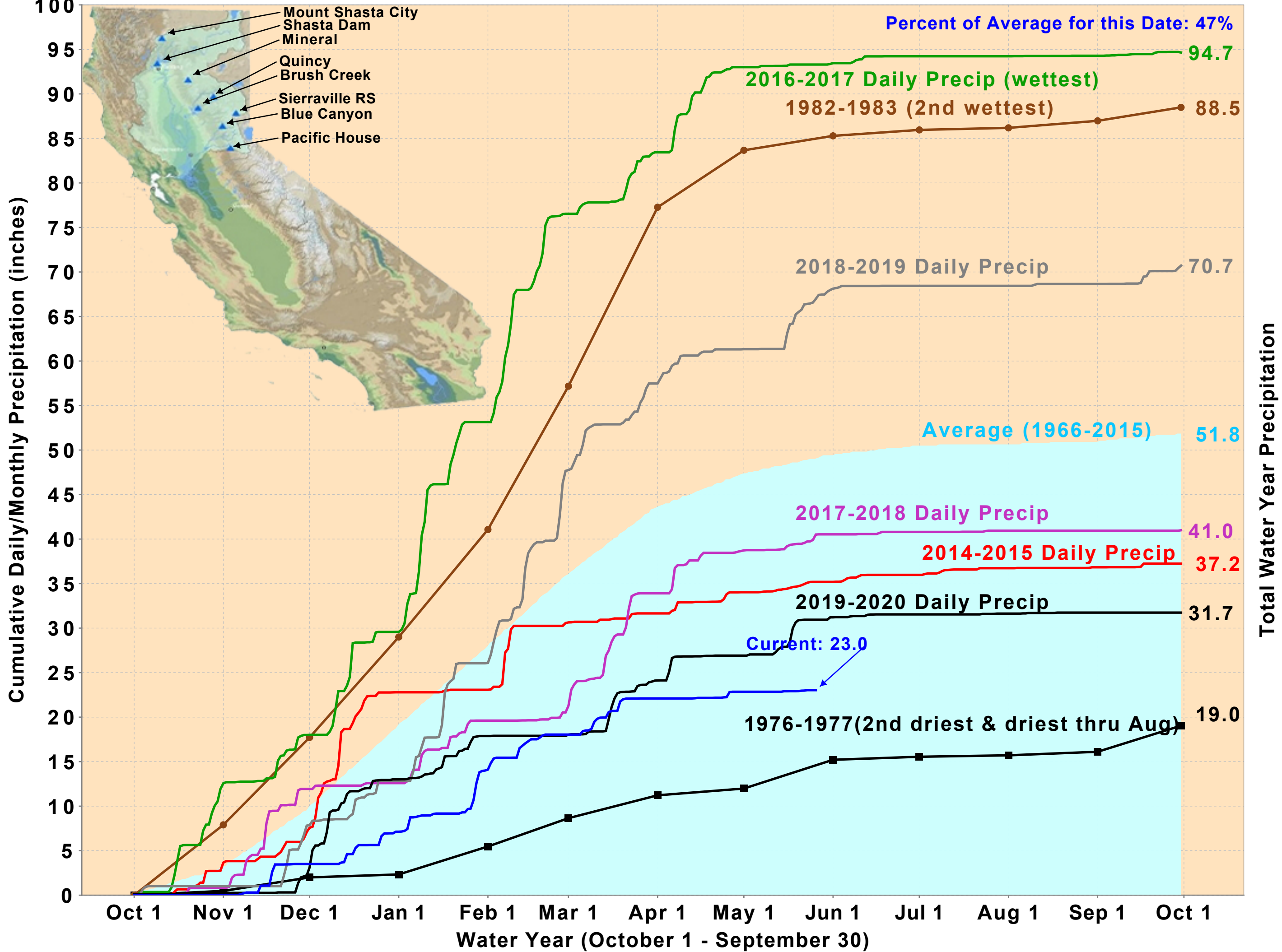
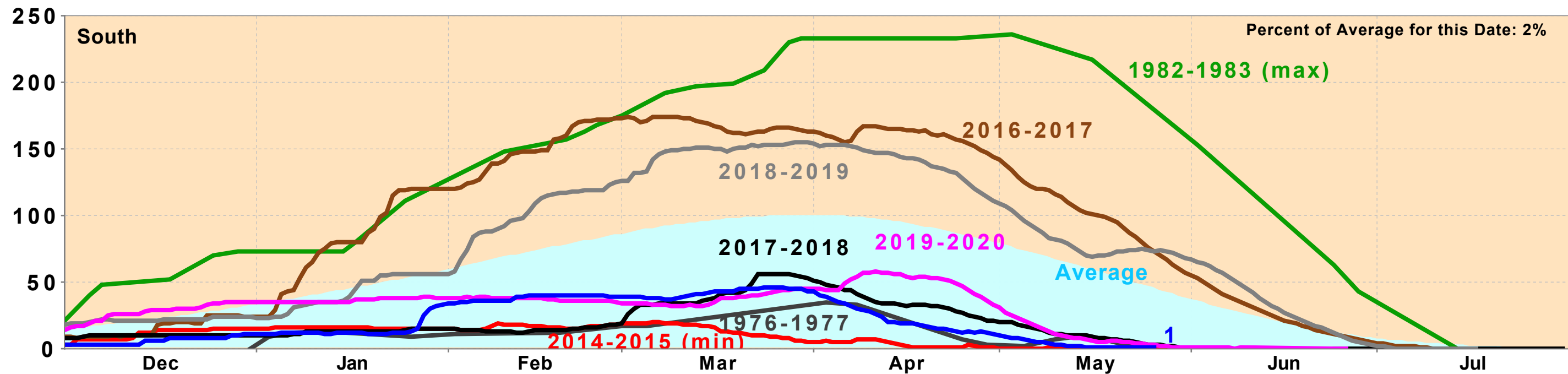
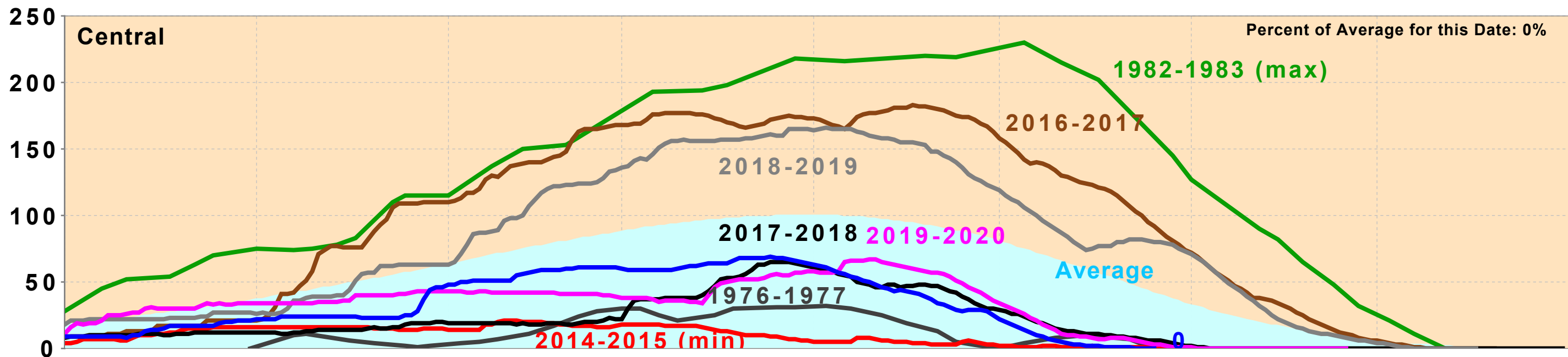
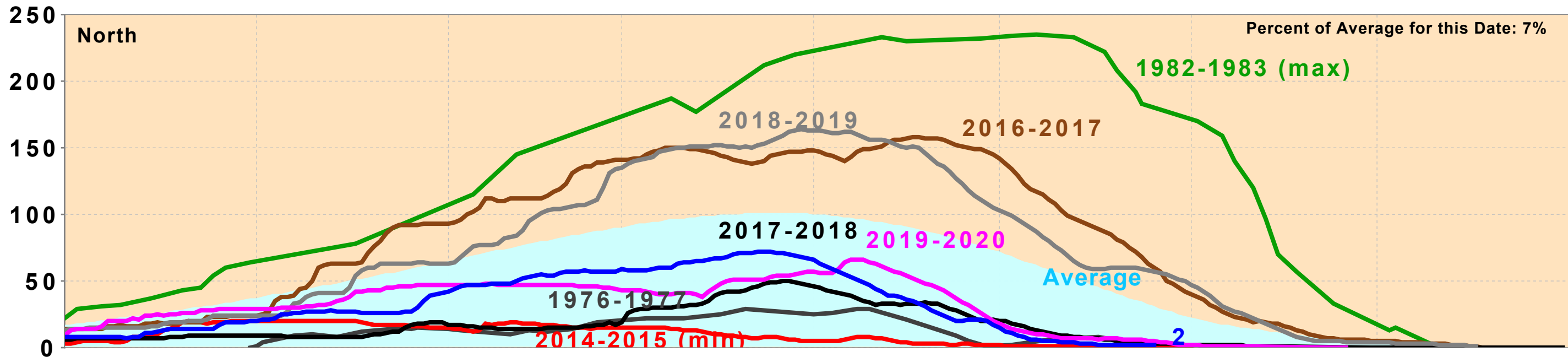


# Northern Sierra Precipitation: 8-Station Index, May 26, 2021



# California Snow Water Content, May 26, 2021, Percent of April 1 Average



Statewide Percent of April 1: 1%

Statewide Percent of Average for Date: 3%

UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

**DAILY CVP WATER SUPPLY REPORT**

MAY 25, 2021

RUN DATE: May 26, 2021

**RESERVOIR RELEASES IN CUBIC FEET/SECOND**

RESERVOIR	DAM	WY 2020	WY 2021	15 YR MEDIAN
TRINITY	LEWISTON	862	1,309	1,988
SACRAMENTO	KESWICK	7,907	8,530	9,188
FEATHER	OROVILLE (SWP)	2,050	2,050	2,050
AMERICAN	NIMBUS	1,189	1,016	2,000
STANISLAUS	GOODWIN	1,501	601	822
SAN JOAQUIN	FRIANT	500	400	452

**STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET**

RESERVOIR	CAPACITY	15 YR AVG	WY 2020	WY 2021	% OF 15 YR AVG
TRINITY	2,448	1,764	1,876	1,274	72
SHASTA	4,552	3,584	3,568	2,032	57
FOLSOM	977	771	775	366	47
NEW MELONES	2,420	1,485	1,858	1,380	93
FED. SAN LUIS	966	555	448	313	56
TOTAL NORTH CVP	11,363	8,159	8,525	5,365	66
MILLERTON	520	356	439	261	73
OROVILLE (SWP)	3,538	2,539	2,449	1,373	54

**ACCUMULATED INFLOW FOR WATER YEAR TO DATE IN THOUSANDS OF ACRE-FEET**

RESERVOIR	CURRENT WY 2021	WY 1977	WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	310	154	1,848	858	36
SHASTA	1,848	1,772	8,995	3,829	48
FOLSOM	642	263	4,817	1,867	34
NEW MELONES	273	----	1,556	661	41
MILLERTON	377	126	2,314	812	46

**ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES**

RESERVOIR	CURRENT WY 2021	WY 1977	WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	16.21	12.40	54.59	29.96 ( 59)	54	0.00
SACRAMENTO AT SHASTA DAM	23.52	16.10	112.07	58.68 ( 64)	40	0.00
AMERICAN AT BLUE CANYON	31.59	15.64	103.28	63.62 ( 46)	50	0.00
STANISLAUS AT NEW MELONES	16.78	----	45.33	26.53 ( 43)	63	0.00
SAN JOAQUIN AT HUNTINGTON LK	17.60	16.30	80.80	39.64 ( 46)	44	0.00

