

DRAFT

Attachment B SRWQM Output – Sacramento River Water Temperatures

Water Quality Technical Report

Shasta Lake Water Resources Investigation

Prepared by:

**United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region**



**U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Sacramento, California**

November 2011

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Attachment B

SRWQM Output – Sacramento River

Water Temperatures

Existing Condition v Alternative CP1
Existing Condition v Alternative CP2
Existing Condition v Alternative CP3
Existing Condition v Alternative CP4

No-Action Alternative v Alternative CP1
No-Action Alternative v Alternative CP2
No-Action Alternative v Alternative CP3
No-Action Alternative v Alternative CP4

Sacramento River Water Temperatures at Keswick Dam (°F)

Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	51	50	52	49	47	48	52	52	50	51	51	52	50
1923	Below Normal	52	51	51	48	47	48	52	53	51	51	51	53	51
1924	Critical	53	53	51	47	47	50	53	55	52	55	58	64	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	54	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	54	56	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	52	53	50
1928	Above Normal	53	52	49	47	46	47	50	50	50	51	54	55	50
1929	Critical	55	53	51	45	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	51
1931	Critical	55	54	51	47	47	48	49	51	53	55	59	65	53
1932	Dry	60	54	48	46	44	47	49	52	54	55	56	61	52
1933	Critical	60	56	51	46	45	47	49	51	53	55	56	61	52
1934	Critical	61	56	51	47	46	48	49	51	54	56	63	65	54
1935	Below Normal	61	53	49	46	45	46	48	50	52	52	55	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	55	54	52	48	46	47	48	50	50	51	53	55	51
1938	Wet	55	53	49	46	45	46	48	50	50	51	53	54	50
1939	Dry	55	54	51	48	46	48	48	49	51	51	54	55	51
1940	Above Normal	55	54	51	47	47	47	50	51	50	51	53	55	51
1941	Wet	55	53	50	47	46	47	48	50	51	53	53	55	51
1942	Wet	55	54	50	46	46	47	49	49	50	51	52	53	50
1943	Wet	54	54	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	54	54	52	48	47	48	48	50	50	52	53	55	51
1945	Below Normal	54	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	52	49	45	45	46	47	48	49	50	51	52	49
1947	Dry	53	52	50	47	46	47	48	49	50	51	53	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	53	50
1949	Dry	53	53	51	47	46	46	48	49	49	50	51	53	50
1950	Below Normal	53	53	51	46	44	45	47	48	49	51	51	53	49
1951	Above Normal	52	51	48	45	44	45	47	48	48	49	51	52	48
1952	Wet	50	51	48	44	44	44	46	48	50	51	51	53	48
1953	Wet	54	54	49	47	45	46	48	48	49	51	51	53	50
1954	Above Normal	53	53	49	46	45	46	47	48	50	50	53	54	50
1955	Dry	53	52	49	46	45	47	47	49	49	51	52	53	49
1956	Wet	52	51	49	44	43	45	47	46	48	50	50	51	48
1957	Above Normal	52	52	51	47	46	46	48	50	50	50	52	54	50
1958	Wet	53	52	49	46	46	46	47	49	50	51	51	54	49
1959	Below Normal	55	54	51	47	46	46	48	49	50	52	55	56	51
1960	Dry	56	54	52	47	46	46	47	48	49	51	52	54	50
1961	Dry	54	53	48	46	45	46	47	48	49	50	52	54	49
1962	Below Normal	54	53	48	46	45	45	47	48	49	50	51	53	49
1963	Wet	53	53	50	47	46	47	48	50	50	51	53	53	50
1964	Dry	53	52	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	53	51	49	44	44	45	45	47	49	50	51	52	48
1966	Below Normal	51	51	49	45	45	45	48	49	49	50	52	53	49
1967	Wet	54	53	48	46	45	45	46	48	50	51	51	52	49
1968	Below Normal	53	54	50	46	46	47	48	49	50	51	53	54	50
1969	Wet	54	52	48	45	43	44	45	47	49	51	51	52	48
1970	Wet	53	53	50	47	45	46	46	48	49	50	52	54	49
1971	Wet	53	52	48	44	44	45	47	48	49	51	52	52	49
1972	Below Normal	53	52	49	45	45	46	47	49	49	50	52	53	49
1973	Above Normal	52	51	48	45	44	45	47	48	49	50	52	52	48
1974	Wet	50	51	47	45	43	45	47	48	49	51	50	52	48
1975	Wet	53	53	49	47	45	46	48	49	50	52	51	53	50
1976	Critical	53	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	51	53	57	62	63	53
1978	Above Normal	58	52	46	45	43	44	46	47	49	51	51	51	48
1979	Below Normal	52	52	51	48	46	47	48	50	50	51	52	53	50
1980	Above Normal	52	51	49	46	46	47	48	49	49	50	51	53	49
1981	Dry	52	51	50	47	46	47	49	50	50	51	53	54	50
1982	Wet	53	52	48	44	44	45	46	49	50	50	50	52	49
1983	Wet	53	52	48	46	45	46	47	49	50	51	52	54	49
1984	Wet	55	53	49	45	45	46	47	49	50	50	53	53	50
1985	Dry	52	51	48	46	45	46	48	49	50	51	53	54	50
1986	Wet	55	53	49	47	47	48	50	50	51	52	53	55	51
1987	Dry	54	54	51	47	46	47	48	49	50	51	54	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	54	53	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	54	50
1990	Critical	53	53	51	47	45	47	48	49	50	53	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	55	51
1992	Critical	57	55	51	47	46	47	48	49	51	54	58	62	52
1993	Above Normal	61	54	48	43	43	45	46	47	49	50	51	52	49
1994	Critical	54	53	50	47	46	48	49	50	51	52	55	56	51
1995	Wet	58	54	49	45	44	46	47	49	50	52	53	54	50
1996	Wet	55	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	52	50	46	45	46	47	48	49	50	52	54	49
1998	Wet	53	52	48	46	45	45	48	47	49	51	53	55	49
1999	Wet	56	53	49	46	45	45	47	48	49	50	51	51	49
2000	Above Normal	53	53	50	48	49	49	51	51	51	52	55	56	52
2001	Dry	56	55	53	49	46	48	48	50	51	53	55	56	52
2002	Dry	56	56	49	47	47	47	49	50	51	52	55	56	51
2003	Above Normal	56	56	50	46	46	48	48	49	51	51	53	55	51
Average		54	53	50	46	45	46	48	49	50	51	53	55	50
Wet		54	53	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	46	45	46	48	49	50	51	52	54	50
Dry		55	53	50	47	46	47	48	49	50	51	53	55	50
Critical		55	54	51	47	46	48	49	50	52	54	56	59	52

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP1 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	51	50	52	49	47	47	52	52	50	51	51	52	50
1923	Below Normal	52	51	50	48	47	48	53	54	50	51	51	53	51
1924	Critical	53	53	51	47	47	50	53	55	52	55	58	64	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	53	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	54	56	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	51	53	50
1928	Above Normal	53	52	49	47	46	47	50	50	50	51	53	55	50
1929	Critical	54	53	51	46	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	50
1931	Critical	54	54	51	47	47	48	49	51	53	55	58	64	53
1932	Dry	60	54	48	45	44	47	49	52	53	55	55	61	52
1933	Critical	60	56	51	46	45	47	49	50	53	55	55	60	52
1934	Critical	61	56	51	47	46	48	49	51	54	56	62	65	54
1935	Below Normal	61	54	49	46	45	46	48	50	51	52	55	57	51
1936	Below Normal	57	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	55	54	52	48	46	47	48	50	50	51	53	54	51
1938	Wet	55	53	49	46	45	46	48	50	50	51	53	54	50
1939	Dry	54	53	50	48	47	48	48	49	50	51	54	55	51
1940	Above Normal	55	54	52	47	46	47	50	51	51	51	53	54	51
1941	Wet	54	53	50	47	46	47	48	50	51	52	53	54	50
1942	Wet	54	54	50	46	46	47	49	49	50	51	52	53	50
1943	Wet	54	53	50	47	46	47	49	50	50	51	52	54	50
1944	Dry	53	53	52	48	47	48	48	50	50	52	53	55	51
1945	Below Normal	55	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	52	49	45	45	46	47	48	49	50	51	52	49
1947	Dry	52	52	50	47	46	47	48	49	50	51	54	56	50
1948	Below Normal	57	53	51	47	46	47	48	50	51	51	52	52	50
1949	Dry	52	52	50	47	45	45	48	49	49	50	51	53	49
1950	Below Normal	52	53	51	47	44	45	47	48	49	51	51	52	49
1951	Above Normal	52	51	48	45	44	45	46	48	48	49	51	52	48
1952	Wet	50	51	48	44	44	44	46	48	49	51	51	53	48
1953	Wet	53	53	49	47	46	46	48	48	49	51	51	52	50
1954	Above Normal	52	52	49	46	45	46	47	48	50	50	52	53	49
1955	Dry	53	52	48	46	45	47	47	49	49	50	52	54	49
1956	Wet	52	51	48	44	43	45	47	46	48	50	50	50	48
1957	Above Normal	51	52	50	47	46	46	48	50	50	50	52	54	50
1958	Wet	52	51	49	46	46	46	47	49	50	51	51	53	49
1959	Below Normal	54	53	51	47	46	47	48	49	50	52	54	56	51
1960	Dry	56	54	52	47	46	46	47	48	49	51	52	54	50
1961	Dry	54	53	48	46	45	46	47	48	49	50	51	53	49
1962	Below Normal	53	53	48	46	45	45	47	48	49	50	51	52	49
1963	Wet	51	52	50	47	46	47	48	50	50	51	52	53	50
1964	Dry	52	51	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	53	51	49	44	44	45	46	47	49	50	51	50	48
1966	Below Normal	50	51	48	45	45	45	48	49	49	50	51	53	49
1967	Wet	53	52	48	46	45	46	46	48	50	51	51	52	49
1968	Below Normal	52	53	49	46	46	47	48	49	50	51	53	54	50
1969	Wet	53	52	48	45	43	44	45	47	48	50	51	51	48
1970	Wet	52	52	49	47	45	46	46	48	49	50	52	53	49
1971	Wet	53	52	47	44	44	45	47	48	49	51	52	52	49
1972	Below Normal	52	52	49	45	45	46	47	49	49	50	52	53	49
1973	Above Normal	52	50	48	45	44	45	47	48	48	50	52	52	48
1974	Wet	49	51	47	45	43	45	47	48	49	51	50	51	48
1975	Wet	52	52	49	47	45	46	48	49	50	51	51	52	49
1976	Critical	52	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	51	53	57	62	63	53
1978	Above Normal	59	52	46	45	44	44	45	47	48	50	51	50	48
1979	Below Normal	51	52	50	48	46	47	48	50	50	51	52	53	50
1980	Above Normal	52	51	50	46	46	47	48	49	49	51	51	51	49
1981	Dry	51	51	50	47	46	47	49	49	50	51	53	54	50
1982	Wet	53	51	48	44	44	45	46	49	49	50	50	51	48
1983	Wet	52	51	48	46	45	46	47	49	50	51	52	53	49
1984	Wet	54	53	49	45	45	46	47	49	50	51	52	53	49
1985	Dry	52	51	48	46	46	46	48	48	50	51	53	54	49
1986	Wet	55	52	49	47	47	48	49	50	51	52	53	54	51
1987	Dry	54	53	51	47	46	47	48	49	50	51	53	55	50
1988	Critical	57	55	49	45	45	47	48	49	50	54	53	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	54	50
1990	Critical	53	52	51	47	45	47	48	49	50	52	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	55	51
1992	Critical	56	54	51	47	46	47	48	49	51	54	58	63	52
1993	Above Normal	61	54	48	43	43	45	46	48	48	50	51	51	49
1994	Critical	52	52	50	48	47	48	49	50	51	52	54	55	51
1995	Wet	56	53	49	45	45	46	47	48	50	52	53	54	50
1996	Wet	54	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	52	50	46	45	46	47	48	49	50	52	53	49
1998	Wet	53	52	48	46	45	45	47	49	51	53	55	55	49
1999	Wet	55	53	49	47	45	45	48	48	49	50	52	51	49
2000	Above Normal	52	52	50	48	49	49	51	51	51	52	54	56	51
2001	Dry	55	54	52	49	46	48	49	50	50	52	54	56	51
2002	Dry	56	56	49	47	46	47	49	50	51	52	54	55	51
2003	Above Normal	55	55	50	46	46	47	48	49	51	51	53	54	50
Average		54	53	50	46	46	47	48	49	50	51	53	54	50
Wet		53	52	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	47	45	46	48	49	50	50	52	54	50
Dry		55	53	50	47	46	47	48	49	50	51	53	55	50
Critical		55	54	51	47	46	48	49	50	52	54	56	59	52

Change in Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP1 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Total (TAF)
1922	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Norma	0	0	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1928	Above Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1935	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1940	Above Norma	0	0	0	0	0	0	0	0	0	0	0	-1	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1945	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	Dry	-1	0	0	0	0	0	0	0	-1	0	1	1	0
1948	Below Norma	1	0	0	0	0	0	0	0	1	0	0	0	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Norma	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1955	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Norma	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Norma	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1962	Below Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-2	0
1966	Below Norma	0	0	0	0	0	0	0	0	0	0	0	-1	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Norma	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1969	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
1973	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	0	0	1	0	0	0	0	0	0	0	0	0
1977	Critical	0	-1	0	0	0	0	0	0	0	0	0	1	0
1978	Above Norma	1	0	0	0	1	0	0	0	0	0	0	-1	0
1979	Below Norma	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Norma	0	0	0	0	0	0	0	0	0	0	0	-2	0
1981	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	0	0	0	1	0	0	0	0	0	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	1	0
1993	Above Norma	0	0	0	0	0	0	0	1	0	0	0	-1	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1995	Wet	-2	0	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Norma	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
2003	Above Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
Average		0	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Norma		0	0	0	0	0	0	0	0	0	0	0	-1	0
Below Norma		0	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation
 Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures at Keswick Dam (°F)

From Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Total
Year	Year Type													
1922	Above Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Norma	-1%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%
1924	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1928	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1929	Critical	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1930	Dry	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-1%	0%
1932	Dry	0%	1%	1%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1935	Below Norma	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1936	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1939	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%
1940	Above Norma	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1941	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1945	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Norma	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1947	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	1%	0%
1948	Below Norma	1%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%
1949	Dry	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1951	Above Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Norma	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Norma	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	-1%	-1%	-1%	0%
1960	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1962	Below Norma	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	0%
1963	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1965	Wet	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	-3%	0%
1966	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1967	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1969	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%
1971	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1973	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1974	Wet	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1977	Critical	0%	-1%	0%	0%	1%	0%	0%	0%	1%	0%	-1%	1%	0%
1978	Above Norma	1%	0%	0%	0%	1%	0%	-1%	-1%	-1%	0%	0%	-1%	0%
1979	Below Norma	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Norma	0%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	-3%	0%
1981	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1984	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1985	Dry	-1%	-1%	0%	1%	0%	0%	1%	0%	-1%	0%	0%	0%	0%
1986	Wet	-1%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
1988	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1989	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1991	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	2%	0%
1993	Above Norma	0%	0%	0%	0%	0%	0%	0%	2%	-1%	0%	0%	-2%	0%
1994	Critical	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1995	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1996	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-1%	-1%	0%	0%	0%	1%	0%	1%	0%	0%	-1%	-1%	0%
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Norma	-1%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2001	Dry	-2%	-1%	-1%	0%	0%	0%	1%	1%	-1%	-1%	0%	0%	0%
2002	Dry	0%	0%	0%	-1%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%
2003	Above Norma	-1%	0%	0%	0%	0%	-1%	1%	0%	0%	0%	-1%	-1%	0%
Average		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Wet		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Norma		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Norma		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Critical		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%

Sacramento River Water Temperatures at Balls Ferry (°F)

Existing Condition		SVI												
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Norma	55	49	49	46	46	49	54	57	53	53	53	55	52
1923	Below Norma	53	50	48	45	47	50	54	55	53	54	54	55	51
1924	Critical	53	53	49	45	48	50	53	57	54	57	60	64	54
1925	Dry	56	49	43	43	47	48	54	54	54	54	56	58	51
1926	Dry	56	53	48	45	47	50	53	54	54	54	57	58	53
1927	Wet	56	53	46	45	46	50	50	52	52	53	54	56	51
1928	Above Norma	54	51	47	45	47	48	54	52	52	53	56	57	51
1929	Critical	55	52	47	44	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
1931	Critical	55	52	48	46	47	50	51	54	55	57	60	64	53
1932	Dry	59	52	46	44	45	50	51	56	57	57	58	62	53
1933	Critical	60	55	48	44	45	50	52	54	56	57	58	61	53
1934	Critical	60	54	48	46	48	51	52	55	56	58	64	65	55
1935	Below Norma	59	52	47	45	46	49	54	55	54	54	57	59	53
1936	Below Norma	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Norma	55	53	49	45	46	49	53	55	54	54	55	56	52
1938	Wet	55	52	47	45	45	47	49	54	54	54	55	56	51
1939	Dry	55	52	48	46	46	49	50	52	53	53	55	57	51
1940	Above Norma	55	53	49	46	47	48	54	55	53	53	55	57	52
1941	Wet	55	52	48	47	46	49	50	52	54	55	55	56	52
1942	Wet	55	53	49	46	47	49	53	52	55	54	54	55	52
1943	Wet	55	52	48	46	47	48	53	54	53	53	55	56	52
1944	Dry	54	53	50	47	47	49	50	53	53	53	55	57	52
1945	Below Norma	55	51	47	45	47	48	51	53	53	52	54	55	51
1946	Below Norma	53	51	48	45	44	48	49	51	51	52	53	54	50
1947	Dry	53	51	48	45	46	49	52	51	53	53	55	58	51
1948	Below Norma	56	51	48	46	46	48	52	57	54	53	55	55	52
1949	Dry	54	52	48	45	45	47	52	52	52	52	54	56	51
1950	Below Norma	53	52	49	44	45	47	51	52	52	54	54	55	51
1951	Above Norma	52	50	47	44	44	47	49	52	52	52	54	55	50
1952	Wet	51	50	46	43	44	46	47	53	54	55	54	55	50
1953	Wet	55	52	47	46	46	48	51	51	53	54	54	55	51
1954	Above Norma	53	52	47	46	45	47	50	51	52	53	55	56	51
1955	Dry	53	51	46	44	45	48	49	54	52	53	56	56	51
1956	Wet	53	49	48	44	44	48	51	50	52	54	53	53	50
1957	Above Norma	52	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	53	51	47	45	46	46	50	53	54	54	55	55	51
1959	Below Norma	55	52	49	46	46	47	50	51	52	54	57	58	52
1960	Dry	56	53	50	46	46	48	49	53	52	54	55	57	51
1961	Dry	54	51	46	45	46	47	50	51	52	53	54	56	50
1962	Below Norma	54	52	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	53	52	49	46	47	47	48	55	54	53	56	56	51
1964	Dry	53	51	47	45	46	47	49	51	52	54	55	56	50
1965	Wet	54	50	48	44	45	47	49	51	52	53	55	55	50
1966	Below Norma	52	51	46	44	45	46	50	51	51	52	54	56	50
1967	Wet	54	51	47	45	45	46	48	51	53	54	53	54	50
1968	Below Norma	53	53	47	45	46	49	50	52	52	53	56	57	51
1969	Wet	54	51	45	44	43	47	47	50	52	54	54	54	50
1970	Wet	53	52	48	47	45	49	47	51	52	53	55	56	51
1971	Wet	54	50	46	44	44	45	50	51	53	54	55	54	50
1972	Below Norma	53	51	46	44	45	47	49	52	52	53	55	55	50
1973	Above Norma	52	49	46	44	44	46	51	53	52	53	55	55	50
1974	Wet	51	51	46	44	44	45	51	53	54	55	53	54	50
1975	Wet	53	51	47	46	45	47	50	52	54	55	54	55	51
1976	Critical	53	51	47	45	46	49	50	52	51	54	56	57	51
1977	Critical	53	52	49	46	47	49	51	53	55	59	63	63	53
1978	Above Norma	58	50	45	45	44	46	50	51	52	54	54	54	50
1979	Below Norma	53	51	49	46	46	49	51	54	52	54	55	56	51
1980	Above Norma	53	50	47	46	46	49	51	52	52	53	54	56	51
1981	Dry	53	51	48	46	47	48	51	53	52	54	56	57	51
1982	Wet	53	50	47	43	44	46	47	55	54	54	54	54	50
1983	Wet	53	50	47	45	45	46	49	52	53	53	54	55	50
1984	Wet	55	52	47	45	46	47	49	52	53	53	56	57	51
1985	Dry	53	50	46	45	46	48	51	52	53	54	55	57	51
1986	Wet	55	50	47	47	47	49	52	53	54	55	55	57	52
1987	Dry	55	53	49	45	46	48	50	51	52	54	57	57	51
1988	Critical	57	53	46	44	46	48	50	52	53	57	56	57	52
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	56	51
1990	Critical	53	52	49	46	45	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	58	52
1992	Critical	57	53	48	45	47	49	51	52	53	56	60	63	53
1993	Above Norma	60	52	45	43	45	49	51	51	53	53	54	54	51
1994	Critical	54	52	48	46	46	49	50	53	53	54	56	58	52
1995	Wet	57	52	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	55	53	48	46	47	48	52	52	54	55	55	55	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	56	51
1998	Wet	54	51	46	46	45	46	51	49	52	54	56	57	50
1999	Wet	55	52	47	46	45	46	51	51	52	53	55	54	51
2000	Above Norma	53	52	48	48	49	51	54	54	54	54	57	59	53
2001	Dry	56	53	51	47	46	51	50	53	52	55	58	60	53
2002	Dry	56	54	46	46	47	49	52	53	54	55	58	59	52
2003	Above Norma	56	54	47	46	46	50	50	52	55	54	57	58	52
Average		55	52	47	45	46	48	51	53	53	54	56	57	51
Wet		54	51	47	45	45	47	50	52	53	54	55	55	51
Above Norma		55	51	47	45	46	48	51	53	53	53	55	56	51
Below Norma		54	52	48	45	46	48	51	53	52	53	55	56	51
Dry		55	52	47	45	46	49	51	53	53	54	56	57	51
Critical		55	53	48	45	47	49	51	53	54	56	58	60	53

