)	50.0 (12.5%)	50.0 (12.5%)	31.3 (-6.3%)
C	8	25.0	31.3 (6.3%)	31.3 (6.3%)	37.5 (12.5%)	31.3 (6.3%)	37.5 (12.5%)	43.8 (18.8%)	25.0 (0.0%)
All	6	66.7	79.8 (13.1%)	74.7 (8.1%)	76.8 (10.1%)	74.7 (8.1%)	67.7 (1.0%)	57.6 (-9.1%)	68.7 (2.0%)
All	7	84.8	89.9 (5.1%)	87.9 (3.0%)	86.9 (2.0%)	87.9 (3.0%)	87.9 (3.0%)	84.8 (0.0%)	86.9 (2.0%)
All	8	83.8	82.8 (-1.0%)	84.8 (1.0%)	85.9 (2.0%)	84.8 (1.0%)	85.9 (2.0%)	85.9 (2.0%)	81.8 (-2.0%)
W	All	81.0	85.7 (4.8%)	83.3 (2.4%)	83.3 (2.4%)	83.3 (2.4%)	83.3 (2.4%)	66.7 (-14.3%)	81.0 (0.0%)
AN	All	87.2	100.0 (12.8%)	94.9 (7.7%)	94.9 (7.7%)	94.9 (7.7%)	87.2 (0.0%)	84.6 (-2.6%)	92.3 (5.1%)
BN	All	87.0	87.0 (0.0%)	87.0 (0.0%)	88.9 (1.9%)	87.0 (0.0%)	85.2 (-1.9%)	81.5 (-5.6%)	88.9 (1.9%)
D	All	88.9	91.7 (2.8%)	94.4 (5.6%)	94.4 (5.6%)	94.4 (5.6%)	90.3 (1.4%)	94.4 (5.6%)	93.1 (4.2%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	All	41.7	54.2 (12.5%)	47.9 (6.3%)	50.0 (8.3%)	47.9 (6.3%)	50.0 (8.3%)	52.1 (10.4%)	33.3 (-8.3%)
All	All	78.5	84.2 (5.7%)	82.5 (4.0%)	83.2 (4.7%)	82.5 (4.0%)	80.5 (2.0%)	76.1 (-2.4%)	79.1 (0.7%)

Table L.1-18. Percent (difference in percent relative to NAA) of months above the 66°F water temperature lower end of observed summer-time range of non-spawning adult smallmouth bass by water year type and month, and for all years combined, Sacramento River at Clear Creek below Whiskeytown, June - August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	100.0 (0.0%)	100.0 (0.0%)	93.8 (-6.3%)	93.8 (-6.3%)
C	8	93.8	93.8 (0.0%)	93.8 (0.0%)	93.8 (0.0%)	87.5 (-6.3%)	87.5 (-6.3%)	93.8 (0.0%)	87.5 (-6.3%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	8	99.0	99.0 (0.0%)	99.0 (0.0%)	99.0 (0.0%)	98.0 (-1.0%)	98.0 (-1.0%)	99.0 (0.0%)	98.0 (-1.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	97.9	97.9 (0.0%)	97.9 (0.0%)	95.8 (-2.1%)	95.8 (-2.1%)	95.8 (-2.1%)	95.8 (-2.1%)	93.8 (-4.2%)
All	All	99.7	99.7 (0.0%)	99.7 (0.0%)	99.3 (-0.3%)	99.3 (-0.3%)	99.3 (-0.3%)	99.3 (-0.3%)	99.0 (-0.7%)

Table L.1-19. Percent (difference in percent relative to NAA) of months outside the 77°F - 80°F water temperature optimal range for growth of non-spawning adult smallmouth bass by water year type and month, and for all years combined, Sacramento River at Hamilton City, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

Table L.1-20. Percent (difference in percent relative to NAA) of months outside the 77°F - 80°F water temperature optimal range for growth of non-spawning adult smallmouth bass by water year type and month, and for all years combined, Clear Creek below Whiskeytown, year-round.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	9	94.4	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	94.4 (0.0%)	100.0 (5.6%)	94.4 (0.0%)
BN	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	9	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
C	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	9	100.0	100.0 (0.0%)	100.0 (0.0%)	87.5 (-12.5%)	93.8 (-6.3%)	93.8 (-6.3%)	93.8 (-6.3%)	93.8 (-6.3%)
C	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	1	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	2	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	3	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	4	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	5	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	9	99.0	99.0 (0.0%)	99.0 (0.0%)	97.0 (-2.0%)	98.0 (-1.0%)	98.0 (-1.0%)	99.0 (0.0%)	98.0 (-1.0%)
All	10	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	11	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	12	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	All	99.5	99.5 (0.0%)	99.5 (0.0%)	99.5 (0.0%)	99.5 (0.0%)	99.5 (0.0%)	100.0 (0.5%)	100.0 (0.5%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	100.0 (0.0%)	100.0 (0.0%)	98.9 (-1.1%)	99.5 (-0.5%)	99.5 (-0.5%)	99.5 (-0.5%)	100.0 (0.0%)
All	All	99.9	99.9 (0.0%)	99.9 (0.0%)	99.7 (-0.2%)	99.8 (-0.1%)	99.8 (-0.1%)	99.9 (0.0%)	99.8 (-0.1%)

L.1.3.19 Spotted Bass

L.1.3.19.1 Spawning

Water temperature related effects on spotted bass spawning in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 58.1°F – 73.4°F (Aasen and Henry 1981) at Butte City (Table L.1-2).