DATE	Mean Daily Water Temperatures (°F)														Mean Daily Release (CFS)			Mean Daily Air Temperatures (°F)			
	TCD <sup>1</sup>	SHD	SPP <sup>1</sup>	KWK	SAC <sup>2</sup>	CCR <sup>2</sup>	BSF	JLF	BND	RDB	IGO <sup>3</sup>	LWS	DGC	NFH	Shasta Generation	Spring Creek P.P.	Keswick Total	RDD	BSF	RDB	
Apr	50.2	52.3	50.1	52.8	53.4	54.0	55.6	56.6	57.4	57.9	51.4	50.3	53.9	53.3	3024	142	5927	62.2	60.6	62.4	
05/01	49.5	57.3	51.0	57.9	58.3	58.8	60.4	61.3	61.9	62.8	52.8	49.4	52.0	54.3	29	77	7472	68.5	68.6	68.6	
05/02	49.6	58.4	51.0	58.1	58.4	58.9	60.3	61.2	61.9	62.8	52.7	49.8	52.4	54.3	25	77	7877	70.0	69.2	69.6	
05/03	49.3	59.1	51.0	58.8	58.9	59.3	60.3	61.0	61.6	62.3	52.7	50.5	52.7	54.6	31	77	7822	75.0	70.4	73.1	
05/04	49.4	58.9	51.1	59.7	59.9	60.5	61.6	62.3	62.8	63.2	53.1	50.2	53.1	55.2	29	77	7817	78.0	71.4	73.9	
05/05	49.4	58.8	51.2	59.8	60.2	60.8	62.1	63.0	63.6	64.4	53.1	50.1	53.1	55.1	29	53	7824	74.0	70.6	73.5	
05/06	50.9	57.7	51.5	59.9	60.1	60.7	62.1	63.1	63.7	64.7	53.1	50.0	53.0	54.9	818	38	8405	71.0	68.4	72.1	
05/07	52.0	58.7	51.6	58.8	59.4	59.8	61.3	62.2	62.9	63.8	52.7	50.2	52.6	53.7	784	39	8460	69.5	66.3	68.1	
05/08	51.6	59.5	51.6	59.1	59.1	59.3	59.9	60.4	60.9	61.9	51.6	50.4	52.6	54.0	776	38	8932	72.0	70.1	71.2	
05/09	52.6	60.1	51.7	60.0	60.1	60.6	60.9	61.5	61.9	62.0	51.3	50.2	52.7	54.6	819	37	8963	74.5	71.9	73.9	
05/10	51.4	60.3	51.9	60.4	60.5	60.9	61.1	61.6	62.1	62.8	51.3	50.5	52.8	54.8	670	37	8965	76.0	73.7	75.1	
05/11	51.2	57.0	51.8	60.7	61.0	61.6	62.0	62.6	63.0	63.5	51.4	50.4	53.1	55.4	3572	37	9018	77.5	71.0	74.1	
05/12	51.6	56.3	51.9	58.7	59.5	60.3	61.5	62.5	63.1	64.3	51.6	50.4	53.2	55.7	4001	37	9019	74.5	70.9	73.1	
05/13	52.1	56.8	51.9	57.3	58.0	58.5	60.3	61.6	62.3	63.8	52.5	50.5	53.6	55.9	4305	37	8827	76.0	72.8	75.3	
05/14	52.7	54.4	51.9	57.5	58.1	58.5	59.7	60.7	61.4	62.9	53.0	50.6	53.7	55.7	6314	60	8823	73.5	70.5	72.5	
05/15	52.6	?	54.7	51.6	55.6	56.4	56.8	58.8	60.0	60.9	62.1	53.2	50.8	53.9	6760	76	8737	72.0	68.8	67.1	
05/16	52.5	54.4	51.6	55.4	56.2	56.7	58.4	59.5	60.1	61.3	53.7	50.7	53.7	56.1	6222	84	8819	72.0	68.5	67.9	
05/17	52.6	54.4	51.6	55.5	56.1	56.6	58.5	59.7	60.5	61.8	53.9	50.5	54.0	56.5	6575	76	8815	71.0	68.5	67.6	
05/18	53.0	54.6	51.7	55.4	56.0	56.5	58.5	59.8	60.5	61.7	53.4	50.8	53.9	55.8	6510	81	8822	70.5	70.6	69.7	
05/19	53.1	54.9	51.6	55.6	55.9	56.2	57.8	58.9	59.6	60.9	52.9	51.0	53.6	54.6	6330	76	8700	66.0	63.6	65.5	
05/20	54.5	56.1	51.7	55.6	55.9	56.1	57.2	58.0	58.5	?	59.1	52.2	51.1	53.0	6648	76	8674	59.5	58.5	60.0	
05/21	54.6	54.2	51.2	56.3	56.3	56.5	57.4	58.0	58.4	58.9	52.6	51.2	52.6	53.6	7361	392	8838	60.5	59.5	62.0	
05/22	54.2	53.7	51.4	55.7	56.2	56.6	58.3	59.1	59.5	59.9	52.8	50.3	52.7	54.1	7377	419	8419	65.0	64.2	66.4	
05/23	54.2	53.0	51.6	55.2	55.9	56.4	58.2	59.1	59.7	60.7	53.5	49.8	52.4	54.5	7696	150	8524	68.5	66.3	65.9	
05/24	54.6	54.1	52.0	54.8	55.5	55.9	57.8	59.0	59.7	60.9	53.4	49.9	52.8	55.1	8071	85	8516	69.5	67.2	70.1	
05/25	54.6	53.3	51.9	55.3	55.8	56.2	57.8	59.0	59.8	61.0	53.7	50.3	53.1	55.8	8170	75	8530	69.5	68.0	71.1	
05/26																					
05/27																					
05/28																					
05/29																					
05/30																					
05/31																					
May	52.2	56.4	51.6	57.5	57.9	58.4	59.7	60.6	61.2	62.1	52.7	50.4	53.1	54.9	3997	92	8545	71.0	68.4	69.9	
															Total CFS	99922	2311	213618			
															Total AF	198191	4584	423703			

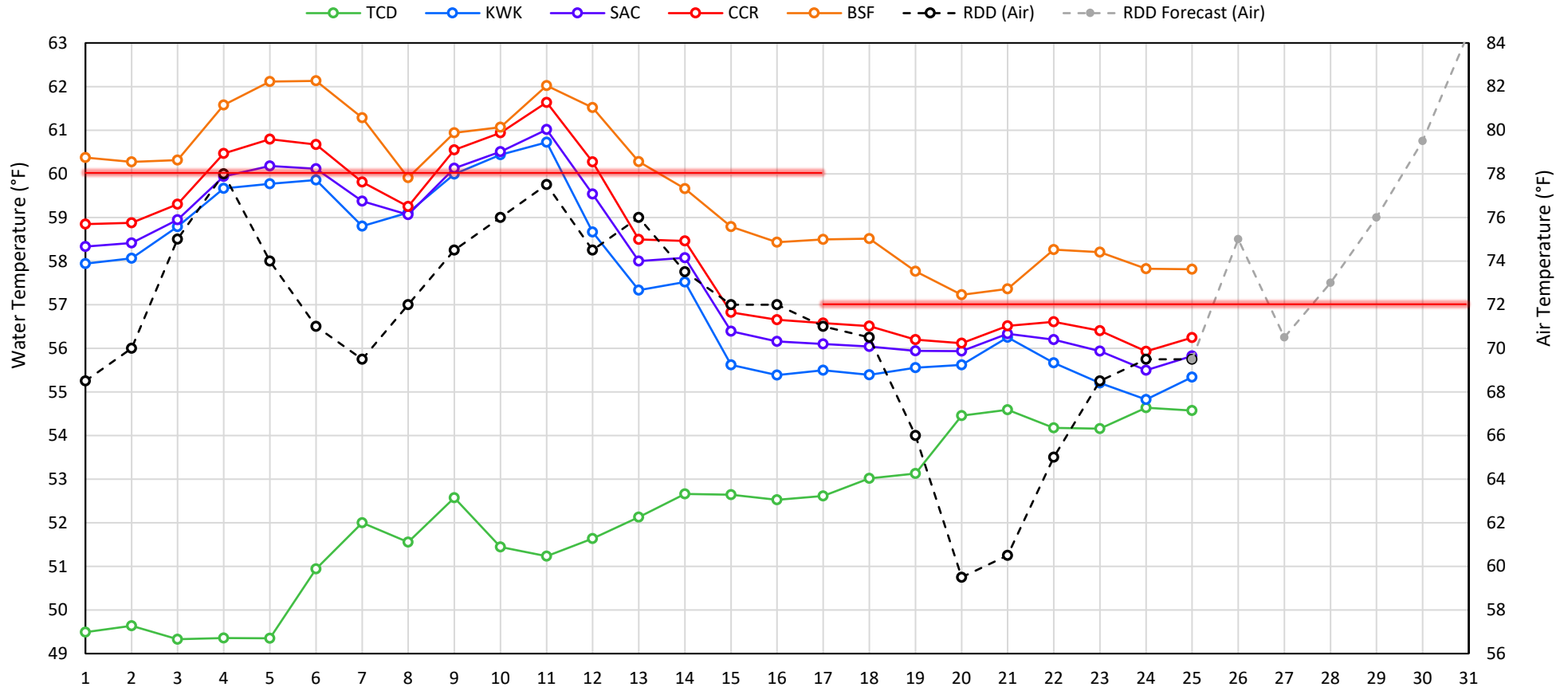
Legend

- ? = 1-9 hours of data missing (Average includes estimations)
- ! = 10 or more hours of data missing (Average not calculated)
- # = Station out of service
- ↑ = Record high air temperature
- ↓ = Record low air temperature
- = Monthly Averages

Notes

- <sup>1</sup> Temperatures are weighted averages based on individual penstock flow and temperature
- Highlighted cells in the TCD column indicate a TCD change was made on that day
- <sup>2</sup> Current Sacramento River control point (see page 4 for more details)

## Mean Daily Temperatures



### Station Details

Code	Body of Water	Location <sup>1</sup>	CDEC Link
TCD	N/A	Shasta Power Plant	N/A
SHD	Sacramento River	0.3 miles downstream of Shasta Power Plant	<a href="#">Click Here</a>
SPP	N/A	Spring Creek Power Plant	N/A
KWK	Sacramento River	0.8 miles downstream of Keswick Dam	<a href="#">Click Here</a>
SAC	Sacramento River	4.8 miles downstream of Keswick Dam	<a href="#">Click Here</a>
CCR	Sacramento River	9.7 miles downstream of Keswick Dam	<a href="#">Click Here</a>
BSF	Sacramento River	25 miles downstream of Keswick Dam	<a href="#">Click Here</a>
JLF	Sacramento River	34 miles downstream of Keswick Dam	<a href="#">Click Here</a>
BND	Sacramento River	41 miles downstream of Keswick Dam	<a href="#">Click Here</a>
RDB	Sacramento River	58 miles downstream of Keswick Dam	<a href="#">Click Here</a>
IGO	Clear Creek	7.3 miles downstream of Whiskeytown Dam	<a href="#">Click Here</a>
LWS	Trinity River	1.1 miles downstream of Lewiston Dam	<a href="#">Click Here</a>
DGC	Trinity River	19 miles downstream of Lewiston Dam	<a href="#">Click Here</a>
NFH	Trinity River	38 miles downstream of Lewiston Dam	<a href="#">Click Here</a>

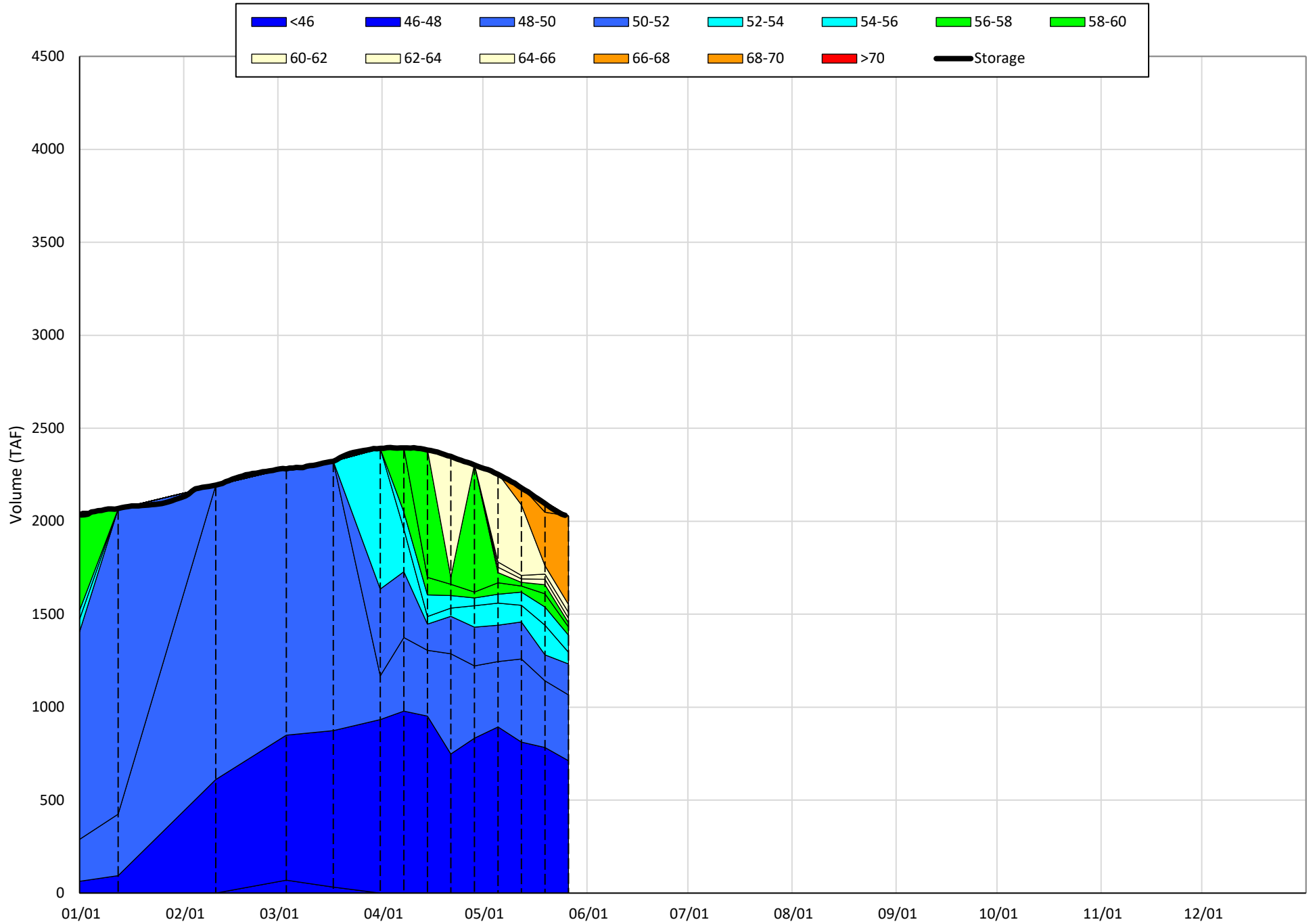
### Water Right Temperature Control Points