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP1 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	55	49	49	46	46	49	54	57	53	53	54	55	52
1923	Below Normal	53	50	47	45	47	50	54	55	52	53	54	55	51
1924	Critical	53	52	49	45	48	50	53	57	54	57	60	64	54
1925	Dry	56	49	43	43	47	48	54	54	54	54	56	58	51
1926	Dry	56	53	48	45	47	50	53	54	54	54	57	58	52
1927	Wet	56	53	46	45	46	49	50	52	52	53	54	55	51
1928	Above Normal	53	51	47	45	47	49	54	52	52	53	56	57	51
1929	Critical	54	51	47	44	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
1931	Critical	55	52	48	46	47	50	51	54	55	57	59	63	53
1932	Dry	59	52	46	44	45	50	51	56	57	57	57	62	53
1933	Critical	59	55	48	44	45	50	52	54	56	57	57	61	53
1934	Critical	60	54	48	46	48	51	52	54	56	58	63	65	55
1935	Below Normal	60	52	47	45	46	49	54	55	54	54	57	59	53
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	51
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	56	52
1938	Wet	55	51	47	45	46	47	49	54	54	54	55	55	51
1939	Dry	54	52	48	46	46	49	50	52	52	53	55	57	51
1940	Above Normal	55	53	49	46	47	48	54	55	53	53	55	56	52
1941	Wet	54	52	48	47	46	49	50	52	54	55	55	55	51
1942	Wet	54	52	49	46	47	49	53	52	55	54	54	54	52
1943	Wet	54	52	48	46	47	48	53	54	53	53	54	56	52
1944	Dry	54	53	50	47	47	49	50	53	52	53	55	57	52
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	55	51
1946	Below Normal	53	51	48	45	44	48	49	51	51	51	53	54	50
1947	Dry	52	51	48	45	46	49	52	51	52	53	56	58	51
1948	Below Normal	56	51	48	46	46	48	52	57	56	54	55	55	52
1949	Dry	53	51	48	45	45	47	52	52	52	52	54	55	51
1950	Below Normal	53	52	49	44	45	47	51	52	52	54	54	55	51
1951	Above Normal	52	50	47	44	44	47	49	52	52	52	54	55	50
1952	Wet	50	49	46	43	44	46	47	53	54	55	54	54	50
1953	Wet	54	52	47	46	46	48	51	51	53	54	54	54	51
1954	Above Normal	53	51	47	46	46	47	50	51	52	53	55	56	50
1955	Dry	53	51	45	44	45	48	49	53	52	53	55	56	50
1956	Wet	53	49	47	44	44	48	50	50	52	54	53	52	50
1957	Above Normal	51	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	52	50	47	45	46	46	50	53	54	54	55	55	51
1959	Below Normal	54	52	49	46	46	48	51	52	52	54	56	58	51
1960	Dry	55	53	50	46	46	48	49	53	52	54	55	57	51
1961	Dry	54	51	46	45	46	47	50	51	52	52	53	56	50
1962	Below Normal	54	51	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	53	51	48	46	47	47	49	55	54	54	56	56	51
1964	Dry	53	51	47	45	46	47	49	51	52	53	54	56	50
1965	Wet	54	50	48	44	45	47	50	50	52	53	55	54	50
1966	Below Normal	52	50	46	44	45	46	50	51	51	52	54	55	50
1967	Wet	53	51	47	45	45	46	48	51	53	54	53	53	50
1968	Below Normal	52	52	47	45	46	49	50	52	52	53	56	57	51
1969	Wet	53	51	45	44	43	47	47	50	52	54	54	53	49
1970	Wet	52	51	48	47	46	49	47	51	52	53	55	56	51
1971	Wet	53	50	46	44	44	46	50	51	53	54	55	54	50
1972	Below Normal	53	51	46	44	45	47	49	52	52	53	55	55	50
1973	Above Normal	52	49	45	44	44	46	51	53	52	53	55	55	50
1974	Wet	51	50	46	44	44	45	51	53	54	55	53	53	50
1975	Wet	52	50	47	46	45	47	50	52	54	55	54	54	50
1976	Critical	52	50	47	45	46	49	50	52	51	54	56	57	51
1977	Critical	53	52	50	46	47	49	51	53	55	59	63	63	53
1978	Above Normal	58	50	45	45	45	47	50	51	52	54	54	53	50
1979	Below Normal	52	51	48	46	46	49	51	54	52	54	55	56	51
1980	Above Normal	53	50	48	46	46	49	51	52	52	53	54	54	51
1981	Dry	52	51	48	46	47	49	51	52	52	54	56	57	51
1982	Wet	53	50	47	43	44	46	47	55	54	54	54	53	50
1983	Wet	52	50	47	45	45	46	49	52	53	53	54	55	50
1984	Wet	54	52	47	45	46	48	49	52	53	54	56	56	51
1985	Dry	52	50	46	45	46	48	52	52	52	54	55	56	51
1986	Wet	55	50	47	46	47	49	52	53	54	55	55	57	52
1987	Dry	55	52	49	45	46	48	50	51	52	53	56	57	51
1988	Critical	57	53	46	44	46	48	51	53	53	57	56	57	52
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	56	51
1990	Critical	53	52	49	46	45	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	58	52
1992	Critical	57	53	48	45	47	49	51	52	53	56	59	64	53
1993	Above Normal	60	53	45	43	45	49	51	53	53	53	54	53	51
1994	Critical	53	51	48	46	46	49	50	53	53	54	56	58	51
1995	Wet	56	51	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	54	53	48	46	47	48	52	52	54	55	56	54	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	55	51
1998	Wet	53	50	46	46	45	46	51	49	52	54	55	56	50
1999	Wet	55	52	47	46	45	46	51	51	52	53	55	54	51
2000	Above Normal	53	51	48	48	49	51	54	54	54	54	56	59	52
2001	Dry	55	53	50	47	46	51	51	53	52	55	57	59	52
2002	Dry	56	54	46	46	47	49	52	53	54	55	57	58	52
2003	Above Normal	56	54	47	46	46	50	50	52	55	54	57	58	52
Average		54	51	47	45	46	48	51	53	53	54	55	56	51
Wet		53	51	47	45	46	47	50	52	53	54	55	55	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Below Normal		54	51	48	45	46	48	51	53	53	53	55	56	51
Dry		55	52	47	45	46	49	51	53	53	54	55	57	51
Critical		55	52	48	45	47	49	51	53	54	56	58	60	52

Change in Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP1 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1940	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1943	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	Dry	0	0	0	0	0	0	0	0	-1	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	0	2	0	0	0	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1950	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	Dry	0	0	-1	0	0	0	0	0	0	-1	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1960	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1963	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1969	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1972	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1973	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	0	0	0	1	0
1978	Above Normal	1	0	0	0	1	0	0	0	0	0	0	0	0
1979	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	1	0	0	0	0	0	0	0	0	-1	0
1981	Dry	0	0	0	0	0	1	0	0	0	0	-1	0	0
1982	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	1	0
1993	Above Normal	0	0	0	0	0	0	0	2	0	0	0	-1	0
1994	Critical	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1995	Wet	-2	0	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1998	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1999	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	0	-1	0	0	0	0	0	0	-1	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	-1	0	0
2003	Above Normal	0	0	0	0	0	-1	1	0	0	0	0	0	0
Average		0	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures at Balls Ferry (°F)

From Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Total
Year	Year Type													
1922	Above Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Norma	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
1924	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1928	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1929	Critical	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1935	Below Norma	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1936	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1939	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%
1940	Above Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1941	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1942	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1945	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Norma	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1947	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	1%	1%	0%
1948	Below Norma	1%	0%	0%	0%	0%	0%	0%	0%	3%	1%	0%	1%	0%
1949	Dry	-1%	-1%	0%	0%	-1%	-1%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1951	Above Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1955	Dry	-1%	0%	-2%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%	0%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1957	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1958	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Norma	-1%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%
1960	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	-1%	-1%	0%
1962	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1963	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1965	Wet	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Norma	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1967	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1969	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	-1%	0%	-1%	0%	0%
1971	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1973	Above Norma	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1977	Critical	0%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
1978	Above Norma	1%	0%	0%	0%	1%	1%	-1%	0%	-1%	0%	0%	-1%	0%
1979	Below Norma	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1980	Above Norma	0%	-1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1984	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	-1%	0%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%
1986	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1988	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1989	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	2%	0%
1993	Above Norma	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	-2%	0%
1994	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1995	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1996	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2001	Dry	-1%	-1%	-1%	0%	0%	0%	1%	1%	-1%	-1%	-1%	-1%	0%
2002	Dry	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
2003	Above Norma	-1%	0%	0%	0%	0%	0%	-1%	1%	0%	0%	-1%	0%	0%
Average		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Wet		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Norma		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Norma		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Critical		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%

Sacramento River Water Temperatures at Bend Bridge (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	54	49	47	45	47	51	54	56	54	55	56	57	52
1924	Critical	53	52	48	45	48	51	54	58	56	59	61	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	57	52	47	44	47	52	55	56	56	56	58	60	53
1927	Wet	56	52	45	45	46	50	52	54	54	55	56	57	52
1928	Above Normal	54	50	46	45	47	49	55	54	54	55	57	59	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	59	52
1930	Dry	56	52	47	44	48	51	53	55	55	56	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	64	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	59	63	54
1933	Critical	59	54	47	44	45	50	53	56	58	59	59	62	54
1934	Critical	60	53	47	46	48	53	54	56	57	59	65	65	55
1935	Below Normal	59	51	46	45	46	49	54	57	57	56	59	60	53
1936	Below Normal	57	51	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	53	48	44	46	50	54	57	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	57	52
1939	Dry	55	52	47	45	46	50	52	53	54	55	57	58	52
1940	Above Normal	55	53	48	45	47	49	55	57	55	55	57	58	53
1941	Wet	55	51	48	46	47	50	52	54	57	57	57	57	52
1942	Wet	55	52	48	46	47	50	54	54	57	56	55	56	52
1943	Wet	55	52	47	46	47	49	54	56	55	55	56	58	52
1944	Dry	55	53	49	46	47	50	51	55	54	55	57	58	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	51	48	45	44	49	51	53	53	54	54	56	51
1947	Dry	53	51	47	45	47	50	53	53	55	55	57	59	52
1948	Below Normal	56	51	47	45	46	49	52	58	56	56	57	56	52
1949	Dry	54	51	47	45	45	48	54	55	54	54	56	57	52
1950	Below Normal	53	52	48	44	45	48	53	55	55	57	56	57	52
1951	Above Normal	53	50	46	44	44	48	51	54	54	54	56	57	51
1952	Wet	51	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	57	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	53	54	55	57	58	51
1955	Dry	54	51	45	44	46	49	50	56	53	55	58	58	52
1956	Wet	54	49	47	44	44	49	53	52	55	57	55	54	51
1957	Above Normal	52	51	48	44	46	48	50	56	57	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	56	51	48	46	46	48	52	53	54	56	58	60	52
1960	Dry	56	53	49	45	46	49	51	55	54	56	57	59	52
1961	Dry	54	50	45	44	46	47	52	53	54	54	56	58	51
1962	Below Normal	54	51	45	44	46	47	53	53	54	55	56	57	51
1963	Wet	54	51	48	45	47	48	49	57	56	55	58	57	52
1964	Dry	53	50	46	44	46	48	50	53	54	56	57	57	51
1965	Wet	54	49	47	44	46	48	50	53	54	55	57	57	51
1966	Below Normal	53	50	45	44	45	47	52	54	53	54	56	57	51
1967	Wet	54	51	46	45	46	46	48	53	56	57	55	55	51
1968	Below Normal	53	52	46	44	46	50	51	54	53	55	58	58	52
1969	Wet	54	50	44	44	44	48	49	53	55	56	56	55	51
1970	Wet	53	51	48	46	46	49	49	53	54	55	57	58	52
1971	Wet	54	50	45	44	45	46	51	53	56	57	57	55	51
1972	Below Normal	53	50	45	44	45	48	50	54	54	55	57	57	51
1973	Above Normal	52	49	45	44	45	47	53	56	54	55	57	57	51
1974	Wet	51	50	46	44	44	45	52	55	57	57	55	55	51
1975	Wet	54	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	53	50	47	44	46	50	51	55	53	56	58	59	52
1977	Critical	54	52	49	45	47	49	52	54	56	60	65	63	54
1978	Above Normal	58	50	45	45	45	48	51	53	54	56	56	55	51
1979	Below Normal	54	51	48	46	46	50	53	56	54	56	57	58	52
1980	Above Normal	54	50	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	58	59	52
1982	Wet	53	50	46	43	44	47	48	58	56	56	56	55	51
1983	Wet	53	50	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	59	52
1985	Dry	53	49	46	44	46	49	54	54	55	56	57	58	52
1986	Wet	55	50	46	46	48	50	53	54	56	57	57	58	52
1987	Dry	56	52	48	44	46	49	52	53	54	55	59	59	52
1988	Critical	57	53	45	44	47	49	52	54	54	59	58	59	53
1989	Dry	58	50	45	44	44	49	55	52	55	55	56	58	52
1990	Critical	54	52	48	45	45	51	52	55	56	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	57	52	47	44	47	50	53	54	55	58	61	63	54
1993	Above Normal	60	52	44	43	45	50	52	53	55	55	57	56	52
1994	Critical	54	51	47	46	46	50	52	55	55	56	58	60	52
1995	Wet	57	51	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	53	47	45	47	49	53	54	56	57	58	56	53
1997	Wet	55	51	48	46	47	50	50	53	55	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	57	57	57	51
1999	Wet	56	51	47	46	45	47	53	53	55	55	57	55	52
2000	Above Normal	54	51	47	48	49	51	56	57	56	56	59	60	54
2001	Dry	56	53	50	46	46	52	52	55	54	57	60	61	54
2002	Dry	57	53	46	46	47	49	53	55	56	57	60	60	53
2003	Above Normal	57	54	47	46	47	51	51	54	58	56	59	60	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		54	51	47	45	46	48	51	54	56	56	57	56	52
Above Normal		55	51	46	45	46	49	53	55	55	55	57	58	52
Below Normal		55	51	47	45	46	49	53	55	54	55	57	58	52
Dry		55	51	47	45	46	49	53	55	55	56	58	59	52
Critical		56	52	47	45	47	50	52	55	56	58	60	61	53

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP1 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	53	49	47	45	47	51	55	57	54	55	56	57	52
1924	Critical	53	52	48	45	48	51	54	58	56	59	61	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	56	52	47	44	47	52	55	56	56	56	58	60	53
1927	Wet	56	52	45	45	46	50	52	54	54	55	55	57	52
1928	Above Normal	54	50	46	45	47	49	55	54	54	55	57	58	52
1929	Critical	55	51	46	43	46	49	51	54	55	55	57	59	52
1930	Dry	57	53	47	44	48	51	53	55	55	56	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	61	64	54
1932	Dry	58	52	45	44	45	51	53	58	58	59	59	63	54
1933	Critical	59	54	47	44	45	50	53	55	58	59	59	62	54
1934	Critical	60	53	47	46	48	53	54	56	57	59	64	65	55
1935	Below Normal	59	51	46	45	46	49	54	57	57	56	58	60	53
1936	Below Normal	57	51	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	53	48	44	46	50	54	57	56	56	57	58	53
1938	Wet	56	51	47	44	46	48	51	57	57	56	57	56	52
1939	Dry	54	51	47	45	46	50	52	53	54	55	56	58	52
1940	Above Normal	55	53	48	45	47	49	55	57	55	55	56	58	53
1941	Wet	55	51	48	46	47	50	52	54	57	57	56	56	52
1942	Wet	54	52	48	46	47	50	54	54	57	56	55	55	52
1943	Wet	54	51	47	46	47	49	54	56	55	55	56	57	52
1944	Dry	55	52	49	46	47	50	51	55	54	55	56	58	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	50	47	45	45	49	51	53	53	53	54	56	51
1947	Dry	53	50	47	44	47	50	53	53	54	54	57	59	52
1948	Below Normal	56	51	47	45	46	49	52	58	58	56	57	57	53
1949	Dry	53	51	47	45	44	47	54	55	54	54	56	57	51
1950	Below Normal	53	51	48	44	45	48	53	55	55	57	56	57	52
1951	Above Normal	52	50	46	44	44	48	51	54	54	54	56	57	51
1952	Wet	51	49	46	43	44	47	49	55	56	58	56	55	51
1953	Wet	55	51	46	46	47	49	52	53	55	57	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	52	54	55	57	57	51
1955	Dry	53	51	45	43	46	49	50	55	54	55	57	58	51
1956	Wet	53	49	47	44	44	49	53	53	55	56	55	54	51
1957	Above Normal	52	50	48	44	46	48	50	56	56	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	55	51	48	46	46	49	52	53	53	56	58	59	52
1960	Dry	55	53	49	45	46	49	51	55	54	56	57	59	52
1961	Dry	54	50	45	44	46	48	52	53	54	54	55	57	51
1962	Below Normal	54	51	45	44	46	47	53	53	54	55	56	57	51
1963	Wet	53	51	48	45	47	48	49	57	56	55	57	57	52
1964	Dry	53	50	46	44	46	48	50	53	54	55	56	57	51
1965	Wet	54	49	47	44	46	48	51	53	55	55	57	56	51
1966	Below Normal	53	50	45	44	45	47	52	54	53	54	56	57	51
1967	Wet	54	51	46	45	46	47	48	53	55	57	56	55	51
1968	Below Normal	53	52	45	44	46	50	51	54	53	55	58	58	52
1969	Wet	54	50	44	44	44	48	49	53	55	56	57	54	51
1970	Wet	52	51	48	46	46	50	49	53	54	55	57	58	51
1971	Wet	54	50	45	44	45	46	51	53	56	57	57	55	51
1972	Below Normal	53	50	45	44	45	48	50	54	54	54	57	57	51
1973	Above Normal	52	49	45	44	45	47	53	56	54	55	57	57	51
1974	Wet	51	50	46	44	45	45	52	55	56	57	55	55	51
1975	Wet	53	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	52	50	47	45	46	50	51	54	53	56	58	58	52
1977	Critical	54	52	49	45	47	49	52	54	56	60	64	64	54
1978	Above Normal	58	49	45	45	46	48	51	53	54	56	56	55	51
1979	Below Normal	53	50	47	46	46	50	53	56	54	56	57	58	52
1980	Above Normal	54	49	47	46	46	49	52	55	53	56	56	56	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	58	58	52
1982	Wet	53	50	46	43	44	47	48	58	56	56	56	54	51
1983	Wet	53	49	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	58	52
1985	Dry	53	49	46	45	46	49	54	54	54	56	57	58	52
1986	Wet	55	49	46	46	48	49	53	55	56	57	57	58	52
1987	Dry	55	52	48	44	46	49	52	53	54	55	58	58	52
1988	Critical	57	53	45	44	46	49	52	55	54	59	58	58	53
1989	Dry	58	50	45	44	44	49	55	52	55	55	56	58	52
1990	Critical	54	52	49	45	45	51	52	55	56	57	58	59	53
1991	Critical	56	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	57	52	47	44	47	50	53	54	55	58	60	64	53
1993	Above Normal	60	52	45	43	45	50	52	55	55	55	57	55	52
1994	Critical	53	51	47	46	46	50	52	55	55	56	57	59	52
1995	Wet	56	50	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	52	47	45	47	49	53	54	56	57	58	56	52
1997	Wet	54	50	48	46	47	50	50	53	54	55	57	57	52
1998	Wet	53	50	45	45	45	47	52	51	55	56	57	57	51
1999	Wet	55	51	47	46	45	47	53	53	55	55	57	55	52
2000	Above Normal	53	51	47	48	49	51	55	57	56	56	58	60	54
2001	Dry	56	53	49	46	46	53	52	55	54	57	59	61	53
2002	Dry	57	53	46	45	47	50	54	55	56	57	59	60	53
2003	Above Normal	56	54	47	46	46	51	52	54	58	56	59	59	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		54	50	46	45	46	48	51	54	56	56	56	56	52
Above Normal		55	51	46	45	46	49	53	55	55	55	57	57	52
Below Normal		55	51	47	45	46	49	53	55	55	55	56	57	52
Dry		55	51	47	45	46	50	53	55	55	56	57	59	52
Critical		55	52	47	45	47	50	52	55	56	58	60	61	53

Change in Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP1 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Total (TAF)
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1940	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	-1	0	0	0	0	0	0	0	0	0	0	0
1947	Dry	0	0	0	0	0	0	0	0	-1	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	0	2	0	0	1	0
1949	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1950	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	Dry	0	0	-1	0	0	0	0	0	0	-1	-1	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1960	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1963	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1969	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1971	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1973	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	0	0	0	1	0
1978	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	1	0	0	0	0	0	0	0	0	-1	0
1981	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1982	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1985	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	1	0
1993	Above Normal	0	0	0	0	0	0	0	2	0	0	0	-1	0
1994	Critical	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1995	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1998	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	0	-1	0	0	0	0	0	0	-1	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	-1	0	0
2003	Above Normal	0	0	0	0	0	-1	1	0	0	0	0	0	0
Average		0	0	0	0	0	0	0	0	0	0	0	0	0
Wet		0	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures at Bend Bridge (°F)

From Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Total
Year	Year Type													
1922	Above Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Norma	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
1924	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1928	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%
1929	Critical	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1935	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1936	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1939	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	0%
1940	Above Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1941	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1942	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1945	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Norma	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1947	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	1%	1%	0%
1948	Below Norma	1%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%
1949	Dry	-1%	-1%	0%	0%	-1%	-1%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1951	Above Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1955	Dry	0%	0%	-2%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%	0%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1957	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1958	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1960	Dry	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	-1%	-1%	0%
1962	Below Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1963	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1964	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1965	Wet	0%	0%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1967	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1969	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	0%
1971	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1973	Above Norma	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1977	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
1978	Above Norma	1%	0%	0%	0%	1%	1%	-1%	0%	-1%	0%	0%	0%	0%
1979	Below Norma	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1980	Above Norma	0%	-1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1984	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	0%	0%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%
1986	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1988	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1989	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	1%	0%
1993	Above Norma	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	-2%	0%
1994	Critical	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1995	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1996	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
2001	Dry	-1%	-1%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-1%
2002	Dry	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
2003	Above Norma	-1%	0%	0%	0%	0%	-1%	1%	0%	0%	0%	-1%	0%	0%
Average		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Wet		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Norma		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Norma		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dry		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Critical		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)

Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	55	49	48	45	45	50	54	59	57	57	56	58	53
1923	Below Normal	54	49	46	44	47	51	55	57	55	57	57	58	53
1924	Critical	54	52	48	44	48	51	55	59	57	60	62	65	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	60	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	55	50	45	45	47	49	56	55	55	56	58	60	53
1929	Critical	55	51	46	43	46	50	52	56	56	57	59	60	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	51	45	44	45	52	54	59	60	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	61	62	54
1934	Critical	60	53	47	46	48	53	55	58	58	61	65	66	56
1935	Below Normal	59	51	46	44	46	49	55	58	58	58	60	61	54
1936	Below Normal	57	51	47	45	46	50	54	55	56	56	57	59	53
1937	Below Normal	55	52	47	43	46	50	55	58	57	57	58	59	53
1938	Wet	56	51	47	44	46	48	51	57	58	57	58	57	53
1939	Dry	55	51	47	45	46	50	53	54	56	56	58	59	53
1940	Above Normal	56	53	48	45	47	49	56	58	57	56	58	59	53
1941	Wet	55	51	48	46	47	50	52	55	58	58	58	57	53
1942	Wet	55	52	48	46	47	50	54	55	58	58	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	57	58	59	53
1944	Dry	55	53	48	46	47	50	52	57	56	56	58	59	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	51	47	45	44	49	52	55	54	55	56	57	52
1947	Dry	54	51	46	44	47	50	54	54	56	56	58	60	52
1948	Below Normal	56	50	47	45	46	49	52	58	57	57	58	57	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	59	52
1950	Below Normal	54	51	47	43	45	48	54	56	56	59	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	56	57	58	52
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	57	51
1953	Wet	55	51	45	46	47	49	52	53	56	58	57	57	52
1954	Above Normal	54	51	46	45	46	48	52	53	55	56	58	59	52
1955	Dry	54	50	45	43	46	50	50	57	55	57	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	53	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	57	58	57	52
1959	Below Normal	56	51	48	46	46	49	53	54	55	58	59	60	53
1960	Dry	56	52	49	45	46	49	51	56	56	58	58	60	53
1961	Dry	54	50	45	44	46	48	52	54	55	56	57	59	52
1962	Below Normal	55	51	45	44	46	47	54	54	56	56	57	58	52
1963	Wet	54	51	48	45	47	48	49	57	58	57	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	56	57	58	58	52
1965	Wet	55	49	47	44	46	49	51	54	56	57	59	58	52
1966	Below Normal	54	50	45	44	45	47	53	55	55	55	58	58	52
1967	Wet	55	51	46	45	46	47	48	54	57	58	57	56	52
1968	Below Normal	54	52	45	44	46	50	52	55	55	57	59	60	52
1969	Wet	54	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	49	54	56	56	59	59	52
1971	Wet	54	50	45	44	45	46	52	54	57	58	59	56	52
1972	Below Normal	54	50	45	44	45	48	51	55	55	56	59	58	52
1973	Above Normal	53	49	44	44	45	47	54	57	56	56	59	58	52
1974	Wet	52	50	46	44	44	46	52	56	58	58	57	56	52
1975	Wet	54	50	46	45	45	47	51	55	57	58	57	57	52
1976	Critical	53	50	46	44	46	50	51	56	54	58	60	60	52
1977	Critical	54	52	48	44	47	49	53	55	57	61	66	63	54
1978	Above Normal	58	49	44	45	45	48	52	54	56	58	58	57	52
1979	Below Normal	55	51	47	46	46	50	53	58	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	59	52
1981	Dry	54	50	47	46	47	49	53	55	55	57	60	60	53
1982	Wet	54	50	46	43	44	47	49	59	58	58	57	56	52
1983	Wet	53	49	46	45	45	47	51	55	56	57	57	57	52
1984	Wet	56	51	47	45	46	49	51	55	56	57	60	60	53
1985	Dry	53	49	45	44	46	50	54	55	56	57	58	59	52
1986	Wet	56	49	46	46	48	50	54	55	57	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	60	60	53
1988	Critical	57	52	45	44	47	50	53	55	56	60	60	60	53
1989	Dry	58	50	45	43	44	49	56	54	56	57	58	60	52
1990	Critical	54	52	48	45	44	51	53	56	57	59	60	61	53
1991	Critical	57	51	46	45	48	48	53	55	58	61	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	62	64	54
1993	Above Normal	60	51	44	43	45	51	52	54	56	57	59	57	52
1994	Critical	54	51	47	46	46	50	52	56	56	58	59	61	53
1995	Wet	58	50	45	45	47	47	53	54	57	59	59	58	53
1996	Wet	55	53	47	45	47	49	53	55	58	59	60	57	53
1997	Wet	55	50	48	46	47	51	51	54	56	57	59	58	53
1998	Wet	54	50	45	45	45	47	52	51	55	58	58	58	52
1999	Wet	56	51	47	46	45	47	53	54	56	56	58	56	52
2000	Above Normal	54	51	47	48	49	52	56	58	58	58	60	62	54
2001	Dry	57	53	50	46	46	53	53	57	56	59	61	62	54
2002	Dry	57	53	46	46	47	50	54	56	58	59	61	61	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	61	54
Average		55	51	46	45	46	49	53	56	56	58	59	59	53
Wet		55	51	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	51	46	45	46	49	53	56	56	57	58	59	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	59	52
Dry		55	51	46	44	46	50	53	56	56	57	59	60	53
Critical		56	52	46	44	47	50	53	56	57	59	61	62	54