Results outside the 58.1°F – 73.4°F water temperature optimal range for spotted bass spawning are presented in Table L.1-331 for Butte City.

- At Butte City, the highest percent of months with water temperatures outside the range was 53.6% and occurred during April of a wet water year type under Alternative 3 (Table L.1-331). The lowest percent of months with water temperatures outside the range was 0% and occurred during May of each water year type under the NAA and all alternatives. Combining water year types, the highest percent of months with water temperatures outside the range was in April and the lowest percent was in May.

Table L.1-21. Percent (difference in percent relative to NAA) of months outside the 58.1°F – 73.4°F water temperature for spotted bass spawning by water year type and month, and for all years combined, Sacramento River at Butte City, April - June.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	4	46.4	42.9 (-3.6%)	46.4 (0.0%)	46.4 (0.0%)	46.4 (0.0%)	46.4 (0.0%)	53.6 (7.1%)	50.0 (3.6%)
W	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
W	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.1 (7.1%)	0.0 (0.0%)
AN	4	15.4	15.4 (0.0%)	15.4 (0.0%)	15.4 (0.0%)	15.4 (0.0%)	23.1 (7.7%)	15.4 (0.0%)	15.4 (0.0%)
AN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
AN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	7.7 (7.7%)	0.0 (0.0%)
BN	4	11.1	5.6 (-5.6%)	5.6 (-5.6%)	5.6 (-5.6%)	11.1 (0.0%)	11.1 (0.0%)	5.6 (-5.6%)	11.1 (0.0%)
BN	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
BN	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	4	8.3	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	8.3 (0.0%)	4.2 (-4.2%)	8.3 (0.0%)	8.3 (0.0%)
D	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
D	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	4	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
C	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	4	19.2	17.2 (-2.0%)	18.2 (-1.0%)	18.2 (-1.0%)	19.2 (0.0%)	19.2 (0.0%)	20.2 (1.0%)	20.2 (1.0%)
All	5	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	6	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	3.0 (3.0%)	0.0 (0.0%)
W	All	15.5	14.3 (-1.2%)	15.5 (0.0%)	15.5 (0.0%)	15.5 (0.0%)	15.5 (0.0%)	20.2 (4.8%)	16.7 (1.2%)
AN	All	5.1	5.1 (0.0%)	5.1 (0.0%)	5.1 (0.0%)	5.1 (0.0%)	7.7 (2.6%)	7.7 (2.6%)	5.1 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	3.7	1.9 (-1.9%)	1.9 (-1.9%)	1.9 (-1.9%)	3.7 (0.0%)	3.7 (0.0%)	1.9 (-1.9%)	3.7 (0.0%)
D	All	2.8	2.8 (0.0%)	2.8 (0.0%)	2.8 (0.0%)	2.8 (0.0%)	1.4 (-1.4%)	2.8 (0.0%)	2.8 (0.0%)
C	All	0.0	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
All	All	6.4	5.7 (-0.7%)	6.1 (-0.3%)	6.1 (-0.3%)	6.4 (0.0%)	6.4 (0.0%)	7.7 (1.3%)	6.7 (0.3%)

L.1.3.19.2 Non-Spawning Adult

Water temperature related effects on non-spawning adult spotted bass in the Sacramento River were evaluated by assessing the percent of months with water temperature outside the 75°F - 87°F preferred summer-time range (Moyle 2002) at Butte City (Table L.1-2).

Results outside the 75°F - 87°F water temperature preferred summertime range for non-spawning adult spotted bass are presented in Table L.1-332 for Butte City.

- At Butte City, the highest percent of months with water temperatures outside the range was 100% and occurred during June and July of each water year types under the NAA and all alternatives (Table L.1-332). The lowest percent of months outside the range was 81.3% in August of a critical water year type under Alternative 1. Combining water year types, the highest percent of months outside the range occurred in June and July and the lowest occurred in August.

Table L.1-22. Percent (difference in percent relative to NAA) of months outside the 75°F - 87°F water temperature preferred summer-time range for non-spawning adult spotted bass by water year type and month, and for all years combined, Sacramento River at Butte City, June through August.

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
W	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
W	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
BN	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	8	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	8	100.0	81.3 (-18.8%)	93.8 (-6.3%)	100.0 (0.0%)	93.8 (-6.3%)	93.8 (-6.3%)	100.0 (0.0%)	100.0 (0.0%)
All	6	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	7	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
All	8	100.0	97.0 (-3.0%)	99.0 (-1.0%)	100.0 (0.0%)	99.0 (-1.0%)	99.0 (-1.0%)	100.0 (0.0%)	100.0 (0.0%)
W	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
AN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)

WYT	Month	NAA	Alt1	Alt2wTUCP woVA	Alt2woTUCP woVA	Alt2woTUCP DeltaVA	Alt2woTUCP AllVA	Alt3	Alt4
BN	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
D	All	100.0	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)	100.0 (0.0%)
C	All	100.0	93.8 (-6.3%)	97.9 (-2.1%)	100.0 (0.0%)	97.9 (-2.1%)	97.9 (-2.1%)	100.0 (0.0%)	100.0 (0.0%)
All	All	100.0	99.0 (-1.0%)	99.7 (-0.3%)	100.0 (0.0%)	99.7 (-0.3%)	99.7 (-0.3%)	100.0 (0.0%)	100.0 (0.0%)

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