River	Point	Temp. (°F)	Begin Date	End Date
Sacramento	CCR	56	09/21/2020	04/18/2021
Sacramento	CCR	60	04/18/2021	05/17/2021
Sacramento	SAC	57	05/17/2021	TBD
Trinity	DGC	56	09/15/2021	10/01/2021
Trinity	NFH	56	10/01/2021	12/31/2021

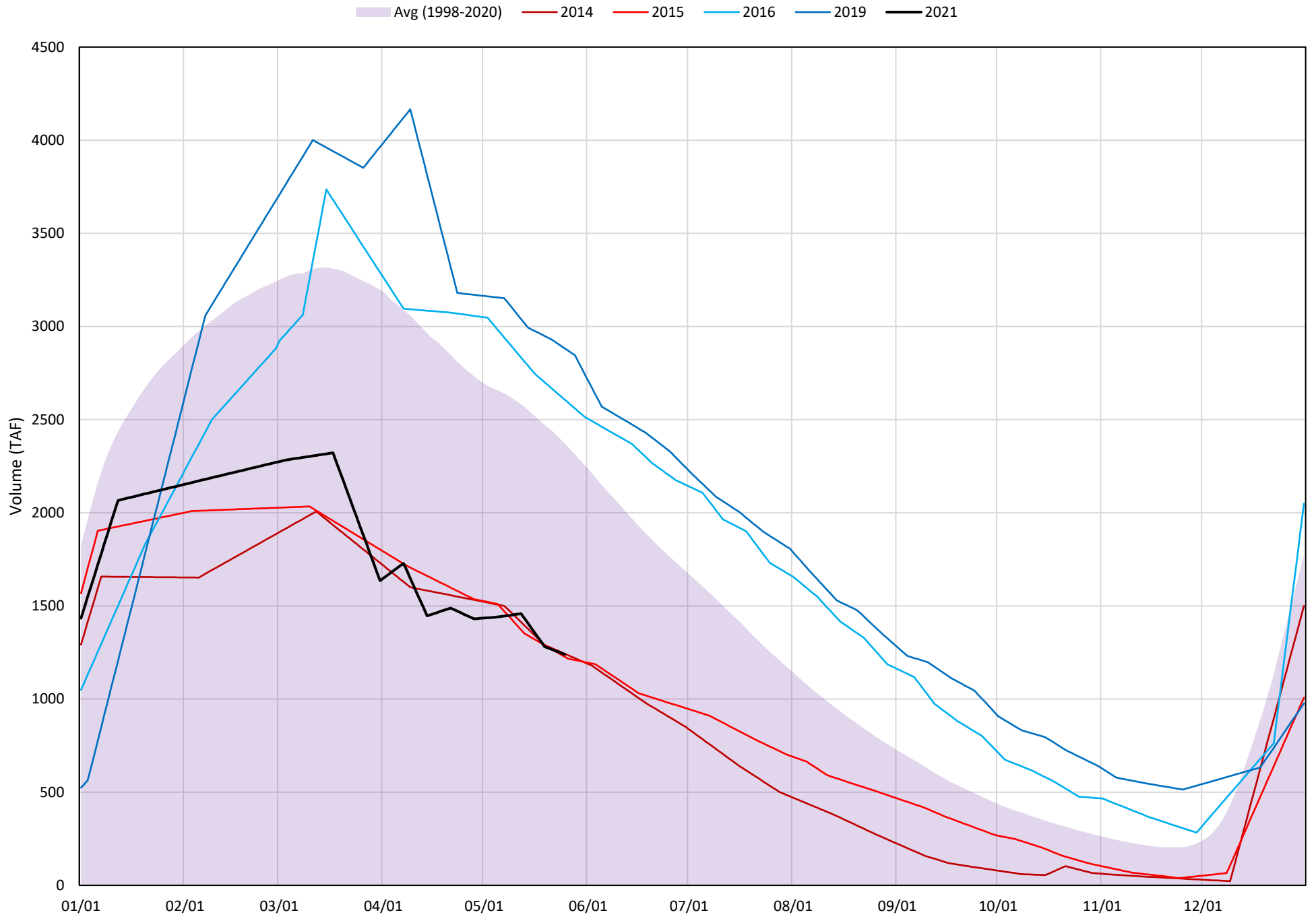
### Notes

<sup>1</sup> Distances are approximate

### Shasta Lake Isothermobaths Plot - 2021

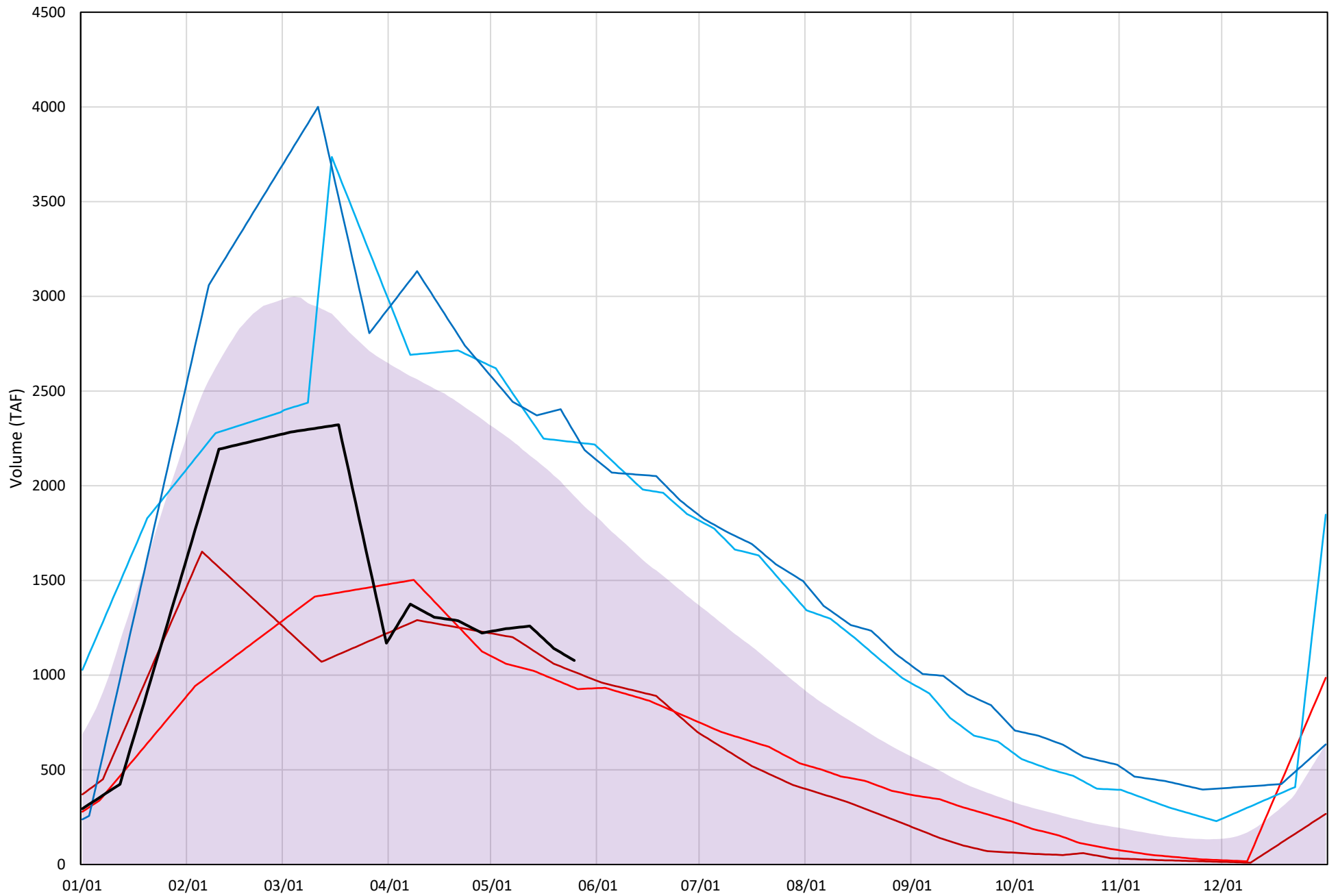


# Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$



# Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$

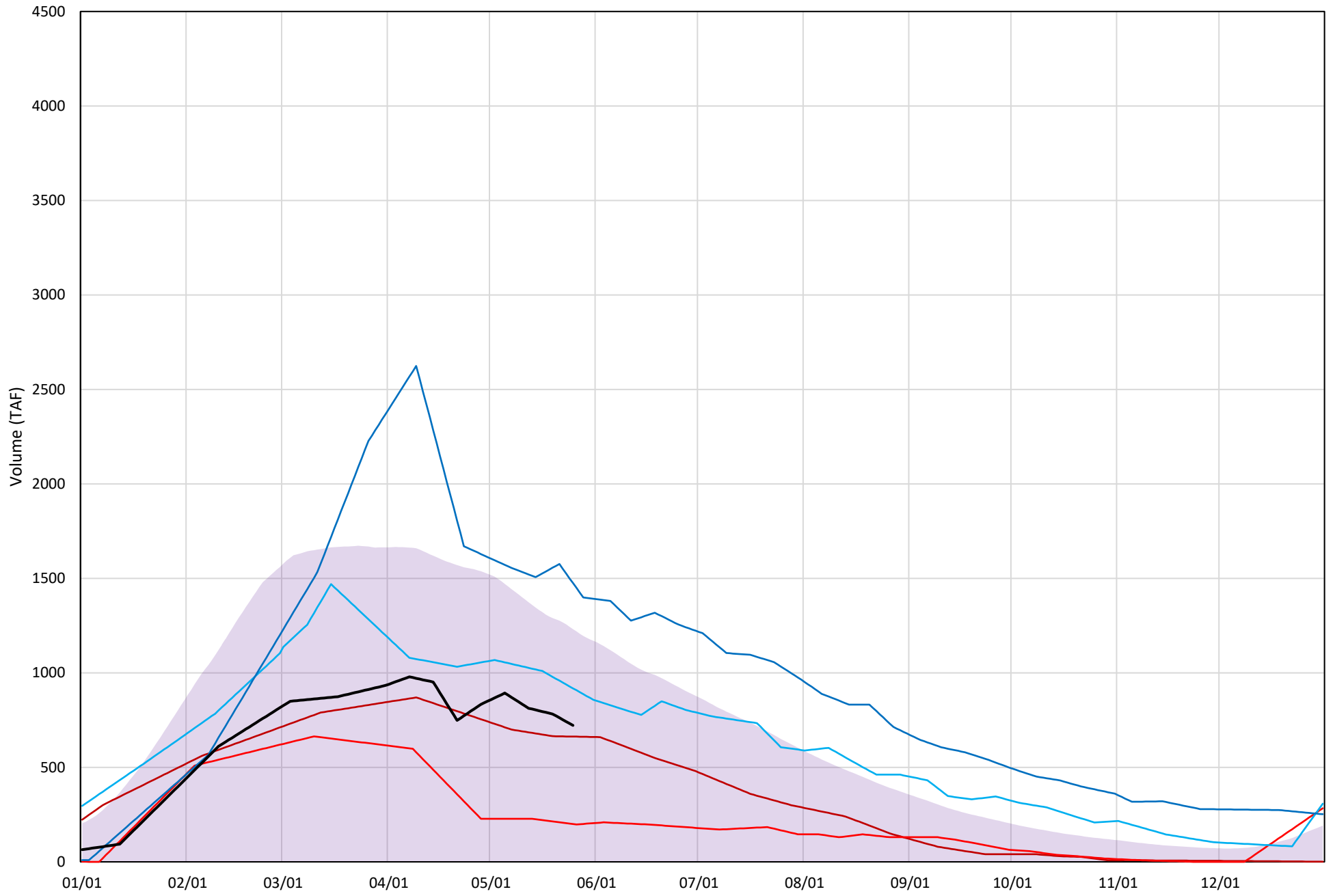
Avg (1998-2020) 2014 2015 2016 2019 2021