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP1 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	55	49	48	45	45	49	54	59	57	57	57	58	53
1923	Below Normal	54	49	46	44	47	51	55	58	55	57	57	58	53
1924	Critical	54	52	48	44	48	51	55	59	57	60	62	65	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	60	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	54	50	45	45	47	49	56	55	55	56	58	59	53
1929	Critical	55	51	46	43	46	50	52	55	56	57	58	60	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	62	64	54
1932	Dry	58	51	45	44	45	52	54	59	60	60	60	63	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	60	62	54
1934	Critical	60	53	47	46	48	53	55	57	58	60	65	66	56
1935	Below Normal	59	51	46	44	46	49	55	58	58	58	60	61	54
1936	Below Normal	57	51	47	45	46	50	54	55	56	56	57	59	53
1937	Below Normal	55	52	47	43	46	50	55	58	57	57	58	59	53
1938	Wet	56	51	46	44	46	48	51	57	58	57	58	57	52
1939	Dry	54	51	47	45	46	50	53	54	55	56	57	59	52
1940	Above Normal	56	53	48	45	47	49	56	58	57	56	58	58	53
1941	Wet	55	51	48	46	47	50	52	55	58	58	58	57	53
1942	Wet	54	52	48	46	47	50	54	55	58	57	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	57	57	58	53
1944	Dry	55	52	48	46	47	50	52	57	55	56	58	59	53
1945	Below Normal	56	50	46	44	47	48	54	56	57	56	57	57	52
1946	Below Normal	54	50	47	45	45	49	52	55	54	55	56	57	52
1947	Dry	53	50	46	44	47	50	54	54	55	56	58	60	52
1948	Below Normal	56	50	47	45	46	49	52	58	59	57	58	58	53
1949	Dry	54	50	46	44	44	48	55	56	56	56	57	58	52
1950	Below Normal	53	51	47	43	45	48	54	56	56	59	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	55	57	58	51
1952	Wet	52	49	46	43	44	47	49	55	57	59	58	56	51
1953	Wet	55	51	45	46	47	49	52	54	56	58	57	57	52
1954	Above Normal	53	51	46	45	46	48	52	53	55	56	58	58	52
1955	Dry	54	50	44	43	46	50	50	56	55	56	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	52	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	56	57	57	58	57	52
1959	Below Normal	55	51	48	46	46	49	53	55	55	57	59	60	53
1960	Dry	56	53	49	45	46	49	51	56	56	58	58	60	53
1961	Dry	54	50	45	44	46	48	52	54	55	56	56	58	52
1962	Below Normal	54	51	45	44	46	47	54	54	56	56	57	58	52
1963	Wet	54	51	48	45	47	48	49	57	58	57	59	58	53
1964	Dry	53	50	46	44	46	48	51	54	55	57	58	58	52
1965	Wet	55	49	47	44	46	49	51	54	56	57	58	57	52
1966	Below Normal	54	50	45	44	45	47	53	55	55	55	58	58	51
1967	Wet	54	51	46	45	46	47	48	54	57	58	57	56	51
1968	Below Normal	53	52	45	44	46	50	52	55	55	56	59	59	52
1969	Wet	54	50	44	44	44	48	50	54	56	58	58	55	51
1970	Wet	53	51	47	46	46	50	49	54	55	56	58	59	52
1971	Wet	54	50	45	44	45	46	52	54	57	58	59	56	52
1972	Below Normal	53	50	45	44	45	48	50	55	55	56	58	58	51
1973	Above Normal	52	48	44	44	45	47	54	57	56	56	59	58	52
1974	Wet	52	50	46	44	45	46	52	56	58	58	57	56	52
1975	Wet	53	49	45	45	45	47	52	55	57	58	57	57	52
1976	Critical	52	50	46	45	46	50	51	56	54	57	59	60	52
1977	Critical	54	52	48	45	48	49	53	55	58	61	65	64	54
1978	Above Normal	58	49	44	45	46	48	51	54	55	58	58	56	52
1979	Below Normal	54	50	47	45	46	50	53	57	56	57	59	59	53
1980	Above Normal	54	49	47	45	46	50	53	56	54	57	58	58	52
1981	Dry	54	50	47	46	47	49	53	55	55	57	59	60	53
1982	Wet	53	50	46	43	44	47	49	59	58	58	58	55	52
1983	Wet	53	49	46	45	45	47	51	55	56	56	57	57	51
1984	Wet	55	51	47	45	46	49	51	55	56	57	59	60	53
1985	Dry	53	49	45	45	46	50	55	55	56	57	58	58	52
1986	Wet	55	49	46	46	48	50	54	55	57	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	59	60	53
1988	Critical	57	52	45	44	47	50	53	56	56	60	60	60	53
1989	Dry	58	50	45	43	44	49	56	54	56	57	58	59	52
1990	Critical	54	52	48	45	44	51	53	56	57	59	60	61	53
1991	Critical	57	51	46	45	49	48	53	55	57	61	60	61	54
1992	Critical	58	52	46	44	47	51	54	55	56	59	61	64	54
1993	Above Normal	60	51	44	43	45	51	52	56	56	57	59	56	52
1994	Critical	54	50	46	46	46	50	52	56	56	57	59	60	53
1995	Wet	56	50	45	45	47	47	53	54	57	58	59	58	52
1996	Wet	55	52	47	45	47	50	53	55	58	59	60	57	53
1997	Wet	54	50	48	46	47	51	51	54	56	57	58	58	53
1998	Wet	54	50	45	45	45	47	52	52	55	58	58	58	52
1999	Wet	55	51	47	46	45	47	53	54	56	56	58	56	52
2000	Above Normal	54	51	47	48	49	52	56	58	58	58	60	61	54
2001	Dry	56	52	49	46	46	53	53	57	55	58	60	62	54
2002	Dry	57	53	46	45	47	50	54	56	58	59	61	61	54
2003	Above Normal	57	54	47	46	47	51	52	55	60	58	60	61	54
Average		55	51	46	45	46	49	53	56	56	57	59	59	53
Wet		54	50	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	50	46	45	46	49	53	56	56	57	58	58	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	58	52
Dry		55	51	46	44	46	50	53	56	56	57	59	60	53
Critical		56	52	46	45	47	51	53	56	57	59	61	62	54

Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)

Alternative CP1 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Total (TAF)
1922	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1935	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1940	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Norma	0	-1	0	0	0	0	0	0	0	0	0	0	0
1947	Dry	0	0	0	0	0	0	0	0	-1	0	0	0	0
1948	Below Norma	0	0	0	0	0	0	0	0	2	0	0	1	0
1949	Dry	0	0	0	0	-1	0	0	0	0	0	0	0	0
1950	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	Dry	0	0	-1	0	0	0	0	0	0	-1	-1	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Norma	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1960	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1962	Below Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
1963	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1971	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	Below Norma	-1	0	0	0	0	0	0	0	0	0	0	0	0
1973	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	0	0	0	1	0
1978	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	Below Norma	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Norma	0	0	1	0	0	0	0	0	0	0	0	-1	0
1981	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1982	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1985	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	1	0
1993	Above Norma	0	0	0	0	0	0	0	2	0	0	0	-1	0
1994	Critical	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1995	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	0	-1	0	0	0	0	0	0	-1	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	0	0	0
2003	Above Norma	0	0	0	0	0	-1	1	0	0	0	0	0	0
Average		0	0	0	0	0	0	0	0	0	0	0	0	0
Wet		0	0	0	0	0	0	0	0	0	0	0	0	0
Above Norma		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Norma		0	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation
 Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
 From Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Total
Year	Year Type													
1922	Above Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Norma	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
1924	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1928	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%
1929	Critical	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1935	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1936	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1939	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	0%
1940	Above Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1941	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1942	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1945	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Norma	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1947	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	1%	0%
1948	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%
1949	Dry	-1%	-1%	0%	0%	-1%	-1%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1951	Above Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1954	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1955	Dry	0%	0%	-2%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%	-1%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1957	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1958	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1960	Dry	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	0%
1962	Below Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1963	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1964	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1965	Wet	0%	0%	-1%	0%	0%	-1%	1%	0%	0%	0%	0%	-1%	0%
1966	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1967	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1969	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	0%
1971	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1973	Above Norma	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1977	Critical	0%	0%	1%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
1978	Above Norma	1%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%
1979	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1980	Above Norma	0%	-1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	0%	0%
1982	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1984	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	0%	0%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%
1986	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1987	Dry	0%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1988	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1989	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	1%	0%
1993	Above Norma	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	-1%	0%
1994	Critical	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1995	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1996	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
2001	Dry	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
2002	Dry	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
2003	Above Norma	-1%	0%	0%	0%	0%	-1%	1%	0%	0%	0%	0%	0%	0%
Average		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Wet		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Norma		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Norma		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dry		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Critical		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Sacramento River Water Temperatures below Shasta Dam (°F)

Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	49	49
1923	Below Normal	50	51	51	49	47	47	51	52	49	48	48	50	49
1924	Critical	53	53	52	48	47	49	52	54	51	53	57	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	51	55	48
1926	Dry	57	54	52	47	45	46	46	47	48	49	52	55	50
1927	Wet	56	54	49	46	45	45	46	47	48	48	49	51	49
1928	Above Normal	52	52	50	47	46	46	47	48	48	50	52	53	49
1929	Critical	54	54	52	47	45	45	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	50	53	49
1931	Critical	54	54	52	48	46	46	47	49	51	53	58	64	52
1932	Dry	60	54	48	44	44	45	47	49	52	53	53	60	51
1933	Critical	60	56	52	46	44	45	47	48	51	53	54	60	51
1934	Critical	60	56	52	46	45	46	47	49	52	55	63	65	53
1935	Below Normal	60	52	49	45	44	45	46	47	49	49	53	56	50
1936	Below Normal	58	54	52	47	45	45	45	46	47	48	49	52	49
1937	Below Normal	54	54	53	48	45	46	46	47	48	48	50	53	49
1938	Wet	54	53	49	46	45	46	46	48	48	50	51	53	49
1939	Dry	55	54	51	48	46	46	47	48	49	49	52	54	50
1940	Above Normal	56	55	52	47	46	47	47	48	48	49	51	53	50
1941	Wet	54	53	50	47	46	46	47	48	48	50	52	53	50
1942	Wet	55	54	50	46	46	46	46	47	48	48	50	52	49
1943	Wet	54	54	51	47	46	46	47	48	48	49	50	52	49
1944	Dry	53	54	53	49	47	47	47	48	48	49	51	52	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	48	49	50	48
1946	Below Normal	52	52	49	45	44	44	45	46	47	48	48	50	48
1947	Dry	52	53	51	47	46	46	46	47	48	49	51	54	49
1948	Below Normal	56	53	52	47	45	46	46	47	48	48	49	51	49
1949	Dry	52	53	51	48	46	45	46	46	47	48	48	50	48
1950	Below Normal	52	53	52	47	44	44	45	45	47	48	48	49	48
1951	Above Normal	51	51	48	45	44	44	45	45	46	47	48	48	47
1952	Wet	49	51	48	44	44	44	45	46	47	48	49	52	47
1953	Wet	54	54	50	47	45	45	46	46	47	48	49	51	48
1954	Above Normal	53	53	50	46	45	45	46	47	48	48	50	51	48
1955	Dry	53	53	49	46	45	45	46	46	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	43	44	46	47	48	48	47
1957	Above Normal	52	52	51	48	46	46	47	47	48	48	50	51	49
1958	Wet	53	52	49	46	46	45	46	47	48	48	49	52	48
1959	Below Normal	55	54	52	47	46	46	46	47	48	49	53	56	50
1960	Dry	57	55	53	48	45	45	45	46	47	48	49	51	49
1961	Dry	53	53	48	46	45	45	46	46	47	48	49	52	48
1962	Below Normal	54	53	49	46	45	44	45	45	46	47	48	49	48
1963	Wet	52	53	50	47	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	52	52	49	44	43	43	44	45	46	47	48	48	47
1966	Below Normal	49	51	50	45	44	45	45	46	47	48	49	51	48
1967	Wet	53	53	49	46	44	45	46	47	48	48	49	50	48
1968	Below Normal	52	54	51	47	46	46	47	47	48	48	50	52	49
1969	Wet	53	53	49	45	43	43	44	45	46	48	48	50	47
1970	Wet	53	53	50	47	44	44	45	45	46	48	49	51	48
1971	Wet	53	52	48	44	44	44	45	46	47	48	48	51	47
1972	Below Normal	53	53	50	46	44	45	46	47	48	48	49	51	48
1973	Above Normal	52	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	48	51	47	45	43	44	44	45	46	48	48	49	47
1975	Wet	53	53	50	47	45	46	46	47	48	48	49	51	49
1976	Critical	53	52	50	47	46	46	46	47	48	48	49	50	49
1977	Critical	52	53	52	48	47	47	48	49	51	57	66	64	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	49	47
1979	Below Normal	51	53	52	48	46	45	46	47	48	48	49	50	49
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	49	48
1981	Dry	50	51	50	47	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	46	46	47	48	48	50	47
1983	Wet	53	52	49	46	45	46	45	47	48	48	50	53	48
1984	Wet	55	54	49	45	44	45	46	46	48	48	49	50	48
1985	Dry	52	52	49	46	45	45	46	46	48	48	50	53	48
1986	Wet	55	53	50	47	47	47	47	48	48	49	51	53	49
1987	Dry	54	54	52	48	45	45	46	47	48	49	51	54	49
1988	Critical	56	55	50	45	45	45	46	47	49	51	49	54	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	49	50	48
1990	Critical	52	53	52	48	45	45	46	46	48	50	49	53	49
1991	Critical	55	54	52	48	46	47	47	48	49	51	49	52	50
1992	Critical	56	55	52	48	45	45	46	47	50	53	58	64	51
1993	Above Normal	61	54	48	43	42	42	43	45	46	48	48	50	48
1994	Critical	53	53	51	48	46	47	47	48	49	50	53	56	50
1995	Wet	58	54	50	45	43	46	46	47	48	49	51	53	49
1996	Wet	55	55	51	47	47	46	46	47	48	49	50	52	49
1997	Wet	54	53	50	46	44	44	45	46	47	48	49	51	48
1998	Wet	53	52	49	46	45	44	44	46	48	49	52	54	49
1999	Wet	56	54	49	46	45	45	45	46	47	48	48	49	48
2000	Above Normal	52	53	51	48	48	47	48	48	49	50	52	53	50
2001	Dry	55	55	53	49	46	46	47	47	48	49	51	53	50
2002	Dry	56	56	49	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	52	49
Average		54	53	50	46	45	45	46	47	48	49	50	53	49
Wet		54	53	49	46	45	45	45	46	47	48	49	51	48
Above Normal		54	53	50	46	45	45	46	47	47	48	49	50	48
Below Normal		54	53	51	47	45	45	46	47	48	48	50	51	49
Dry		54	53	50	47	45	45	46	47	48	49	50	53	49
Critical		55	54	52	47	46	46	47	48	50	52	55	58	51

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures below Shasta Dam (°F)
Alternative CP1 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	48	49
1923	Below Normal	50	51	51	48	47	47	52	53	49	48	48	50	50
1924	Critical	52	53	52	48	47	49	52	54	51	53	58	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	51	55	48
1926	Dry	57	54	52	47	45	46	46	47	48	49	52	54	50
1927	Wet	56	54	49	46	45	45	46	47	48	48	49	50	49
1928	Above Normal	52	52	50	47	46	47	47	48	49	50	51	52	49
1929	Critical	54	54	52	47	45	46	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	50	52	49
1931	Critical	54	54	52	48	46	46	47	49	51	53	57	63	52
1932	Dry	60	54	49	44	44	45	47	49	52	53	52	59	51
1933	Critical	60	56	53	47	45	45	47	48	51	53	53	59	51
1934	Critical	60	56	52	46	45	46	47	49	52	54	62	65	53
1935	Below Normal	60	53	49	45	44	45	46	47	49	49	53	56	50
1936	Below Normal	57	54	52	47	45	45	45	46	47	48	49	52	49
1937	Below Normal	54	54	53	48	46	46	46	47	48	48	50	53	49
1938	Wet	54	53	49	46	45	46	46	48	48	49	51	52	49
1939	Dry	54	54	51	48	46	46	47	48	48	49	52	55	50
1940	Above Normal	56	55	52	47	46	47	47	48	48	49	51	52	50
1941	Wet	53	53	50	47	46	46	47	48	48	50	51	53	49
1942	Wet	54	54	50	46	46	46	46	47	48	48	50	51	49
1943	Wet	53	54	51	47	46	46	47	48	48	49	50	51	49
1944	Dry	52	53	53	49	47	47	47	48	48	49	51	53	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	48	49	50	48
1946	Below Normal	52	52	49	45	44	45	45	46	47	48	48	49	48
1947	Dry	51	52	51	47	46	46	46	47	48	49	52	55	49
1948	Below Normal	57	53	52	47	45	46	46	47	48	48	49	50	49
1949	Dry	52	52	51	48	45	45	46	46	47	48	48	49	48
1950	Below Normal	51	53	52	47	44	44	45	45	46	48	48	49	48
1951	Above Normal	51	51	48	45	44	44	45	45	46	47	48	47	47
1952	Wet	49	51	48	44	44	44	45	46	47	48	49	51	47
1953	Wet	53	53	50	47	45	45	46	46	47	48	49	50	48
1954	Above Normal	52	52	50	46	45	45	46	47	48	48	49	51	48
1955	Dry	52	52	49	46	45	45	46	47	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	44	44	45	47	48	48	46
1957	Above Normal	50	52	51	48	46	46	47	47	48	48	49	51	49
1958	Wet	52	52	49	46	46	45	46	46	47	48	49	51	48
1959	Below Normal	54	54	52	47	46	46	47	47	48	49	52	54	50
1960	Dry	56	55	53	48	45	45	45	46	47	48	49	51	49
1961	Dry	53	53	48	46	45	45	46	46	47	48	49	51	48
1962	Below Normal	53	53	49	46	45	44	45	45	46	47	48	48	48
1963	Wet	51	52	50	47	46	46	47	48	48	49	49	50	49
1964	Dry	51	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	52	52	49	44	43	44	44	45	46	48	48	48	47
1966	Below Normal	49	51	49	45	45	45	45	46	47	48	48	50	47
1967	Wet	52	53	49	46	44	45	46	47	47	48	49	50	48
1968	Below Normal	51	53	50	47	46	46	47	47	48	48	50	51	49
1969	Wet	53	52	49	45	43	43	44	45	46	47	48	49	47
1970	Wet	52	53	50	47	44	44	45	46	46	48	48	50	48
1971	Wet	52	52	48	44	44	44	45	46	47	48	48	50	47
1972	Below Normal	52	52	50	46	44	45	46	46	48	48	49	50	48
1973	Above Normal	51	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	48	51	47	45	43	44	44	45	46	47	48	49	46
1975	Wet	51	52	50	47	45	46	46	47	48	48	49	50	48
1976	Critical	52	52	50	47	46	46	46	47	48	48	49	50	49
1977	Critical	52	53	52	48	47	47	48	49	52	57	66	64	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	47	48	48	47
1979	Below Normal	50	52	51	48	46	46	46	47	48	48	49	50	48
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	48	48
1981	Dry	50	51	50	47	46	46	47	47	48	48	50	51	48
1982	Wet	52	51	48	44	44	44	45	46	47	48	48	49	47
1983	Wet	52	52	49	46	45	46	45	46	48	48	50	52	48
1984	Wet	54	53	49	45	45	45	46	47	48	48	49	50	48
1985	Dry	51	51	49	46	45	45	46	46	47	48	50	52	48
1986	Wet	54	53	50	47	47	47	47	48	48	49	51	52	49
1987	Dry	53	53	52	48	45	46	46	47	48	49	51	54	49
1988	Critical	57	55	50	45	45	45	46	47	48	51	49	54	49
1989	Dry	57	54	50	46	44	44	45	45	47	48	48	50	48
1990	Critical	51	52	52	48	45	45	46	46	48	50	49	52	49
1991	Critical	55	54	52	48	46	47	47	48	49	51	49	52	50
1992	Critical	55	55	52	48	45	45	46	47	50	53	57	64	51
1993	Above Normal	61	54	48	43	42	42	43	44	46	47	48	49	47
1994	Critical	52	52	51	48	46	47	47	48	49	49	52	54	50
1995	Wet	56	54	50	45	44	46	46	47	48	49	51	52	49
1996	Wet	54	54	51	47	47	46	46	47	48	49	50	51	49
1997	Wet	53	52	50	46	44	45	45	46	47	48	48	50	48
1998	Wet	52	52	49	46	45	44	44	46	47	49	51	53	48
1999	Wet	55	53	49	47	45	45	45	46	47	48	48	49	48
2000	Above Normal	51	52	51	48	48	47	48	48	49	50	51	52	50
2001	Dry	54	54	53	49	47	46	47	48	48	49	51	53	50
2002	Dry	56	56	50	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	51	49
Average		53	53	50	46	45	45	46	47	48	49	50	52	49
Wet		53	53	49	46	45	45	46	46	47	48	49	50	48
Above Normal		53	52	50	46	45	45	46	47	47	48	49	50	48
Below Normal		53	53	51	47	45	45	46	47	48	48	49	51	49
Dry		54	53	50	47	45	45	46	47	48	49	50	53	49
Critical		54	54	52	47	46	46	47	48	50	52	54	58	51

Change in Sacramento River Water Temperatures below Shasta Dam (°F)

Alternative CP1 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September
1922	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Norma	0	0	0	0	0	0	1	1	0	0	0	0
1924	Critical	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	-1
1928	Above Norma	-1	0	0	0	0	0	0	0	0	0	0	0
1929	Critical	-1	0	0	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	-1	0	-2	-1
1932	Dry	0	0	1	0	0	0	0	0	0	0	-1	-1
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1
1934	Critical	0	0	0	0	0	0	0	0	-1	-1	-1	0
1935	Below Norma	0	1	0	0	0	0	0	0	0	0	0	0
1936	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	-1
1939	Dry	-1	0	0	0	0	0	0	0	-1	0	0	0
1940	Above Norma	0	0	0	0	0	0	0	0	0	0	-1	-1
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0
1945	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Norma	0	0	0	0	0	0	0	0	0	0	0	0
1947	Dry	-1	0	0	0	0	0	0	0	0	0	1	1
1948	Below Norma	1	0	0	0	0	0	0	0	0	0	0	-1
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1
1950	Below Norma	-1	-1	0	0	0	0	0	0	0	0	0	-1
1951	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1
1954	Above Norma	-1	0	0	0	0	0	0	0	0	0	-1	-1
1955	Dry	-1	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Norma	-1	-1	0	0	0	0	0	0	0	0	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1959	Below Norma	-1	-1	0	0	0	0	0	0	0	0	-1	-1
1960	Dry	-1	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1
1962	Below Norma	-1	0	0	0	0	0	0	0	0	0	0	-1
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	0
1966	Below Norma	-1	-1	0	0	0	0	0	0	0	0	0	-1
1967	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1
1968	Below Norma	-1	-1	0	0	0	0	0	0	0	0	-1	-1
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1970	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1972	Below Norma	-1	0	0	0	0	0	0	0	0	0	0	-1
1973	Above Norma	-1	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1
1976	Critical	-1	0	0	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	0	0	0
1978	Above Norma	0	0	0	0	0	0	0	0	0	0	0	-1
1979	Below Norma	-1	-1	0	0	0	0	0	0	0	0	0	0
1980	Above Norma	0	0	0	0	0	0	0	0	0	0	0	0
1981	Dry	0	0	0	0	0	0	0	0	0	0	0	-1
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	0
1985	Dry	-1	0	0	0	0	0	0	0	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1987	Dry	-1	0	0	0	0	0	0	0	0	0	0	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	-1
1989	Dry	-1	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	-1	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	0
1993	Above Norma	0	0	0	0	0	0	0	0	-1	0	0	-1
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	-1	-2
1995	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1
1997	Wet	-1	0	0	0	0	0	1	0	0	0	0	-1
1998	Wet	-1	0	0	0	0	0	0	0	-1	0	0	-1
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0
2000	Above Norma	-1	-1	0	0	0	0	0	0	0	0	-1	-1
2001	Dry	-1	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1
2003	Above Norma	-1	0	0	0	0	0	0	0	0	0	-1	-1
Average		-1	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1
Above Norma		-1	0	0	0	0	0	0	0	0	0	0	-1
Below Norma		0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	0	-1

