

Appendix D

Sources of Existing Habitat-Related Data

Table D-1. Content coverage and analysis for data and reports providing hydrologic information for the Sacramento and McCloud rivers.

Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Extent/Continuity	Comments
PG&E	2013	PG&E MSS MeanDailyFlow pd of	Data file	River flow	Stream gage	Daily	McCloud	McCloud River at MSS	1993-2013	Complete	Mean Daily
PG&E	2006	MC-7 McCloud Dam Release with est spill	Data file	River flow	Stream gage	Daily	McCloud	McCloud Dam MC-7	1973-2006	Complete	Mean Daily
PG&E	2009	Conduits - PHs	Data file	River flow	Stream gage	Daily	Pit	James B Black (MC11), McCloud Tunnel (MC8), Pit No 5 PH, Pit No 6 PH, and Pit No 7 PH.	1974-2006	Complete	Mean Daily
PG&E	2009	Reservoirs	Data file	River flow	Other	Daily	McCloud	McCloud Reservoir (MC6)	1974-2006	Complete	Mean Daily
PG&E	2009	Reservoirs	Data file	River flow	Other	Daily	Pit	Pit 6 Reservoir (PH 58) and Pit 7 Reservoir (PH 59). Iron Canyon Reservoir (MC9)	1974-2006	Complete	Mean Daily
PG&E	2009	Flow duration plots	Data file	Other	Stream gage	Other	McCloud	Duration Plots McCloud River streamflow gages		Complete	
PG&E	2013	PG&E MC7 Event Flow pd of record	Data file	River flow	Stream gage	15-min	McCloud	McCloud Dam MC-7	2011-2013	Complete	
PG&E	2013	PG&E MCA Event Flow pd of record	Data file	River flow	Stream gage	15-min	McCloud	McCloud River MCA	2009-2013	Complete	
PG&E; U.S. Geological Survey	2009	Streamflow	Data file	River flow	Stream gage		McCloud		YYYY-2006		
PG&E; U.S. Geological Survey	2009	Streamflow (MCId R at McClid Dam and MC-7)	Data file	River flow	Stream gage	Daily	McCloud	MC-7 (11367760) McCloud blw McCloud Dam	1976-2006	Complete	Mean Daily w/plots by WY
PG&E; U.S. Geological Survey	2009	Streamflow (MCCL0~10)	Data file	River flow	Stream gage	Daily	McCloud	MC-1 (11367800) McCloud R at Ah-Di-Na	1974-2006	Complete	Mean Daily w/plots by WY
PG&E; U.S. Geological Survey	2009	Streamflow (MCCL0~14)	Data file	River flow	Stream gage	Daily	McCloud	MC-3 (1137500) McCloud River at McCloud	1974-2006	Complete	Mean Daily w/plots by WY
PG&E; U.S. Geological Survey	2009	Streamflow (MCCL0~B)	Data file	River flow	Stream gage	Daily	McCloud	MC-5 (11368000) McCloud River above Shasta	1974-2006	Complete	Mean Daily w/plots by WY
PG&E; U.S. Geological Survey		Gage rating tables	Data file	Other	Stream gage		McCloud	MCR Gages		Complete	Rating Tables
U.S. Geological Survey	2008	MC-6 (11367740) McCloud Res storage	Data file	Other	Other		McCloud	McCloud Reservoir (MC6)	1973-2007	Complete	Mean Daily
U.S. Geological Survey	2008	MC-7 (11367760) McCloud blw McCloud Dam	Data file	River flow	Stream gage	Daily	McCloud	MC-7 (11367760) McCloud blw McCloud Dam	1966-2007	Complete	Mean Daily
U.S. Geological Survey	2013	USGS 11367500 McCloud nr McCloud Mean Daily Flow pd of record	Data file	River flow	Stream gage	Daily	McCloud	USGS 11367500 McCloud nr McCloud	1931-2013	Complete	Mean Daily
U.S. Geological Survey	2013	USGS 11367800 McCloud R at Ah-Di-Na Mean Daily Flow pd of record	Data file	River flow	Stream gage	Daily	McCloud	USGS 11367800 McCloud R at Ah-Di-Na	1964-2012	Complete	Mean Daily
U.S. Geological Survey	2013	USGS 11368000 McCloud R AB Shasta Mean Daily Flow pd of record	Data file	River flow	Stream gage	Daily	McCloud	USGS 11368000 McCloud R AB Shasta	1945-2012	Complete	Mean Daily
U.S. Geological Survey	2013	USGS 11369000 McCloud Baird Mean Daily Flow pd of record	Data file	River flow	Stream gage	Daily	McCloud	USGS 11369000 McCloud Baird	1910-1943	Complete	Mean Daily
North State Resources, Inc.	2011	Investigation and characterization of the hydrology and biology of Squaw Valley Creek, McCloud, California	Report	River flow	Stream gage	15-min	McCloud	Squaw Valley Creek	2008-2010	Complete	Multiple Stations
Murphy, P.J.; Severinghaus, J.	1989	1989 Summary report water quality monitoring program	Report	River flow	Flow measurement	Other	McCloud	Ladybug, Bones Gulch, Bald Mountain	1989	Complete	Periodic Seasonal MMTs
Guttinger, C.B.; Moegenburg, S.M.	1990	1990 Summary report the McCloud River water quality monitoring program	Report	River flow	Flow measurement	Other	McCloud	Ladybug, Bones Gulch, Bald Mountain	1990	Complete	Periodic Seasonal MMTs
Holladay, K.; Polgar, D.	1991	1991 Summary report water quality monitoring program	Report	River flow	Flow measurement	Other	McCloud	Ladybug, Bones Gulch, Bald Mountain	1991	Complete	Periodic Seasonal MMTs

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Extent/Continuity	Comments
Childers, E. ; Schilling, S.	1992	1992 Summary report water quality monitoring program	Report	River flow	Flow measurement	Other	McCloud	Ladybug, Bones Gulch, Bald Mountain	1992	Complete	Periodic Seasonal MMTs
Evans, C.A.; Kummer, L.W.	1993	Winter water quality report and 1993 winter researcher summary	Report	River flow	Flow measurement	Other	McCloud	Ladybug, Bones Gulch, Bald Mountain	1993	Complete	Periodic Seasonal MMTs
Aramayo, A.	1987	Use of small tributaries by river fish in a section of the Lower McCloud River, California	Report	River flow	Flow measurement	Other	McCloud	McCloud, Claiborne, Hawkins, Fitzhugh, Ah-Di-Nah, Ladybug, Bald Mountain	1988-1989	Complete	
Ridgewood Renewable Power	2012	Box Canyon discharge data	Data file	River flow	Stream gage	Daily	Sacramento	Box Canyon Dam	2012	Incomplete	Mean Daily
U.S. Bureau of Reclamation; U.S. Geological Survey	2011	SacAtDeltaHAflows: USGS 11342000 Sacramento R @ Delta 1944-2011	Data file	River flow	Stream gage	Monthly	Sacramento	Sac at Delta (11342000)	1944-2011	Complete	Median Monthly Flow with 25/75 percentiles
U.S. Bureau of Reclamation; U.S. Geological Survey	1993	BOR_GS 2013 DLT Mean Daily Flow pd of record	Data file	River flow	Stream gage	Daily	Sacramento	Sac at Delta (11342000)	1993-2013	Complete	Mean Daily
U.S. Bureau of Reclamation; U.S. Geological Survey	2013	BOR_GS 2013 DLT Mean Hrly Flow pd of record	Data file	River flow	Stream gage	Hourly	Sacramento	Sac at Delta (11342000)	1991-2013	Complete	Mean Hourly
U.S. Bureau of Reclamation; U.S. Geological Survey	2013	BOR_GS 2013 SDT Monthly FullNatFlow pd of record	Data file	Other	Stream gage	Monthly	Sacramento	Sac at Delta (11342000)	1905-2013	Complete	Full Monthly Natural Flow (AF)
U.S. Geological Survey	2013	USGS 11341400_MtShasta Mean Daily Flow pd of record	Data file	River flow	Stream gage	Daily	Sacramento	Sac at Mt Shasta (11341400)	1959-1987	Complete	Mean Daily
U.S. Geological Survey	2013	USGS 11341500 Castella Mean Daily Flow pd of record	Data file	River flow	Stream gage	Daily	Sacramento	Sac at Castella (11341500)	1910-1923	Complete	Mean Daily
U.S. Geological Survey	2013	USGS 11342000 Delta Mean Daily Flow pd of record	Data file	River flow	Stream gage	Daily	Sacramento	Sac at Delta (11342000)	1944-2013	Complete	Mean Daily
U.S. Bureau of Reclamation; U.S. Geological Survey	2013	SacramentoRiverStage at Delta pd of record	Data file	River stage	Stream gage	Hourly	Sacramento	Sac at Delta (11342000)	1989-2013	Complete	Hourly
PG&E	2013	McCloudRiverStage at MCD (at McCloud) pd of record	Data file	River stage	Stream gage	Hourly	McCloud	MCD - McCloud nr McCloud	2005-2013	Complete	Hourly
PG&E	2013	McCloudRiverStage (MSS) pd of record	Data file	River stage	Stream gage	Hourly	McCloud	McCloud River at MSS	1989-2013	Complete	Hourly

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Table D-2. Content coverage and analysis for data and reports providing water quality information for the Sacramento and McCloud rivers.

Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Extent/Continuity	Comments
Davis, J.A.; Melwani, A.R.; Bezalel, S.N.; Hunt, J.A.; Ichikawa, G.; Bonnema, A.; Heim, W.A.; Crane, D.; Swenson, S.; Lamerdin, C.; Stephenson, M.	2010	Contaminants in fish from California lakes and reservoirs, 2007-2008: Summary report on a two-year screening survey	Report	Contamination	Other	Once	Both	Shasta Lake	2007-2008	Complete	Fish Toxicity
AquaTerra Consulting, ; The Source Group, Inc.	2009	Mt. Shasta Springs 2009 summary report	Report	Physicochemical	Grab	Other	Both	22-springs in Mt. Shasta Area	2007-2009	Complete	water chemistry. Sample interval not specified
PG&E	2009	Water quality in project reservoirs and project-affected stream reaches	Report	Physicochemical	Multiparameter logger	15-min	McCloud	14 riverine sites	2007-2008	Complete	Physicochemical: Monthly/Seasonal. Minerals-Seasonal. In-situ: Temp, SpecCond, pH, DO, Turbidity
PG&E	2009	Results of suspended sediment monitoring	Report	Physicochemical	Multiparameter logger	15-min	McCloud	22-Stations: 2-DS McCloud Reservoir w/ Continuous Data. Data coverage ranges by station.	2007-2008		
PG&E	2013	PG&E MSS Hrly DO pd of record	Data file	Physicochemical	Multiparameter logger	Hourly	McCloud	Above Shasta (MSS)	1989-2000	Complete	Dissolved Oxygen
PG&E	2013	PG&E MSS HrlyTurb pd of record	Data file	Physicochemical	Multiparameter logger	Hourly	McCloud	Above Shasta (MSS)	1989-2000	Complete	Turbidity
The Nature Conservancy	2010	McCloud TNC water quality 2010	Data file	Physicochemical	Multiparameter logger	Hourly	McCloud	MCR Preserve	1996-2010	Complete	March-Nov/Dec
Knight, C.; Hoss, A.	1998	McCloud River Preserve 1998 research and monitoring report	Report	Physicochemical	Multiparameter logger	Hourly	McCloud	MCR Preserve	1998	Incomplete	pH, SpecCond, DO, Turbidity. Graphically summarized daily data
PG&E	2013	PG&E 2013 MSS Turb pd Record	Data file	Physicochemical	Multiparameter logger	Hourly	McCloud	McCloud River above Shasta Lake (MSS)	1989-2013	Complete	Turbidity
PG&E	2013	PG&E 2013 MSS DO pd Record	Data file	Physicochemical	Multiparameter logger	Hourly	McCloud	McCloud River above Shasta Lake (MSS)	1989-2013	Complete	Dissolved Oxygen
California Department of Water Resources	2013	WQMcCloud AB Shasta Pd of Record	Data file	Physicochemical	Grab	Monthly	McCloud	Above Shasta: A2215000	1951-1989 2000-2013	Complete	
PG&E	1987	Project C - Water quality investigation	Report	Physicochemical	Grab	Monthly	McCloud	5 St: Reservoir, 2-US Reservoir, 2-DS Reservoir.	1985-1986	Incomplete	Tabular Data. Multiple parameters. Monthly-Qrtly Sampling
North State Resources, Inc.	2011	Investigation and characterization of the hydrology and biology of Squaw Valley Creek, McCloud, California	Report	Physicochemical	Grab	Monthly	McCloud	Squaw Valley Creek	2008-2010	Complete	Multiple Stations
Bolda, K.; Meyers, B.	1997	Conducting a long-term water quality monitoring project on the McCloud River, California	Published paper	Physicochemical	Grab	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain, Bones Gulch	1987-1994	Complete	Turbidity, Suspended Sediment during peak flows
Bolda, K.; Meyers, B.	1995	McCloud River water quality monitoring report	Report	Physicochemical	Grab	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain, Bones Gulch	1995	Complete	Turbidity, Suspended Sediment, pH during peak flows
Childers, E. ; Schilling, S.	1992	1992 Summary report water quality monitoring program	Report	Physicochemical	Grab	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain, Bones Gulch	1992	Complete	Turbidity, Suspended Sediment, pH during peak flows
Crandall, J.	2001	McCloud River Preserve 2001 research and monitoring report	Report	Physicochemical	Multiparameter logger	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain	2001	Complete	pH, SpecCond, DO, Turbidity. Graphically summarized daily data

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Extent/Continuity	Comments
Crandall, J.; Middleton, P.	2000	McCloud River Preserve 1999 research and monitoring report	Report	Physicochemical	Multiparameter logger	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain	2001	Incomplete	pH, SpecCond, DO, Turbidity. Graphically summarized daily data. Intermittent mmts of metrics
Evans, C.A.; Kummer, L.W.	1993	Winter water quality report and 1993 winter researcher summary	Report	Physicochemical	Grab	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain, Bones Gulch	1993	Complete	Turbidity, Suspended Sediment, pH during peak flows. Graphically summarized daily data
Guttinger, C.B.; Moegenburg, S.M.	1990	1990 Summary report the McCloud River water quality monitoring program	Report	Physicochemical	Grab	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain, Bones Gulch	1993	Complete	Turbidity, Suspended Sediment, pH during peak flows. Graphically summarized daily data
Holladay, K.; Polgar, D.	1991	1991 Summary report water quality monitoring program	Report	Physicochemical	Grab	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain, Bones Gulch	1991	Complete	Turbidity, Suspended Sediment, pH during peak flows. Graphically summarized daily data
Murphy, P.J.; Severinghaus, J.	1989	1989 Summary report water quality monitoring program	Report	Physicochemical	Grab	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain, Bones Gulch	1989	Complete	Turbidity, Suspended Sediment, pH during peak flows. Graphically summarized daily data
PG&E	2009	Water quality in project reservoirs and project-affected stream reaches	Report	Physicochemical	Grab	Other	McCloud	18 locations	2007-2008	Complete	
Tussing, S.; Wingo-Tussing, S.; Steward, L.	2005	McCloud River Preserve research and monitoring report 2002 - 2004	Report	Physicochemical	Multiparameter logger	Other	McCloud	MCR Preserve	2002-2004	Complete	pH, SpecCond, DO, Turbidity. Graphically summarized daily data
Tussing, S.; Wingo-Tussing, S.; Steward, L.	2005	McCloud River Preserve research and monitoring report 2002 - 2004	Report	Physicochemical	Grab	Other	McCloud	MCR Preserve	2003	Complete	Suspended sediment grab samples
U.S. Commission of Fish and Fisheries	1872-1883	Report of the commissioner for years 1872-1883	Report	Physicochemical	Grab		McCloud	Baird Hatchery	1872-1883	Complete	Notes, descriptions of water quality
PG&E	2007	Water temperature monitoring program report for 2007 (TM-28)	Report	Water temperature	Datalogger	15-min	McCloud	27 Stations	2007	Complete	Tabular/Graphical Data for 2007
PG&E	2009	Water quality in project reservoirs and project-affected stream reaches	Report	Water temperature	Multiparameter logger	15-min	McCloud	14 riverine sites	2007-2008	Complete	Physicochemical: Monthly/Seasonal. Minerals-Seasonal. In-situ: Temp, SpecCond, pH, DO, Turbidity
North State Resources, Inc.	2011	Investigation and characterization of the hydrology and biology of Squaw Valley Creek, McCloud, California	Report	Water temperature	Datalogger	15-min	McCloud	Squaw Valley Creek	2008-2010	Complete	Multiple Stations

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Extent/Continuity	Comments
PG&E	2009	McCloud River above Shasta Lake water temperature (Station ID MSS)	Data file	Water temperature	Datalogger	Daily	McCloud	Above Shasta (MSS)	1990-2009	Complete	Daily Average
Stone, L.	1883	McCloud River water temperature measured at Baird Hatchery	Data file	Water temperature	Grab	Daily	McCloud	Baird Hatchery	1874-1883	Complete	Median Daily
Hannon, J.; U.S. Bureau of Reclamation	2011	SacMcCloudTemperatures.pdf	Data file	Water temperature	Datalogger	Daily	McCloud	MCR Preserve	1996-2010	Complete	Average Daily+stats
PG&E	2013	PG&E MSS HryWatTemp pd of record	Data file	Water temperature	Datalogger	Hourly	McCloud	Above Shasta (MSS)	1989-2000	Complete	
The Nature Conservancy	2010	McCloud TNC water quality 2010	Data file	Water temperature	Datalogger	Hourly	McCloud	MCR Preserve	1996-2010	Complete	March-Nov/Dec
Knight, C.; Hoss, A.	1998	McCloud River Preserve 1998 research and monitoring report	Report	Water temperature	Multiparameter logger	Hourly	McCloud	MCR Preserve	1998	Complete	pH, SpecCond, DO, Turbidity. Inconsistent sampling for Ladybug and Bald Mountain. Graphically summarized daily data
PG&E	2013	PG&E 2013 MSS Temp pd Record	Data file	Water temperature	Multiparameter logger	Hourly	McCloud	McCloud River above Shasta Lake (MSS)	1989-2013	Complete	Fahrenheit
PG&E	1987	Project C - Water quality investigation	Report	Water temperature	Grab	Monthly	McCloud	5 St: Reservoir, 2-US Reservoir, 2-DS Reservoir.	1985-1986	Incomplete	Tabular Data. Multiple parameters. Monthly-Qrtly Sampling
Crandall, J.	2001	McCloud River Preserve 2001 research and monitoring report	Report	Water temperature	Datalogger	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain	2001	Complete	pH, SpecCond, DO, Turbidity. Inconsistent sampling for Ladybug and Bald Mountain. Graphically summarized daily data
Crandall, J.; Middleton, P.	2000	McCloud River Preserve 1999 research and monitoring report	Report	Water temperature	Datalogger	Other	McCloud	MCR Preserve, Ladybug Creek, Bald Mountain	2001	Complete	pH, SpecCond, DO, Turbidity. Inconsistent sampling for Ladybug and Bald Mountain. Graphically summarized daily data
PG&E	2009	Lower McCloud River water temperature modeling	Report	Water temperature	Modeled	Other	McCloud	McCloud			Model development, validation, and results
Tussing, S.; Wingo-Tussing, S.; Steward, L.	2005	McCloud River Preserve research and monitoring report 2002 - 2004	Report	Water temperature	Multiparameter logger	Other	McCloud	MCR Preserve	2002-2004	Complete	Graphically summarized daily data
Central Valley Regional Water Quality Control Board	1991	Final water sampling report: Southern Pacific - Cantara Spill	Report	Contamination	Grab	Daily	Sacramento	17 Sites: Cantara-Shasta Lake	1991	Complete	30 days following spill
Saiki, M.K.; Castleberry, D.T.; May, T.W.; Martin, B.A.; Bullard, F.N.	1995	Copper, cadmium, and zinc concentrations in aquatic food chains from the upper Sacramento River (California) and selected tributaries	Published paper	Contamination	Grab	Once	Sacramento	DS Shasta Dam/Spring Creek	1990	Complete	Summary data statistics
Central Valley Regional Water Quality Control Board	2002	Upper Sacramento River TMDL for cadmium, copper & zinc	Report	Contamination	Other	Other	Sacramento		Variable	Incomplete	Lists all mines. Compilation of exist data, loads estimated