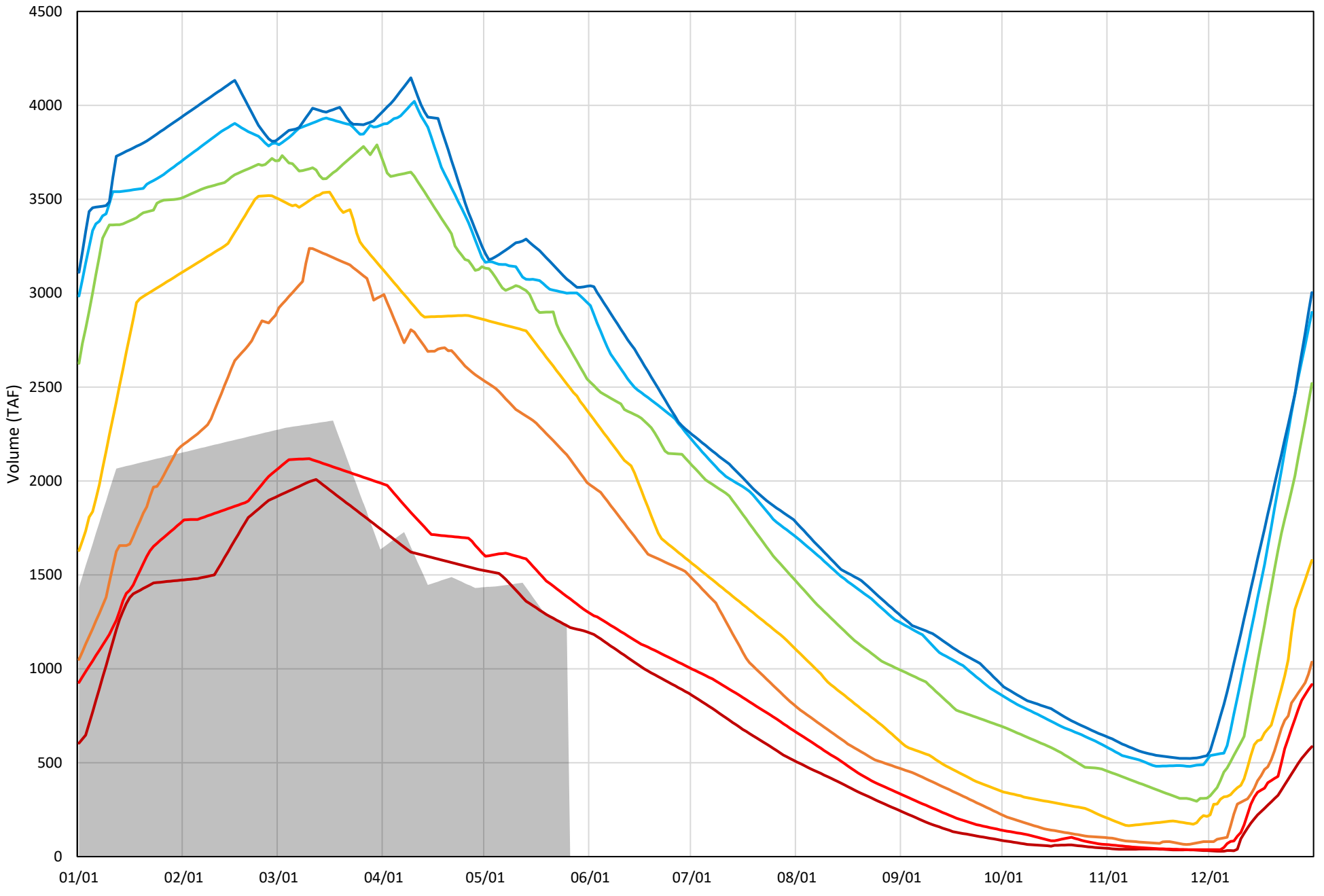
# Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

Avg (1998-2020) 2014 2015 2016 2019 2021



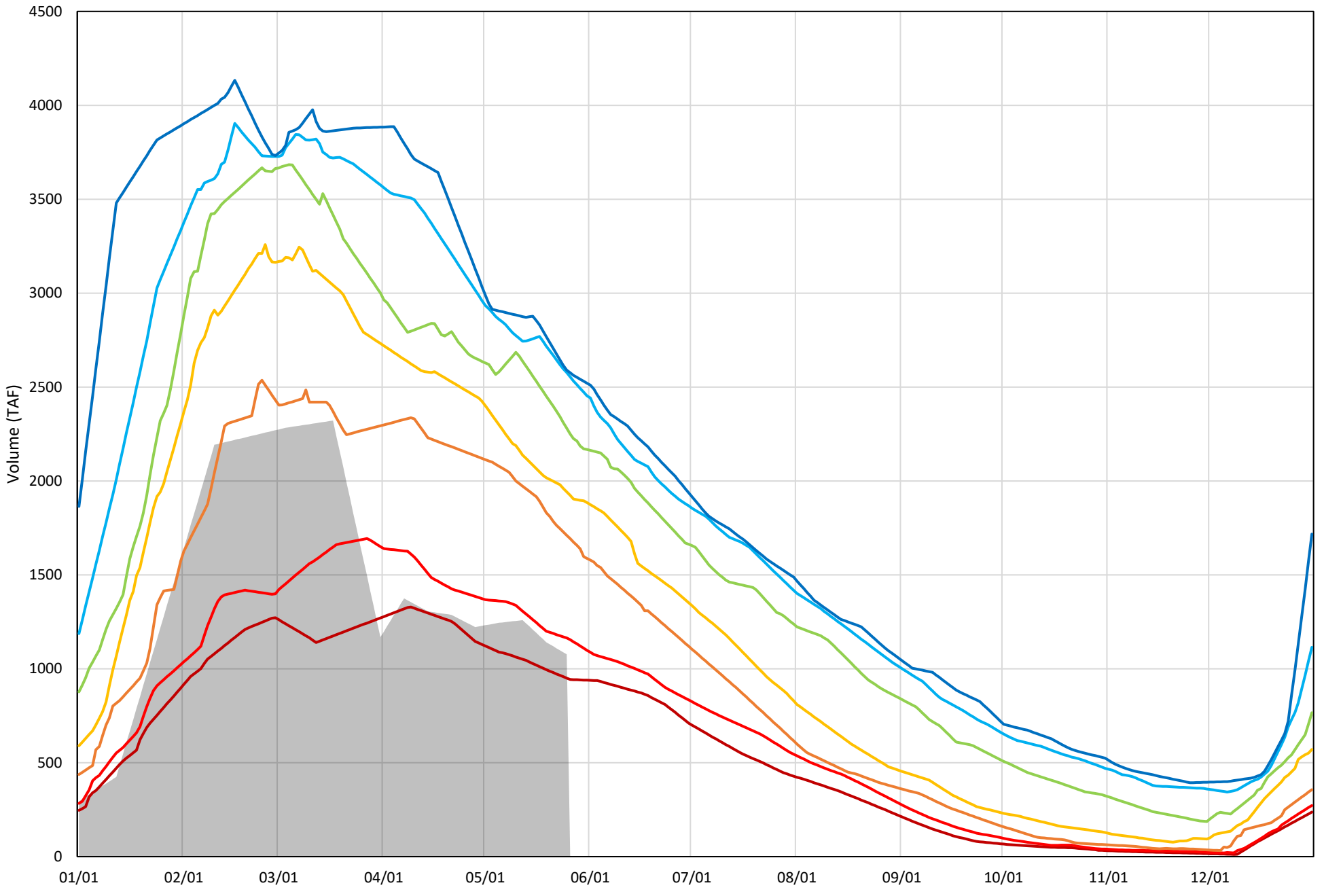
Shasta Lake Cold Water Pool Volume  $\leq 52^{\circ}\text{F}$  - Percent Exceedances (1998-2020)

2021 95 90 75 50 25 10 5



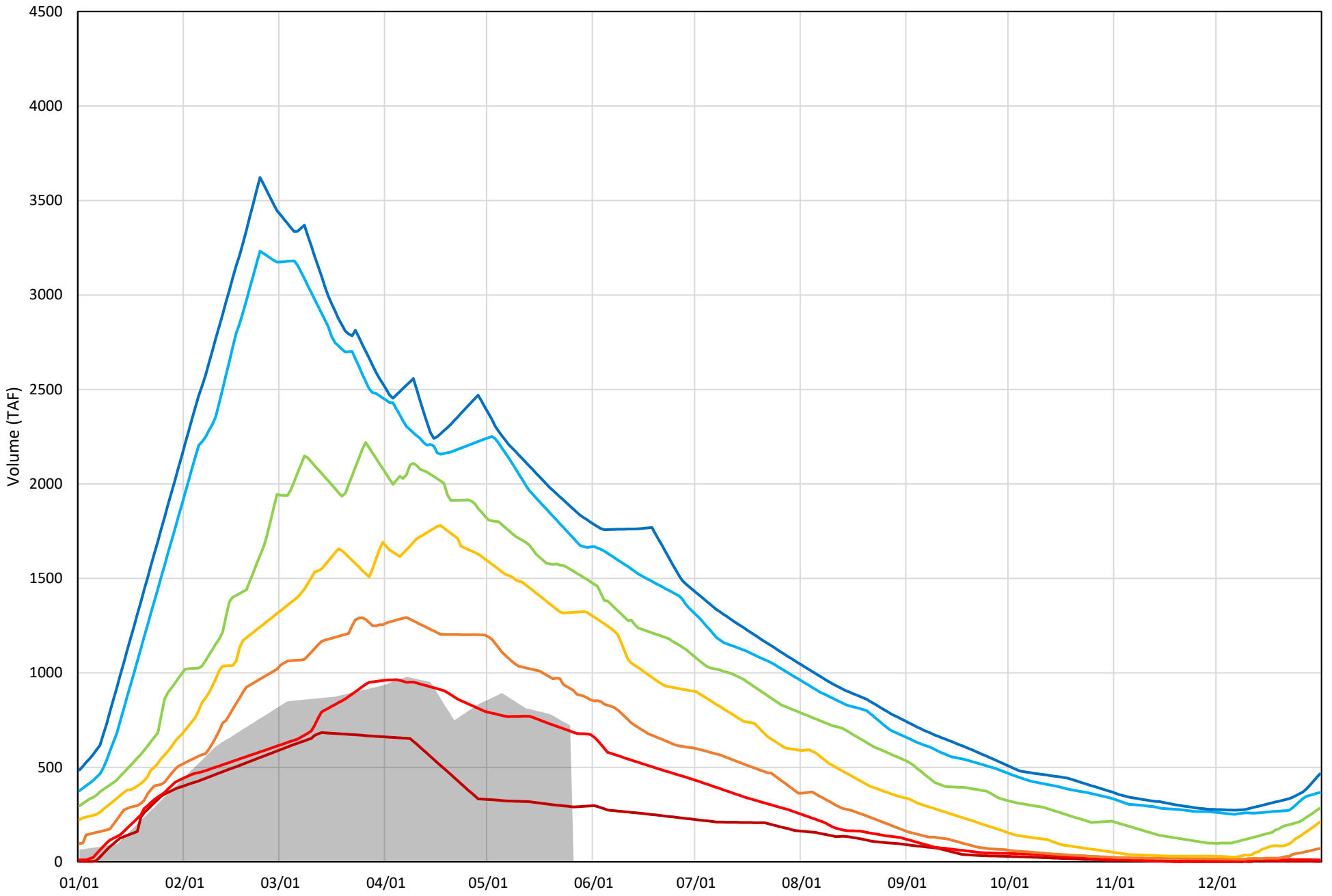
Shasta Lake Cold Water Pool Volume  $\leq 50^{\circ}\text{F}$  - Percent Exceedances (1998-2020)

2021 95 90 75 50 25 10 5



Shasta Lake Cold Water Pool Volume  $\leq 48^{\circ}\text{F}$  - Percent Exceedances (1998-2020)