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures below Shasta Dam (°F)

From Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September
Year	Year Type												
1922	Above Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Norma	-1%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%
1924	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	-1%	-1%
1928	Above Norma	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1929	Critical	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-3%	-1%
1932	Dry	0%	1%	1%	1%	0%	0%	-1%	-1%	-1%	0%	-1%	-1%
1933	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1935	Below Norma	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1936	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%
1939	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	1%
1940	Above Norma	1%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	-1%	-2%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%
1942	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1943	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1945	Below Norma	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Norma	0%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-1%
1947	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	1%	2%	2%
1948	Below Norma	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1949	Dry	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1950	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1951	Above Norma	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1952	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-2%
1953	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1954	Above Norma	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1955	Dry	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
1956	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%
1957	Above Norma	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%
1959	Below Norma	-3%	-1%	0%	0%	0%	1%	1%	0%	-2%	0%	-2%	-2%
1960	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%
1962	Below Norma	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-1%
1963	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1964	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
1965	Wet	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
1966	Below Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%
1967	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1968	Below Norma	-2%	-2%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	-1%
1969	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%
1970	Wet	-3%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-2%
1971	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1972	Below Norma	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1973	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%
1975	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1976	Critical	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
1977	Critical	-1%	0%	0%	0%	1%	0%	0%	1%	1%	1%	0%	0%
1978	Above Norma	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	-2%
1979	Below Norma	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1980	Above Norma	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1981	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1982	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%
1984	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1985	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	-1%
1986	Wet	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	-1%
1987	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%
1988	Critical	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1989	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1991	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1993	Above Norma	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	-3%
1994	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-4%
1995	Wet	-4%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	0%	-1%
1996	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1997	Wet	-2%	-1%	0%	0%	0%	1%	1%	0%	0%	0%	-1%	-2%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
2000	Above Norma	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%
2001	Dry	-2%	-1%	-1%	0%	0%	1%	1%	0%	0%	0%	0%	0%
2002	Dry	0%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	-1%	-1%
2003	Above Norma	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
Above Norma		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
Below Norma		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Critical		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%

Sacramento River Water Temperatures at Keswick Dam (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	48	52	52	50	51	51	52	50
1923	Below Normal	52	51	51	48	47	48	52	53	51	51	51	53	51
1924	Critical	53	53	51	47	47	50	53	55	52	55	58	64	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	54	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	54	56	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	52	53	50
1928	Above Normal	53	52	49	47	46	47	50	50	50	51	54	55	50
1929	Critical	55	53	51	45	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	51
1931	Critical	55	54	51	47	47	48	49	51	53	55	59	65	53
1932	Dry	60	54	48	46	44	47	49	52	54	55	56	61	52
1933	Critical	60	56	51	46	45	47	49	51	53	55	56	61	52
1934	Critical	61	56	51	47	46	48	49	51	54	56	63	65	54
1935	Below Normal	61	53	49	46	45	46	48	50	52	52	55	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	55	54	52	48	46	47	48	50	50	51	53	55	51
1938	Wet	55	53	49	46	45	46	48	50	50	51	53	54	50
1939	Dry	55	54	51	48	46	48	48	49	51	51	54	55	51
1940	Above Normal	55	54	51	47	47	47	50	51	50	51	53	55	51
1941	Wet	55	53	50	47	46	47	48	50	51	53	53	55	51
1942	Wet	55	54	50	46	46	47	49	49	50	51	52	53	50
1943	Wet	54	54	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	54	54	52	48	47	48	48	50	50	52	53	55	51
1945	Below Normal	54	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	52	49	45	45	46	47	48	49	50	51	52	49
1947	Dry	53	52	50	47	46	47	48	49	50	51	53	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	53	50
1949	Dry	53	53	51	47	46	46	48	49	49	50	51	53	50
1950	Below Normal	53	53	51	46	44	45	47	48	49	51	51	53	49
1951	Above Normal	52	51	48	45	44	45	47	48	48	49	51	52	48
1952	Wet	50	51	48	44	44	44	46	48	50	51	51	53	48
1953	Wet	54	54	49	47	45	46	48	48	49	51	51	53	50
1954	Above Normal	53	53	49	46	45	46	47	48	50	50	53	54	50
1955	Dry	53	52	49	46	45	47	47	49	49	51	52	53	49
1956	Wet	52	51	49	44	43	45	47	46	48	50	50	51	48
1957	Above Normal	52	52	51	47	46	46	48	50	50	50	52	54	50
1958	Wet	53	52	49	46	46	46	47	49	50	51	51	54	49
1959	Below Normal	55	54	51	47	46	46	48	49	50	52	55	56	51
1960	Dry	56	54	52	47	46	46	47	48	49	51	52	54	50
1961	Dry	54	53	48	46	45	46	47	48	49	50	52	54	49
1962	Below Normal	54	53	48	46	45	45	47	48	49	50	51	53	49
1963	Wet	53	53	50	47	46	47	48	50	50	51	53	53	50
1964	Dry	53	52	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	53	51	49	44	44	45	45	47	49	50	51	52	48
1966	Below Normal	51	51	49	45	45	45	48	49	49	50	52	53	49
1967	Wet	54	53	48	46	45	45	46	48	50	51	51	52	49
1968	Below Normal	53	54	50	46	46	47	48	49	50	51	53	54	50
1969	Wet	54	52	48	45	43	44	45	47	49	51	51	52	48
1970	Wet	53	53	50	47	45	46	46	48	49	50	52	54	49
1971	Wet	53	52	48	44	44	45	47	48	49	51	52	52	49
1972	Below Normal	53	52	49	45	45	46	47	49	49	50	52	53	49
1973	Above Normal	52	51	48	45	44	45	47	48	49	50	52	52	48
1974	Wet	50	51	47	45	43	45	47	48	49	51	50	52	48
1975	Wet	53	53	49	47	45	46	48	49	50	52	51	53	50
1976	Critical	53	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	51	53	57	62	63	53
1978	Above Normal	58	52	46	45	43	44	46	47	49	51	51	51	48
1979	Below Normal	52	52	51	48	46	47	48	50	50	51	52	53	50
1980	Above Normal	52	51	49	46	46	47	48	49	49	50	51	53	49
1981	Dry	52	51	50	47	46	47	49	50	50	51	53	54	50
1982	Wet	53	52	48	44	44	45	46	49	50	50	50	52	49
1983	Wet	53	52	48	46	45	46	47	49	50	51	52	54	49
1984	Wet	55	53	49	45	45	46	47	49	50	50	53	53	50
1985	Dry	52	51	48	46	45	46	48	49	50	51	53	54	50
1986	Wet	55	53	49	47	47	48	50	50	51	52	53	55	51
1987	Dry	54	54	51	47	46	47	48	49	50	51	54	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	54	53	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	54	50
1990	Critical	53	53	51	47	45	47	48	49	50	53	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	55	51
1992	Critical	57	55	51	47	46	47	48	49	51	54	58	62	52
1993	Above Normal	61	54	48	43	43	45	46	47	49	50	51	52	49
1994	Critical	54	53	50	47	46	48	49	50	51	52	55	56	51
1995	Wet	58	54	49	45	44	46	47	49	50	52	53	54	50
1996	Wet	55	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	52	50	46	45	46	47	48	49	50	52	54	49
1998	Wet	53	52	48	46	45	45	48	47	49	51	53	55	49
1999	Wet	56	53	49	46	45	45	47	48	49	50	51	51	49
2000	Above Normal	53	53	50	48	49	49	51	51	51	52	55	56	52
2001	Dry	56	55	53	49	46	48	48	50	51	53	55	56	52
2002	Dry	56	56	49	47	47	47	49	50	51	52	55	56	51
2003	Above Normal	56	56	50	46	46	48	48	49	51	51	53	55	51
Average		54	53	50	46	45	46	48	49	50	51	53	55	50
Wet		54	53	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	46	45	46	48	49	50	51	52	54	50
Dry		55	53	50	47	46	47	48	49	50	51	53	55	50
Critical		55	54	51	47	46	48	49	50	52	54	56	59	52

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP2 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	51	50	52	49	47	47	52	52	50	51	51	52	50
1923	Below Normal	51	51	50	48	47	48	53	54	50	51	51	52	51
1924	Critical	52	53	51	47	47	50	52	55	52	55	58	64	53
1925	Dry	57	50	45	44	45	45	49	49	50	51	53	56	50
1926	Dry	57	54	51	47	46	48	49	50	51	51	54	56	51
1927	Wet	57	55	48	46	45	46	47	48	49	50	51	53	50
1928	Above Normal	52	52	49	47	46	47	50	49	50	51	53	54	50
1929	Critical	54	53	51	47	46	47	48	49	50	51	52	55	50
1930	Dry	55	54	50	46	46	47	48	49	50	51	52	54	50
1931	Critical	54	54	51	47	47	48	49	51	53	55	58	64	53
1932	Dry	60	54	48	46	44	47	49	52	54	55	55	60	52
1933	Critical	60	56	51	46	45	47	49	50	53	55	55	60	52
1934	Critical	61	56	51	47	46	48	49	51	54	56	62	65	54
1935	Below Normal	61	54	49	46	45	46	48	50	51	52	55	57	51
1936	Below Normal	57	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	54	54	52	48	46	47	48	50	50	51	52	54	51
1938	Wet	55	53	49	46	45	46	48	50	50	51	53	54	50
1939	Dry	54	53	50	48	47	48	49	49	50	51	54	55	51
1940	Above Normal	54	53	52	47	46	47	50	51	50	51	53	54	51
1941	Wet	54	53	50	47	46	47	48	50	50	52	53	54	50
1942	Wet	54	53	50	46	47	47	49	49	50	51	52	53	50
1943	Wet	53	53	50	47	46	47	49	50	50	51	52	54	50
1944	Dry	53	53	52	49	47	48	49	50	50	51	53	55	51
1945	Below Normal	54	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	52	49	46	45	46	47	48	49	50	51	52	49
1947	Dry	52	52	50	47	46	47	48	49	50	51	53	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	51	51	52	53	50
1949	Dry	53	52	50	47	45	45	48	49	49	50	51	52	49
1950	Below Normal	52	52	51	47	44	45	47	48	49	51	51	52	49
1951	Above Normal	51	51	48	45	44	45	46	48	48	49	51	52	48
1952	Wet	49	50	48	44	44	44	46	48	49	51	51	52	48
1953	Wet	53	53	49	47	46	47	48	48	49	51	51	52	49
1954	Above Normal	52	52	49	46	45	46	47	48	50	50	52	53	49
1955	Dry	52	52	48	46	46	47	47	49	49	50	52	53	49
1956	Wet	52	51	48	44	43	45	47	46	48	50	50	50	48
1957	Above Normal	50	51	50	47	46	46	48	50	50	51	52	54	50
1958	Wet	52	51	49	46	46	46	47	49	49	51	51	52	49
1959	Below Normal	53	53	51	47	46	47	48	50	50	52	54	55	50
1960	Dry	55	54	52	48	46	46	47	48	49	51	52	54	50
1961	Dry	53	53	48	46	46	46	47	48	49	50	51	53	49
1962	Below Normal	53	52	49	46	45	45	47	48	49	50	51	52	49
1963	Wet	51	52	50	47	46	47	48	50	50	51	53	52	50
1964	Dry	52	51	49	46	45	46	47	49	49	51	52	53	49
1965	Wet	53	51	49	44	44	45	46	47	49	50	51	50	48
1966	Below Normal	50	51	48	45	45	45	48	48	49	50	51	52	49
1967	Wet	52	52	48	46	45	46	46	48	50	51	51	52	49
1968	Below Normal	52	52	49	46	46	47	48	49	50	51	52	53	50
1969	Wet	53	52	48	45	43	44	45	47	48	50	51	51	48
1970	Wet	52	52	49	47	45	46	46	48	49	50	52	53	49
1971	Wet	52	52	47	44	44	45	47	48	49	50	52	52	48
1972	Below Normal	52	52	49	46	45	46	47	49	49	50	52	53	49
1973	Above Normal	52	50	48	45	44	45	47	48	48	50	52	52	48
1974	Wet	49	51	47	45	44	45	47	48	49	51	50	51	48
1975	Wet	51	51	49	47	46	46	48	49	50	51	51	52	49
1976	Critical	52	51	49	47	47	47	48	50	50	51	53	54	50
1977	Critical	53	52	51	48	47	48	50	51	54	58	61	63	53
1978	Above Normal	59	52	47	45	44	44	45	46	48	50	51	50	48
1979	Below Normal	50	51	50	48	46	47	48	50	50	51	52	53	50
1980	Above Normal	52	51	49	47	46	47	48	49	49	51	51	51	49
1981	Dry	51	51	49	47	46	47	49	49	50	51	52	54	50
1982	Wet	52	51	48	44	44	45	46	49	49	50	50	51	48
1983	Wet	52	51	48	46	45	46	47	49	50	50	52	53	49
1984	Wet	54	53	49	45	45	46	47	49	50	51	52	52	49
1985	Dry	51	51	48	46	46	47	48	49	50	51	52	54	49
1986	Wet	54	52	49	47	47	48	49	50	51	52	53	54	50
1987	Dry	54	53	51	47	46	47	48	49	50	51	53	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	52	54	57	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	54	50
1990	Critical	53	53	51	48	45	47	48	49	50	53	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	54	53	55	51
1992	Critical	56	55	51	47	46	47	48	49	51	54	58	62	52
1993	Above Normal	61	54	48	43	43	45	46	48	48	50	51	50	49
1994	Critical	52	52	50	48	47	48	49	50	51	52	54	55	51
1995	Wet	56	53	49	45	45	46	47	48	50	51	53	54	50
1996	Wet	54	54	50	47	47	47	48	49	50	51	53	52	50
1997	Wet	53	52	50	46	45	46	47	48	49	50	52	52	49
1998	Wet	52	52	48	46	45	45	47	49	51	53	54	54	49
1999	Wet	55	53	49	47	45	45	48	48	49	50	52	51	49
2000	Above Normal	52	52	50	48	49	49	51	51	51	52	54	56	51
2001	Dry	54	54	52	49	46	48	49	50	50	52	54	56	51
2002	Dry	55	55	49	47	46	47	49	50	51	52	54	55	51
2003	Above Normal	55	55	50	46	46	47	48	49	51	51	53	54	50
Average		54	52	50	46	46	47	48	49	50	51	53	54	50
Wet		53	52	49	46	45	46	47	48	50	51	52	52	49
Above Normal		53	52	49	46	46	46	48	49	50	51	52	53	50
Below Normal		53	52	50	47	45	46	48	49	50	51	52	53	50
Dry		54	53	50	47	46	47	48	49	50	51	53	55	50
Critical		55	54	51	47	46	48	49	51	52	54	56	59	52

Change in Sacramento River Water Temperatures at Keswick Dam (°F)

Alternative CP2 (2005) - Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	1	1	0	0	0	-1	0
1924	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1928	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1929	Critical	-1	-1	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1935	Below Normal	0	1	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	-1	0	-1	0
1939	Dry	-1	-1	0	0	0	0	0	0	-1	0	1	0	0
1940	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	-1	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	0	1	0	0	0	0
1949	Dry	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1955	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1962	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1963	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	-1	0	0	0	0	0	0	0	0	0	0	-2	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1971	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1973	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	0	0	0
1977	Critical	0	-1	0	0	0	0	0	1	1	1	-1	1	0
1978	Above Normal	1	0	0	0	1	0	0	-1	-1	0	0	-1	0
1979	Below Normal	-2	-2	-1	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1981	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-2	0	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1986	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1988	Critical	-1	0	0	0	0	0	0	0	0	-2	2	1	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Above Normal	0	0	0	0	0	0	0	1	0	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1995	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Average		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Dry		-1	0	0	0	0	0	0	0	0	0	0	0	0
Critical		-1	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures at Keswick Dam (°F)

From Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	-1%	0%	0%	0%	0%	1%	2%	0%	0%	0%	-1%	0%
1924	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%	-1%	-1%	0%
1928	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	-1%
1929	Critical	-2%	-1%	0%	3%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1931	Critical	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1932	Dry	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%	0%
1935	Below Normal	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1937	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1938	Wet	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-2%	-1%
1939	Dry	-2%	-1%	0%	0%	0%	0%	1%	0%	-2%	-1%	1%	0%	0%
1940	Above Normal	-2%	-1%	0%	0%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1941	Wet	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	-1%	-1%
1942	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-2%	-2%	-1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	-1%	-1%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%
1948	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%
1949	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1950	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1951	Above Normal	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-2%	-2%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	-2%	-1%
1953	Wet	-2%	-2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1955	Dry	-1%	-1%	-1%	0%	0%	0%	0%	0%	1%	-1%	0%	0%	0%
1956	Wet	-1%	-1%	-1%	1%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1957	Above Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1959	Below Normal	-3%	-2%	0%	0%	0%	1%	1%	1%	0%	-1%	-2%	-2%	-1%
1960	Dry	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1961	Dry	-1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	-2%	-2%	0%
1962	Below Normal	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1963	Wet	-4%	-3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1964	Dry	-2%	-1%	0%	0%	0%	1%	1%	0%	-1%	-1%	-1%	-1%	0%
1965	Wet	-1%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	-4%	0%
1966	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1967	Wet	-3%	-1%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	0%
1970	Wet	-3%	-2%	0%	0%	0%	0%	1%	1%	0%	0%	-1%	-2%	0%
1971	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	0%
1972	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1973	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1975	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1976	Critical	-2%	-1%	0%	3%	0%	0%	0%	1%	0%	0%	-1%	-1%	0%
1977	Critical	0%	-1%	0%	0%	1%	0%	0%	1%	2%	1%	-2%	1%	0%
1978	Above Normal	1%	0%	0%	0%	1%	1%	-1%	-1%	-1%	-1%	0%	-2%	0%
1979	Below Normal	-4%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-3%	-1%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	1%	-1%	-2%	0%	0%
1982	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1984	Wet	-3%	-1%	0%	0%	1%	0%	0%	0%	0%	1%	-1%	-2%	0%
1985	Dry	-2%	-1%	0%	1%	0%	0%	1%	1%	-1%	0%	-1%	-1%	0%
1986	Wet	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	1%	1%	0%	-1%	-1%	-1%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	3%	2%	0%
1989	Dry	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	-3%	0%
1994	Critical	-4%	-2%	-1%	1%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1995	Wet	-4%	-1%	0%	0%	1%	0%	0%	-1%	0%	-1%	-1%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1997	Wet	-2%	-1%	0%	0%	0%	1%	0%	1%	0%	0%	0%	-2%	0%
1998	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%
1999	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-2%	-3%	-1%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%
2001	Dry	-2%	-1%	0%	0%	0%	0%	1%	1%	-1%	0%	-1%	-1%	0%
2002	Dry	0%	-1%	0%	-1%	0%	0%	1%	1%	0%	-1%	-1%	-1%	0%
2003	Above Normal	-2%	0%	1%	0%	0%	-1%	1%	0%	0%	0%	-1%	-1%	0%
Average		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%

Sacramento River Water Temperatures at Balls Ferry (°F)

Existing Condition	Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
	1922	Above Normal	55	49	49	46	46	49	54	57	53	53	53	55	52
	1923	Below Normal	53	50	48	45	47	50	54	55	53	54	55	55	51
	1924	Critical	53	53	49	45	48	50	53	57	54	57	60	64	54
	1925	Dry	56	49	43	43	47	48	54	54	54	54	56	58	51
	1926	Dry	56	53	48	45	47	50	53	54	54	54	57	58	53
	1927	Wet	56	53	46	45	46	50	50	52	52	53	54	56	51
	1928	Above Normal	54	51	47	45	47	48	54	52	52	53	56	57	51
	1929	Critical	55	52	47	44	46	48	50	52	53	54	55	57	51
	1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
	1931	Critical	55	52	48	46	47	50	51	54	55	57	60	64	53
	1932	Dry	59	52	46	44	45	50	51	56	57	57	58	62	53
	1933	Critical	60	55	48	44	45	50	52	54	56	57	58	61	53
	1934	Critical	60	54	48	46	48	51	52	55	56	58	64	65	55
	1935	Below Normal	59	52	47	45	46	49	54	55	54	54	57	59	53
	1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
	1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	56	52
	1938	Wet	55	52	47	45	45	47	49	54	54	54	55	56	51
	1939	Dry	55	52	48	46	46	49	50	52	53	53	55	57	51
	1940	Above Normal	55	53	49	46	47	48	54	55	53	53	55	57	52
	1941	Wet	55	52	48	47	46	49	50	52	54	55	55	56	52
	1942	Wet	55	53	49	46	47	49	53	52	55	54	54	55	52
	1943	Wet	55	52	48	46	47	48	53	54	53	53	55	56	52
	1944	Dry	54	53	50	47	47	49	50	53	53	53	55	57	52
	1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	55	51
	1946	Below Normal	53	51	48	45	44	48	49	51	51	52	53	54	50
	1947	Dry	53	51	48	45	46	49	52	51	53	53	55	58	51
	1948	Below Normal	56	51	48	46	46	48	52	57	54	53	55	55	52
	1949	Dry	54	52	48	45	45	47	52	52	52	52	54	56	51
	1950	Below Normal	53	52	49	44	45	47	51	52	52	54	54	55	51
	1951	Above Normal	52	50	47	44	44	47	49	52	52	52	54	55	50
	1952	Wet	51	50	46	43	44	46	47	53	54	55	54	55	50
	1953	Wet	55	52	47	46	46	48	51	51	53	54	54	55	51
	1954	Above Normal	53	52	47	46	45	47	50	51	52	53	55	56	51
	1955	Dry	53	51	46	44	45	48	49	54	52	53	56	56	51
	1956	Wet	53	49	48	44	44	48	51	50	52	54	53	53	50
	1957	Above Normal	52	51	49	45	46	47	49	54	54	53	55	57	51
	1958	Wet	53	51	47	45	46	46	50	53	54	54	55	55	51
	1959	Below Normal	55	52	49	46	46	47	50	51	52	54	57	58	52
	1960	Dry	56	53	50	46	46	48	49	53	52	54	55	57	51
	1961	Dry	54	51	46	45	46	47	50	51	52	53	54	56	50
	1962	Below Normal	54	52	46	45	45	47	51	51	52	53	54	55	50
	1963	Wet	53	52	49	46	47	47	48	55	54	53	56	56	51
	1964	Dry	53	51	47	45	46	47	49	51	52	54	55	56	50
	1965	Wet	54	50	48	44	45	47	49	51	52	53	55	55	50
	1966	Below Normal	52	51	46	44	45	46	50	51	51	52	54	56	50
	1967	Wet	54	51	47	45	45	46	48	51	53	54	53	54	50
	1968	Below Normal	53	53	47	45	46	49	50	52	52	53	56	57	51
	1969	Wet	54	51	45	44	43	47	47	50	52	54	54	54	50
	1970	Wet	53	52	48	47	45	49	47	51	52	53	55	56	51
	1971	Wet	54	50	46	44	44	45	50	51	53	54	55	54	50
	1972	Below Normal	53	51	46	44	45	47	49	52	52	53	55	55	50
	1973	Above Normal	52	49	46	44	44	46	51	53	52	53	55	55	50
	1974	Wet	51	51	46	44	44	45	51	53	54	55	53	54	50
	1975	Wet	53	51	47	46	45	47	50	52	54	55	54	55	51
	1976	Critical	53	51	47	45	46	49	50	52	51	54	56	57	51
	1977	Critical	53	52	49	46	47	49	51	53	55	59	63	63	53
	1978	Above Normal	58	50	45	45	44	46	50	51	52	54	54	54	50
	1979	Below Normal	53	51	49	46	46	49	51	54	52	54	55	56	51
	1980	Above Normal	53	50	47	46	46	49	51	52	52	53	54	56	51
	1981	Dry	53	51	48	46	47	48	51	53	52	54	56	57	51
	1982	Wet	53	50	47	43	44	46	47	55	54	54	54	54	50
	1983	Wet	53	50	47	45	45	46	49	52	53	53	54	55	50
	1984	Wet	55	52	47	45	46	47	49	52	53	53	56	57	51
	1985	Dry	53	50	46	45	46	48	51	52	53	54	55	57	51
	1986	Wet	55	50	47	47	47	49	52	53	54	55	55	57	52
	1987	Dry	55	53	49	45	46	48	50	51	52	54	57	57	51
	1988	Critical	57	53	46	44	46	48	50	52	53	57	56	57	52
	1989	Dry	58	51	46	44	44	48	53	50	52	53	54	56	51
	1990	Critical	53	52	49	46	45	50	53	53	55	55	56	58	52
	1991	Critical	56	52	48	46	48	48	51	52	54	57	56	58	52
	1992	Critical	57	53	48	45	47	49	51	52	53	56	60	63	53
	1993	Above Normal	60	52	45	43	45	49	51	51	53	53	54	54	51
	1994	Critical	54	52	48	46	46	49	50	53	53	54	56	58	52
	1995	Wet	57	52	46	45	46	47	51	52	54	55	55	56	51
	1996	Wet	55	53	48	46	47	48	52	52	54	55	56	55	52
	1997	Wet	54	51	49	46	46	49	49	51	52	53	55	56	51
	1998	Wet	54	51	46	46	45	46	51	49	52	54	56	57	50
	1999	Wet	55	52	47	46	45	46	51	51	52	53	55	54	51
	2000	Above Normal	53	52	48	48	49	51	54	54	54	54	57	59	53
	2001	Dry	56	53	51	47	46	51	50	53	52	55	58	60	53
	2002	Dry	56	54	46	46	47	49	52	53	54	55	58	59	52
	2003	Above Normal	56	54	47	46	46	50	50	52	55	54	57	58	52
	Average		55	52	47	45	46	48	51	53	53	54	56	57	51
	Wet		54	51	47	45	45	47	50	52	53	54	55	55	51
	Above Normal		55	51	47	45	46	48	51	53	53	53	55	56	51
	Below Normal		54	52	48	45	46	48	51	53	52	53	55	56	51
	Dry		55	52	47	45	46	49	51	53	53	54	56	57	51
	Critical		55	53	48	45	47	49	51	53	54	56	58	60	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP2 (2005)**