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Extent/Continuity	Comments
Brett, M.T.; Goldman, C.R.; Lubnow, F.S.; Bracher, A.; Brandt, D.; Brandt, O.; Muller-Solger, A.	1995	Impact of a major soil fumigant spill on the planktonic ecosystem of Shasta Lake, California	Published paper	Contamination	Grab	Other	Sacramento	Shasta Lake	1991	Incomplete	5-d interval, 26 days @ 2 stations
Healey, T.	1991	Cantara chemical spill, summary report of post incident bioassays on the Sacramento River	Report	Contamination	Other	Other	Sacramento	Cantara-Shasta Lake	1991	Complete	Post-Cantara spill bioassays
Domagalski, J.L.; Knifong, D.L.; Dileanis, P.D.; Brown, L.R.; May, J.T.; Connor, V.; Alpers, C.N	2000	Water quality in the Sacramento River basin California 1994-1998	Report	Nutrients	Grab	Other	Sacramento	36 NAWQA Sites Downstream Shasta Dam	1994-1998	Complete	Data Summarized in Appendix
SHN Consulting Engineers & Geologists, Inc.	2004	Draft Lake Siskiyou Watershed Assessment	Report	Nutrients	Other	Other	Sacramento	Upstream Lake Siskiyou	1964, 1986, 2003	Incomplete	June-Nov 2002 most complete
U.S. Bureau of Reclamation, ; U.S. Geological Survey	2013	BOR_GS 2013 DLT Hrly Turb pd of record	Data file	Physicochemical	Multiparameter logger	Hourly	Sacramento	Delta	1989-2013	Complete	Turbidity
U.S. Bureau of Reclamation, ; U.S. Geological Survey	2013	BOR_GS 2013 DLT Hrly DO pd of record	Data file	Physicochemical	Multiparameter logger	Hourly	Sacramento	Delta	1989-2013	Complete	Dissolved Oxygen
California Department of Water Resources	2013	WQ SacDelta Period of Record	Data file	Physicochemical	Grab	Monthly	Sacramento	Delta: A2130000	1951-1989 2000-2013	Complete	
Saiki, M.K.; Castleberry, D.T.; May, T.W.; Martin, B.A.; Bullard, F.N.	1995	Copper, cadmium, and zinc concentrations in aquatic food chains from the upper Sacramento River (California) and selected tributaries	Published paper	Physicochemical	Grab	Once	Sacramento	DS Shasta Dam/Spring Creek	1990	Complete	Summary data statistics
SHN Consulting Engineers & Geologists, Inc.	2004	Draft Lake Siskiyou Watershed Assessment	Report	Physicochemical	Other	Other	Sacramento	Upstream Lake Siskiyou	1964, 1986, 2002	Incomplete	June-Nov 2002 most complete
U.S. Geological Survey, ; U.S. Bureau of Reclamation	2009	SacramentoatDeltaTemp (Station ID DLT)	Data file	Water temperature	Datalogger	Daily	Sacramento	Delta	1990-2009	Complete	Daily Average
Hannon, J.; U.S. Bureau of Reclamation	2011	SacTempLoggerAll	Data file	Water temperature	Datalogger	Daily	Sacramento	9-Stations: Box Canyon-Gibson	2011	Complete	Daily Average
Hannon, J.; U.S. Bureau of Reclamation	2011	SacTempLoggerAllthru20121110	Data file	Water temperature	Datalogger	Daily	Sacramento	9-Stations: Box Canyon-Gibson	2011-2012	Complete	Daily Average
U.S. Bureau of Reclamation, ; U.S. Geological Survey	2013	BOR_GS 2013 DLT Hrly WatTemp pd of record	Data file	Water temperature	Datalogger	Hourly	Sacramento	Delta	1989-2013	Complete	Water Temperature
Hanson, H.A.; Smith, O.R.; Needham, P.R.	1940	An investigation of fish-salvage problems in relation to Shasta Dam	Report	Water temperature	Grab	Other	Sacramento	Redding	1939-1940	Incomplete	Observations of temperatures, no raw data
Healey, T.	1991	Cantara chemical spill, summary report of post incident bioassays on the Sacramento River	Report	Water temperature	Multiparameter logger	Other	Sacramento	Shasta Lake	1991	Complete	Shasta Lake Temp Profiles associated with bioassays
Rode, M.; Zuspan, M.	1994	Upper Sacramento River fishery investigations Part 1: Fish population, migration, angler harvest rate and water temperature studies	Report	Water temperature	Datalogger	Other	Sacramento	Soda Creek/Sims Campground	1981	Incomplete	Summary data statistics
Federal Energy Regulatory Commission	2006	Environmental inspection report for the Lake Siskiyou (Box Canyon) Power Project	Report	Physicochemical	Other	Other	Sacramento	Box Canyon	n/a	Incomplete	Requirements for Box Canyon; no data

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Extent/Continuity	Comments
Federal Energy Regulatory Commission	2006	Environmental inspection report for the Lake Siskiyou (Box Canyon) Power Project	Report	Water temperature	Other	Other	Sacramento	Box Canyon	n/a	Incomplete	Requirements for Box Canyon; no data

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Table D-3. Content coverage and analysis for data and reports providing physical habitat information for the Sacramento and McCloud rivers.

Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
PG&E	2006	McCloud-Pit Hydroelectric Project FERC Project No. 2106 Relicensing Pre-Application Document (PAD)	Report	Barriers	Other	Once	McCloud	Project Reservoirs	2005	General info in PAD. No specific Information
North State Resources, Inc.	2003	Shasta Dam and Reservoir Enlargement Project: Lower McCloud River technical report	Report	Barriers	Ground survey	Once	McCloud	Tuna Creek to Shasta Lake	2003	NSR Survey Lower McCloud River ESL
U.S. Bureau of Reclamation	2009	Lower McCloud River technical report	Report	Barriers	Ground survey	Once	McCloud	Tuna Creek to Shasta Lake	2008	NSR Survey Lower McCloud River ESL
Cheny, W.O.; Hall, E.E. Jr.	1960	Fish barriers in the McCloud River one to one and one-half miles upstream from Chatterdown Creek	Report	Barriers	Ground survey	Once	McCloud	1-mi US Chatterdown Creek	1960	Documents two 6-8 foot bedrock falls at "reef"
North State Resources, Inc.	2007	Lower McCloud River fish habitat survey	Report	Barriers	Ground survey	Once	McCloud	Existing/Proposed inundation zone	2008	Inventory of fish passage impediments in the McCloud River and its tributaries within and immediately upstream of the inundation zone of Shasta Lake
California Department of Fish and Game	1994	Survey of potential trout migration barriers caused by Interstate-5	Report	Barriers	Ground survey	Once	Sacramento	All major tributaries to west side of Sacramento River between Box Canyon Dam and Shasta Lake.	1994	See also Hendrix 1994
California Department of Fish and Game	2000	Fishery management plan for the Upper Sacramento River (Box Canyon Dam to Lake Shasta) 2000-2005 Shasta/Siskiyou Counties, California	Report	Barriers	Other		Sacramento	Little Castle Creek, Boulder Creek, Shotgun Creek	2000-2005	Report identifies three culverts Caltrans has built passage structures in their general info on performance
Hendrix, P.B.	1994	Survey of potential trout migration barriers caused by Interstate Highway 5	Report	Barriers	Ground survey	Once	Sacramento	All major tributaries to west side of Sacramento River	1994	Summarized by tributary surveyed. Includes table of tributaries with barriers and quality of habitat and priority for restoration
Interagency Fish Passage Steering Committee	2010	Draft summary of initial reconnaissance of habitat upstream of Shasta Lake. Upstream habitat assessment group reconnaissance trip to Shasta Lake tributaries (McCloud and Sacramento rivers) October 5-8, 2010	Report	Bed substrate	Ground survey	Once	Both	McCloud/Sacramento	2010	Reconnaissance survey with notes on suitable spawning habitat and potential spawning capacity
U.S. Bureau of Reclamation	2009	Lower McCloud River technical report	Report	Bed substrate	Ground survey	Once	McCloud	Proposed inundation zone	2008	Suitable spawning habitat is limited in the 2,300-foot segment upstream of Shasta Lake
McBain, S.	1989	A spawning gravel database for the McCloud River, California	Report	Bed substrate	Ground survey	Once	McCloud	MMTs in 4 sections between McCloud Dam and Bollibokka Club.	1989	Particle size distribution and permeability data and analysis. Versions do not include appendices containing the data
PG&E	2009	Fish populations in Project-affected stream reaches	Report	Bed substrate	Ground survey	Once	McCloud	9-Sites McCloud Dam-Shasta Lake	2007-2009	Substrate composition (%) at fish population monitoring sites was recorded. Spawning gravel quantity and quality (according to USFS 2007) was also recorded. Spawning gravel survey was from McCloud Dam-Ladybug Creek

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Table D-3. Content coverage and analysis for data and reports providing physical habitat information for the Sacramento and McCloud rivers.

Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
PG&E	2009	Mobile sediment storage and spawnable gravel investigations (presentation)	Other	Bed substrate	Other		McCloud	McCloud River		Presentation on mobile sediment storage and spawnable gravel investigations. Includes particle size distribution, storage and mobilization, and sediment patch size by reach
PG&E	2009	Assessment of channel morphology and fluvial geomorphic processes in the Lower McCloud River	Report	Bed substrate	Measurement/Modeling	Once	McCloud	McCloud River		Course sediment supply, sediment transport, alluvial sediment storage, mass balance, etc.
PG&E	2011	spwn_poly_rev2	Data file	Bed substrate	Ground survey	Once	McCloud	McCloud Dam-Shasta Lake	2009	GIS Shapefile of Spawning Habitat Polygons-Continuous McCloud Dam-RM 18, then 10 instream flow study sites between McCloud Dam and Shasta Lake
PG&E	2012	Lower McCloud River salmon and steelhead spawning gravel mapping	Report	Bed substrate	Ground survey	Once	McCloud	The 10 existing HCM and IBM sites (comprising 26 habitat units) on the Lower McCloud River.	2009	Criteria used to map spawning habitat for Chinook salmon and steelhead. Estimates of the quantity of suitable area. Includes particle size distribution data
North State Resources, Inc.	2007	Lower McCloud River fish habitat survey	Report	Bed substrate	Ground survey		McCloud	Existing/Proposed inundation zone	2008	Quantity and quality of trout spawning habitat in the McCloud River and tributaries within the existing and proposed inundation zone of Shasta Lake upstream of McCloud Bridge
PG&E	2009	Assessment of channel morphology and fluvial geomorphic processes in the Lower McCloud River	Report	Bed substrate	Ground survey	Once	McCloud	McCloud River, Hawkins Creek, Claiborne Creek, Squaw Valley Creek	2008	Active and bankfull widths, gradient, sediment storage and facies, bulk samples (particle size distribution). Performed at each intensive station and in tributaries near confluence with McCloud River. Study includes bed mobility thresholds and bedload transport capacity
PG&E	2010	Investigation of Star City Creek sediment deposits	Report	Bed substrate	Measurement/Modeling	Once	McCloud	Star City Creek (trib to McCloud Reservoir)	2009	Sediment supply estimation and characterization for the Star City Creek delta with notes regarding use for downstream gravel augmentation
California Department of Fish and Game	1993	1993 Fishery management plan for the Upper Sacramento River (Box Canyon Dam to Shasta Lake)	Report	Bed substrate	Ground survey		Sacramento	DS Box Canyon		Notes to evaluate potential to augment gravel at Box Canyon Dam to improve natural trout production since reach is devoid of gravel and is armored