2021 95 90 75 50 25 10 5

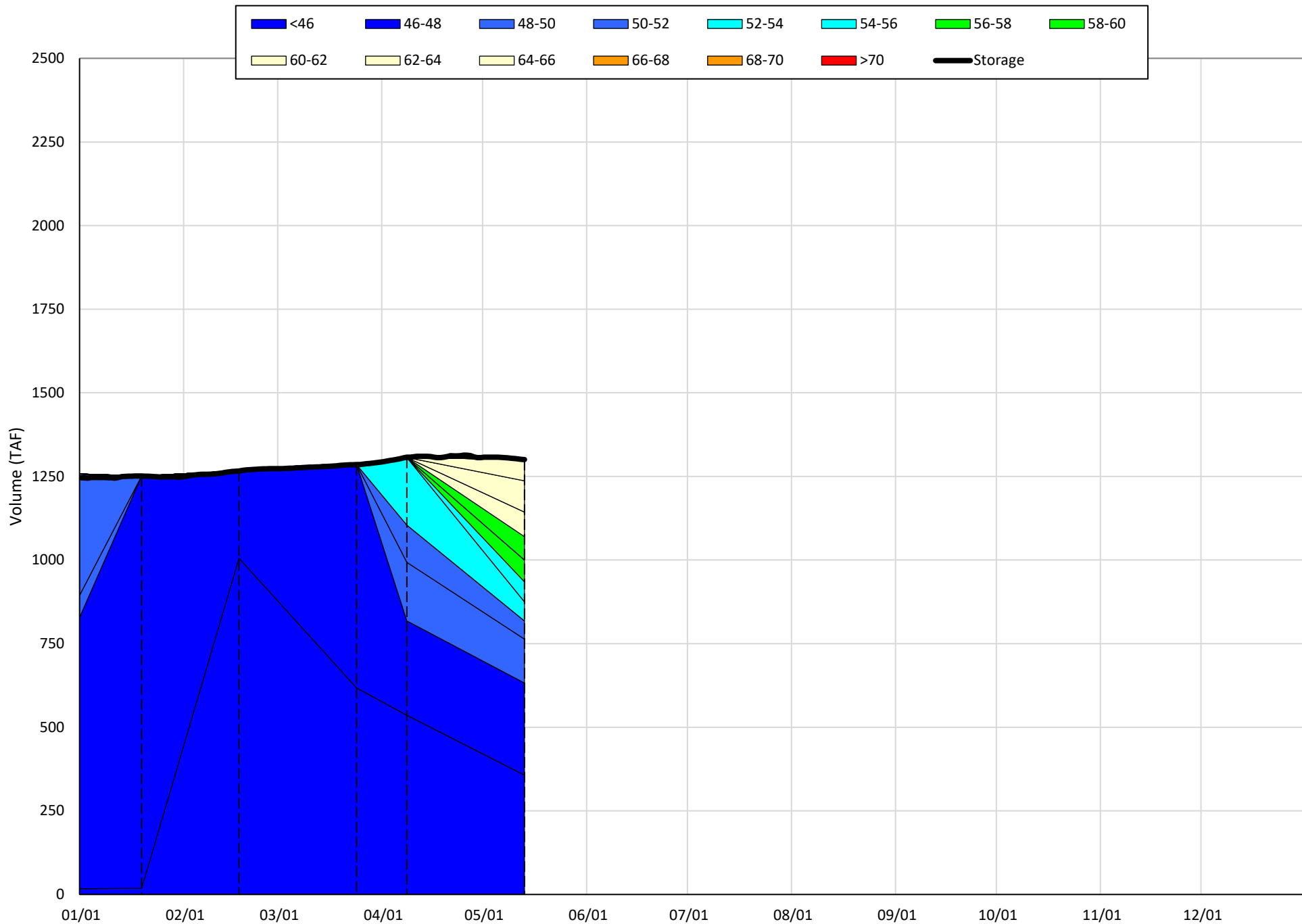


### Shasta Lake Cold Water Pool Comparison by Year (for Specified Date)

May-26 2021	$\Delta$ TAF				% $\Delta$			
	$\leq 52^\circ$	$\leq 50^\circ$	$\leq 48^\circ$	Abs. Avg.	$\leq 52^\circ$	$\leq 50^\circ$	$\leq 48^\circ$	Abs. Avg.
1998	1854	1482	923	1420	150	138	128	138
1999	1332	1196	1067	1198	107	111	148	122
2000	1236	691	270	732	100	64	37	67
2001	948	865	762	858	76	80	106	87
2002	1278	1093	827	1066	103	102	114	106
2003	1404	804	155	788	113	75	22	70
2004	900	713	558	724	73	66	77	72
2005	1092	634	155	627	88	59	21	56
2006	1362	1215	750	1109	110	113	104	109
2007	963	874	703	847	78	81	97	85
2008	360	313	418	364	29	29	58	39
2009	480	307	384	390	39	29	53	40
2010	1759	1513	842	1371	142	140	117	133
2011	1762	1513	1184	1486	142	141	164	149
2012	1613	1480	885	1326	130	137	123	130
2013	827	776	658	754	67	72	91	77
2014	3	-60	-59	41	0	-6	-8	5
2015	-13	-143	-522	226	-1	-13	-72	29
2016	1367	1153	196	905	110	107	27	82
2017	1491	831	597	973	120	77	83	93
2018	1348	933	203	828	109	87	28	74
2019	1642	1204	753	1200	132	112	104	116
2020	1007	602	14	541	81	56	2	46
2021	0	0	0	0	0	0	0	0

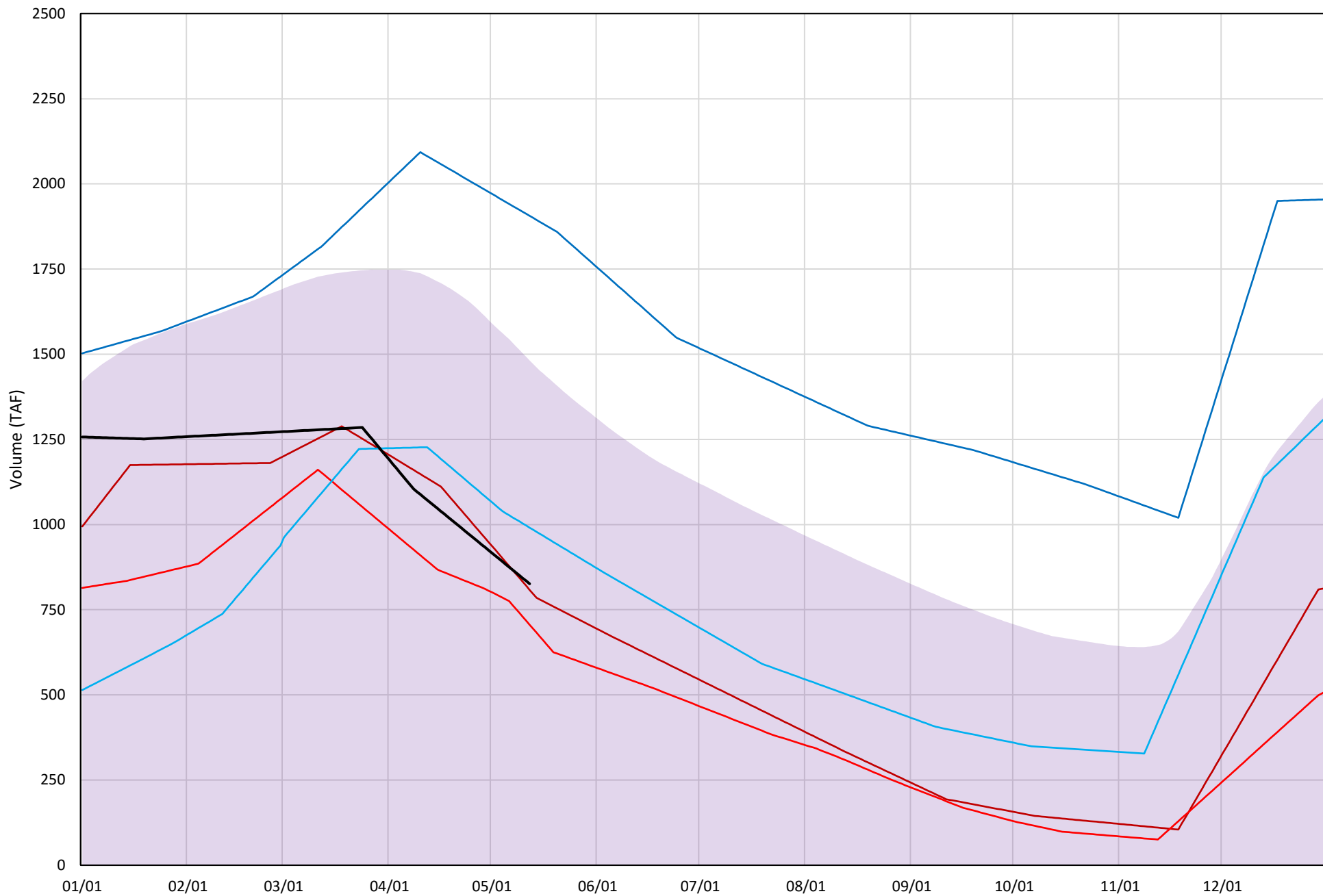
} Historic - Current
} (Historic - Current) / Current

Trinity Lake Isothermobaths Plot - 2021



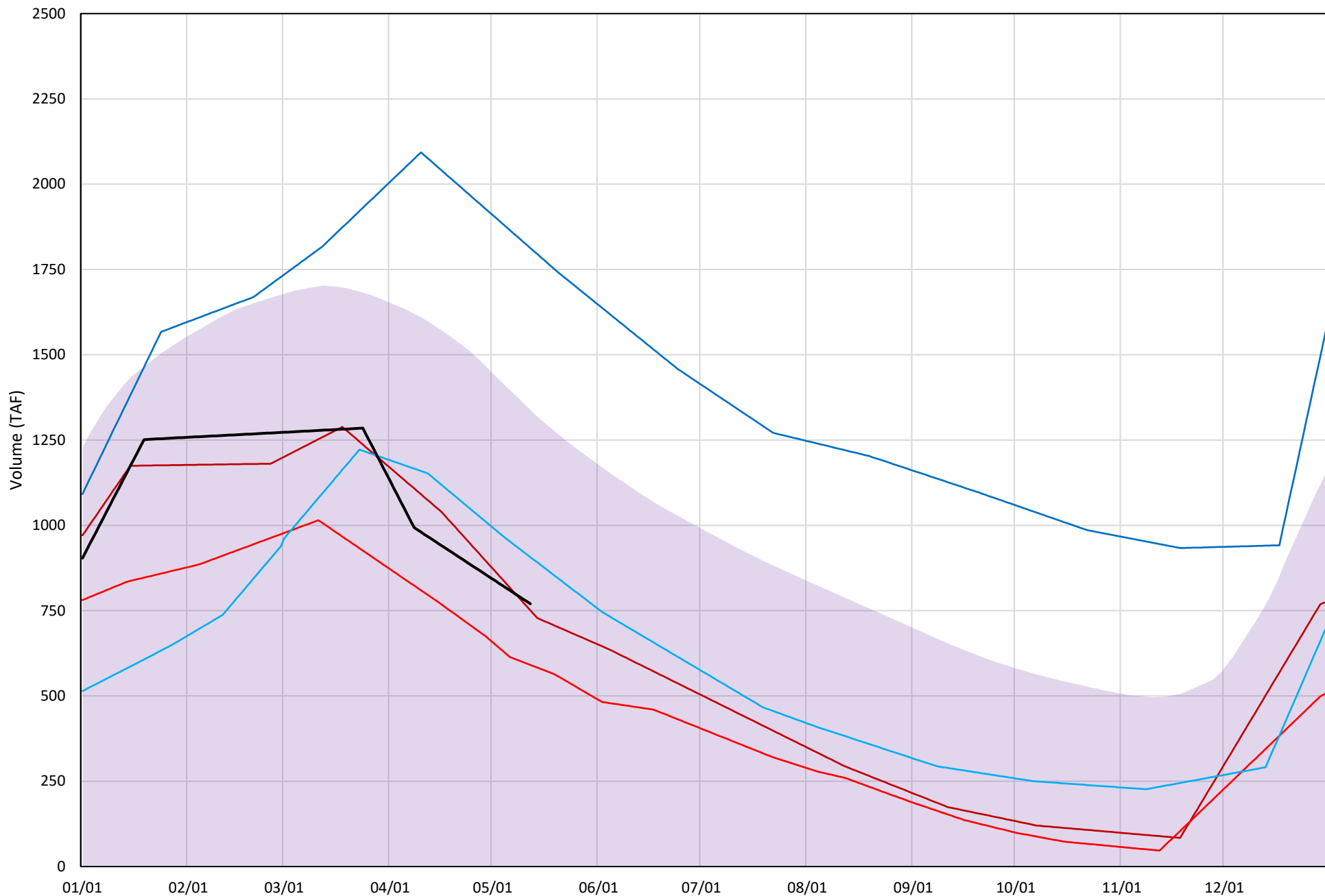
# Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$