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	57	53	54	54	55	52
1923	Below Normal	53	50	47	45	47	50	54	56	53	54	54	55	51
1924	Critical	53	52	49	46	48	50	53	57	54	57	60	64	54
1925	Dry	56	49	43	43	47	48	54	54	54	54	56	58	51
1926	Dry	56	53	48	45	47	50	53	54	54	54	57	58	52
1927	Wet	56	53	46	45	46	49	50	52	52	53	54	55	51
1928	Above Normal	53	50	47	45	47	49	55	52	52	53	55	57	51
1929	Critical	54	51	47	44	46	48	50	52	53	53	55	57	51
1930	Dry	56	53	48	45	48	50	51	53	53	54	55	57	52
1931	Critical	54	52	48	46	47	50	51	54	55	57	60	64	53
1932	Dry	59	52	46	44	45	50	51	56	57	57	57	62	53
1933	Critical	59	55	48	44	45	50	52	54	56	57	57	61	53
1934	Critical	60	54	48	46	48	51	52	54	56	58	63	65	55
1935	Below Normal	59	52	47	45	46	49	54	55	54	54	57	59	53
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	51
1937	Below Normal	54	53	49	45	46	49	53	55	54	54	55	56	52
1938	Wet	55	51	47	45	46	47	49	54	54	54	55	55	51
1939	Dry	54	52	48	46	46	49	51	52	52	53	56	57	51
1940	Above Normal	54	52	49	46	47	48	54	55	53	53	55	56	52
1941	Wet	54	52	48	47	46	49	50	52	54	54	55	55	51
1942	Wet	54	52	49	46	47	49	53	52	55	54	54	54	51
1943	Wet	54	51	48	46	47	48	53	54	53	53	55	55	51
1944	Dry	54	52	49	47	47	49	50	53	52	53	55	56	51
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	55	51
1946	Below Normal	53	51	48	45	45	48	49	51	51	52	52	54	50
1947	Dry	52	51	48	45	46	49	52	51	52	53	55	57	51
1948	Below Normal	56	52	48	46	46	48	52	57	56	54	55	55	52
1949	Dry	53	51	48	45	45	47	52	52	52	52	54	55	51
1950	Below Normal	52	51	49	44	45	47	51	52	52	54	54	55	51
1951	Above Normal	52	50	46	44	44	47	49	52	51	52	54	55	50
1952	Wet	50	49	46	43	44	46	47	52	53	55	54	54	50
1953	Wet	54	51	46	46	46	48	51	51	53	54	54	54	51
1954	Above Normal	52	51	47	46	46	47	50	50	52	53	55	55	50
1955	Dry	53	51	45	44	45	48	49	53	52	53	55	56	50
1956	Wet	53	49	47	44	44	48	50	50	52	54	53	52	50
1957	Above Normal	51	50	48	45	46	47	49	54	54	53	55	56	51
1958	Wet	52	50	47	45	46	46	50	53	54	54	55	54	51
1959	Below Normal	54	51	49	47	46	48	51	52	52	54	56	58	51
1960	Dry	55	53	50	46	46	48	49	53	52	53	55	57	51
1961	Dry	53	51	46	45	46	47	50	51	52	53	53	56	50
1962	Below Normal	53	51	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	52	51	48	46	47	47	49	55	54	53	56	55	51
1964	Dry	52	50	47	45	46	47	49	51	52	53	54	55	50
1965	Wet	53	49	47	44	45	47	50	50	52	53	55	54	50
1966	Below Normal	51	50	46	44	45	46	50	51	51	52	54	55	50
1967	Wet	52	51	47	45	45	46	48	51	53	54	53	53	50
1968	Below Normal	52	52	46	45	46	49	50	52	52	53	55	56	51
1969	Wet	53	50	45	44	43	47	47	50	52	54	54	53	49
1970	Wet	52	51	48	47	46	49	47	51	52	53	55	56	50
1971	Wet	52	50	46	44	45	46	50	51	53	54	55	54	50
1972	Below Normal	52	50	46	44	45	47	49	52	52	53	54	55	50
1973	Above Normal	52	49	45	44	45	46	51	53	52	53	55	55	50
1974	Wet	50	50	46	45	44	45	51	53	54	55	53	53	50
1975	Wet	52	50	47	46	45	47	50	52	53	55	54	54	50
1976	Critical	52	50	47	46	46	49	50	53	51	54	56	56	51
1977	Critical	53	52	50	46	47	49	51	53	55	59	63	63	53
1978	Above Normal	58	50	45	45	45	47	50	51	51	53	54	53	50
1979	Below Normal	52	50	48	46	46	49	51	54	52	54	55	56	51
1980	Above Normal	53	49	47	46	46	49	51	52	52	54	54	54	51
1981	Dry	52	50	48	46	47	49	51	52	52	54	55	57	51
1982	Wet	52	50	47	43	44	46	47	55	54	54	54	53	50
1983	Wet	52	50	47	45	45	46	50	52	53	53	54	54	50
1984	Wet	54	51	47	45	46	48	49	52	53	54	56	56	51
1985	Dry	52	50	46	45	46	48	52	52	52	54	55	56	51
1986	Wet	54	50	47	47	47	49	51	53	54	55	55	56	51
1987	Dry	55	52	49	45	46	49	50	52	52	53	56	57	51
1988	Critical	56	53	46	44	46	48	50	52	53	55	57	58	52
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	56	51
1990	Critical	53	52	49	46	45	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	58	52
1992	Critical	57	53	48	45	47	49	51	52	53	56	59	63	53
1993	Above Normal	60	53	45	43	45	49	51	53	54	53	54	53	51
1994	Critical	52	51	48	46	46	49	50	53	53	54	56	58	51
1995	Wet	56	51	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	54	53	48	46	47	48	52	52	54	54	56	54	51
1997	Wet	53	51	49	46	46	49	49	51	52	53	55	55	51
1998	Wet	52	50	46	46	45	46	51	49	52	54	55	56	50
1999	Wet	55	52	48	46	45	46	51	51	52	53	55	54	51
2000	Above Normal	53	51	48	48	49	51	54	54	54	54	56	58	52
2001	Dry	55	53	50	47	46	51	51	53	52	55	57	59	52
2002	Dry	56	53	46	46	47	49	52	53	54	55	57	58	52
2003	Above Normal	55	54	47	46	46	50	51	53	55	54	57	58	52
Average		54	51	47	45	46	48	51	53	53	54	55	56	51
Wet		53	51	47	45	46	47	50	52	53	54	54	54	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	55	51
Below Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Dry		54	52	47	45	46	49	51	53	53	54	55	57	51
Critical		55	52	48	45	47	49	51	53	54	56	58	60	52

Change in Sacramento River Water Temperatures at Balls Ferry (°F)

Alternative CP2 (2005) - Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1928	Above Normal	-1	-1	0	0	0	0	0	-1	0	0	-1	-1	0
1929	Critical	-1	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	-1	0	-1	0
1939	Dry	-1	-1	0	0	0	0	0	0	-1	0	0	0	0
1940	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	-1	-1	0	0	0	0	0	0	0	0	0	0
1947	Dry	-1	-1	0	0	0	0	0	0	-1	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	0	2	0	0	1	0
1949	Dry	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1955	Dry	-1	0	-1	0	0	0	0	0	0	-1	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	1	0	0	0	0	-1	-1	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	1	0	0	0	0	-1	0
1966	Below Normal	0	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1973	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	-1	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	1	-1	-1	0
1978	Above Normal	1	0	0	0	1	1	0	0	-1	0	0	1	0
1979	Below Normal	-2	-1	-1	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	1	0	0	0	0	-1	0	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	-1	0	0	0	0	0	0	0	-1	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	-1	0	0	0	0	0	0	0	0	-2	1	1	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	1	0	0	-1	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1995	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	0	0	0	0	-1	1	1	0	0	0	0	0
Average		-1	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Balls Ferry (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	-1%
1924	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1928	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1929	Critical	-1%	-1%	0%	2%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1931	Critical	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1935	Below Normal	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1937	Below Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1939	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	1%	0%	0%
1940	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1941	Wet	-2%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-1%	-2%	-1%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	0%	0%
1948	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	4%	1%	0%	1%	1%
1949	Dry	-1%	-1%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1951	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1953	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1955	Dry	-1%	0%	-2%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%	-1%
1956	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1957	Above Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1959	Below Normal	-2%	-1%	0%	0%	0%	0%	1%	1%	0%	-1%	-1%	-1%	-1%
1960	Dry	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	-2%	-1%	0%
1962	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1963	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	-1%	-1%	-1%	0%	0%
1965	Wet	-1%	0%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1967	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1969	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	0%
1971	Wet	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1973	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1975	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-2%	-1%	0%	2%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1977	Critical	0%	-1%	1%	1%	1%	0%	0%	1%	1%	1%	-1%	1%	0%
1978	Above Normal	1%	0%	0%	1%	2%	-1%	-1%	-1%	-1%	-1%	0%	-1%	0%
1979	Below Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-2%	0%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1984	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	-1%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1986	Wet	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	2%	1%	0%
1989	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	0%	5%	2%	0%	0%	-2%	0%
1994	Critical	-3%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1995	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1996	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-2%	0%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1999	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
2001	Dry	-2%	-1%	0%	0%	0%	0%	1%	1%	-1%	-1%	-1%	-1%	-1%
2002	Dry	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2003	Above Normal	-2%	0%	0%	0%	0%	-1%	1%	1%	0%	0%	-1%	-1%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%

Sacramento River Water Temperatures at Bend Bridge (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	54	49	47	45	47	51	54	56	54	55	56	57	52
1924	Critical	53	52	48	45	48	51	54	58	56	59	61	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	57	52	47	44	47	52	55	56	56	56	58	60	53
1927	Wet	56	52	45	45	46	50	52	54	54	55	56	57	52
1928	Above Normal	54	50	46	45	47	49	55	54	54	55	57	59	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	59	52
1930	Dry	56	52	47	44	48	51	53	55	55	56	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	64	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	59	63	54
1933	Critical	59	54	47	44	45	50	53	56	58	59	59	62	54
1934	Critical	60	53	47	46	48	53	54	56	57	59	65	65	55
1935	Below Normal	59	51	46	45	46	49	54	57	57	56	59	60	53
1936	Below Normal	57	51	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	53	48	44	46	50	54	57	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	57	52
1939	Dry	55	52	47	45	46	50	52	53	54	55	57	58	52
1940	Above Normal	55	53	48	45	47	49	55	57	55	55	57	58	53
1941	Wet	55	51	48	46	47	50	52	54	57	57	57	57	52
1942	Wet	55	52	48	46	47	50	54	54	57	56	55	56	52
1943	Wet	55	52	47	46	47	49	54	56	55	55	56	58	52
1944	Dry	55	53	49	46	47	50	51	55	54	55	57	58	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	51	48	45	44	49	51	53	53	54	54	56	51
1947	Dry	53	51	47	45	47	50	53	53	55	55	57	59	52
1948	Below Normal	56	51	47	45	46	49	52	58	56	56	57	56	52
1949	Dry	54	51	47	45	45	48	54	55	54	54	56	57	52
1950	Below Normal	53	52	48	44	45	48	53	55	55	57	56	57	52
1951	Above Normal	53	50	46	44	44	48	51	54	54	54	56	57	51
1952	Wet	51	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	57	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	53	54	55	57	58	51
1955	Dry	54	51	45	44	46	49	50	56	53	55	58	58	52
1956	Wet	54	49	47	44	44	49	53	52	55	57	55	54	51
1957	Above Normal	52	51	48	44	46	48	50	56	57	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	56	51	48	46	46	48	52	53	54	56	58	60	52
1960	Dry	56	53	49	45	46	49	51	55	54	56	57	59	52
1961	Dry	54	50	45	44	46	47	52	53	54	54	56	58	51
1962	Below Normal	54	51	45	44	46	47	53	53	54	55	56	57	51
1963	Wet	54	51	48	45	47	48	49	57	56	55	58	57	52
1964	Dry	53	50	46	44	46	48	50	53	54	56	57	57	51
1965	Wet	54	49	47	44	46	48	50	53	54	55	57	57	51
1966	Below Normal	53	50	45	44	45	47	52	54	53	54	56	57	51
1967	Wet	54	51	46	45	46	46	48	53	56	57	55	55	51
1968	Below Normal	53	52	46	44	46	50	51	54	53	55	58	58	52
1969	Wet	54	50	44	44	44	48	49	53	55	56	56	55	51
1970	Wet	53	51	48	46	46	49	49	53	54	55	57	58	52
1971	Wet	54	50	45	44	45	46	51	53	56	57	57	55	51
1972	Below Normal	53	50	45	44	45	48	50	54	54	55	57	57	51
1973	Above Normal	52	49	45	44	45	47	53	56	54	55	57	57	51
1974	Wet	51	50	46	44	44	45	52	55	57	57	55	55	51
1975	Wet	54	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	53	50	47	44	46	50	51	55	53	56	58	59	52
1977	Critical	54	52	49	45	47	49	52	54	56	60	65	63	54
1978	Above Normal	58	50	45	45	45	48	51	53	54	56	56	55	51
1979	Below Normal	54	51	48	46	46	50	53	56	54	56	57	58	52
1980	Above Normal	54	50	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	58	59	52
1982	Wet	53	50	46	43	44	47	48	58	56	56	56	55	51
1983	Wet	53	50	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	59	52
1985	Dry	53	49	46	44	46	49	54	54	55	56	57	58	52
1986	Wet	55	50	46	46	48	50	53	54	56	57	57	58	52
1987	Dry	56	52	48	44	46	49	52	53	54	55	59	59	52
1988	Critical	57	53	45	44	47	49	57	54	54	59	58	59	53
1989	Dry	58	50	45	44	44	49	55	52	55	55	56	58	52
1990	Critical	54	52	48	45	45	51	52	55	56	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	57	52	47	44	47	50	53	54	55	58	61	63	54
1993	Above Normal	60	52	44	43	45	50	52	53	55	55	57	56	52
1994	Critical	54	51	47	46	46	50	52	55	55	56	58	60	52
1995	Wet	57	51	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	53	47	45	47	49	53	54	56	57	58	56	53
1997	Wet	55	51	48	46	47	50	50	53	55	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	57	57	57	51
1999	Wet	56	51	47	46	45	47	53	53	55	55	57	55	52
2000	Above Normal	54	51	47	48	49	51	56	57	56	56	59	60	54
2001	Dry	56	53	50	46	46	52	52	55	54	57	60	61	54
2002	Dry	57	53	46	46	47	49	53	55	56	57	60	60	53
2003	Above Normal	57	54	47	46	47	51	51	54	58	56	59	60	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		54	51	47	45	46	48	51	54	56	56	57	56	52
Above Normal		55	51	46	45	46	49	53	55	55	57	58	52	52
Below Normal		55	51	47	45	46	49	53	55	54	55	57	58	52
Dry		55	51	47	45	46	49	53	55	55	56	58	59	52
Critical		56	52	47	45	47	50	52	55	56	58	60	61	53

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Bend Bridge (°F)

Alternative CP2 (2005)

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	53	49	47	45	47	51	55	57	54	55	56	56	52
1924	Critical	53	52	48	45	48	51	54	58	56	59	61	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	56	52	47	44	47	52	55	56	56	56	58	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	55	55	56	52
1928	Above Normal	53	50	46	45	47	49	55	54	54	55	57	58	52
1929	Critical	54	51	46	44	46	49	51	54	55	55	57	58	52
1930	Dry	56	52	47	44	48	51	53	55	55	56	56	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	61	64	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	59	63	54
1933	Critical	59	54	47	44	45	50	53	56	58	59	59	61	54
1934	Critical	60	53	47	46	48	53	54	56	57	59	64	65	55
1935	Below Normal	59	51	46	45	46	49	54	57	57	56	58	60	53
1936	Below Normal	57	51	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	52	48	44	46	50	54	57	56	56	57	58	53
1938	Wet	55	51	46	44	46	48	51	57	57	56	57	56	52
1939	Dry	54	51	47	45	46	50	52	53	54	54	57	58	52
1940	Above Normal	54	52	48	45	47	49	55	57	55	55	56	57	53
1941	Wet	54	51	48	46	47	50	52	54	57	56	56	56	52
1942	Wet	54	52	48	46	47	50	54	54	57	56	55	55	52
1943	Wet	54	51	47	46	47	49	54	56	55	55	56	57	52
1944	Dry	54	52	49	46	47	50	51	55	54	55	56	58	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	50	47	45	45	49	51	53	53	53	54	55	51
1947	Dry	53	50	47	45	47	50	53	53	54	54	57	59	52
1948	Below Normal	56	51	47	45	46	49	52	58	58	56	57	57	53
1949	Dry	54	51	47	45	45	48	54	55	54	54	56	57	51
1950	Below Normal	53	51	48	44	45	48	53	55	55	57	56	57	52
1951	Above Normal	52	49	46	44	44	48	51	54	54	54	56	57	51
1952	Wet	51	49	46	43	45	47	49	55	56	58	56	55	51
1953	Wet	54	51	46	46	47	49	52	53	55	57	56	55	52
1954	Above Normal	53	51	46	45	46	48	51	52	54	55	57	57	51
1955	Dry	53	50	44	43	46	49	50	56	54	55	57	58	51
1956	Wet	53	49	47	44	44	49	53	53	55	56	55	53	51
1957	Above Normal	51	50	48	44	46	48	50	56	56	55	57	58	52
1958	Wet	52	50	47	45	46	47	52	56	56	56	57	56	52
1959	Below Normal	54	51	48	46	46	48	52	54	53	56	58	59	52
1960	Dry	55	53	49	45	46	49	51	55	54	55	57	58	52
1961	Dry	54	50	45	44	46	48	52	53	54	54	55	57	51
1962	Below Normal	53	51	45	44	46	47	53	53	54	55	56	57	51
1963	Wet	53	51	48	45	47	48	49	57	56	55	58	57	52
1964	Dry	53	50	46	44	46	48	50	53	54	55	56	57	51
1965	Wet	54	49	47	44	46	48	51	53	55	56	57	56	51
1966	Below Normal	53	50	45	44	45	47	52	54	53	54	56	56	51
1967	Wet	53	51	46	45	46	47	48	53	55	57	56	54	51
1968	Below Normal	52	52	45	44	46	50	51	54	53	55	57	58	51
1969	Wet	53	50	44	44	44	48	49	53	54	56	56	54	51
1970	Wet	52	51	48	47	46	50	49	53	54	55	57	57	51
1971	Wet	53	50	45	44	45	46	51	53	55	57	57	55	51
1972	Below Normal	53	50	45	44	45	48	50	54	53	55	56	57	51
1973	Above Normal	52	48	45	44	45	47	53	56	54	55	57	57	51
1974	Wet	51	50	46	44	45	45	52	55	56	57	55	55	51
1975	Wet	52	49	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	52	50	46	45	46	50	51	55	53	56	58	58	52
1977	Critical	54	52	49	45	48	49	52	54	57	61	64	63	54
1978	Above Normal	58	49	45	45	46	48	51	53	54	56	56	55	51
1979	Below Normal	53	50	47	46	46	50	53	56	54	56	57	58	52
1980	Above Normal	53	49	46	46	46	49	52	55	53	56	56	56	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	57	58	52
1982	Wet	53	50	46	43	44	47	48	58	56	56	56	54	51
1983	Wet	52	49	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	54	51	47	45	46	49	50	54	55	56	58	58	52
1985	Dry	52	49	46	45	46	49	54	54	54	56	57	57	52
1986	Wet	55	49	46	46	48	49	53	55	56	57	57	58	52
1987	Dry	55	52	48	44	46	49	52	54	54	55	58	58	52
1988	Critical	56	53	45	44	46	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	55	52	55	55	56	58	52
1990	Critical	54	52	49	45	45	51	52	55	56	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	57	52	47	44	47	50	53	54	55	58	60	63	53
1993	Above Normal	60	52	44	43	45	50	52	56	57	55	57	54	52
1994	Critical	53	50	47	46	46	50	52	55	54	56	57	59	52
1995	Wet	56	50	45	45	47	47	52	53	56	57	57	57	52
1996	Wet	54	52	47	45	47	49	53	54	56	57	58	56	52
1997	Wet	54	50	48	46	47	50	50	53	54	55	57	56	52
1998	Wet	53	50	45	45	45	47	52	51	54	56	57	57	51
1999	Wet	55	51	47	46	45	47	53	53	55	55	57	55	51
2000	Above Normal	53	51	47	48	49	51	55	57	56	56	58	60	53
2001	Dry	55	52	50	46	46	53	52	55	54	57	59	61	53
2002	Dry	56	53	46	45	47	49	54	55	56	57	60	60	53
2003	Above Normal	56	54	47	46	46	51	52	55	58	56	59	59	53
Average		54	51	47	45	46	49	52	55	55	56	57	58	52
Wet		54	50	46	45	46	48	51	54	55	56	56	56	52
Above Normal		54	50	46	45	46	49	53	55	55	55	57	57	52
Below Normal		54	51	47	45	46	49	53	55	55	55	56	57	52
Dry		55	51	47	45	46	50	53	55	55	55	57	59	52
Critical		55	52	47	45	47	50	52	55	56	58	60	61	53

Change in Sacramento River Water Temperatures at Bend Bridge (°F)

Alternative CP2 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1928	Above Normal	-1	-1	0	0	0	0	0	-1	0	0	-1	-1	0
1929	Critical	-1	0	0	1	0	0	0	0	0	0	-1	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	-1	0	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	-1	0	0	0	0
1940	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	-1	-1	0	0	0	0	0	0	0	0	0	0
1947	Dry	-1	0	0	0	0	0	0	0	-1	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	0	2	0	0	1	0
1949	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1955	Dry	0	0	-1	0	0	0	0	0	0	-1	-1	0	0
1956	Wet	0	0	-1	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	1	0	0	0	0	-1	0
1966	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1973	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	0	0	1	0	0	0	0	0	0	-1	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	1	0	0	0
1978	Above Normal	0	0	0	0	1	1	0	0	0	0	0	0	0
1979	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	0	0	0	-1	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	-1	0	0	0	0	0	0	0	0	-2	1	1	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	1	0	0	-1	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1995	Wet	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
2001	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	0	-1	0
2003	Above Normal	-1	0	0	0	0	-1	1	1	0	0	0	0	0
Average		-1	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures at Bend Bridge (°F)

From Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%
1924	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1928	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1929	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1939	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	0%
1940	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1941	Wet	-2%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-1%	-1%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1947	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	0%	0%
1948	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	3%	1%	0%	2%	1%
1949	Dry	-1%	-1%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1951	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1953	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-1%	0%	-2%	0%	0%	0%	0%	-1%	0%	-2%	-1%	-1%	-1%
1956	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	-1%	0%
1960	Dry	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	-1%	-1%	0%
1962	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1963	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	0%
1965	Wet	-1%	0%	-1%	0%	0%	-1%	1%	0%	0%	0%	-2%	0%	0%
1966	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1967	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1969	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1971	Wet	-2%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1973	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	2%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1977	Critical	0%	0%	1%	1%	1%	0%	1%	1%	1%	1%	-1%	1%	0%
1978	Above Normal	1%	0%	0%	0%	1%	2%	-1%	-1%	-1%	0%	0%	-1%	0%
1979	Below Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1984	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	-1%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1986	Wet	-1%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	0%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	2%	1%	0%
1989	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	0%	5%	2%	0%	0%	-2%	0%
1994	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%
1995	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1996	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Normal	-1%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2001	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%	-1%
2002	Dry	0%	0%	0%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	1%	1%	0%	0%	-1%	-1%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Wet		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Critical		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	45	50	54	59	57	57	56	58	53
1923	Below Normal	54	49	46	44	47	51	55	57	55	57	57	58	53
1924	Critical	54	52	48	44	48	51	55	59	57	60	62	65	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	60	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	55	50	45	45	47	49	56	55	55	56	58	60	53
1929	Critical	55	51	46	43	46	50	52	56	56	57	59	60	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	51	45	44	45	52	54	59	60	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	61	62	54
1934	Critical	60	53	47	46	48	53	55	58	58	61	65	66	56
1935	Below Normal	59	51	46	44	46	49	55	58	58	58	60	61	54
1936	Below Normal	57	51	47	45	46	50	54	55	56	56	57	59	53
1937	Below Normal	55	52	47	43	46	50	55	58	57	57	58	59	53
1938	Wet	56	51	47	44	46	48	51	57	58	57	58	57	53
1939	Dry	55	51	47	45	46	50	53	54	56	56	58	59	53
1940	Above Normal	56	53	48	45	47	49	56	58	57	56	58	59	53
1941	Wet	55	51	48	46	47	50	52	55	58	58	58	57	53
1942	Wet	55	52	48	46	47	50	54	55	58	58	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	57	58	59	53
1944	Dry	55	53	48	46	47	50	52	57	56	56	58	59	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	51	47	45	44	49	52	55	54	55	56	57	52
1947	Dry	54	51	46	44	47	50	54	54	56	56	58	60	52
1948	Below Normal	56	50	47	45	46	49	52	58	57	57	58	57	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	59	52
1950	Below Normal	54	51	47	43	45	48	54	56	56	59	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	56	57	58	52
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	57	51
1953	Wet	55	51	45	46	47	49	52	53	56	58	57	57	52
1954	Above Normal	54	51	46	45	46	48	52	53	55	56	58	59	52
1955	Dry	54	50	45	43	46	50	50	57	55	57	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	53	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	57	58	57	52
1959	Below Normal	56	51	48	46	46	49	53	54	55	58	59	60	53
1960	Dry	56	52	49	45	46	49	51	56	56	58	58	60	53
1961	Dry	54	50	45	44	46	48	52	54	55	56	57	59	52
1962	Below Normal	55	51	45	44	46	47	54	54	56	56	57	58	52
1963	Wet	54	51	48	45	47	48	49	57	58	57	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	56	57	58	58	52
1965	Wet	55	49	47	44	46	49	51	54	56	57	59	58	52
1966	Below Normal	54	50	45	44	45	47	53	55	55	55	58	58	52
1967	Wet	55	51	46	45	46	47	48	54	57	58	57	56	52
1968	Below Normal	54	52	45	44	46	50	52	55	55	57	59	60	52
1969	Wet	54	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	49	54	56	56	59	59	52
1971	Wet	54	50	45	44	45	46	54	54	57	58	59	56	52
1972	Below Normal	54	50	45	44	45	48	51	55	55	56	59	58	52
1973	Above Normal	53	49	44	44	45	47	54	57	56	56	59	58	52
1974	Wet	52	50	46	44	44	46	52	56	58	58	57	56	52
1975	Wet	54	50	46	45	45	47	51	55	57	58	57	57	52
1976	Critical	53	50	46	44	46	50	51	56	54	58	60	60	52
1977	Critical	54	52	48	44	47	49	53	55	57	61	66	63	54
1978	Above Normal	58	49	44	45	45	48	52	54	56	58	58	57	52
1979	Below Normal	55	51	47	46	46	50	53	58	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	59	52
1981	Dry	54	50	47	46	47	49	53	55	55	57	60	60	53
1982	Wet	54	50	46	43	44	47	49	59	58	58	57	56	52
1983	Wet	53	49	46	45	45	47	51	55	56	57	57	57	52
1984	Wet	56	51	47	45	46	49	51	55	56	57	60	60	53
1985	Dry	53	49	45	44	46	50	54	55	56	57	58	59	52
1986	Wet	56	49	46	46	48	50	54	55	57	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	60	60	53
1988	Critical	57	52	45	44	47	50	53	55	56	60	60	60	53
1989	Dry	58	50	45	43	44	49	56	54	56	57	58	60	52
1990	Critical	54	52	48	45	44	51	53	56	57	59	60	61	53
1991	Critical	57	51	46	45	48	48	53	55	58	61	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	62	64	54
1993	Above Normal	60	51	44	43	45	51	52	54	56	57	59	57	52
1994	Critical	54	51	47	46	46	50	52	56	56	58	59	61	53
1995	Wet	58	50	45	45	47	47	53	54	57	59	59	58	53
1996	Wet	55	53	47	45	47	49	53	55	58	59	60	57	53
1997	Wet	55	50	48	46	47	51	51	54	56	57	59	58	53
1998	Wet	54	50	45	45	45	47	52	51	55	58	58	58	52
1999	Wet	56	51	47	46	45	47	53	54	56	56	58	56	52
2000	Above Normal	54	51	47	48	49	52	56	58	58	58	60	62	54
2001	Dry	57	53	50	46	46	53	53	57	56	59	61	62	54
2002	Dry	57	53	46	46	47	50	54	56	58	59	61	61	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	61	54
Average		55	51	46	45	46	49	53	56	56	58	59	59	53
Wet		55	51	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	51	46	45	46	49	53	56	56	57	58	59	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	59	52
Dry		55	51	46	44	46	50	53	56	56	57	59	60	53
Critical		56	52	46	44	47	50	53	56	57	59	61	62	54

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP2 (2005)**

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	45	49	54	59	57	57	57	58	53
1923	Below Normal	54	49	46	44	47	51	55	58	55	57	57	58	53
1924	Critical	53	52	47	45	48	51	54	59	57	60	62	65	54
1925	Dry	55	49	42	43	47	49	55	57	57	58	59	59	53
1926	Dry	56	52	47	44	47	52	55	57	58	57	60	60	54
1927	Wet	56	52	45	45	46	50	52	55	55	56	56	57	52
1928	Above Normal	54	50	45	45	47	50	56	55	56	56	58	59	52
1929	Critical	55	50	46	43	46	50	52	55	56	57	58	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	62	64	54
1932	Dry	58	51	45	44	45	52	54	59	60	60	60	63	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	60	62	54
1934	Critical	60	53	47	46	48	53	55	57	58	60	65	65	56
1935	Below Normal	59	51	46	44	46	49	55	58	58	58	59	61	54
1936	Below Normal	57	51	47	45	46	50	54	55	56	56	57	59	53
1937	Below Normal	55	52	47	43	46	50	55	58	57	57	58	58	53
1938	Wet	56	51	46	44	46	48	51	57	58	57	58	57	52
1939	Dry	54	51	47	45	46	50	53	54	55	56	58	59	52
1940	Above Normal	55	52	48	45	47	49	56	58	57	56	57	58	53
1941	Wet	54	51	47	46	47	50	52	55	58	58	57	57	53
1942	Wet	54	52	48	46	47	50	55	55	58	57	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	57	57	58	53
1944	Dry	55	52	48	46	47	51	52	57	55	56	58	59	53
1945	Below Normal	55	50	46	44	47	48	54	56	57	56	57	57	52
1946	Below Normal	54	50	47	45	45	49	52	55	54	55	55	57	51
1947	Dry	53	50	46	44	47	50	54	54	55	56	58	60	52
1948	Below Normal	56	51	47	45	46	49	52	58	59	57	58	58	53
1949	Dry	54	51	46	44	44	48	55	56	56	56	57	58	52
1950	Below Normal	53	51	47	43	45	48	54	56	56	59	58	58	52
1951	Above Normal	52	49	46	44	44	48	52	55	56	55	57	58	51
1952	Wet	51	49	46	43	45	47	49	55	57	59	57	56	51
1953	Wet	55	51	45	46	47	49	52	54	56	58	57	56	52
1954	Above Normal	53	51	46	45	46	48	52	53	55	56	58	58	52
1955	Dry	54	50	44	43	46	50	50	57	55	56	59	59	52
1956	Wet	54	49	46	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	52	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	52	50	46	45	46	47	52	56	57	57	58	56	52
1959	Below Normal	55	50	48	46	46	49	53	55	55	57	59	60	53
1960	Dry	55	53	49	45	46	49	51	56	56	57	58	60	53
1961	Dry	54	50	45	44	46	48	52	54	55	56	56	58	52
1962	Below Normal	54	51	45	44	46	47	54	54	56	56	57	58	52
1963	Wet	53	51	48	45	47	48	49	57	58	57	59	58	53
1964	Dry	53	50	46	44	46	48	51	54	55	57	58	58	52
1965	Wet	54	49	47	44	46	49	51	54	56	57	58	57	52
1966	Below Normal	53	50	45	44	45	47	53	55	55	55	57	58	51
1967	Wet	54	51	46	45	46	47	48	54	56	58	57	56	51
1968	Below Normal	53	52	45	44	46	50	52	55	55	56	58	59	52
1969	Wet	54	50	44	44	44	48	50	54	56	58	58	55	51
1970	Wet	52	50	47	47	46	50	50	54	55	56	58	58	52
1971	Wet	53	50	45	44	45	46	52	53	57	58	59	56	51
1972	Below Normal	53	50	45	44	45	48	50	55	55	56	58	58	51
1973	Above Normal	52	48	44	44	45	47	54	57	56	56	58	58	52
1974	Wet	52	50	46	44	45	46	52	56	58	58	57	56	52
1975	Wet	53	49	45	45	45	47	52	55	57	58	57	57	52
1976	Critical	52	50	46	45	46	50	51	56	54	57	59	59	52
1977	Critical	54	52	49	45	48	49	53	55	58	62	65	64	54
1978	Above Normal	58	49	44	45	46	49	51	54	55	58	58	56	52
1979	Below Normal	54	50	46	45	46	50	53	57	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	58	52
1981	Dry	54	50	47	46	47	49	53	55	55	57	59	60	53
1982	Wet	53	50	46	43	45	47	49	59	58	58	58	55	52
1983	Wet	53	49	46	45	45	47	51	55	56	56	57	56	51
1984	Wet	54	51	47	45	46	49	51	55	56	57	59	60	53
1985	Dry	53	49	45	45	46	50	55	55	56	57	58	58	52
1986	Wet	55	49	46	46	48	50	53	55	57	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	59	59	53
1988	Critical	57	52	45	44	47	50	53	56	55	59	60	60	53
1989	Dry	59	50	45	43	44	49	56	54	56	57	57	59	52
1990	Critical	54	52	48	45	44	51	53	56	57	59	60	61	53
1991	Critical	57	51	46	45	49	48	53	55	58	61	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	61	64	54
1993	Above Normal	60	51	44	43	45	51	52	56	58	57	58	56	53
1994	Critical	53	50	46	46	46	50	52	56	55	57	59	60	53
1995	Wet	56	50	45	45	47	47	53	54	57	58	58	58	52
1996	Wet	55	52	47	45	47	50	53	55	58	58	60	57	53
1997	Wet	54	50	48	46	47	51	51	55	56	57	58	58	53
1998	Wet	53	50	45	45	45	47	52	51	55	58	58	57	51
1999	Wet	55	51	47	46	45	47	53	54	56	56	58	56	52
2000	Above Normal	54	51	47	48	49	52	56	58	58	58	60	61	54
2001	Dry	56	52	49	46	46	53	53	57	55	58	60	62	54
2002	Dry	57	53	46	45	47	50	54	56	58	59	61	61	54
2003	Above Normal	56	54	47	46	47	51	52	56	60	58	60	60	54
Average		55	51	46	45	46	49	53	56	56	57	58	59	53
Wet		54	50	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	50	46	45	46	49	53	56	57	57	58	58	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	58	52
Dry		55	51	46	44	46	50	53	56	56	57	58	60	53
Critical		56	52	46	45	47	51	53	56	57	59	61	62	54

Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP2 (2005) - Existing Condition
SVI

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	Above Normal	-1	0	0	0	0	0	0	-1	0	0	-1	-1	0
1929	Critical	-1	0	0	1	0	0	0	0	0	-1	-1	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	-1	0	0	0	0
1940	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	-1	-1	0	0	0	0	0	0	-1	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	-1	-1	0	0	0	0	0	0	0	0	0	0
1947	Dry	-1	0	0	0	0	0	0	0	-1	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	0	2	0	0	1	0
1949	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1955	Dry	0	0	-1	0	0	0	0	0	0	-1	-1	-1	0
1956	Wet	0	0	-1	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	-1	0	0	0	0	0	0	0	0	-1	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1973	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	0	-1	0	0	0	0	0	0	0	0	0	0	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	0	0	1	0	0	0	0	0	0	-1	0	0
1977	Critical	0	0	1	0	0	0	0	0	1	1	0	0	0
1978	Above Normal	0	0	0	0	0	1	0	0	0	0	0	0	0
1979	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1985	Dry	0	0	0	0	0	0	0	0	-1	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	-1	0	0	0	0	0	0	0	0	-1	1	1	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	1	0	0	-1	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1995	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	0	0	0
2003	Above Normal	-1	0	0	0	0	-1	1	1	0	0	0	0	0
Average		-1	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
From Existing Condition**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%
1924	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1926	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1928	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1929	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1939	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	0%
1940	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1941	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1947	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	0%	0%
1948	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	2%	1%
1949	Dry	-1%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1951	Above Normal	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-1%	0%	-2%	0%	0%	0%	0%	-1%	0%	-2%	-1%	-1%	-1%
1956	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1960	Dry	-1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	-1%	-1%	0%
1962	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1963	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	0%
1965	Wet	-1%	0%	-1%	0%	0%	-1%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1967	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1969	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1971	Wet	-2%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1973	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1977	Critical	0%	0%	1%	1%	0%	0%	0%	1%	1%	0%	1%	0%	0%
1978	Above Normal	1%	0%	0%	0%	1%	2%	-1%	-1%	-1%	0%	0%	-1%	0%
1979	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	0%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1984	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	-1%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1986	Wet	-1%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	0%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	1%	0%
1989	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	0%	5%	2%	0%	0%	-2%	0%
1994	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%
1995	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1996	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Normal	-1%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2001	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%	-1%
2002	Dry	0%	0%	0%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	1%	1%	0%	0%	-1%	-1%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Wet		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Critical		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Sacramento River Water Temperatures Below Shasta Dam (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	49	49
1923	Below Normal	50	51	51	49	47	47	51	52	49	48	48	50	49
1924	Critical	53	53	52	48	47	49	52	54	51	53	57	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	51	55	48
1926	Dry	57	54	52	47	45	46	46	47	48	49	52	55	50
1927	Wet	56	54	49	46	45	45	46	47	48	48	49	51	49
1928	Above Normal	52	52	50	47	46	46	47	48	48	50	52	53	49
1929	Critical	54	54	52	47	45	45	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	50	53	49
1931	Critical	54	54	52	48	46	46	47	49	51	53	58	64	52
1932	Dry	60	54	48	44	44	45	47	49	52	53	53	60	51
1933	Critical	60	56	52	46	44	45	47	48	51	53	54	60	51
1934	Critical	60	56	52	46	45	46	47	49	52	55	63	65	53
1935	Below Normal	60	52	49	45	44	45	46	47	49	49	53	56	50
1936	Below Normal	58	54	52	47	45	45	45	46	47	48	49	52	49
1937	Below Normal	54	54	53	48	45	46	46	47	48	48	50	53	49
1938	Wet	54	53	49	46	45	46	46	48	48	50	51	53	49
1939	Dry	55	54	51	48	46	46	47	48	49	49	52	54	50
1940	Above Normal	56	55	52	47	46	47	47	48	48	49	51	53	50
1941	Wet	54	53	50	47	46	46	47	48	48	50	52	53	50
1942	Wet	55	54	50	46	46	46	46	47	48	48	50	52	49
1943	Wet	54	54	51	47	46	46	47	48	48	49	50	52	49
1944	Dry	53	54	53	49	47	47	47	48	48	49	51	52	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	48	49	50	48
1946	Below Normal	52	52	49	45	44	44	45	46	47	48	48	50	48
1947	Dry	52	53	51	47	46	46	46	47	48	49	51	54	49
1948	Below Normal	56	53	52	47	45	46	46	47	48	48	49	51	49
1949	Dry	52	53	51	48	46	45	46	46	47	48	48	50	48
1950	Below Normal	52	53	52	47	44	44	45	45	47	48	48	49	48
1951	Above Normal	51	51	48	45	44	44	45	45	46	47	48	48	47
1952	Wet	49	51	48	44	44	44	45	46	47	48	49	52	47
1953	Wet	54	54	50	47	45	45	46	46	47	48	49	51	48
1954	Above Normal	53	53	50	46	45	45	46	47	48	48	50	51	48
1955	Dry	53	53	49	46	45	45	46	46	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	43	44	46	47	48	48	47
1957	Above Normal	52	52	51	48	46	46	47	47	48	48	50	51	49
1958	Wet	53	52	49	46	46	45	46	47	48	48	49	52	48
1959	Below Normal	55	54	52	47	46	46	46	47	48	49	53	56	50
1960	Dry	57	55	53	48	45	45	45	46	47	48	49	51	49
1961	Dry	53	53	48	46	45	45	46	46	47	48	49	52	48
1962	Below Normal	54	53	49	46	45	44	45	45	46	47	48	49	48
1963	Wet	52	53	50	47	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	52	52	49	44	43	43	44	45	46	47	48	48	47
1966	Below Normal	49	51	50	45	44	45	45	46	47	48	49	51	48
1967	Wet	53	53	49	46	44	45	46	47	48	48	49	50	48
1968	Below Normal	52	54	51	47	46	46	47	47	48	48	50	52	49
1969	Wet	53	53	49	45	43	43	44	45	46	48	48	50	47
1970	Wet	53	53	50	47	44	44	45	45	46	48	49	51	48
1971	Wet	53	52	48	44	44	44	45	46	47	48	48	51	47
1972	Below Normal	53	53	50	46	44	45	46	47	48	48	49	51	48
1973	Above Normal	52	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	48	51	47	45	43	44	44	45	46	48	48	49	47
1975	Wet	53	53	50	47	45	46	46	47	48	48	49	51	49
1976	Critical	53	52	50	47	46	46	46	47	48	48	49	50	49
1977	Critical	52	53	52	48	47	47	48	49	51	57	66	64	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	49	47
1979	Below Normal	51	53	52	48	46	45	46	47	48	48	49	50	49
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	49	48
1981	Dry	50	51	50	47	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	46	46	47	48	48	50	47
1983	Wet	53	52	49	46	45	46	45	47	48	48	50	53	48
1984	Wet	55	54	49	45	44	45	46	46	48	48	49	50	48
1985	Dry	52	52	49	46	45	45	46	46	48	48	50	53	48
1986	Wet	55	53	50	47	47	47	47	48	48	49	51	53	49
1987	Dry	54	54	52	48	45	45	46	47	48	49	51	54	49
1988	Critical	56	55	50	45	45	45	46	47	49	51	49	54	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	49	50	48
1990	Critical	52	53	52	48	45	45	46	46	48	50	49	53	49
1991	Critical	55	54	52	48	46	47	47	48	49	51	49	52	50
1992	Critical	56	55	52	48	45	45	46	47	50	53	58	64	51
1993	Above Normal	61	54	48	43	42	42	43	45	46	48	48	50	48
1994	Critical	53	53	51	48	46	47	47	48	49	50	53	56	50
1995	Wet	58	54	50	45	43	46	46	47	48	49	51	53	49
1996	Wet	55	55	51	47	47	46	46	47	48	49	50	52	49
1997	Wet	54	53	50	46	44	44	45	46	47	48	49	51	48
1998	Wet	53	52	49	46	45	44	44	46	48	49	52	54	49
1999	Wet	56	54	49	46	45	45	45	46	47	48	48	49	48
2000	Above Normal	52	53	51	48	48	47	48	48	49	50	52	53	50
2001	Dry	55	55	53	49	46	46	47	47	48	49	51	53	50
2002	Dry	56	56	49	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	52	49
Average		54	53	50	46	45	45	46	47	48	49	50	53	49
Wet		54	53	49	46	45	45	45	46	47	48	49	51	48
Above Normal		54	53	50	46	45	45	46	47	48	49	50	50	48
Below Normal		54	53	51	47	45	45	46	47	48	48	50	51	49
Dry		54	53	50	47	45	45	46	47	48	49	50	53	49
Critical		55	54	52	47	46	46	47	48	50	52	55	58	51

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP2 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	48	49
1923	Below Normal	50	51	51	48	47	47	52	53	49	48	48	49	49
1924	Critical	52	53	52	48	47	49	52	54	51	53	57	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	51	55	48
1926	Dry	56	54	52	47	45	46	46	47	48	49	52	55	50
1927	Wet	57	54	49	46	45	45	46	46	47	48	49	50	48
1928	Above Normal	51	52	50	47	46	47	47	48	48	50	51	52	49
1929	Critical	53	53	52	47	45	46	46	47	48	48	50	53	49
1930	Dry	55	55	51	47	46	46	46	47	48	48	50	52	49
1931	Critical	54	54	52	48	46	47	48	49	51	53	57	64	52
1932	Dry	60	54	49	44	44	45	47	49	52	53	52	59	51
1933	Critical	60	56	53	47	45	45	47	48	51	53	53	59	51
1934	Critical	60	56	52	46	45	46	47	49	52	54	61	65	53
1935	Below Normal	60	53	49	45	44	45	46	47	49	49	53	56	50
1936	Below Normal	57	54	52	47	45	45	45	46	47	48	49	51	49
1937	Below Normal	53	54	53	48	46	46	46	47	48	48	50	52	49
1938	Wet	54	53	49	46	45	46	46	47	48	49	51	52	49
1939	Dry	54	53	51	48	46	46	47	48	48	49	53	55	50
1940	Above Normal	56	55	52	47	46	47	47	48	48	49	51	52	50
1941	Wet	53	53	50	47	46	46	47	48	48	49	51	52	49
1942	Wet	54	54	50	46	46	46	46	47	48	48	50	51	49
1943	Wet	52	53	51	47	46	46	47	48	48	49	50	51	49
1944	Dry	52	53	52	49	47	47	47	48	48	49	51	52	50
1945	Below Normal	54	53	50	46	45	46	46	47	48	48	49	50	48
1946	Below Normal	52	52	49	46	45	45	45	46	47	48	48	49	48
1947	Dry	50	52	51	47	46	46	46	47	48	49	52	54	49
1948	Below Normal	56	53	52	47	46	46	46	47	48	48	49	50	49
1949	Dry	52	52	51	48	45	45	46	46	47	48	48	49	48
1950	Below Normal	51	52	52	47	44	44	45	45	46	48	48	48	48
1951	Above Normal	50	51	48	45	44	44	45	45	46	47	48	47	47
1952	Wet	48	50	48	44	44	44	45	46	47	48	49	50	47
1953	Wet	52	53	50	47	45	45	46	46	47	48	49	50	48
1954	Above Normal	51	52	50	46	45	45	46	47	48	48	49	50	48
1955	Dry	52	52	49	46	45	45	46	47	48	48	48	50	48
1956	Wet	51	51	49	44	43	43	44	44	45	47	48	48	46
1957	Above Normal	50	51	51	48	46	46	47	47	48	48	49	50	48
1958	Wet	51	51	49	46	46	45	46	46	47	48	49	51	48
1959	Below Normal	53	53	52	48	46	46	47	48	48	49	52	54	49
1960	Dry	55	54	53	48	45	45	45	46	47	48	49	50	49
1961	Dry	53	53	49	46	45	45	46	46	47	48	48	50	48
1962	Below Normal	52	53	49	46	45	44	45	45	46	47	48	48	47
1963	Wet	50	52	50	47	46	46	47	48	48	49	50	50	49
1964	Dry	51	51	50	47	45	45	46	47	47	48	49	50	48
1965	Wet	52	52	49	44	43	44	44	45	46	48	48	47	47
1966	Below Normal	48	50	49	46	45	45	45	46	47	48	48	49	47
1967	Wet	51	52	49	46	45	45	46	47	47	48	49	50	48
1968	Below Normal	51	52	50	47	46	46	47	47	48	48	49	51	48
1969	Wet	52	52	49	45	43	43	44	45	46	47	48	49	47
1970	Wet	51	52	50	47	44	45	45	46	47	48	48	49	48
1971	Wet	51	52	48	44	44	44	45	46	47	48	48	49	47
1972	Below Normal	51	52	50	46	45	45	46	46	48	48	49	50	48
1973	Above Normal	51	50	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	47	51	47	45	43	44	44	45	46	47	48	48	46
1975	Wet	50	52	50	47	45	46	46	47	48	48	49	50	48
1976	Critical	51	52	50	47	46	46	47	47	48	48	49	50	49
1977	Critical	52	53	53	49	47	47	48	49	52	58	66	64	53
1978	Above Normal	59	51	46	42	42	43	43	44	46	47	48	47	47
1979	Below Normal	49	51	51	48	46	46	46	47	48	48	49	48	48
1980	Above Normal	50	51	50	46	46	45	46	46	47	48	48	48	48
1981	Dry	50	51	50	48	46	46	47	47	48	48	50	51	48
1982	Wet	51	51	48	44	44	44	45	46	47	48	48	49	47
1983	Wet	51	51	49	46	45	46	45	46	47	48	49	51	48
1984	Wet	53	53	49	45	45	45	46	46	47	48	48	50	48
1985	Dry	51	51	49	46	45	45	46	47	48	48	50	52	48
1986	Wet	54	53	50	47	47	47	47	48	48	49	51	52	49
1987	Dry	53	53	52	48	46	46	47	47	48	48	51	53	49
1988	Critical	56	55	50	45	45	45	46	47	49	49	52	56	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	48	50	48
1990	Critical	52	52	48	45	45	45	46	46	48	50	49	52	49
1991	Critical	55	54	52	48	46	47	47	48	49	51	49	52	50
1992	Critical	55	55	52	48	45	45	46	47	50	53	57	64	51
1993	Above Normal	61	54	48	43	42	42	43	44	46	47	48	48	47
1994	Critical	51	52	51	48	46	47	47	48	48	49	52	54	49
1995	Wet	55	54	50	45	44	46	46	47	48	48	51	52	49
1996	Wet	53	54	51	47	47	46	46	47	48	49	50	51	49
1997	Wet	52	52	50	46	44	45	45	46	47	48	48	49	48
1998	Wet	51	52	49	46	45	44	45	46	47	48	51	53	48
1999	Wet	55	53	49	47	45	45	45	46	47	48	48	49	48
2000	Above Normal	50	52	51	48	48	48	48	48	49	50	51	52	50
2001	Dry	53	54	53	49	47	46	47	48	48	49	51	53	50
2002	Dry	55	56	50	47	46	47	47	48	48	49	51	52	50
2003	Above Normal	54	55	51	46	45	46	46	47	48	49	50	50	49
Average		53	53	50	46	45	45	46	47	48	49	50	52	49
Wet		52	52	49	46	45	45	46	46	47	48	49	50	48
Above Normal		53	52	50	46	45	45	46	47	47	48	49	49	48
Below Normal		53	52	51	47	45	45	46	47	48	48	49	50	48
Dry		54	53	50	47	45	46	46	47	48	49	50	52	49
Critical		54	54	52	47	46	46	47	48	50	52	54	58	51

Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP2 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	-1	0	0	0	0	0	1	1	0	0	0	-1	0
1924	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1929	Critical	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1931	Critical	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1934	Critical	0	0	0	0	0	0	0	0	0	-1	-1	0	0
1935	Below Normal	0	1	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1937	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	-1	0	0	0	0	0	0	0	0	-1	0	-1	0
1939	Dry	-2	-1	0	0	0	0	0	0	-1	0	1	1	0
1940	Above Normal	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	-1	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-1	-1	0	0	0	0	0	0	-1	0	-1	-2	0
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	-1	0	-1	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1959	Below Normal	-2	-1	0	0	0	0	1	1	0	-1	-1	-2	0
1960	Dry	-2	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	-2	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1963	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1965	Wet	-1	0	0	0	0	1	0	0	0	0	0	0	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-2	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	1	1	0	0	0	-2	0
1971	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	1	1	2	0	0	0
1978	Above Normal	0	0	0	0	0	0	0	-1	-1	0	0	-1	0
1979	Below Normal	-2	-2	-1	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	-1	-1	0	0	0	0	1	0	0	0	-1	-1	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1988	Critical	-1	0	0	0	0	0	0	0	0	-2	3	1	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Above Normal	0	0	0	0	0	0	0	0	-1	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	-1	0	-1	-2	-1
1995	Wet	-3	0	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-2	-1	0	0	0	0	1	1	0	0	0	-2	0
1998	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	-1
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-2	-1	0	0	0	0	0	1	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Dry		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Critical		-1	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
1923	Below Normal	-1%	-1%	0%	0%	0%	0%	1%	-1%	0%	0%	0%	-1%	0.0
1924	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0.0
1926	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
1927	Wet	1%	0%	0%	0%	-1%	0%	-1%	-1%	-1%	0%	-1%	-2%	0.0
1928	Above Normal	-3%	-2%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	-2%	0.0
1929	Critical	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0.0
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0.0
1931	Critical	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-1%	0.0
1932	Dry	0%	0%	1%	1%	0%	0%	0%	0%	-1%	0%	-2%	-1%	0.0
1933	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	-1%	0.0
1934	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%	0.0
1935	Below Normal	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0.0
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0.0
1937	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0.0
1938	Wet	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-1%	-2%	0.0
1939	Dry	-3%	-1%	0%	0%	0%	0%	1%	0%	-1%	1%	2%	1%	0.0
1940	Above Normal	0%	0%	0%	1%	-1%	0%	0%	0%	0%	0%	-2%	-2%	0.0
1941	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	-2%	-1%	-2%	0.0
1942	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	0.0
1943	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0.0
1944	Dry	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
1946	Below Normal	0%	-1%	-1%	0%	1%	1%	0%	0%	1%	0%	0%	-2%	0.0
1947	Dry	-3%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0.0
1948	Below Normal	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	-1%	-1%	0.0
1949	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-3%	0.0
1950	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0.0
1951	Above Normal	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0.0
1952	Wet	-2%	-2%	0%	0%	0%	0%	-2%	-1%	-1%	0%	-1%	-3%	0.0
1953	Wet	-3%	-2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-2%	0.0
1954	Above Normal	-3%	-2%	0%	0%	0%	1%	0%	0%	0%	0%	-2%	-2%	0.0
1955	Dry	-2%	-1%	0%	0%	0%	0%	1%	1%	0%	0%	0%	-1%	0.0
1956	Wet	-1%	0%	-1%	1%	0%	1%	0%	0%	-1%	-1%	0%	-2%	0.0
1957	Above Normal	-4%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0.0
1958	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-3%	0.0
1959	Below Normal	-4%	-2%	0%	0%	1%	1%	1%	0%	-1%	-3%	-4%	0%	0.0
1960	Dry	-3%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0.0
1961	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-3%	0.0
1962	Below Normal	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-2%	0.0
1963	Wet	-5%	-3%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0.0
1964	Dry	-2%	-1%	0%	0%	1%	1%	1%	1%	0%	0%	-1%	-1%	0.0
1965	Wet	-1%	-1%	0%	0%	1%	1%	1%	0%	-1%	1%	0%	-1%	0.0
1966	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-3%	0.0
1967	Wet	-4%	-2%	0%	0%	1%	1%	0%	0%	-1%	0%	0%	-2%	0.0
1968	Below Normal	-3%	-3%	-1%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-2%	0.0
1969	Wet	-3%	-1%	0%	0%	0%	1%	0%	-1%	-1%	0%	0%	-3%	0.0
1970	Wet	-4%	-2%	0%	0%	0%	1%	1%	1%	0%	0%	-1%	-4%	0.0
1971	Wet	-4%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	0.0
1972	Below Normal	-3%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-2%	0.0
1973	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0.0
1974	Wet	-2%	-2%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%	-2%	0.0
1975	Wet	-4%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	0.0
1976	Critical	-3%	-2%	0%	1%	0%	0%	1%	1%	0%	0%	0%	0%	0.0
1977	Critical	-1%	0%	1%	0%	1%	0%	0%	1%	2%	3%	0%	-1%	0.0
1978	Above Normal	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%	0%	-2%	0.0
1979	Below Normal	-4%	-3%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0.0
1980	Above Normal	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0.0
1981	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	0.0
1982	Wet	-3%	-1%	0%	1%	0%	1%	0%	0%	-1%	0%	0%	-3%	0.0
1983	Wet	-4%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-3%	0.0
1984	Wet	-4%	-1%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	0.0
1985	Dry	-2%	-1%	0%	1%	0%	1%	1%	1%	0%	0%	-1%	-2%	0.0
1986	Wet	-2%	-1%	0%	0%	0%	0%	1%	1%	0%	0%	-1%	-2%	0.0
1987	Dry	-2%	-1%	0%	0%	0%	0%	1%	1%	0%	0%	-1%	-1%	0.0
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-4%	5%	2%	0.0
1989	Dry	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0.0
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0.0
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0.0
1993	Above Normal	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%	0%	-4%	0.0
1994	Critical	-4%	-2%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-4%	0.0
1995	Wet	-4%	-1%	0%	1%	1%	0%	0%	-1%	0%	-1%	-1%	-2%	0.0
1996	Wet	-3%	-2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-2%	0.0
1997	Wet	-3%	-1%	0%	0%	1%	1%	1%	1%	0%	0%	-1%	-4%	0.0
1998	Wet	-4%	-2%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-2%	-2%	0.0
1999	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0.0
2000	Above Normal	-3%	-3%	-1%	0%	0%	0%	0%	-1%	0%	-2%	-2%	-2%	0.0
2001	Dry	-3%	-2%	0%	0%	0%	1%	1%	1%	0%	0%	0%	-1%	0.0
2002	Dry	-1%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	-2%	-2%	0.0
2003	Above Normal	-3%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%	-2%	-2%	0.0
Average		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-0.4%
Wet		-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-0.6%
Above Normal		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-0.5%
Below Normal		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-0.4%
Dry		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-0.3%
Critical		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-0.2%

Sacramento River Water Temperatures at Keswick Dam (°F)
Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	48	52	52	50	51	51	52	50
1923	Below Normal	52	51	51	48	47	48	52	53	51	51	51	53	51
1924	Critical	53	53	51	47	47	50	53	55	52	55	58	64	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	54	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	54	56	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	52	53	50
1928	Above Normal	53	52	49	47	46	47	50	50	50	51	54	55	50
1929	Critical	55	53	51	45	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	51
1931	Critical	55	54	51	47	47	48	49	51	53	55	59	65	53
1932	Dry	60	54	48	46	44	47	49	52	54	55	56	61	52
1933	Critical	60	56	51	46	45	47	49	51	53	55	56	61	52
1934	Critical	61	56	51	47	46	48	49	51	56	56	63	65	54
1935	Below Normal	61	53	49	46	45	46	48	50	52	52	55	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	55	54	52	48	46	47	48	50	50	51	53	55	51
1938	Wet	55	53	49	46	45	46	48	50	50	51	53	54	50
1939	Dry	55	54	51	48	46	48	48	49	51	51	54	55	51
1940	Above Normal	55	54	51	47	47	47	50	51	50	51	53	55	51
1941	Wet	55	53	50	47	46	47	48	50	51	53	53	55	51
1942	Wet	55	54	50	46	46	47	49	49	50	51	52	53	50
1943	Wet	54	54	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	54	54	52	48	47	48	48	50	50	52	53	55	51
1945	Below Normal	54	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	52	49	45	45	46	47	48	49	50	51	52	49
1947	Dry	53	52	50	47	46	47	48	49	50	51	53	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	53	50
1949	Dry	53	53	51	47	46	46	48	49	49	50	51	53	50
1950	Below Normal	53	53	51	46	44	45	47	48	49	51	51	53	49
1951	Above Normal	52	51	48	45	44	45	47	48	48	49	51	52	48
1952	Wet	50	51	48	44	44	44	46	48	50	51	51	53	48
1953	Wet	54	54	49	47	45	46	48	48	49	51	51	53	50
1954	Above Normal	53	53	49	46	45	46	47	48	50	50	53	54	50
1955	Dry	53	52	49	46	45	47	47	49	49	51	52	53	49
1956	Wet	52	51	49	44	43	45	47	46	48	50	51	51	48
1957	Above Normal	52	52	51	47	46	46	48	50	50	50	52	54	50
1958	Wet	53	52	49	46	46	46	47	49	50	51	51	54	49
1959	Below Normal	55	54	51	47	46	46	48	49	50	52	55	56	51
1960	Dry	56	54	52	47	46	46	47	48	49	51	52	54	50
1961	Dry	54	53	48	46	45	46	47	48	49	50	52	54	49
1962	Below Normal	54	53	48	46	45	45	47	48	49	50	51	53	49
1963	Wet	53	53	50	47	46	47	48	50	50	51	53	53	50
1964	Dry	53	52	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	53	51	49	44	44	45	45	47	49	50	51	52	48
1966	Below Normal	51	51	49	45	45	45	48	49	49	50	52	53	49
1967	Wet	54	53	48	46	45	45	46	48	50	51	51	52	49
1968	Below Normal	53	54	50	46	46	47	48	49	50	51	53	54	50
1969	Wet	54	52	48	45	43	44	45	47	49	51	51	52	48
1970	Wet	53	53	50	47	45	46	46	48	49	50	52	54	49
1971	Wet	53	52	48	44	44	45	47	48	49	51	52	52	49
1972	Below Normal	53	52	49	45	45	46	47	49	49	50	52	53	49
1973	Above Normal	52	51	48	45	44	45	47	48	49	50	52	52	48
1974	Wet	50	51	47	45	43	45	47	48	49	51	50	52	48
1975	Wet	53	53	49	47	45	46	48	49	50	52	51	53	50
1976	Critical	53	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	51	53	57	62	63	53
1978	Above Normal	58	52	46	45	43	44	46	47	49	51	51	51	48
1979	Below Normal	52	52	51	48	46	47	48	50	50	51	52	53	50
1980	Above Normal	52	51	49	46	46	47	48	49	49	50	51	53	49
1981	Dry	52	51	50	47	46	47	49	50	50	51	53	54	50
1982	Wet	53	52	48	44	44	45	46	49	50	50	50	52	49
1983	Wet	53	52	48	46	45	46	47	49	50	51	52	54	49
1984	Wet	55	53	49	45	45	46	47	49	50	50	53	53	50
1985	Dry	52	51	48	46	45	46	48	49	50	51	53	54	50
1986	Wet	55	53	49	47	47	48	50	50	51	52	53	55	51
1987	Dry	54	54	51	47	46	47	48	49	50	51	54	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	54	53	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	54	50
1990	Critical	53	53	51	47	45	47	48	49	50	53	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	55	51
1992	Critical	57	55	51	47	46	47	48	49	51	54	58	62	52
1993	Above Normal	61	54	48	43	43	45	46	47	49	50	51	52	49
1994	Critical	54	53	50	47	46	48	49	50	51	52	55	56	51
1995	Wet	58	54	49	45	44	46	47	49	50	52	53	54	50
1996	Wet	55	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	52	50	46	45	46	47	48	49	50	52	54	49
1998	Wet	53	52	48	46	45	45	48	47	49	51	53	55	49
1999	Wet	56	53	49	46	45	45	47	48	49	50	51	51	49
2000	Above Normal	53	53	50	48	49	49	51	51	51	52	55	56	52
2001	Dry	56	55	53	49	46	48	48	50	51	53	55	56	52
2002	Dry	56	56	49	47	47	47	49	50	51	52	55	56	51
2003	Above Normal	56	56	50	46	46	48	48	49	51	51	53	55	51
Average		54	53	50	46	45	46	48	49	50	51	53	55	50
Wet		54	53	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	46	45	46	48	49	50	51	52	54	50
Dry		55	53	50	47	46	47	48	49	50	51	53	55	50
Critical		55	54	51	47	46	48	49	50	52	54	56	59	52

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP3 (2005)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	47	52	52	50	51	51	52	50
1923	Below Normal	51	51	50	48	47	48	53	54	51	51	51	52	51
1924	Critical	51	52	51	48	48	50	52	55	53	54	55	63	53
1925	Dry	58	51	45	44	45	45	49	49	50	51	52	56	50
1926	Dry	56	54	51	47	46	48	49	49	51	51	54	57	51
1927	Wet	57	55	48	46	45	46	47	48	49	50	51	52	50
1928	Above Normal	52	51	49	47	47	47	49	50	50	51	52	54	50
1929	Critical	54	53	51	47	46	47	48	49	50	51	52	54	50
1930	Dry	55	55	51	46	46	47	48	49	50	51	52	54	50
1931	Critical	54	54	51	48	47	48	49	51	53	55	58	64	53
1932	Dry	60	54	48	46	44	47	49	53	54	55	55	61	52
1933	Critical	60	56	51	46	45	47	49	51	54	55	55	62	53
1934	Critical	61	56	51	47	46	49	50	52	54	56	64	63	54
1935	Below Normal	59	53	49	46	45	46	49	50	52	54	53	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	55	54	52	48	46	47	49	50	50	51	52	54	51
1938	Wet	54	53	49	46	45	46	48	49	50	50	53	54	50
1939	Dry	53	53	50	48	47	48	49	50	50	51	53	55	50
1940	Above Normal	54	54	52	47	46	47	50	50	50	51	52	54	51
1941	Wet	53	53	49	47	46	47	48	50	50	52	53	54	50
1942	Wet	54	53	50	46	47	47	49	49	50	51	52	53	50
1943	Wet	53	52	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	53	52	51	49	47	48	49	51	50	51	53	54	51
1945	Below Normal	54	53	49	46	46	47	48	49	50	50	51	52	50
1946	Below Normal	53	52	49	46	45	46	47	48	49	50	51	51	49
1947	Dry	51	51	50	47	46	47	49	49	50	51	52	54	50
1948	Below Normal	55	53	51	47	46	47	48	50	51	51	52	52	50
1949	Dry	52	52	50	47	46	46	48	49	49	50	51	52	49
1950	Below Normal	51	52	51	47	44	45	48	49	49	51	51	52	49
1951	Above Normal	50	50	48	45	44	45	46	48	48	49	51	51	48
1952	Wet	49	49	48	44	44	45	46	48	49	51	50	52	48
1953	Wet	52	52	49	47	46	47	48	48	49	51	51	52	49
1954	Above Normal	52	51	49	46	45	46	47	48	50	50	52	53	49
1955	Dry	52	52	48	46	46	47	47	49	50	50	52	53	49
1956	Wet	52	51	48	44	44	45	47	46	48	50	50	50	48
1957	Above Normal	50	51	50	47	46	47	48	50	50	50	52	54	49
1958	Wet	51	51	49	46	46	46	47	49	49	51	51	52	49
1959	Below Normal	53	52	51	48	46	47	48	49	50	51	53	55	50
1960	Dry	54	54	53	48	46	46	47	48	49	51	52	52	50
1961	Dry	53	52	48	46	46	46	47	48	49	50	50	53	49
1962	Below Normal	53	52	49	46	45	45	47	48	49	50	50	52	49
1963	Wet	51	51	50	47	46	47	48	50	50	51	53	53	50
1964	Dry	52	51	49	46	46	46	47	49	49	51	52	53	49
1965	Wet	54	52	48	44	44	45	46	47	49	50	52	50	48
1966	Below Normal	50	50	48	45	45	45	48	48	49	50	51	52	48
1967	Wet	52	52	48	46	45	46	46	48	49	51	51	52	49
1968	Below Normal	51	52	49	46	46	47	48	49	50	51	52	53	49
1969	Wet	52	51	48	45	43	44	45	47	48	50	51	51	48
1970	Wet	51	51	49	47	45	46	46	48	49	50	51	53	49
1971	Wet	52	51	47	44	44	45	47	47	49	50	52	52	48
1972	Below Normal	51	51	49	46	45	46	47	49	49	50	51	53	49
1973	Above Normal	52	50	47	45	44	45	47	48	48	50	51	52	48
1974	Wet	49	50	47	45	44	45	47	48	48	51	50	51	48
1975	Wet	51	51	49	47	46	46	48	49	50	51	51	52	49
1976	Critical	51	51	49	47	47	47	48	50	50	51	53	53	50
1977	Critical	53	53	51	48	47	48	50	51	53	57	62	63	53
1978	Above Normal	59	52	46	45	44	45	45	46	48	50	51	50	48
1979	Below Normal	50	50	50	48	46	47	48	50	50	50	52	53	50
1980	Above Normal	52	51	49	47	46	47	48	49	49	50	51	51	49
1981	Dry	51	51	49	47	46	47	49	49	50	51	52	54	50
1982	Wet	52	51	48	44	44	45	46	49	49	50	50	51	48
1983	Wet	51	51	48	46	45	46	47	49	50	50	51	53	49
1984	Wet	53	52	49	45	45	46	47	49	50	51	52	52	49
1985	Dry	51	51	48	46	46	47	49	49	49	51	52	54	49
1986	Wet	54	52	49	47	47	48	49	50	51	52	53	54	50
1987	Dry	53	53	51	47	46	47	48	49	50	51	53	54	50
1988	Critical	56	55	49	45	46	47	48	49	50	51	54	56	50
1989	Dry	57	54	49	46	45	46	48	48	49	51	51	53	50
1990	Critical	53	52	51	48	45	47	48	49	50	51	53	56	50
1991	Critical	56	54	51	48	48	47	49	50	51	53	53	55	51
1992	Critical	57	55	51	47	46	47	48	49	52	54	58	62	52
1993	Above Normal	61	54	48	43	43	45	46	48	49	49	52	50	49
1994	Critical	51	51	50	48	47	48	49	50	50	52	54	55	50
1995	Wet	56	52	49	45	45	46	48	48	50	51	52	54	50
1996	Wet	53	53	50	47	48	47	48	49	50	51	53	53	50
1997	Wet	52	52	50	46	45	47	47	48	49	50	52	52	49
1998	Wet	52	52	48	46	45	45	48	47	49	51	52	54	49
1999	Wet	54	53	49	47	46	45	48	48	49	50	51	51	49
2000	Above Normal	51	51	50	48	49	49	52	51	51	52	54	56	51
2001	Dry	54	53	52	49	47	49	49	50	50	52	54	55	51
2002	Dry	55	55	49	47	47	48	49	50	51	52	54	55	51
2003	Above Normal	55	55	50	46	46	47	48	49	51	51	53	54	50
Average		53	52	49	46	46	47	48	49	50	51	52	54	50
Wet		53	52	49	46	45	46	47	48	49	51	52	52	49
Above Normal		53	52	49	46	46	47	48	49	50	51	52	53	50
Below Normal		53	52	50	47	46	46	48	49	50	51	52	53	50
Dry		54	53	50	47	46	47	48	49	50	51	52	54	50
Critical		55	53	51	47	46	48	49	51	52	53	56	59	52