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
Thomas R. Payne and Associates	1993	Draft preliminary report on the potential for improving salmonid spawning habitat in the upper Sacramento River by artificial introduction of gravel	Report	Bed substrate	Ground survey	Once	Sacramento	DS Box Canyon	1993	Assessment to determine quantity and quality of spawning habitat, feasibility of managing spawning habitat in that reach including supplementation quantities and locations
Miller, J.W.; Whitman, V.A.; Kawsuniak, K.M.; Hendrix, P.B.; Rojek, N.A.	1996	1994 Stream surveys of the upper Sacramento River tributaries	Report	Bed substrate	Ground survey	Once	Sacramento	Results of stream surveys for 28 tributaries to the Sacramento River	1994	Report provides a narrative summary of results: Actual results are provided in appendices not part of this report
U.S. Bureau of Reclamation	2012	Spawn_Pt	Other	Bed substrate	Ground survey	Once	Both	Box Canyon-Shasta Lake, McCloud Dam-Shasta Lake	2011	Reconnaissance level observations of potential salmon spawning habitat
PG&E	2009	FA-S8 TM-54 Attachment 2 IBM	Data file	Flow-Habitat Relationship	Measurement/Modeling	Once	McCloud	IBM Sites described and reported in PG&E 2008 (TM 54)	2009	This reference is a zipfile containing all of the data files provided in Attachment 2 of the FA-S8 study reported in Technical Memorandum 54
PG&E	2007	Lower McCloud River instream flow study (FA-S8)	Report	Flow-Habitat Relationship	Measurement/Modeling	Once	McCloud	McCloud		This document summarizes habitat criteria reported in the literature for fry, juvenile, adult, and spawning life stages for both brown and rainbow trout. It presents the final habitat criteria that will be used for the HCM mapping effort
PG&E	2009	Individual-based model instream flow evaluation	Report	Flow-Habitat Relationship	Measurement/Modeling	Once	McCloud	2-IBM sites: 1 upstream of Ladybug Creek and 1 downstream Little Bollibokka Creek.	2007	Model compiled biological and physical data to evaluate fish population responses to varying stream flows, cumulative effects of changes in flow, temperature, and turbidity, effects of flow variation within and among seasons and years, and interactions among trout species. Depth and velocity data were collected at IBM site transects, but they are not included in this TM
PG&E	2010	Lower McCloud River 1-D PHABSIM Analysis	Report	Flow-Habitat Relationship	Measurement/Modeling	Once	McCloud	10-Sites: Six sites are located in the reach upstream of Squaw Valley Creek and four are located in the reach downstream of Squaw Valley Creek.	2007	The objective of this supplemental 1-D PHABSIM analysis is to provide additional information regarding potential inflection points or peak values in suitable habitat area (or weighted usable area [WUA]) curves that occur between or beyond the flows measured for the HCM component of Study Description FA-S8

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
PG&E	2009	Lower McCloud River instream flow study	Report	Flow-Habitat Relationship	Measurement/Modeling	Once	McCloud	10-Sites: Six sites are located in the reach upstream of Squaw Valley Creek and four are located in the reach downstream of Squaw Valley Creek.	2007	Report does not include raw data used for model input; it does provide a series of data summaries of habitat area. These measurements do correspond to CRMP mapped habitat units
PG&E	2011	Lower McCloud River 1-D PHABSIM 2011 supplemental analysis	Report	Flow-Habitat Relationship	Measurement/Modeling	Once	McCloud	10-Sites: Six sites are located in the reach upstream of Squaw Valley Creek and four are located in the reach downstream of Squaw Valley Creek.	2007	A reanalysis of the PHABSIM data was performed in 2010 using an alternative transect data set, which omitted transects that were particularly complex, highly subject to flow reversals, and/or gave poor discharge estimates.
PG&E	2011	Lower McCloud River habitat suitability criteria development for Chinook salmon and steelhead	Report	Flow-Habitat Relationship	Measurement/Modeling	Once	McCloud	10-Sites: Six sites are located in the reach upstream of Squaw Valley Creek and four are located in the reach downstream of Squaw Valley Creek.	2011	This document summarizes development of literature-based habitat suitability criteria (HSC) for Chinook salmon and steelhead for use with the Lower McCloud River one-dimensional (1-D) physical habitat simulation (PHABSIM) models
PG&E	2012	Lower McCloud River Chinook salmon and steelhead PHABSIM analysis	Report	Flow-Habitat Relationship	Measurement/Modeling	Once	McCloud	10-Sites: Six sites are located in the reach upstream of Squaw Valley Creek and four are located in the reach downstream of Squaw Valley Creek.	2012	Report does not include raw data used for model input; it does provide 1-D PHABSIM results using the HSC developed for specific Chinook salmon and steelhead life stages to evaluate the flow-habitat relationship for these species in the Lower McCloud River
U.S. Forest Service; The Nature Conservancy, Bollibokka Land Co.; California Department of Fish and Game; California Trout; Crane Mills; Hearst Corporation; McCloud Fly Fishing Club; PG&E; Sierra Pacific Industries	2001	McCloud River habitat typing report	Report	GCU w/metrics	Ground survey	Once	McCloud	McCloud Dam-Shasta Lake	1999-2000	Level IV Habitat Types: Includes unit length, width, shelter value, dominant and subdominant substrates. Report summarizes by reach
U.S. Forest Service; The Nature Conservancy, Bollibokka Land Co.; California Department of Fish and Game; California Trout; Crane Mills; Hearst Corporation; McCloud Fly Fishing Club; PG&E; Sierra Pacific Industries	2001	McCloud River habitat typing report data	Data file	GCU w/metrics	Ground survey	Once	McCloud	McCloud Dam-Shasta Lake	1999-2001	Level IV Habitat Types: Includes unit length, width, shelter value, dominant and subdominant substrates

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
PG&E	2009	Assessment of channel morphology and fluvial geomorphic processes in the Lower McCloud River	Report	GCU w/metrics	Photo-map interp	Once	McCloud	McCloud Dam-Squaw Valley Creek	2006	Channel reaches were classified using a process-based classification system emphasizing sediment supply, sediment transport, links to hillslope processes, and external forcing by valley confinement (Montgomery and Buffington 1998, 1997). Intensive study sites were established within each reach to collect data on sediment supply, transport and storage. Data include local channel gradient, bankfull widths and depths, and width-to-depth ratios, notes on morphology, geology, and confinement.
PG&E	2009	Fish populations in Project-affected stream reaches	Report	GCU w/metrics	Ground survey	Other	McCloud	Fish population monitoring sites	2007-2009	Physical habitat MMTs include channel lengths, widths, habitat type, dominant cover type (%) and substrate composition (%).
Weaver, J.; Mehalick, S.	2008	Upper Sacramento River summary report	Report	GCU w/metrics	Ground survey	Once	Sacramento	Dunsmuir-Shasta Lake	2008	Habitat metrics for each survey section: type, thalweg length, average wetted width, depth
Miller, J.W.; Whitman, V.A.; Kawsuniak, K.M.; Hendrix, P.B.; Rojek, N.A.	1996	1994 Stream surveys of the upper Sacramento River tributaries	Report	GCU w/metrics	Ground survey	Once	Sacramento	Results of stream surveys for 28 tributaries to the Sacramento River	1994	Report provides a narrative summary of results: Actual results are provided in appendices not part of this report.
U.S. Bureau of Reclamation	2009	Lower McCloud River technical report	Report	GCU w/o metrics	Ground survey	Once	McCloud	Proposed inundation zone	2001	Summarizes and discusses the CRMP data in context of impacts analysis for raising Shasta Dam
North State Resources, Inc.	2003	Shasta Dam and Reservoir Enlargement Project: Lower McCloud River technical report	Report	GCU w/o metrics	Ground survey		McCloud	Proposed inundation zone	2001	Summarizes and discusses the CRMP data in context of impacts analysis for raising Shasta Dam
PG&E	2007	Lower McCloud River instream flow study	Report	GCU w/o metrics	Photo-map interp	Once	McCloud	McCloud Dam-Shasta Lake	2007	Comparison of CRMP GCU data to aerial video for use in selecting IFIM study sites. Some discrepancies were identified between the CRMP habitat unit designations and those observed in the aerial video

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
Thomas R. Payne and Associates	1992	Habitat mapping of the upper Sacramento River	Report	GCU w/o metrics	Ground survey	Once	Sacramento	Box Canyon-Shasta Lake	1991	Riffle, run, pool and deep pool delineation with unit lengths. Reference stations at geographic locations and every 1,000 ft. Response habitats (too shallow, too deep or turbulent to survey safely or effectively) marked separate. Report does provide a table summarizing percent habitat composition, gradient, mean channel unit length and width by reach
U.S. Forest Service	1996	Shotgun Slate watershed analysis	Report	GCU w/o metrics	Ground survey	Once	Sacramento	Shotgun-Slate Watershed	1996	High-level summarization of the channel types available following Montgomery and Buffington 1993 classification
PG&E	2009	Summary of 2007 and 2008 benthic macroinvertebrate surveys in Project-affected reaches of the Lower McCloud River and Iron Canyon Creek	Report	HCI-full	Ground survey	Once	McCloud	Six sites on McCloud between McCloud Dam and SVC. Two sites on SVC.	2007-2008	Appendices provide a summary of habitat metrics that include widths, depths, velocity, cover, pebble counts and physical habitat scores for survey sites
North State Resources, Inc.	2011	Investigation and characterization of the hydrology and biology of Squaw Valley Creek, McCloud, California	Report	HCI-partial	Ground survey	Quarterly	McCloud	Squaw Valley Creek	2008-2010	Quarterly measurements at five sites
PG&E	2009	Lower McCloud River instream flow study	Report	HCI-partial	Ground survey	Once	McCloud	10-Sites: Six sites are located in the reach upstream of Squaw Valley Creek and four are located in the reach downstream of Squaw Valley Creek.	2007	Report does not include raw data used for model input; it does provide a series of data summaries of habitat area. These measurements do correspond to CRMP mapped habitat units
PG&E	2009	Lower McCloud River instream flow study	Report	HCI-partial	Photo-map interp	Once	McCloud	10-Sites: Six sites are located in the reach upstream of Squaw Valley Creek and four are located in the reach downstream of Squaw Valley Creek.	2007	Report does not include raw data used for model input; it does provide a series of data summaries of habitat area. These measurements do correspond to CRMP mapped habitat units
PG&E	2009	Draft large woody debris management plan for the lower McCloud River	Report	LWD	Other		McCloud	McCloud		LWD Management Plan
Forest Service; The Nature Conservancy, Bollibokka Land Co.; California Department of Fish and Game; California Trout; Crane Mills; Hearst Corporation; McCloud Fly Fishing Club; PG&E; Sierra Pacific Industries; U.S.	2001	McCloud River habitat typing report	Report	LWD	Ground survey	Once	McCloud	McCloud Dam-Shasta Lake	1999-2000	Notes on the occurrence and role of LWD in aquatic habitat in the McCloud River