Avg (2000-2020) 2014 2015 2016 2019 2021



# Trinity Lake Cold Water Pool Volume ≤50°F

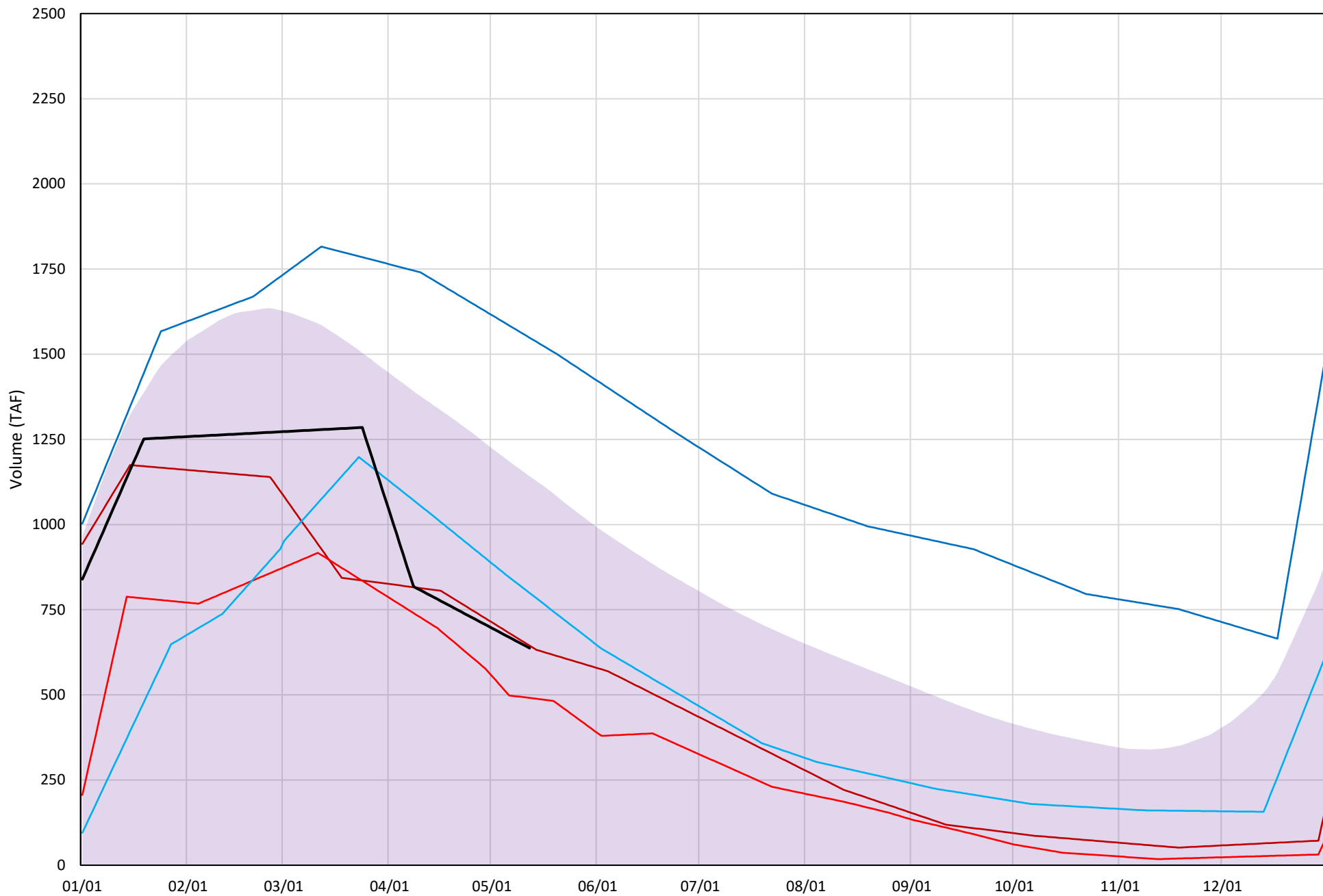
Avg (2000-2020) 2014 2015 2016 2019 2021



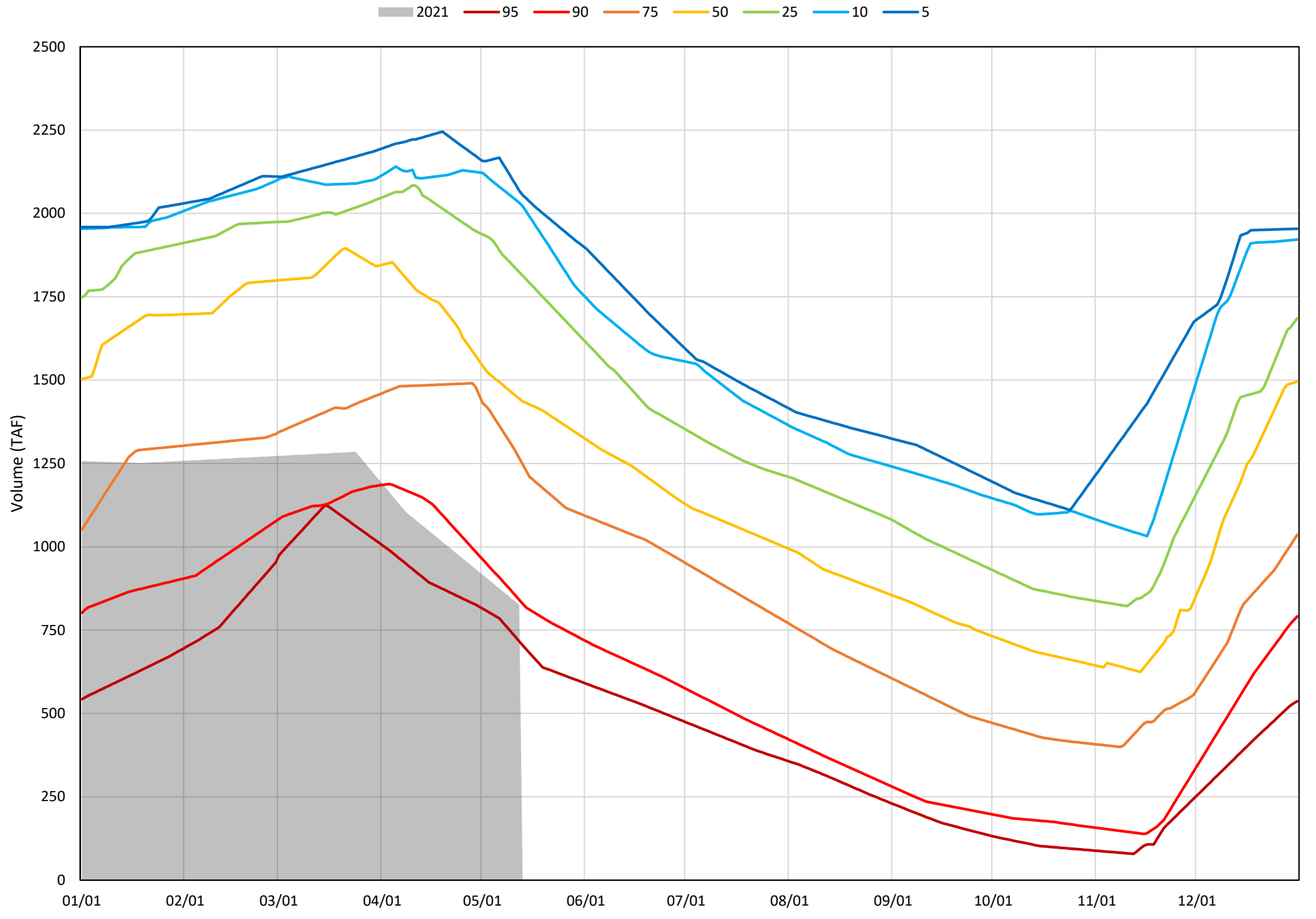


# Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

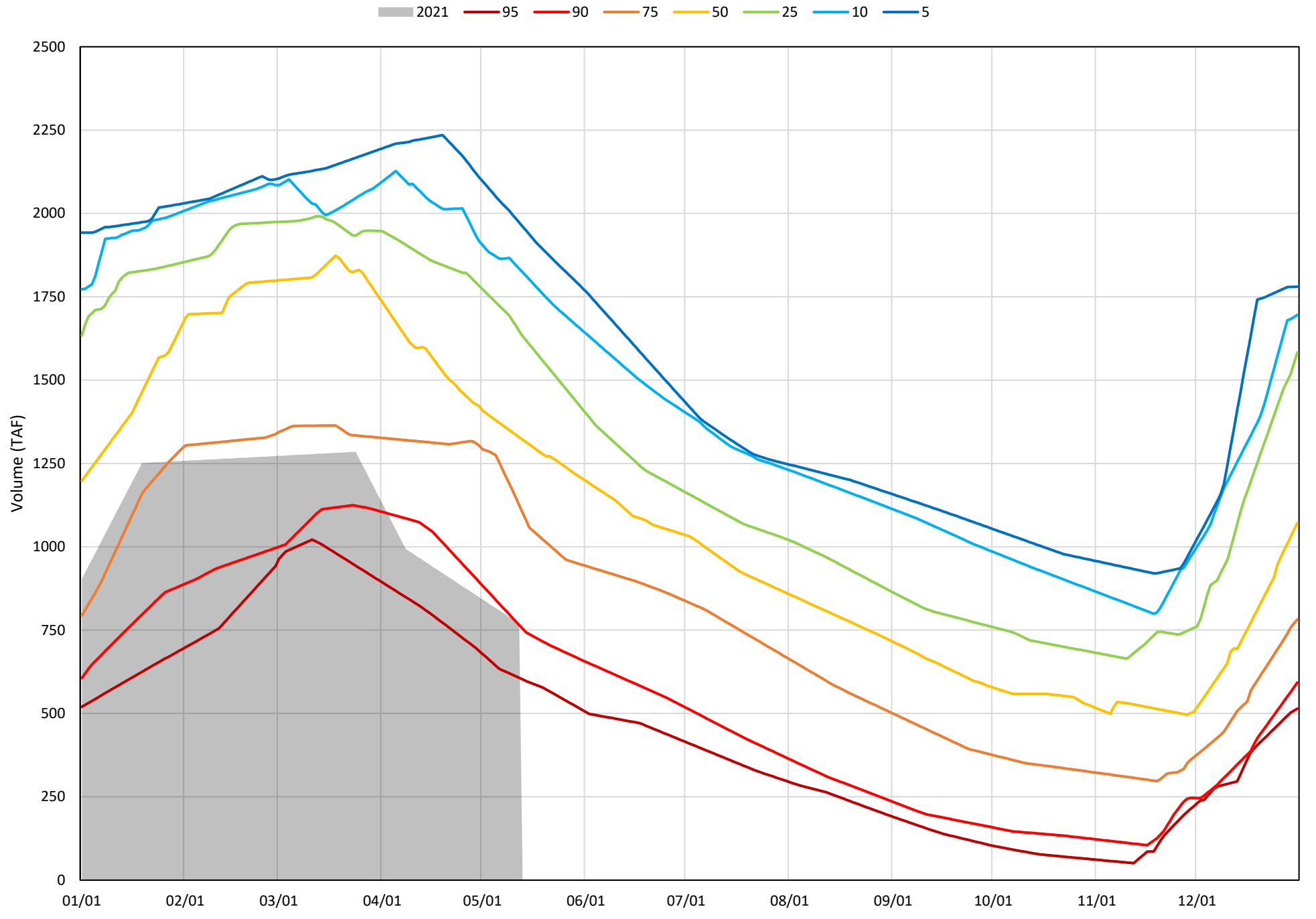
Avg (2000-2020) 2014 2015 2016 2019 2021



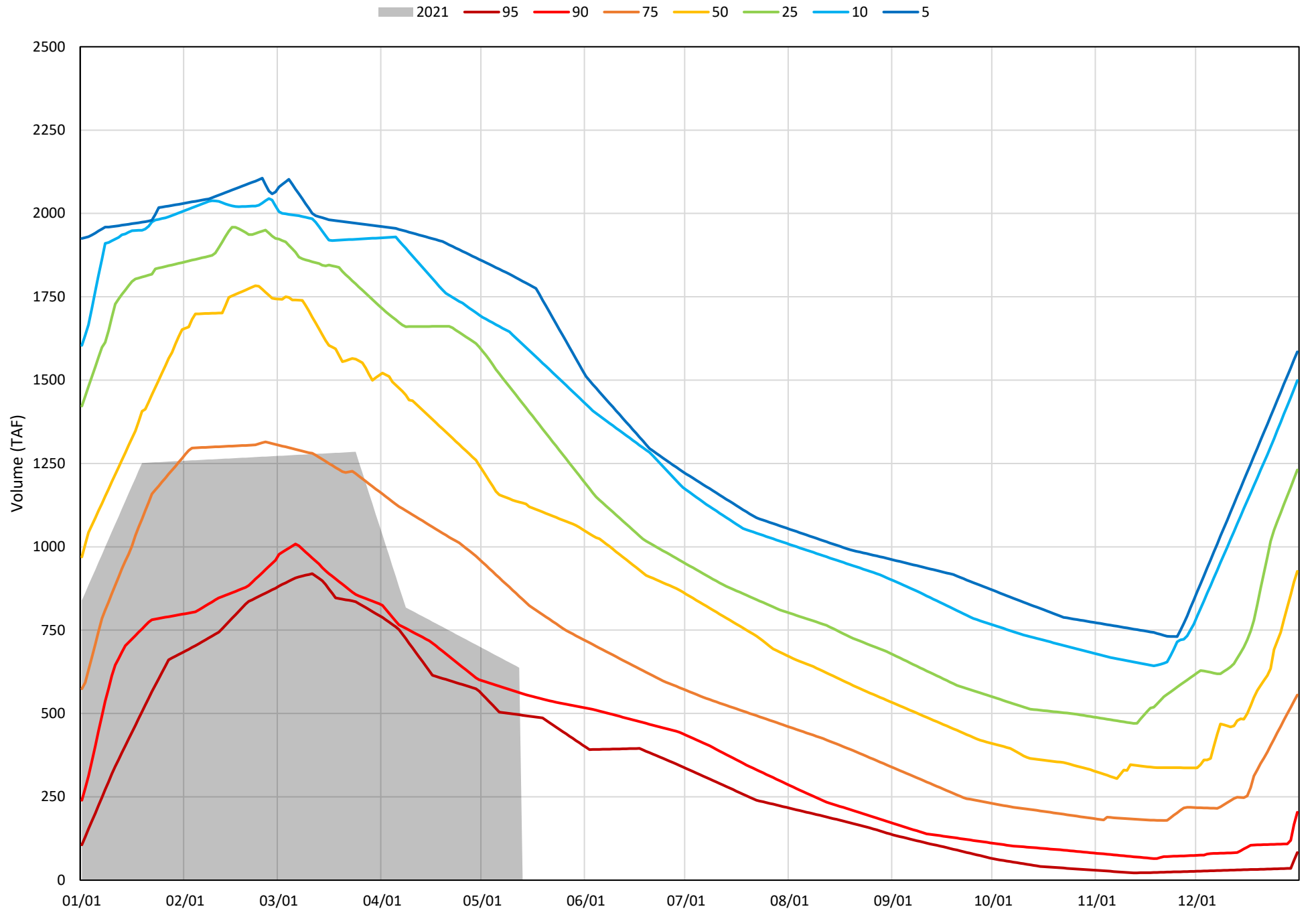
Trinity Lake Cold Water Pool Volume ≤52°F - Percent Exceedances (2000-2020)