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Author	Year	Title	Document Type	Data Content	Collection Method	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
PG&E	2009	Draft large woody debris management plan for the lower McCloud River	Report	LWD	Ground survey	Once	Pit	Iron Canyon Creek	2007	LWD inventory
Hanson, H.A.; Smith, O.R.; Needham, P.R.	1940	An investigation of fish-salvage problems in relation to Shasta Dam	Report	Other	Ground survey	Once	Both	Collinsville to Cantara Loop on Sacramento River and to Lower Falls on McCloud River	1937-1941	Distribution and estimation of salmon spawning habitat capacity
Hannon, J.; U.S. Bureau of Reclamation	2011	SacMcCloudGradientProfile	Other	Other	Photo-map interp	Once	Both			Longitudinal profile for the McCloud and Sacramento rivers measured from Google Earth
Interagency Fish Passage Steering Committee	2010	Draft summary of initial reconnaissance of habitat upstream of Shasta Lake. Upstream habitat assessment group reconnaissance trip to Shasta Lake tributaries (McCloud and Sacramento rivers) October 508, 2010	Report	Other	Ground survey	Once	Both	McCloud/Sacramento	2010	Reconnaissance survey with notes on holding and rearing habitat for anadromous salmonids
Barclay, M.	2007	Aerial video of the Lower McCloud River	Other	Other	Photo-map interp	Once	McCloud	McCloud Dam-Shasta Lake	2006	Aerial video of the Lower McCloud River
U.S. Forest Service	2001	Headwaters Sacramento River ecosystem analysis	Report	Other	Other	Once	Sacramento	Upstream Lake Siskiyou		Ecosystem analysis provides a broad narrative description of the channel geomorphology of headwater tributaries. Provides longitudinal profiles of some of the major tributaries
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Other	Measurement/Modeling	Once	Sacramento	Watershed		Modeled stream widths, depths, stream power

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Table D-4. Content coverage and analysis for data and reports providing biological information for the Sacramento and McCloud rivers.

Author	Year	Title	Document Type	Data Content	Collection Method/Protocol	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
Brett, M.T.; Goldman, C.R.; Lubnow, F.S.	1992	Effects of the Cantara Vapam spill on the planktonic ecosystem of Shasta Lake	Report	Algae/Periphyton	Screen/Van Doren	Once	Sacramento	Shasta Lake	1991	Effects of Vapam spill on planktonic ecosystem
Brett, M.T.; Goldman, C.R.; Lubnow, F.S.; Bracher, A.; Brandt, D.; Brandt, O.; Muller-Solger, A.	1995	Impact of a major soil fumigant spill on the planktonic ecosystem of Shasta Lake, California	Published paper	Algae/Periphyton	Screen/Van Doren	Once	Sacramento	Shasta Lake	1991	Effects of Vapam spill on planktonic ecosystem
California Department of Fish and Game	1993	Natural resource damage assessment plan Sacramento River: Cantara Spill, Shasta and Siskiyou Counties, California	Report	Algae/Periphyton	Compilation	Once	Sacramento	Cantara-Shasta Lake	1993	Natural resource damage assessment. Includes brief summaries of existing conditions prior to Cantara Spill with descriptions of causation and injury too natural resources
Reuter, J.E.; Goldman, C.R.	1993	Investigation of periphyton in the upper Sacramento River	Report	Algae/Periphyton	Visual Observation	Regular	Sacramento	10 Sites between Cantara and Dog Creek	1991-1992	Monitoring and damage assessment for periphyton in the Sacramento River following Cantara spill.
PG&E	2006	McCloud-Pit Hydroelectric Project FERC Project No. 2106 Relicensing Pre-Application Document (PAD)	Report	Amphibian	Compilation	Once	McCloud	McCloud Watershed	2006	Summary of existing environment
U.S. Forest Service	1998	Lower McCloud River watershed analysis	Report	Amphibian	Compilation	Once	McCloud	McCloud Watershed	1998	High level summary description of current (1998) and reference conditions
Aramayo, A.	1987	Use of small tributaries by river fish in a section of the Lower McCloud River, California	Report	Amphibian	Trapping/ Electrofishing	Other	McCloud	McCloud, Claiborne, Hawkins, Fitzhugh, Ah-Di-Nah, Ladybug, Bald Mountain	1987-1989	Incidental observations of amphibians
North State Resources, Inc.	2011	Investigation and characterization of the hydrology and biology of Squaw Valley Creek, McCloud, California	Report	Amphibian	VES	Regular	McCloud	Squaw Valley Creek	2008-2010	Quarterly amphibian surveys for four sites on Squaw Valley Creek between McCloud and Johnny Jump Up Creek and of Johnny Jump Up Creek
PG&E	2009	Surveys of special-status amphibians and aquatic reptiles near Project reservoirs and Project-affected stream reaches	Report	Amphibian	VES	Once	McCloud	McCloud, Squaw Valley Creek, Big Gray Creek, Chatterdown Creek, Tuna Creek, Claiborne Creek, Ladybug Creek, Fitzhugh Gulch, Hawkins Creek	2007-2008	Habitat and presence of special-status amphibian and aquatic reptile species
U.S. Forest Service	1999	Squaw Creek watershed analysis	Report	Amphibian	Compilation	Once	Pit	Squaw Creek	Pre-1999	High-level summary of current condition (1999) of amphibian populations in the watershed
California Department of Fish and Game	1993	Natural resource damage assessment plan Sacramento River: Cantara Spill, Shasta and Siskiyou Counties, California	Report	Amphibian	Compilation	Once	Sacramento	Cantara-Shasta Lake	1993	Natural resource damage assessment. Includes brief summaries of existing conditions prior to Cantara Spill with descriptions of causation and injury too natural resources

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North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Amphibian	Compilation	Once	Sacramento	Box Canyon-Shasta Lake		Watershed Assessment provides wide synthetic overview of the amphibian community in the upper Sacramento River drainage.
U.S. Forest Service	1996	Shotgun Slate watershed analysis	Report	Amphibian	Compilation	Once	Sacramento	Shotgun-Slate Watersheds	1996	High-level summary of current condition (1996) of amphibian populations in the watershed
Mundy, P.J.	1988	Age and growth of brown trout ( <i>Salmo trutta</i> ) McCloud River, Shasta County, California	Report	Fish Age/Growth	Angling/Trap	Once	McCloud	McCloud River Preserve	1985	Brown trout
Rode, M.	1988	McCloud River wild trout area management plan	Other	Fish Age/Growth	Compilation	Episodic	McCloud	Watershed (focus on MCR Preserve)	1988	MGMT Plan: Summary of age distribution and growth
Rode, M.	1990	Bull trout, <i>Salvelinus confluentus</i> suckley in the McCloud River: status and recovery recommendations	Report	Fish Age/Growth	Compilation	Once	McCloud	McCloud Watershed	1990	Compilation of existing information on bull trout in the McCloud River
Rode, M. ; Dean. M.	2004	Lower McCloud River wild trout area fishery management plan	Other	Fish Age/Growth	Compilation	Episodic	McCloud	Wild trout area	2004	Updated LMCR wild trout fishery management plan
Sturgess, J.A. ; Moyle, P.B.	1978	Biology of rainbow trout ( <i>Salmo gairdneri</i> ), brown trout ( <i>S. trutta</i> ) and interior Dolly Varden ( <i>Salvelinus confluentus</i> ) in the McCloud River, California, in relation to management	Published paper	Fish Age/Growth	Angling/trapping	Once	McCloud	McCloud River Preserve	1974-1978	
Glowacki, S.C.	2003	A comparison of growth rates of wild rainbow trout ( <i>Oncorhynchus mykiss</i> ) in the upper Sacramento River before and after the Cantara Spill of 1991	Report	Fish Age/Growth	Various	Episodic	Sacramento	Box Canyon-Shasta Lake	1978-1986 and 1994-1997	
Thomas R. Payne and Associates	1995	Upper Sacramento River creel censuses 1978-1986	Report	Fish Age/Growth	Angler Survey	Regular	Sacramento	Box Canyon-Shasta Lake	1978-1986	
California Department of Fish and Game	2000	Fishery management plan for the Upper Sacramento River (Box Canyon Dam to Lake Shasta) 2000-2005 Shasta/Siskiyou Counties, California	Other	Fish Age/Growth	Compilation	Episodic	Sacramento	Box Canyon-Shasta Lake		MGMT Plan: Summary of existing fish population data establishing environmental baseline for management plan
Tippets, W.E.; Moyle, P.B.	1978	Epibenthic feeding by rainbow trout ( <i>Salmo gairdneri</i> ) in the McCloud River, California	Published paper	Fish Diet	Angling/trapping	Once	McCloud	McCloud River Preserve	1974-1978	
Glowacki, S.C.	2003	A comparison of growth rates of wild rainbow trout ( <i>Oncorhynchus mykiss</i> ) in the upper Sacramento River before and after the Cantara Spill of 1991	Report	Fish Diet	Various	Episodic	Sacramento	Box Canyon-Shasta Lake	1978-1986 and 1994-1997	
Knight, C.A.		Unique aspects of McCloud River ichthyofauna	Published paper	Fish Habitat Utilization/ Distribution	Compilation	Once	McCloud	McCloud Watershed		Historical and contemporary synthesis of fish community and habitat in the McCloud River