Trinity Lake Cold Water Pool Volume  $\leq 50^{\circ}\text{F}$  - Percent Exceedances (2000-2020)



Trinity Lake Cold Water Pool Volume  $\leq 48^{\circ}\text{F}$  - Percent Exceedances (2000-2020)



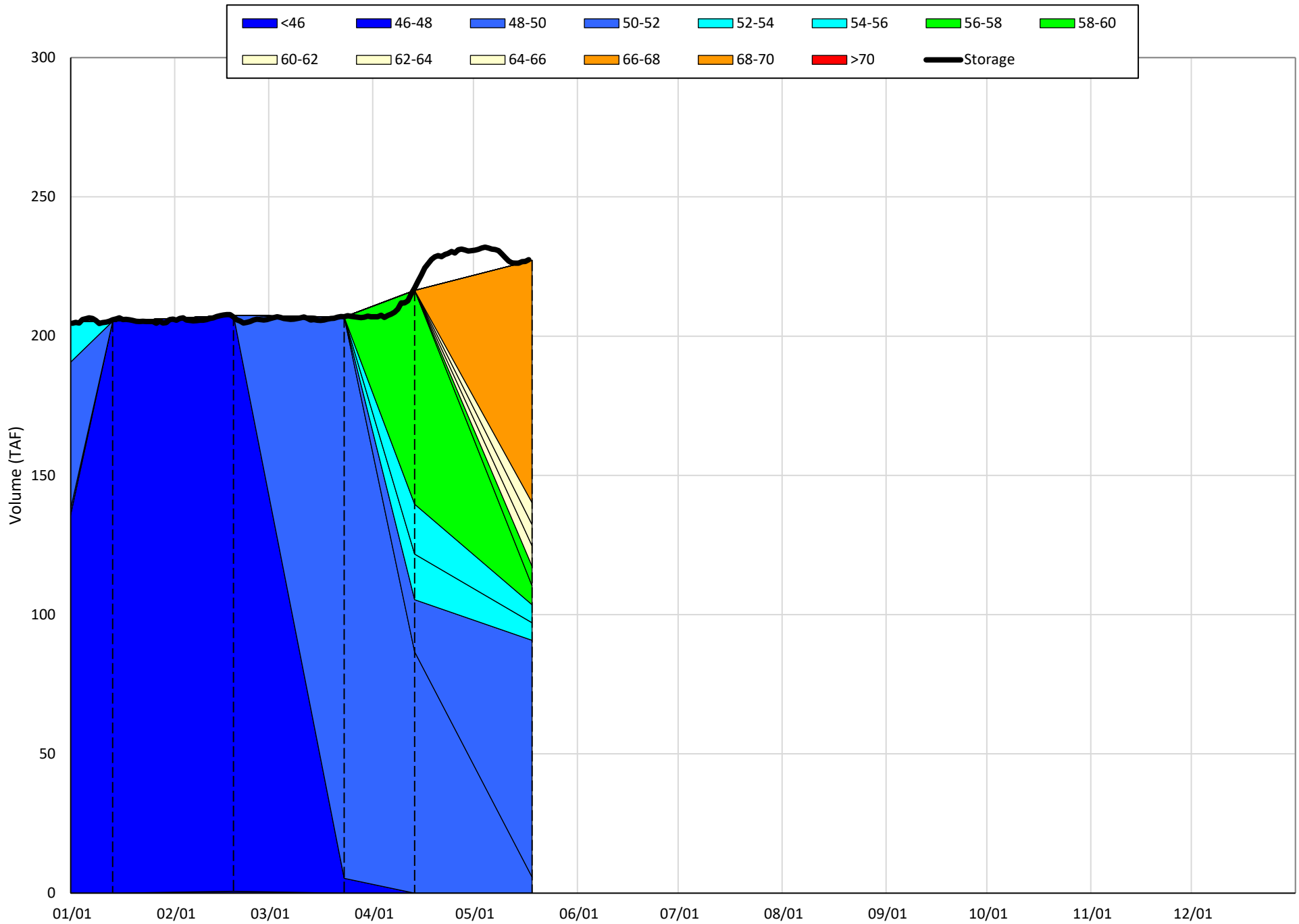
### Trinity Cold Water Pool Comparison by Year (for Specified Date)

May-13 2021	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
2000	934	861	762	852	113	112	120	115
2001	615	567	495	559	74	74	78	75
2002	618	559	576	584	75	73	90	79
2003	1243	856	792	964	150	111	124	129
2004	888	750	647	762	108	97	101	102
2005	757	502	276	512	92	65	43	67
2006	1238	1217	1183	1213	150	158	186	165
2007	583	445	458	495	71	58	72	67
2008	379	288	191	286	46	37	30	38
2009	144	51	-95	97	17	7	-15	13
2010	500	420	237	386	61	55	37	51
2011	1004	896	879	927	122	116	138	125
2012	1043	1070	997	1036	126	139	156	141
2013	509	473	408	463	62	61	64	62
2014	-18	-19	7	15	-2	-2	1	2
2015	-120	-179	-146	149	-15	-23	-23	20
2016	165	137	162	155	20	18	25	21
2017	991	893	818	901	120	116	128	121
2018	629	581	545	585	76	75	86	79
2019	1080	1043	911	1011	131	135	143	136
2020	596	530	497	541	72	69	78	73
2021	0	0	0	0	0	0	0	0

Historic - Current

(Historic - Current) / Current

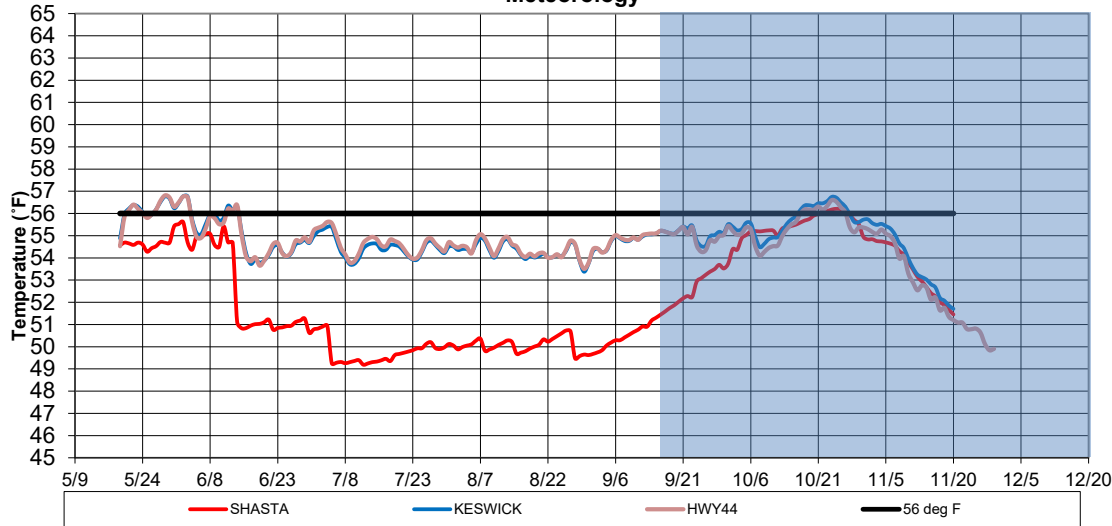
# Whiskeytown Lake Isothermobaths Plot - 2021



*Table 1. monthly forecasted operations for Shasta and Keswick Reservoir releases and estimated storage.*

<b>Operations Information/Month</b>	<b>June</b>	<b>July</b>	<b>August</b>	<b>September</b>
<b>Shasta Releases (TAF)</b>	332	351	346	255
<b>Spring Creek Power Plant (TAF)</b>	90	110	90	90
<b>Keswick Releases (TAF)</b>	422	461	436	345
<b>Keswick Releases (cfs)</b>	7,100	7,500	7,100	5,800
<b>Shasta End-of-Month Storage (TAF)</b>	1,822	1,598	1,379	1,250
<b>Clear Creek Releases (cfs)</b>	150	150	150	150
<b>Trinity End-of-Month Storage (TAF)</b>	1,069	919	765	611

**Sacramento River Modeled Temperature  
2021 May 90%-Exceedance Water Outlook - L3MTO 25%  
Meteorology**



	Shasta deg F	Keswick deg F	Hwy44 deg F	Igo deg F	Trinity deg F	Lewiston deg F
May	54.7	56.2	56.1	51.3	46.0	49.4
Jun	52.7	55.1	55.1	53.5	46.2	49.5
Jul	49.8	54.5	54.6	56.7	46.8	50.9
Aug	50.1	54.3	54.4	58.7	47.8	50.9
Sep	51.5	54.9	54.9	58.1	50.2	52.1
Oct	55.4	55.7	55.5	55.3	52.0	53.1
Nov	52.6	53.0	52.5	52.9	51.6	51.8

Run date: 5/25/21 S13

**EOM Sept storage: 1.25 MAF**

Trinity profile date: 5/13/21

Whiskeytown profile date: 5/18/21

Shasta profile date: 5/19/21

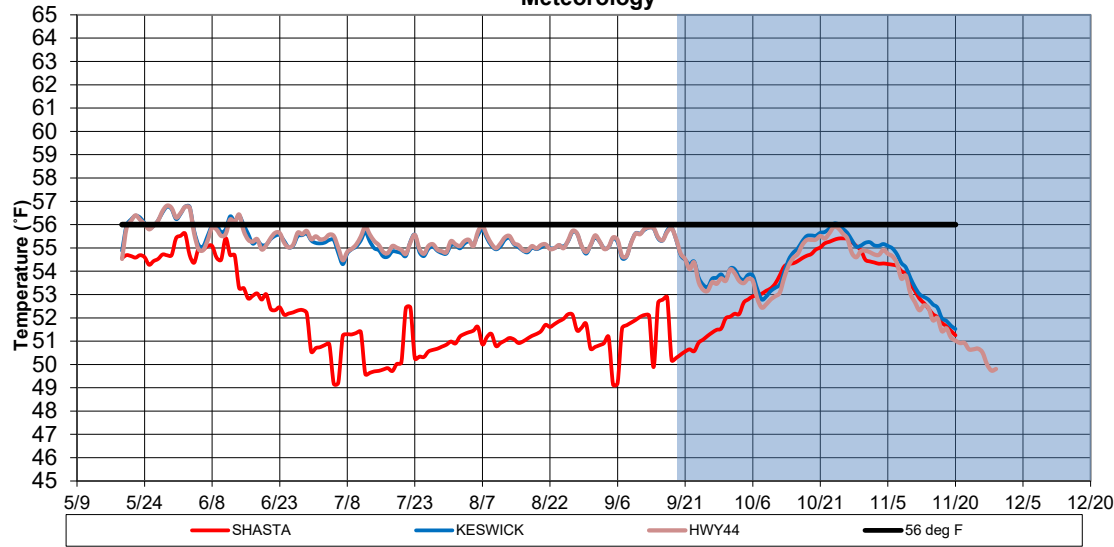
Projected Side gates: First Jul 13 Full Aug 29

Shaded area denotes period of model limitations - see Fall Temperature Index

**End of September Cold-Water-Pool less than 56 deg F: 173 TAF**



**Sacramento River Modeled Temperature  
2021 May 90%-Exceedance Water Outlook - L3MTO 25%  
Meteorology**



	Shasta deg F	Keswick deg F	Hwy44 deg F	Igo deg F	Trinity deg F	Lewiston deg F
May	54.7	56.2	56.1	51.3	46.0	49.4
Jun	53.5	55.7	55.6	53.5	46.2	49.5
Jul	50.5	55.0	55.1	56.7	46.8	50.9
Aug	51.3	55.2	55.2	58.7	47.8	50.9
Sep	51.2	54.9	54.8	58.1	50.2	52.1
Oct	54.1	54.6	54.4	55.3	52.0	53.1
Nov	52.3	52.7	52.3	52.9	51.6	51.8

Run date: 5/25/21 S14

**EOM Sept storage: 1.25 MAF**

Trinity profile date: 5/13/21

Whiskeytown profile date: 5/18/21

Shasta profile date: 5/19/21

Projected Side gates: First Aug 8 Full Sep 19

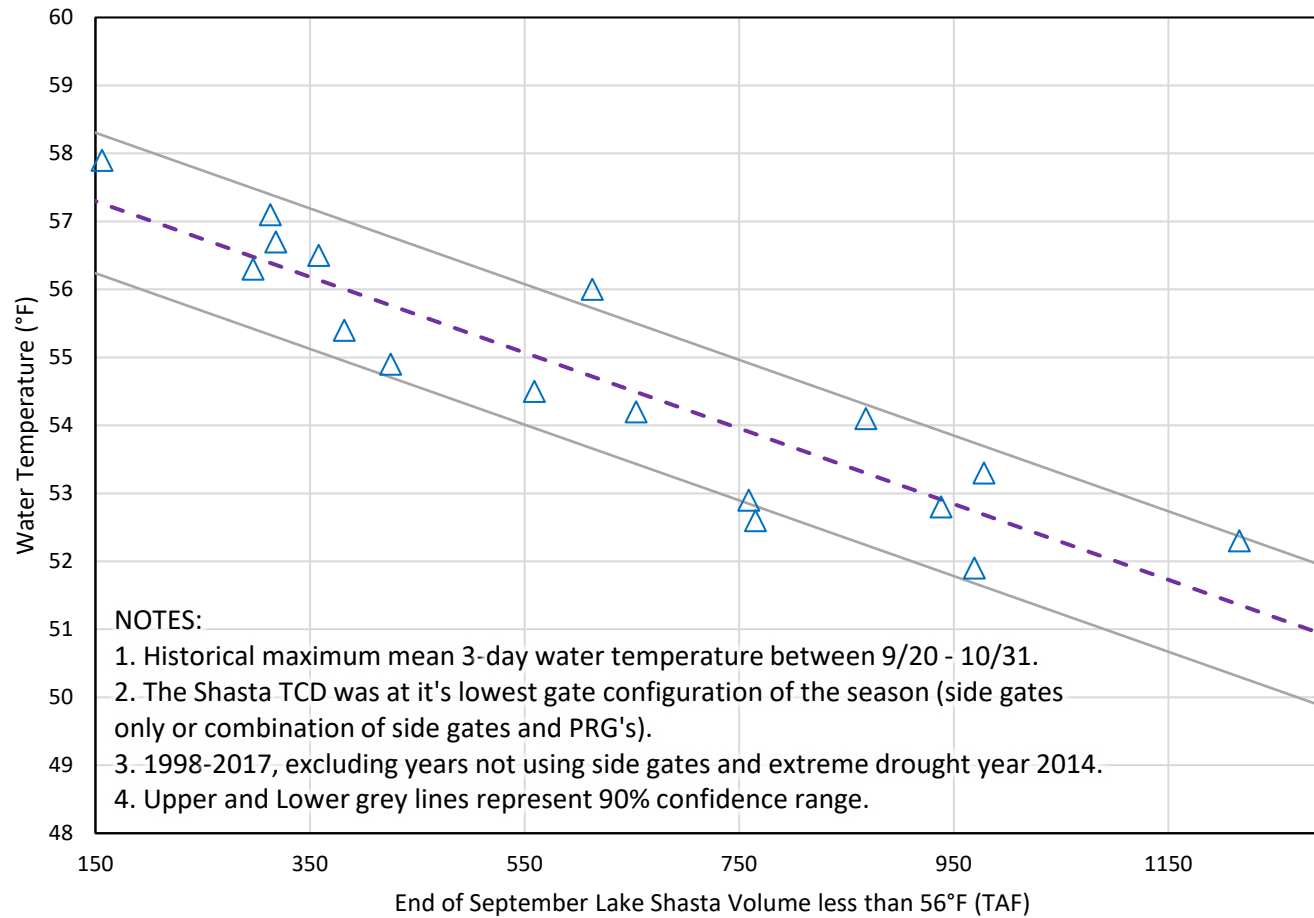
Shaded area denotes period of model limitations - see Fall Temperature Index

**End of September Cold-Water-Pool less than 56 deg F: 230 TAF**

**Figures 3-5 Model Performance and Fall Temperature Index:**

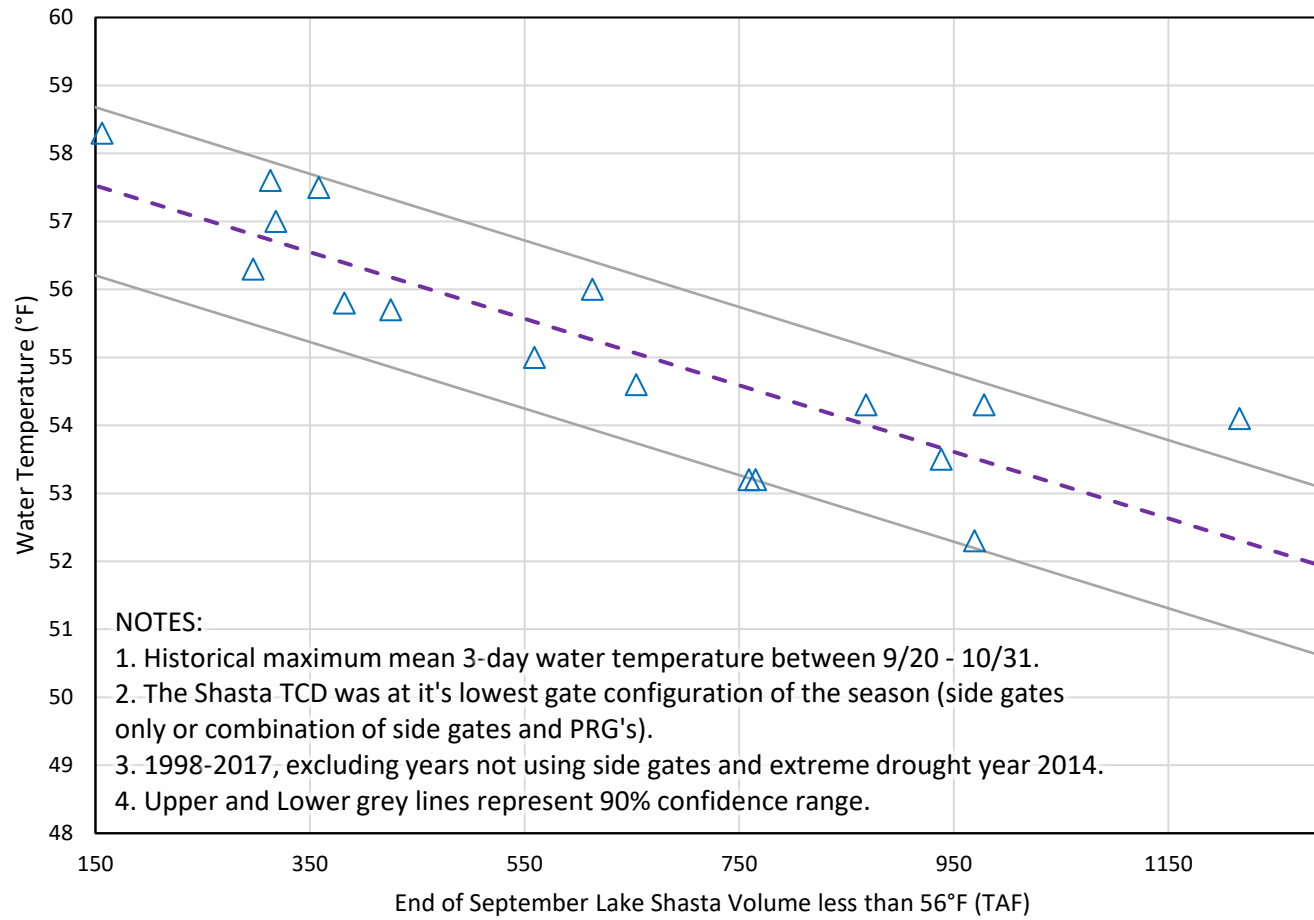
1. Based on past analyses, the temperature model does not perform well in late September and October. One factor is that the modeled release temperatures are cooler than has historically been achieved when all release is through the side gates (lowest gates), especially when there's a large temperature gradient between the pressure relief gates (PRG) and the side gates.
2. Based on historical records, the end-of-September Lake Shasta volume below 56°F is a good indicator of fall water temperature in the river reaches.
3. Based on these records and estimates, the charts below illustrate a range of uncertainty in the expected river temperatures based on the end-of-September lake volume less than 56°F.

### Sacramento River - Lake Shasta Early Fall Water Temperature - Keswick (KWK)



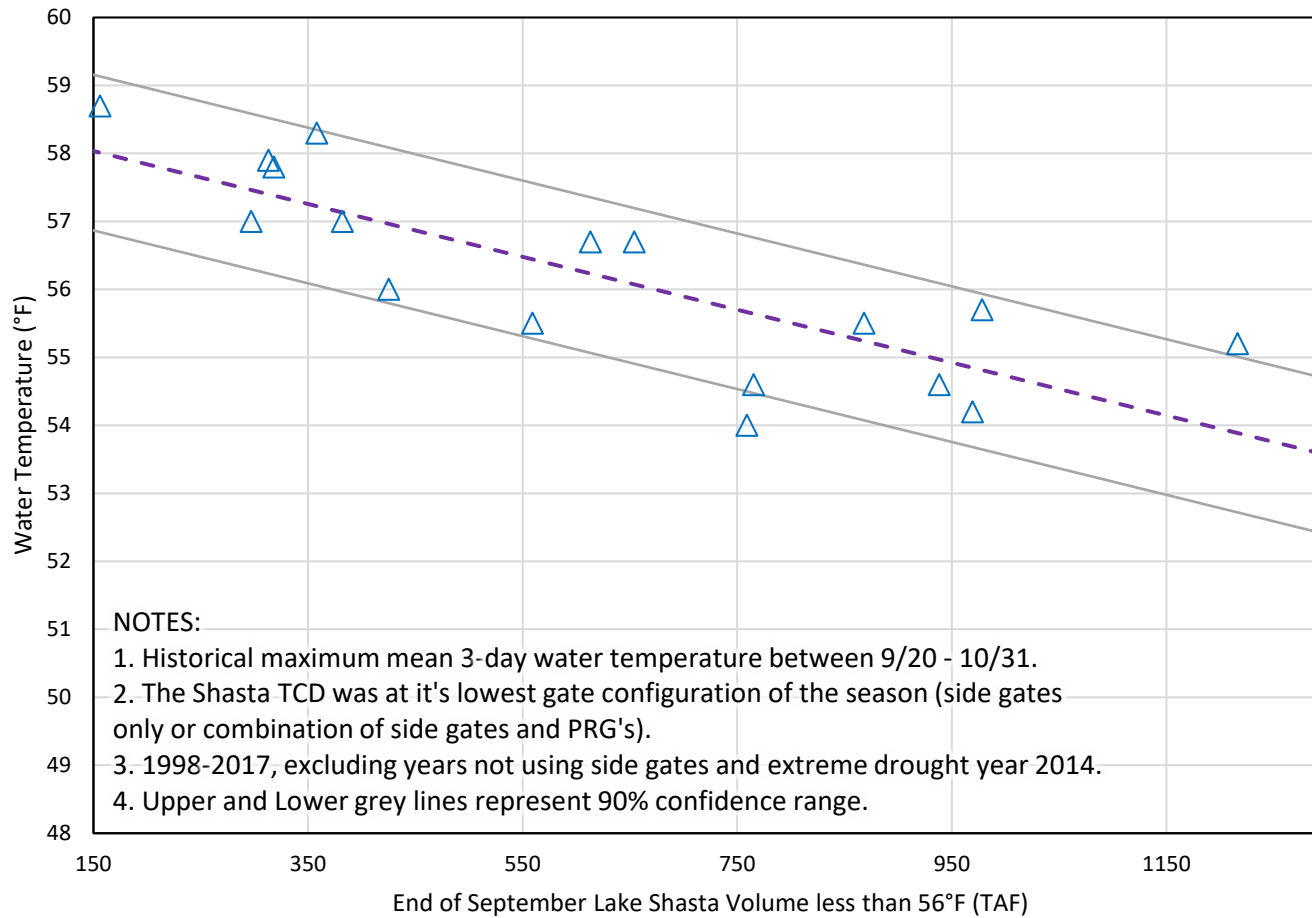
**Figure 3.** Historical relationship between Lake Shasta cold-water-pool characteristics and early fall Keswick water temperature.

Sacramento River - Lake Shasta  
 Early Fall Water Temperature - Sac River above Clear Creek (CCR)



**Figure 4.** Historical relationship between Lake Shasta cold-water-pool characteristics and early fall Sacramento River above Clear Creek confluence water temperature.

Sacramento River - Lake Shasta  
Early Fall Water Temperature - Balls Ferry (BSF)



**Figure 5.** Historical relationship between Lake Shasta cold-water-pool characteristics and early fall Balls Ferry water temperature.