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Rode, M.	1990	Bull trout, <i>Salvelinus confluentus</i> suckley in the McCloud River: status and recovery recommendations	Report	Fish Habitat Utilization/ Distribution	Compilation	Once	McCloud	McCloud Watershed	1990	Compilation of existing information on bull trout in the McCloud River
Sturgess, J.A. ; Moyle, P.B.	1978	Biology of rainbow trout ( <i>Salmo gairdneri</i> ), brown trout ( <i>S. trutta</i> ) and interior Dolly Varden ( <i>Salvelinus confluentus</i> ) in the McCloud River, California, in relation to management	Published paper	Fish Habitat Utilization/ Distribution	Angling/trapping	Once	McCloud	McCloud River Preserve	1974-1978	
California Department of Fish and Game	1963	Effect of medium impoundments progress report No. 3	Report	Fish Habitat Utilization/ Distribution	Lake Merwin traps/ gill nets	Other	Sacramento	1.5 MI upstream Shasta Lake	1963	Fish distribution study in the Sacramento River into Shasta Lake conducted with juvenile Chinook salmon
California Department of Fish and Game	1963	Effect of medium impoundments progress report No. 4	Report	Fish Habitat Utilization/ Distribution	Lake Merwin traps/ gill nets	Other	Sacramento	1.5 MI upstream Shasta Lake	1963	Fish distribution study in the Sacramento River into Shasta Lake conducted with juvenile Chinook salmon
Rode, M.; Zuspan, M.	1994	Upper Sacramento River fishery investigations Part 1: Fish population, migration, angler harvest rate and water temperature studies	Report	Fish Habitat Utilization/ Distribution	Electrofishing, tagging, angler survey	Once	Sacramento	Box Canyon-Shasta Lake	1980-1981	Results of 1980-1981 studies of wild, hatchery trout and warmwater fish size, migration, angler harvest, and water temperature
Thomas R. Payne and Associates	1992	Summary report describing fish distribution and abundance in the Upper Sacramento River, June-July 1992	Report	Fish Habitat Utilization/ Distribution	Snorkel, Counts, other	Regular	Sacramento	Box Canyon-Shasta Lake	1992	Summary review of the fish population surveys conducted during 1992
Thomas R. Payne and Associates	1995	Upper Sacramento River creel censuses 1978-1986	Report	Fish Habitat Utilization/ Distribution	Angler Survey	Regular	Sacramento	Box Canyon-Shasta Lake	1978-1986	
Yoshiyama, R.M.; Fisher, F.W.; Moyle, P.B.	1998	Historical abundance and decline of Chinook salmon in the Central Valley region of California	Published paper	Fish Pop and Abundance	Compilation	Once	Both	Historical abundance and decline of Chinook salmon in the Central Valley region of California		
Crandall, J.; Middleton, P.	2000	McCloud River Preserve 1999 research and monitoring report	Report	Fish Pop and Abundance	Angler Survey	Regular	McCloud	McCloud River Preserve	1999	
Healey, T.P. ; Rode, M.	1994	McCloud River wild trout migrations and angler harvest from weir counts and tagging, 1984-1987	Report	Fish Pop and Abundance	Weir Counts/Angler Harvest	Regular	McCloud	McCloud River Preserve/Bollibokka Club	1984-1987	Angler harvest, weir counts, tagging
Knight, C.; Hoss, A.	1998	McCloud River Preserve 1998 research and monitoring report	Report	Fish Pop and Abundance	Angler Survey	Regular	McCloud	McCloud River Preserve	1998	
Knight, C.; Hoss, A.	1998	McCloud River Preserve 1998 research and monitoring report	Report	Fish Pop and Abundance	Mark/Recapture	Once	McCloud	McCloud River Preserve	1998	
PG&E	2009	Fish populations in Project-affected stream reaches	Report	Fish Pop and Abundance	Snorkel/Electrofishing	Once	McCloud	8-9 Sites between McCloud Dam and Shasta Lake	2007-2009	Estimates of trout, by species and age class

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Rode, M.	1988	McCloud River wild trout area management plan	Other	Fish Pop and Abundance	Compilation	Episodic	McCloud	Watershed (focus on MCR Preserve)	1988	MGMT Plan: Summary of fish abundance and angler harvest
Rode, M.	1990	Bull trout, <i>Salvelinus confluentus suckleyi</i> in the McCloud River: status and recovery recommendations	Report	Fish Pop and Abundance	Compilation	Once	McCloud	McCloud Watershed	1990	Compilation of existing information on bull trout in the McCloud River
Rode, M. ; Dean. M.	2004	Lower McCloud River wild trout area fishery management plan	Other	Fish Pop and Abundance	Compilation	Episodic	McCloud	Wild trout area	2004	Updated LMCR wild trout fishery management plan
Tussing, S.; Wingo-Tussing, S.; Steward, L.	2005	McCloud River Preserve research and monitoring report 2002 - 2004	Report	Fish Pop and Abundance	Angler Survey	Regular	McCloud	McCloud River Preserve	2002-2004	
Aramayo, A.	1987	Use of small tributaries by river fish in a section of the Lower McCloud River, California	Report	Fish Pop and Abundance	Trapping/ Electrofishing	Other	McCloud	McCloud, Claiborne, Hawkins, Fitzhugh, Ah-Di-Nah, Ladybug, Bald Mountain	1987-1989	Migration, age class distribution, species composition
Crandall, J.	2001	McCloud River Preserve 2001 research and monitoring report	Report	Fish Pop and Abundance	Angler Survey	Regular	McCloud	McCloud River Preserve	2001	
Gast, T.; Allen, M.	2005	Recovery of fish populations in the Upper Sacramento River (Final)	Report	Fish Pop and Abundance	Snorkel, Counts, other	Regular	Sacramento	Box Canyon-Shasta Lake	1992-2001	Analysis of annual fish density estimates in the Sacramento River for 10-years following spill. Includes analysis of age class/size and species distributions spatially and temporally
Hankin, D.G.	1993	The number of fish killed in the Cantara Spill of July 1991	Report	Fish Pop and Abundance	Other	Once	Sacramento	Cantara-Shasta Lake	1991	Estimates of the number of fish killed by the Cantara spill
Hankin, D.G.; McCanne, D.	2000	Estimating the number of fish and crayfish killed and the proportions of wild and hatchery rainbow trout in the Cantara spill	Published paper	Fish Pop and Abundance	Other	Once	Sacramento	Cantara-Shasta Lake	1991	Methods and results for estimating the number of fish and crayfish killed and the proportions of wild and hatchery rainbow trout in the Cantara spill
Hanson, H.A.; Smith, O.R.; Needham, P.R.	1940	An investigation of fish-salvage problems in relation to Shasta Dam	Report	Fish Pop and Abundance	Various	Regular	Both	Redding area	1937-1941	Summary of biological studies on the biology and salmon run sizes in the years leading up to completion of Shasta Dam. Includes weekly counts, length/weight, fecundity, adult and juvenile run timing and sex ratios. Includes a salmon salvage plan.
Rode, M.; Zuspan, M.	1994	Upper Sacramento River fishery investigations Part 1: Fish population, migration, angler harvest rate and water temperature studies	Report	Fish Pop and Abundance	Electrofishing, tagging, angler survey	Once	Sacramento	Box Canyon-Shasta Lake	1980-1981	Results of 1980-1981 studies of wild, hatchery trout and warmwater fish size, migration, angler harvest, and water temperature.

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Table D-4. Content coverage and analysis for data and reports providing biological information for the Sacramento and McCloud rivers.

Author	Year	Title	Document Type	Data Content	Collection Method/Protocol	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
Weaver, J.; Mehalick, S.	2008	Upper Sacramento River summary report	Report	Fish Pop and Abundance	Snorkel	Once	Sacramento	Dunsmuir-Shasta Lake	2007-2008	Snorkel survey results for 8 index sections between Dunsmuir and Shasta Lake.
California Department of Fish and Game	2000	Fishery management plan for the Upper Sacramento River (Box Canyon Dam to Lake Shasta) 2000-2005 Shasta/Siskiyou Counties, California	Other	Fish Pop and Abundance	Compilation	Episodic	Sacramento	Box Canyon-Shasta Lake		MGMT Plan: Summary of existing fish population data establishing environmental baseline for management plan
California Department of Fish and Game	1991	Draft Shasta Lake Management Plan	Other	Fish Species	Compilation	Other	Both	Shasta Lake	1991	Draft Shasta Lake Mgmt Plan. Summarization of the fishery resources in Shasta Lake with monitoring and management recommendations
California Department of Fish	2001	Fish Bulletin 179: Contributions	Report	Fish Species	Compilation	Other	Both			Historical and Present
Jones & Stokes Associates, Inc.	1988	McCloud River Wild and Scenic River study report	Report	Fish Species	Compilation	Other	McCloud	McCloud Watershed	1988	High level summary description of resources
Knight, C.A.		Unique aspects of McCloud River ichthyofauna	Published paper	Fish Species	Compilation	Once	McCloud	McCloud Watershed		Historical and contemporary synthesis of fish community and habitat in the McCloud River
North State Resources, Inc.	2003	Shasta Dam and Reservoir Enlargement Project: Lower McCloud River technical report	Report	Fish Species	Compilation	Once	McCloud	Existing/Proposed inundation zone	2003	
North State Resources, Inc.	2008	Lower McCloud River fish habitat survey	Report	Fish Species	Snorkel	Once	McCloud	Existing/Proposed inundation zone	2008	Species composition and distribution in the McCloud River within the existing and proposed inundation zone of Shasta Lake
PG&E	2006	McCloud-Pit Hydroelectric Project FERC Project No. 2106 Relicensing Pre-Application Document (PAD)	Report	Fish Species	Compilation	Once	McCloud	McCloud Watershed	2006	Summary of existing environment. Includes timeline of events affecting the McCloud River fishery
PG&E	2009	Fish populations in Project-affected stream reaches	Report	Fish Species	Snorkel/Electrofishing	Once	McCloud	8-9 Sites between McCloud Dam and Shasta Lake	2007-2009	
Rode, M.	1988	McCloud River wild trout area management plan	Other	Fish Species	Compilation	Episodic	McCloud	Watershed (focus on MCR Preserve)	1988	MGMT Plan: Summary of species composition
Rode, M.	1990	Bull trout, <i>Salvelinus confluentus</i> suckley in the McCloud River: status and recovery recommendations	Report	Fish Species	Compilation	Once	McCloud	McCloud Watershed	1990	Compilation of existing information on bull trout in the McCloud River
Rode, M. ; Dean. M.	2004	Lower McCloud River wild trout area fishery management plan	Other	Fish Species	Compilation	Episodic	McCloud	Wild trout area	2004	Updated LMCR wild trout fishery management plan
Simmons, R.E.; Lavretsky, P.; May, B.	2009	Introgressive hybridization of redband trout in the Upper McCloud River watershed	Published paper	Fish Species	Genetic Study	Once	McCloud	12 Stations upstream of McCloud Dam, 2-downstream	2002-2007	Study of genetic introgression between species and subspecies of rainbow trout in the Upper McCloud watershed

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Author	Year	Title	Document Type	Data Content	Collection Method/Protocol	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
Sturgess, J.A. ; Moyle, P.B.	1978	Biology of rainbow trout ( <i>Salmo gairdneri</i> ), brown trout ( <i>S. trutta</i> ) and interior Dolly Varden ( <i>Salvelinus confluentus</i> ) in the McCloud River, California, in relation to management	Published paper	Fish Species	Angling/trapping	Once	McCloud	McCloud River Preserve	1974-1977	
Tussing, S.P.	2006	McCloud River salmonid reintroduction and climate change refugia assessment	Report	Fish Species	Other	Other	McCloud		2006	Preliminary assessment of the potential for and regional significance of re-introductions of anadromous salmonids and bull trout into the McCloud River
U.S. Forest Service	1998	Lower McCloud River watershed analysis	Report	Fish Species	Compilation	Once	McCloud	McCloud Watershed	1998	High level summary description of current (1998) and reference conditions
Aramayo, A.	1987	Use of small tributaries by river fish in a section of the Lower McCloud River, California	Report	Fish Species	Trapping/Electrofishing	Other	McCloud	McCloud, Claiborne, Hawkins, Fitzhugh, Ah-Di-Nah, Ladybug, Bald Mountain	1987-1989	Migration, age class distribution, species composition
North State Resources, Inc.	2011	Investigation and characterization of the hydrology and biology of Squaw Valley Creek, McCloud, California	Report	Fish Species	Electrofishing	Regular	McCloud	Squaw Valley Creek	2008-2010	Quarterly fish population surveys for four sites on Squaw Valley Creek between McCloud and Johnny Jump Up Creek and of Johnny Jump Up Creek
U.S. Forest Service	1999	Squaw Creek watershed analysis	Report	Fish Species	Compilation	Once	Pit	Squaw Creek	Pre-1999	High-level summary of current condition (1999) of fisheries resources in the watershed. Includes summary of fish bearing streams
California Department of Fish and Game	1993	1993 Fishery management plan for the Upper Sacramento River (Box Canyon Dam to Shasta Lake)	Other	Fish Species	Compilation	Episodic	Sacramento	Box Canyon-Shasta Lake	1993	MGMT Plan: Summarization of the fishery resources in Sacramento River following the Cantara spill with monitoring and management recommendations
California Department of Fish and Game	1991	Draft recovery plan for upper Sacramento River trout fishery	Other	Fish Species	Compilation	Episodic	Sacramento	Box Canyon-Shasta Lake	1993	Draft recovery plan for the Sacramento River trout fishery following Cantara spill
California Department of Fish and Game	1993	Natural resource damage assessment plan Sacramento River: Cantara Spill, Shasta and Siskiyou Counties, California	Report	Fish Species	Compilation	Once	Sacramento	Cantara-Shasta Lake	1993	Natural resource damage assessment. Includes brief summaries of existing conditions prior to Cantara Spill with descriptions of causation and injury too natural resources

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Author	Year	Title	Document Type	Data Content	Collection Method/Protocol	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
Nielsen, J.L.; Heine, E.L.; Gan, C.A.; Fountain, M.C.	2000	Molecular analysis of population genetic structure and recolonization of rainbow trout following the Cantara Spill	Published paper	Fish Species	Electrofishing/ DNA	Once	Sacramento	11-Mainstem locations between Box Canyon-Shasta Lake and 8-tributaries	1993-1996	Genetic analysis of trout population structure following Cantara spill
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Fish Species	Compilation	Once	Sacramento	Box Canyon-Shasta Lake		Watershed Assessment provides wide synthetic overview of the fish and fisheries in the upper Sacramento River drainage
SHN Consulting Engineers & Geologists, Inc.	2004	Draft Lake Siskiyou Watershed Assessment	Report	Fish Species	Compilation	Once	Sacramento	Lake Siskiyou watershed		Watershed Assessment provides wide synthetic overview of the fish and fisheries in the Lake Siskiyou watershed.
Thomas R. Payne and Associates	1992	Summary report describing fish distribution and abundance in the Upper Sacramento River, June-July 1992	Report	Fish Species	Snorkel, Counts, other	Regular	Sacramento	Box Canyon-Shasta Lake	1992	Summary review of the fish population surveys conducted during 1992
Thomas R. Payne and Associates	1995	Upper Sacramento River creel censuses 1978-1986	Report	Fish Species	Angler Survey	Regular	Sacramento	Box Canyon-Shasta Lake	1978-1986	
Turek, S.M.	1997	1995 Upper Sacramento River angler survey, second year of angling following the 1991 Cantara Spill	Report	Fish Species	Angler Survey	Regular	Sacramento	Box Canyon-Shasta Lake	1995	Results for second year of angler survey following legal fishing following Cantara spill
California Department of Fish and Game	2000	Fishery management plan for the Upper Sacramento River (Box Canyon Dam to Lake Shasta) 2000-2005 Shasta/Siskiyou Counties, California	Other	Fish Species	Compilation	Episodic	Sacramento	Box Canyon-Shasta Lake		MGMT Plan: Summary of existing fish population data establishing environmental baseline for management plan.
Miller, J.W.; Whitman, V.A.; Kawsuniak, K.M.; Hendrix, P.B.; Rojek, N.A.	1996	1994 Stream surveys of the upper Sacramento River tributaries	Report	Fish Species	Electrofishing/ Snorkel	Once	Sacramento	Results of stream surveys for 28 tributaries to the Sacramento River	1994	Report provides a narrative summary of results: Actual results are provided in appendices not part of this report
U.S. Forest Service	1996	Shotgun Slate watershed analysis	Report	Fish Species	Compilation	Once	Sacramento	Shotgun-Slate Watersheds	1996	High-level summary of current condition (1996) of fisheries resources in the watershed. Includes summary of fish bearing streams
U.S. Forest Service	2001	Headwaters Sacramento River ecosystem analysis	Report	Fish Species	Compilation	Once	Sacramento	Headwaters (upstream Box Canyon Dam)	Pre-2001	Ecosystem analysis provides wide synthetic overview of the fish and fisheries in the Sacramento River headwaters
Castillo, G.C.	1996	Annotated bibliography on ecological interactions between Chinook salmon and resident rainbow/steelhead trout	Other	Fish Species Interaction	Compilation	Once	Other		pre-1996	Annotated bibliography on interactions of Chinook salmon and resident trout
Leitritz, E.	1969	Fish Bulletin 150. A history of California's Fish Hatcheries 1870-1960	Report	Hatchery	Hatchery		Both	Baird Hatchery/Hazel and Mears Creek Egg Stations	1800's	Development of fish culture in California from 1870-1960

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Author	Year	Title	Document Type	Data Content	Collection Method/Protocol	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
Baird, S.F.		Work of the U.S. Fish Commission	Report	Hatchery	Hatchery	Regular	McCloud	Baird Hatchery		Narrative description egg taking
U.S. Commission of Fish and Fisheries	1872-1883	Report of the commissioner for years 1872-1883	Report	Hatchery	Hatchery	Regular	McCloud	Baird Hatchery	1872-1883	Annual descriptions of the propagation of salmon and trout on the McCloud River at the McCloud River Station
Yoshiyama, R.M.; Fisher, F.W.	2001	Long time past: Baird station and the McCloud Wintu	Report	Hatchery	Hatchery	Other	McCloud	Baird Hatchery	1872-1883	Historical summary of the annual reports written by Livingston Stone at Baird Hatchery
Furnish, J.L. ; Monthey, R.W.	1998	Draft management recommendations for nugget pebblesnail ( <i>Flumicola seminalis</i> ), a ROD mollusk species associated with Sacramento River habitats	Report	Invertebrate	Other	Once	Both	Springs		Species description, taxonomic summary, range, specific habitats, data gaps, threats and management recommendations for the nugget pebblesnail
Crandall, J.; Middleton, P.	2000	McCloud River Preserve 1999 research and monitoring report	Report	Invertebrate	CSBP	Regular	McCloud	McCloud River Preserve	2000	
Hershler, R. ; Hsiu-Ping, L.	2005	Taxonomic status of the Elk Springs pebblesnails	Report	Invertebrate	Hand Collection	Once	McCloud	Elk Springs/Upper Sac	2005	Fluminicola: Genetic studies
Knight, C.; Hoss, A.	1998	McCloud River Preserve 1998 research and monitoring report	Report	Invertebrate	CSBP	Regular	McCloud	McCloud River Preserve	1998	
PG&E	2006	McCloud-Pit Hydroelectric Project FERC Project No. 2106 Relicensing Pre-Application Document (PAD)	Report	Invertebrate	Compilation	Once	McCloud	McCloud Watershed	2006	Summary of existing environment
Tussing, S.; Wingo-Tussing, S.; Steward, L.	2005	McCloud River Preserve research and monitoring report 2002 - 2004	Report	Invertebrate	CSBP	Regular	McCloud	McCloud River Preserve	2002-2005	
Crandall, J.	2001	McCloud River Preserve 2001 research and monitoring report	Report	Invertebrate	CSBP	Regular	McCloud	McCloud River Preserve	2001	
North State Resources, Inc.	2011	Investigation and characterization of the hydrology and biology of Squaw Valley Creek, McCloud, California	Report	Invertebrate	SWAMP	Regular	McCloud	Squaw Valley Creek	2008-2010	Quarterly invertebrate surveys for four sites on Squaw Valley Creek between McCloud and Johnny Jump Up Creek and of Johnny Jump Up Creek. Includes snail sampling for tributary springs
PG&E	2009	Summary of 2007 and 2008 benthic macroinvertebrate surveys in Project-affected reaches of the Lower McCloud River and Iron Canyon Creek	Report	Invertebrate	SWAMP	Once	McCloud	McCloud, Squaw Valley Creek	2007-2008	Comparison of BMI assemblages downstream of Project diversions with those collected from nearby unregulated sites
PG&E	2008	Survey for special-status aquatic molluscs and invasive crayfish within Project reservoirs and Project-affected streams	Report	Invertebrate	Various	Once	McCloud	59 Sites throughout watershed	2007-2008	Presence or absence of four special-status aquatic molluscs in the Project Vicinity and the distribution and relative abundance of nonnative crayfish

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Table D-4. Content coverage and analysis for data and reports providing biological information for the Sacramento and McCloud rivers.

Author	Year	Title	Document Type	Data Content	Collection Method/Protocol	Interval	River Basin	Sub-Basin Location(s)	Period of Record	Comments
Brett, M.T.; Goldman, C.R.	1993	Crayfish population size and recolonization potential in the upper Sacramento River following the Cantara Vapam spill	Report	Invertebrate	Trapping	Once	Sacramento	Cantara-Shasta Lake, some tributaries	1992	Crayfish population size
California Department of Fish and Game	1993	Natural resource damage assessment plan Sacramento River: Cantara Spill, Shasta and Siskiyou Counties, California	Report	Invertebrate	Compilation	Once	Sacramento	Cantara-Shasta Lake	1993	Natural resource damage assessment. Includes brief summaries of existing conditions prior to Cantara Spill with descriptions of causation and injury too natural resources
Frest, T.J.; Johannes, E.J.	1997	Upper Sacramento system freshwater mollusk monitoring, California, with particular reference to the Cantara Spill	Report	Invertebrate	Quadrat Samples	Regular	Sacramento	Box Canyon-Shasta Lake	1996	Annual results of mollusk monitoring in the upper Sacramento River. Includes synthesis of previous years' data
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Invertebrate	Compilation	Once	Sacramento	Box Canyon-Shasta Lake		Watershed Assessment provides wide synthetic overview of the invertebrate community in the upper Sacramento River drainage.
California Department of Water Resources	1997	Aquatic macroinvertebrate recovery assessment in the upper Sacramento River 1991-1996	Report	Invertebrate	Kicknet	Regular	Sacramento	Six stations from upstream of Cantara to Shasta Lake	1991-1996	Summary report and analysis for six years of sampling following Cantara spill
Jones & Stokes Associates, Inc.	1988	McCloud River Wild and Scenic River study report	Report	Riparian	Compilation	Other	McCloud	McCloud Watershed	1988	High level summary description of resources
PG&E	2006	McCloud-Pit Hydroelectric Project FERC Project No. 2106 Relicensing Pre-Application Document (PAD)	Report	Riparian	Compilation	Once	McCloud	McCloud Watershed	2006	Summary of existing environment
U.S. Forest Service	1998	Lower McCloud River watershed analysis	Report	Riparian	Compilation	Once	McCloud	McCloud Watershed	1998	High level summary description of current (1998) and reference conditions
PG&E	2009	Assess potential ongoing project effects on riparian vegetation community types in the project area	Report	Riparian	Field Survey & Photo-Map Interp	Once	McCloud	McCloud Dam-Squaw Valley Creek	2007	Details on riparian species composition. Data include riparian zone widths, channel sinuosity, riparian connectivity, valley shape, elevation, etc.
U.S. Forest Service	1999	Squaw Creek watershed analysis	Report	Riparian	Compilation	Once	Pit	Squaw Creek	Pre-1999	Description of riparian habitat and riparian reserves in the watershed
California Department of Fish and Game	1993	Natural resource damage assessment plan Sacramento River: Cantara Spill, Shasta and Siskiyou Counties, California	Report	Riparian	Compilation	Once	Sacramento	Cantara-Shasta Lake	1993	Natural resource damage assessment. Includes brief summaries of existing conditions prior to Cantara Spill with descriptions of causation and injury too natural resources
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Riparian	Compilation	Once	Sacramento	Box Canyon-Shasta Lake		Watershed Assessment provides wide synthetic overview of the riparian community in the upper Sacramento River drainage

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Table D-5. Content coverage and analysis for data and reports providing infrastructure information for the Sacramento and McCloud rivers.

Author	Year	Title	Document Type	Data Content	Ownership	River Basin	Sub-Basin Location(s)	Comments
U.S. Forest Service	2012	Mt. Shasta watershed analysis	Report	Railroads	Unknown	Both	Mt. Shasta Watershed	Broad level information
U.S. Forest Service		Shasta Trinity NF roadmap	Other	Roads	Unknown	Both	Shasta-Trinity NF (PDF map)	Need to locate GIS file if available.
U.S. Forest Service	2012	Mt. Shasta watershed analysis	Report	Roads	Unknown	Both	Mt. Shasta Watershed	Broad level information
California Department of Water Resources	2005	Bulletin 250: Fish Passage Improvement	Report	Stream Crossings	Other	Both		
PG&E; U.S. Geological Survey		Gage rating tables	Data file	Stream Gages	Other	Both		
PG&E	2008	Project schematic	Report	Dams/Diversions	Private	McCloud		
PG&E	2006	McCloud-Pit Hydroelectric Project FERC Project No. 2106 Relicensing Pre-Application Document (PAD)	Report	Dams/Diversions	Private	McCloud		
PG&E	2009	Application for new License: Executive summary, initial statement, and exhibits A-G	Report	Dams/Diversions	Private	McCloud		
PG&E	2009	Application for New License, Volume II, Exhibit E, Environmental Exhibit for the McCloud-Pit Hydroelectric Project FERC Project No. 2106	Report	Dams/Diversions	Private	McCloud		
Ridgewood Renewable Power	2013	Box Canyon Hydroelectric Project	Other	Dams/Diversions	Private	McCloud	Box Canyon Dam	
Jones & Stokes Associates, Inc.	1988	McCloud River Wild and Scenic River study report	Report	Dams/Diversions	Other	McCloud		
PG&E	2009	Assessment of channel morphology and fluvial geomorphic processes in the Lower McCloud River	Report	Dams/Diversions	Unknown	McCloud	McCloud-Pit	
Jones & Stokes Associates, Inc.	1988	McCloud River Wild and Scenic River study report	Report	Ownership	Other	McCloud		
U.S. Forest Service	1998	Lower McCloud River watershed analysis	Report	Ownership	Unknown	McCloud	McCloud Dam-Shasta Lake	Broad level information
Jones & Stokes Associates, Inc.	1988	McCloud River Wild and Scenic River study report	Report	Roads	Other	McCloud		
U.S. Forest Service	1998	Lower McCloud River watershed analysis	Report	Roads	Unknown	McCloud	McCloud Dam-Shasta Lake	Broad level information
U.S. Forest Service	1998	Lower McCloud River watershed analysis	Report	Stream Crossings	Unknown	McCloud	McCloud Dam-Shasta Lake	Broad level information
PG&E	2009	Assessment of channel morphology and fluvial geomorphic processes in the Lower McCloud River	Report	Stream Gages	Unknown	McCloud	McCloud-Pit	
Siskiyou County	2010	Agenda worksheet	Other	Dams/Diversions	Private	Sacramento	Box Canyon Dam	
Federal Energy Regulatory Commission	2006	Environmental inspection report for the Lake Siskiyou (Box Canyon) Power Project	Report	Dams/Diversions	Private	Sacramento	Box Canyon Dam	
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Dams/Diversions	Unknown	Sacramento	Box Canyon-Shasta Dam	
Central Valley Regional Water Quality Control Board	2004	NPDES No. CA0004596 Waste discharge requirements for State of California Fish and Game Mount Shasta Fish Hatchery Siskiyou County	Other	Discharges	State	Sacramento	Mt. Shasta	
Central Valley Regional Water Quality Control Board	2005	NPDES No. CA0083178 Waste discharge requirements for Union Pacific Railroad Company Dunsmuir Railyard Siskiyou County	Other	Discharges	Private	Sacramento	Dunsmuir	
Central Valley Regional Water Quality Control Board	2012	NPDES No. CA0078051 Waste discharge requirements for the City of Mt. Shasta and U.S. Department of Agriculture, Forest Service City of Mt. Shasta Wastewater Treatment Plant Siskiyou County	Other	Discharges	City	Sacramento	Mt. Shasta	

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Author	Year	Title	Document Type	Data Content	Ownership	River Basin	Sub-Basin Location(s)	Comments
Central Valley Regional Water Quality Control Board	2012	NPDES No. CA0078441 City of Dunsmuir wastewater treatment plant Shasta and Siskiyou counties	Other	Discharges	City	Sacramento	Dunsmuir	
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Discharges	Unknown	Sacramento	Box Canyon-Shasta Dam	
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Ownership	Unknown	Sacramento	Box Canyon-Shasta Dam	
SHN Consulting Engineers & Geologists, Inc.	2004	Draft Lake Siskiyou Watershed Assessment	Report	Ownership	Unknown	Sacramento	Upstream Box Canyon Dam	
U.S. Forest Service	1996	Shotgun Slate watershed analysis	Report	Ownership	Unknown	Sacramento	Shotgun-Slate watershed	Broad level information
U.S. Forest Service	2001	Headwaters Sacramento River ecosystem analysis	Report	Ownership	Unknown	Sacramento	Upstream Box Canyon Dam	Broad level information
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Railroads	Unknown	Sacramento	Box Canyon-Shasta Dam	
U.S. Forest Service	1996	Shotgun Slate watershed analysis	Report	Railroads	Unknown	Sacramento	Shotgun-Slate watershed	Broad level information
U.S. Forest Service	2001	Headwaters Sacramento River ecosystem analysis	Report	Railroads	Unknown	Sacramento	Upstream Box Canyon Dam	Broad level information
North State Resources, Inc.	2010	Upper Sacramento River watershed assessment and management strategy	Report	Roads	Unknown	Sacramento	Box Canyon-Shasta Dam	
SHN Consulting Engineers & Geologists, Inc.	2004	Draft Lake Siskiyou Watershed Assessment	Report	Roads	Unknown	Sacramento	Upstream Box Canyon Dam	
U.S. Forest Service	1996	Shotgun Slate watershed analysis	Report	Roads	Unknown	Sacramento	Shotgun-Slate watershed	Broad level information
U.S. Forest Service	2001	Headwaters Sacramento River ecosystem analysis	Report	Roads	Unknown	Sacramento	Upstream Box Canyon Dam	Broad level information
California Department of Fish and Game	1994	Survey of potential trout migration barriers caused by Interstate-5	Report	Stream Crossings	Other	Sacramento	Box Canyon Dam-Shasta Lake	
U.S. Forest Service	1996	Shotgun Slate watershed analysis	Report	Stream Crossings	Unknown	Sacramento	Shotgun-Slate watershed	Broad level information
Hannon, J.; U.S. Bureau of Reclamation	2011	USacTempLogger_GPSlocations	Geospatial	Stream Gages	Unknown	Sacramento		