Change in Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP3 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	1	1	0	0	0	-1	0
1924	Critical	-2	-1	0	1	1	0	-1	0	1	-1	-3	-1	0
1925	Dry	0	0	0	0	0	0	0	0	0	-1	-1	-1	0
1926	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	1	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1929	Critical	-1	0	0	1	0	0	0	0	0	0	-1	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1931	Critical	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	1	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	1	1	0	0	1	0
1934	Critical	1	0	0	0	0	0	1	1	0	0	1	-3	0
1935	Below Normal	-2	-1	0	-1	0	0	0	0	0	3	-2	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1938	Wet	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-2	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1940	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-2	-1	-1	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-2	-1	0	0	0	0	0	0	-1	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1946	Below Normal	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	0	0	1	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-1	-2	0	0	0	0	0	0	-1	0	-1	-1	-1
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1956	Wet	0	0	-1	0	0	0	0	0	0	-1	0	-1	0
1957	Above Normal	-2	-2	-1	0	0	0	0	0	0	0	0	-1	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1959	Below Normal	-2	-2	0	0	0	0	0	0	0	-1	-2	-1	-1
1960	Dry	-2	0	1	0	0	0	0	0	0	0	0	-2	0
1961	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1963	Wet	-2	-2	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-2	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-2	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	-1	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	-1	-1	0	0	0	0	0	0	0	-1	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	-1	0	0	-1	0
1975	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	2	0	0	0	0	0	0	0	-1	0
1977	Critical	0	-1	0	0	0	0	0	0	0	0	0	1	0
1978	Above Normal	1	0	0	0	1	1	0	-1	-1	-1	0	-1	0
1979	Below Normal	-3	-2	-1	0	0	0	0	0	0	0	0	0	-1
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	-1	-1	0	1	0	0	0	1	-1	0	-1	-1	0
1986	Wet	-1	0	0	0	0	0	0	-1	0	0	-1	-1	0
1987	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	-1	0	0	0	0	0	0	0	0	-2	1	0	0
1989	Dry	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1990	Critical	0	0	0	0	0	0	0	0	0	-2	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	-1	0	0	0	0	0	0	1	0	0	1	-2	0
1994	Critical	-3	-2	0	0	0	0	0	0	-1	0	-1	-1	-1
1995	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-2	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-2	-1	0	0	0	0	1	0	-1	0	0	0	0
2002	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-1	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Keswick Dam (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	-1%	0%	0%	0%	0%	1%	2%	1%	0%	0%	-2%	0%
1924	Critical	-3%	-2%	-1%	2%	1%	0%	-1%	0%	1%	-1%	-5%	-1%	-1%
1925	Dry	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%
1927	Wet	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-1%	-2%	0%
1928	Above Normal	-2%	-2%	0%	0%	1%	1%	-1%	-1%	0%	0%	-2%	-1%	-1%
1929	Critical	-1%	-1%	0%	3%	1%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1930	Dry	0%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1931	Critical	-1%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-2%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	1%	0%
1934	Critical	1%	0%	-1%	0%	0%	0%	1%	2%	0%	1%	2%	-4%	0%
1935	Below Normal	-3%	-1%	0%	-1%	0%	0%	1%	1%	1%	5%	-4%	0%	0%
1936	Below Normal	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	0%
1938	Wet	-1%	0%	-1%	0%	0%	0%	0%	-1%	-1%	-2%	-1%	-2%	-1%
1939	Dry	-3%	-2%	0%	0%	0%	0%	1%	0%	-2%	0%	-1%	-1%	-1%
1940	Above Normal	-1%	0%	1%	0%	-1%	0%	0%	-1%	0%	0%	-2%	-2%	-1%
1941	Wet	-3%	-1%	-1%	0%	0%	1%	0%	0%	-1%	-2%	-1%	-1%	-1%
1942	Wet	-3%	-1%	0%	1%	0%	1%	0%	0%	0%	0%	-1%	-1%	0%
1943	Wet	-3%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%
1944	Dry	-2%	-3%	-2%	1%	1%	1%	1%	0%	-1%	-1%	-1%	-1%	-1%
1945	Below Normal	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	0%	-1%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	0%
1947	Dry	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	-1%	-2%	-2%	-1%
1948	Below Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	1%	1%	0%	-2%	0%
1949	Dry	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	-1%
1950	Below Normal	-3%	-1%	-1%	0%	1%	0%	1%	0%	0%	0%	0%	-2%	-1%
1951	Above Normal	-4%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-2%	-1%	-1%
1953	Wet	-3%	-3%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%
1954	Above Normal	-3%	-3%	0%	0%	1%	0%	0%	-1%	0%	0%	-2%	-1%	-1%
1955	Dry	-2%	-1%	-1%	0%	0%	0%	1%	0%	1%	-1%	-1%	-1%	0%
1956	Wet	-1%	0%	-1%	1%	1%	0%	0%	0%	-1%	-1%	1%	-1%	0%
1957	Above Normal	-4%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1959	Below Normal	-4%	-3%	0%	0%	1%	1%	1%	1%	0%	-1%	-3%	-2%	-1%
1960	Dry	-3%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	-3%	0%
1961	Dry	-2%	-2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-3%	-1%
1962	Below Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1963	Wet	-4%	-3%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%
1964	Dry	-2%	-1%	0%	0%	1%	0%	1%	1%	-1%	-1%	-1%	-1%	0%
1965	Wet	1%	0%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	-4%	0%
1966	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	-2%	-1%
1967	Wet	-3%	-1%	-1%	0%	1%	1%	0%	0%	-1%	0%	0%	-1%	-1%
1968	Below Normal	-3%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	1%	0%	0%	-1%	0%	0%	-2%	-1%
1970	Wet	-5%	-3%	0%	0%	1%	1%	1%	1%	1%	0%	-2%	-2%	-1%
1971	Wet	-3%	-1%	0%	0%	1%	1%	0%	0%	-1%	-1%	1%	-2%	-1%
1972	Below Normal	-3%	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1973	Above Normal	-1%	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1974	Wet	-2%	-2%	0%	1%	1%	0%	0%	0%	-1%	-1%	0%	-2%	-1%
1975	Wet	-4%	-3%	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%
1976	Critical	-3%	-2%	0%	3%	1%	0%	1%	1%	0%	-1%	-1%	-1%	0%
1977	Critical	-1%	-1%	0%	0%	0%	0%	0%	0%	1%	-1%	-1%	1%	0%
1978	Above Normal	1%	0%	0%	0%	1%	2%	-1%	-2%	-2%	-1%	0%	2%	0%
1979	Below Normal	-5%	-4%	-2%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%
1980	Above Normal	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-2%	-1%	-1%	0%	0%	1%	0%	0%	1%	-1%	-2%	-1%	-1%
1982	Wet	-2%	-1%	0%	1%	1%	1%	0%	-1%	-1%	0%	0%	-2%	0%
1983	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-2%	-1%
1984	Wet	-4%	-1%	0%	1%	1%	1%	0%	0%	0%	0%	-2%	-2%	-1%
1985	Dry	-2%	-1%	0%	2%	1%	1%	1%	1%	-1%	0%	-2%	-1%	0%
1986	Wet	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	-1%
1987	Dry	-2%	-1%	0%	0%	0%	0%	1%	1%	0%	-1%	-2%	-2%	0%
1988	Critical	-1%	-1%	0%	0%	1%	0%	0%	0%	0%	-4%	3%	0%	0%
1989	Dry	-1%	0%	1%	1%	1%	0%	-1%	0%	0%	1%	-1%	-3%	0%
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	0%	0%
1991	Critical	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1993	Above Normal	-1%	0%	1%	1%	0%	0%	2%	0%	0%	-1%	1%	-4%	0%
1994	Critical	-5%	-3%	-1%	1%	0%	1%	0%	0%	-2%	0%	-2%	-2%	-1%
1995	Wet	-4%	-2%	0%	1%	1%	0%	0%	-1%	0%	-1%	-2%	-1%	-1%
1996	Wet	-2%	-2%	-1%	0%	0%	1%	0%	0%	0%	-1%	1%	-1%	0%
1997	Wet	-4%	-1%	0%	1%	1%	1%	0%	1%	0%	-1%	-1%	-2%	0%
1998	Wet	-3%	-2%	0%	0%	0%	0%	0%	-1%	0%	-1%	-3%	-2%	-1%
1999	Wet	-3%	-1%	0%	1%	1%	1%	0%	0%	-1%	0%	0%	0%	0%
2000	Above Normal	-3%	-4%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	-1%
2001	Dry	-3%	-2%	-1%	0%	1%	1%	1%	1%	-1%	0%	-1%	-1%	-1%
2002	Dry	-2%	-2%	1%	0%	0%	0%	1%	1%	0%	-1%	-2%	-1%	0%
2003	Above Normal	-2%	-1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Average		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-2%	-1%
Above Normal		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Below Normal		-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%

Sacramento River Water Temperatures at Balls Ferry (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	57	53	53	53	55	52
1923	Below Normal	53	50	48	45	47	50	54	55	53	54	54	55	51
1924	Critical	53	53	49	45	48	50	53	57	54	57	60	64	54
1925	Dry	56	49	43	43	47	48	54	54	54	54	56	58	51
1926	Dry	56	53	48	45	47	50	53	54	54	54	57	58	53
1927	Wet	56	53	46	45	46	50	50	52	52	53	54	56	51
1928	Above Normal	54	51	47	45	47	48	54	52	52	53	56	57	51
1929	Critical	55	52	47	44	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
1931	Critical	55	52	48	46	47	50	51	54	55	57	60	64	53
1932	Dry	59	52	46	44	45	50	51	56	57	57	58	62	53
1933	Critical	60	55	48	44	45	50	52	54	56	57	58	61	53
1934	Critical	60	54	48	46	48	51	52	55	56	58	64	65	55
1935	Below Normal	59	52	47	45	46	49	54	55	54	54	57	59	53
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	56	52
1938	Wet	55	52	47	45	45	47	49	54	54	54	55	56	51
1939	Dry	55	52	48	46	46	49	50	52	53	53	55	57	51
1940	Above Normal	55	53	49	46	47	48	54	55	53	53	55	57	52
1941	Wet	55	52	48	47	46	49	50	52	54	55	55	56	52
1942	Wet	55	53	49	46	47	49	53	52	55	54	54	55	52
1943	Wet	55	52	48	46	47	48	53	54	53	53	55	56	52
1944	Dry	54	53	50	47	47	49	50	53	53	53	55	57	52
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	55	51
1946	Below Normal	53	51	48	45	44	48	49	51	51	52	53	54	50
1947	Dry	53	51	48	45	46	49	52	51	53	53	55	58	51
1948	Below Normal	56	51	48	46	46	48	52	57	54	53	55	55	52
1949	Dry	54	52	48	45	45	47	52	52	52	52	54	56	51
1950	Below Normal	53	52	49	44	45	47	51	52	52	54	54	55	51
1951	Above Normal	52	50	47	44	44	47	49	52	52	52	54	55	50
1952	Wet	51	50	46	43	44	46	47	53	54	55	54	55	50
1953	Wet	55	52	47	46	46	48	51	51	53	54	54	55	51
1954	Above Normal	53	52	47	46	45	47	50	51	52	53	55	56	51
1955	Dry	53	51	46	44	45	48	49	54	52	53	56	56	51
1956	Wet	53	49	48	44	44	48	51	50	52	54	53	53	50
1957	Above Normal	52	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	53	51	47	45	46	46	50	53	54	54	55	55	51
1959	Below Normal	55	52	49	46	46	47	50	51	52	54	57	58	52
1960	Dry	56	53	50	46	46	48	49	53	52	54	55	57	51
1961	Dry	54	51	46	45	46	47	50	51	52	53	54	56	50
1962	Below Normal	54	52	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	53	52	49	46	47	47	48	55	54	53	56	56	51
1964	Dry	53	51	47	45	46	47	49	51	52	54	55	56	50
1965	Wet	54	50	48	44	45	47	49	51	52	53	55	55	50
1966	Below Normal	52	51	46	44	45	46	50	51	51	52	54	56	50
1967	Wet	54	51	47	45	45	46	48	51	53	54	53	54	50
1968	Below Normal	53	53	47	45	46	49	50	52	52	53	56	57	51
1969	Wet	54	51	45	44	43	47	47	50	52	54	54	54	50
1970	Wet	53	52	48	47	45	49	47	51	52	53	55	56	51
1971	Wet	54	50	46	44	44	45	50	51	53	54	55	54	50
1972	Below Normal	53	51	46	44	45	47	49	52	52	53	55	55	50
1973	Above Normal	52	49	46	44	44	46	51	53	52	53	55	55	50
1974	Wet	51	51	46	44	44	45	51	53	54	55	53	54	50
1975	Wet	53	51	47	46	45	47	50	52	54	55	54	55	51
1976	Critical	53	51	47	45	46	49	50	52	51	54	56	57	51
1977	Critical	53	52	49	46	47	49	51	53	55	59	63	63	53
1978	Above Normal	58	50	45	45	44	46	50	51	52	54	54	54	50
1979	Below Normal	53	51	49	46	46	49	51	54	52	54	55	56	51
1980	Above Normal	53	50	47	46	46	49	51	52	52	53	54	56	51
1981	Dry	53	51	48	46	47	48	51	53	52	54	56	57	51
1982	Wet	53	50	47	43	44	46	47	55	54	54	54	54	50
1983	Wet	53	50	47	45	45	46	49	52	53	53	54	55	50
1984	Wet	55	52	47	45	46	47	49	52	53	53	56	57	51
1985	Dry	53	50	46	45	46	48	51	52	53	54	55	57	51
1986	Wet	55	50	47	47	47	49	52	53	54	55	55	57	52
1987	Dry	55	53	49	45	46	48	50	51	52	54	57	57	51
1988	Critical	57	53	46	44	46	48	50	52	53	57	56	57	52
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	56	51
1990	Critical	53	52	49	46	45	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	58	52
1992	Critical	57	53	48	45	47	49	51	52	53	56	60	63	53
1993	Above Normal	60	52	45	43	45	49	51	51	53	53	54	54	51
1994	Critical	54	52	48	46	46	49	50	53	53	54	56	58	52
1995	Wet	57	52	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	55	53	48	46	47	48	52	52	54	55	56	55	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	56	51
1998	Wet	54	51	46	46	45	46	51	49	52	54	56	57	50
1999	Wet	55	52	47	46	45	46	51	51	52	53	55	54	51
2000	Above Normal	53	52	48	48	49	51	54	54	54	54	57	59	53
2001	Dry	56	53	51	47	46	51	50	53	52	55	58	60	53
2002	Dry	56	54	46	46	47	49	52	53	54	55	58	59	52
2003	Above Normal	56	54	47	46	46	50	50	52	55	54	57	58	52
Average		55	52	47	45	46	48	51	53	53	54	56	57	51
Wet		54	51	47	45	45	47	50	52	53	54	55	55	51
Above Normal		55	51	47	45	46	48	51	53	53	53	55	56	51
Below Normal		54	52	48	45	46	48	51	53	52	53	55	56	51
Dry		55	52	47	45	46	49	51	53	53	54	56	57	51
Critical		55	53	48	45	47	49	51	53	54	56	58	60	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP3 (2005)**

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	57	54	53	53	55	52
1923	Below Normal	53	50	47	45	47	50	54	56	53	54	54	55	51
1924	Critical	52	52	49	46	48	50	52	57	55	57	58	63	53
1925	Dry	56	49	43	43	47	48	54	54	54	54	55	58	51
1926	Dry	56	53	48	45	47	50	53	53	54	54	56	59	52
1927	Wet	57	53	46	45	46	49	50	52	52	53	53	55	51
1928	Above Normal	53	50	47	45	47	49	54	52	52	54	54	57	51
1929	Critical	54	51	48	44	46	48	50	52	53	53	55	57	51
1930	Dry	56	53	48	45	48	50	51	53	53	54	55	57	52
1931	Critical	54	52	48	46	48	50	51	54	55	57	59	64	53
1932	Dry	59	52	46	44	45	50	52	57	57	57	57	62	53
1933	Critical	60	55	48	44	45	50	52	54	57	57	57	62	53
1934	Critical	61	54	48	46	48	51	53	55	56	58	64	63	55
1935	Below Normal	58	51	47	45	46	49	54	55	55	56	55	59	52
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	56	52
1938	Wet	55	51	47	45	46	47	49	54	54	53	55	55	51
1939	Dry	53	51	48	46	46	49	50	52	52	53	54	56	51
1940	Above Normal	54	53	49	46	47	48	54	54	53	53	54	56	52
1941	Wet	53	52	48	47	46	49	50	52	54	54	55	55	51
1942	Wet	53	52	49	46	47	49	53	52	54	54	54	54	51
1943	Wet	53	51	48	46	47	48	53	54	53	53	55	56	51
1944	Dry	54	52	49	47	47	50	50	53	52	53	54	56	51
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	54	51
1946	Below Normal	53	51	47	45	45	48	50	51	51	52	53	53	50
1947	Dry	51	50	47	45	46	49	52	51	53	52	54	56	51
1948	Below Normal	55	51	48	46	46	48	52	57	56	54	55	54	52
1949	Dry	53	51	48	45	45	48	52	52	52	52	54	55	51
1950	Below Normal	52	51	48	44	45	47	52	52	53	54	54	55	51
1951	Above Normal	51	49	46	44	44	48	49	52	51	52	54	54	50
1952	Wet	50	48	46	43	44	46	47	52	53	55	54	54	49
1953	Wet	53	51	46	46	46	48	51	51	53	54	54	54	51
1954	Above Normal	52	51	47	46	46	47	50	50	52	53	54	56	50
1955	Dry	53	51	45	44	46	48	49	53	52	52	55	56	50
1956	Wet	53	49	47	44	44	48	51	50	52	53	54	52	50
1957	Above Normal	50	50	48	45	46	48	49	54	54	53	54	56	51
1958	Wet	52	50	47	45	46	46	50	53	54	54	54	54	51
1959	Below Normal	53	51	49	47	46	48	51	52	52	54	55	57	51
1960	Dry	54	53	51	46	46	48	49	53	52	54	55	55	51
1961	Dry	53	50	46	45	46	48	50	51	52	53	53	55	50
1962	Below Normal	53	51	46	45	46	47	51	51	52	53	52	55	50
1963	Wet	53	51	48	46	47	47	49	55	54	53	56	56	51
1964	Dry	52	50	47	45	46	47	49	52	52	53	54	55	50
1965	Wet	54	50	47	44	45	47	50	50	52	53	55	53	50
1966	Below Normal	51	50	46	44	45	46	50	51	51	52	53	55	50
1967	Wet	53	51	47	45	46	46	48	51	53	54	53	53	50
1968	Below Normal	52	51	46	45	46	49	50	52	51	53	55	56	51
1969	Wet	53	50	45	44	43	47	47	50	52	54	54	53	49
1970	Wet	51	51	48	47	46	49	48	51	52	53	54	55	50
1971	Wet	52	50	45	44	45	46	50	51	53	54	56	54	50
1972	Below Normal	52	50	46	44	45	47	49	52	52	53	53	55	50
1973	Above Normal	52	49	45	44	45	46	51	53	52	53	54	55	50
1974	Wet	50	50	46	45	44	45	51	53	53	55	53	53	50
1975	Wet	51	50	47	46	45	47	50	52	53	54	54	54	50
1976	Critical	51	50	47	46	46	49	50	53	51	54	56	56	51
1977	Critical	53	52	50	48	47	49	51	53	55	58	63	63	53
1978	Above Normal	58	50	45	45	45	48	50	50	51	53	54	54	50
1979	Below Normal	51	50	48	46	46	49	51	54	52	53	55	56	51
1980	Above Normal	53	49	47	46	46	49	51	52	52	53	54	55	51
1981	Dry	52	50	47	46	47	49	51	52	52	54	55	56	51
1982	Wet	53	50	47	43	44	46	47	55	54	54	54	53	50
1983	Wet	52	49	47	45	45	46	50	52	53	53	54	54	50
1984	Wet	53	51	47	45	46	48	49	52	53	54	55	56	51
1985	Dry	52	49	46	45	46	49	52	52	52	54	54	55	51
1986	Wet	54	50	47	47	47	49	51	53	54	55	55	56	51
1987	Dry	54	52	49	45	46	49	50	52	52	53	56	56	51
1988	Critical	56	53	46	44	46	48	50	52	52	55	57	57	51
1989	Dry	57	51	46	44	44	48	52	50	53	54	54	55	51
1990	Critical	53	52	49	46	45	50	50	53	53	54	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	57	52
1992	Critical	57	53	48	45	47	49	51	52	54	56	59	62	53
1993	Above Normal	60	52	45	43	45	49	51	53	55	53	55	53	51
1994	Critical	52	50	48	46	46	50	51	53	52	55	55	57	51
1995	Wet	56	50	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	54	52	48	46	47	49	52	52	54	54	56	55	51
1997	Wet	53	51	49	46	46	49	49	51	52	53	55	55	51
1998	Wet	52	50	46	45	45	46	51	49	52	54	54	56	50
1999	Wet	54	51	48	46	45	46	51	51	52	53	55	54	51
2000	Above Normal	52	50	48	48	49	51	54	54	54	54	56	58	52
2001	Dry	55	52	50	47	46	52	51	53	52	55	57	59	52
2002	Dry	56	53	47	46	47	49	52	53	54	55	57	58	52
2003	Above Normal	55	54	48	46	46	50	50	53	55	54	57	57	52
Average		54	51	47	45	46	48	51	53	53	54	55	56	51
Wet		53	51	47	45	46	47	50	52	53	54	54	54	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	55	51
Below Normal		54	51	47	45	46	48	51	53	53	53	54	55	51
Dry		54	51	47	45	46	49	51	53	53	54	55	57	51
Critical		55	52	48	45	47	49	51	53	54	56	58	60	52

Change in Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP3 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	1	0	-1	0
1924	Critical	-1	-1	0	0	0	0	-1	0	1	0	-2	-1	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-1	-1	0	0	0	0	-1	-1	0	0	-2	-1	0
1929	Critical	-1	0	0	1	0	0	0	0	0	-1	-1	-1	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	1	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	Critical	0	0	0	0	0	0	1	1	0	0	1	-2	0
1935	Below Normal	-1	0	0	0	0	0	0	0	0	2	-2	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	-1	0	0	0
1939	Dry	-1	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1940	Above Normal	-1	0	0	0	0	0	0	-1	0	0	-1	-1	0
1941	Wet	-1	0	-1	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-2	-1	0	0	0	0	0	0	-1	-1	-1	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1946	Below Normal	0	-1	-1	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-2	0
1948	Below Normal	-1	0	0	0	0	0	0	0	2	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	-1	0	0	0	0	0	0	-1	-1	-1	0
1956	Wet	0	0	-1	0	0	0	0	0	0	-1	0	0	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1960	Dry	-1	0	1	0	0	0	0	0	0	0	0	-2	0
1961	Dry	-1	-1	0	0	0	1	0	0	0	0	-2	-1	0
1962	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1965	Wet	0	0	-1	0	0	0	1	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-1	-1	-1	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-1	0	-1	0	0	0	0	0	0	-1	1	0	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-2	-1	0
1973	Above Normal	0	-1	-1	0	0	0	0	0	0	0	-1	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	-1	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1977	Critical	0	0	0	0	0	0	0	0	0	0	0	1	0
1978	Above Normal	1	0	0	0	1	2	0	-1	-1	-1	0	0	0
1979	Below Normal	-2	-2	-1	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	1	0	0	0	0	-2	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	0	-1	0	1	0	0	0	0	-1	0	-1	-1	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	-1	0	0	0	0	0	0	0	0	-2	1	0	0
1989	Dry	-1	0	0	0	0	0	-1	0	0	0	0	-2	0
1990	Critical	0	0	0	0	0	0	0	0	0	-2	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	2	0	1	-2	0
1994	Critical	-2	-1	0	0	0	1	0	0	-1	0	-1	-2	0
1995	Wet	-2	-2	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	-1	-1	0	-1	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	0	0	0	0	0	0	1	0	0	0	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Balls Ferry (°F)
From Existing Condition**

Year	SVI	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	-1%	0%	0%	0%	0%	1%	1%	1%	1%	0%	-1%	0%
1924	Critical	-3%	-2%	-1%	1%	1%	0%	-1%	0%	2%	-1%	-4%	-1%	-1%
1925	Dry	1%	1%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	-1%	0%	0%
1927	Wet	1%	0%	-1%	0%	1%	0%	-1%	0%	-1%	-1%	-1%	-1%	0%
1928	Above Normal	-2%	-2%	0%	0%	0%	0%	-1%	-1%	0%	0%	-3%	-1%	-1%
1929	Critical	-1%	-1%	0%	2%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1932	Dry	0%	-1%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	1%	0%
1934	Critical	1%	-1%	-1%	0%	0%	0%	1%	1%	0%	1%	1%	-3%	0%
1935	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	4%	-3%	0%	0%
1936	Below Normal	1%	0%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
1937	Below Normal	0%	0%	-1%	0%	0%	0%	1%	1%	1%	1%	-1%	0%	0%
1938	Wet	-1%	-1%	-2%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%	-1%
1939	Dry	-2%	-1%	0%	0%	0%	-1%	0%	0%	-2%	0%	-1%	-2%	-1%
1940	Above Normal	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-2%	-1%
1941	Wet	-2%	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1942	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1943	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1944	Dry	-2%	-3%	-1%	0%	0%	0%	1%	0%	-1%	-1%	-1%	-1%	-1%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	0%	-1%	-1%	0%	1%	-1%	0%	0%	0%	0%	0%	-2%	0%
1947	Dry	-3%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-3%	-1%
1948	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	3%	0%	0%	-2%	0%
1949	Dry	-2%	-2%	-1%	0%	0%	1%	0%	-1%	0%	0%	-1%	-2%	0%
1950	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	1%	1%	-1%	0%	-1%	0%
1951	Above Normal	-3%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-2%	-1%
1953	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	-1%	-1%
1955	Dry	-1%	-1%	-2%	-1%	0%	0%	0%	-1%	1%	-2%	-2%	-1%	-1%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	-1%	-1%	1%	-1%	0%
1957	Above Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-3%	-2%	0%	0%	1%	1%	1%	0%	0%	-1%	-3%	-2%	-1%
1960	Dry	-3%	0%	3%	0%	0%	0%	0%	0%	1%	0%	1%	-4%	0%
1961	Dry	-1%	-1%	0%	0%	1%	1%	0%	0%	0%	0%	-3%	-2%	0%
1962	Below Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1963	Wet	-1%	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	-1%	-1%	-2%	-2%	-1%
1965	Wet	1%	0%	-2%	0%	0%	0%	1%	-1%	0%	0%	0%	-3%	0%
1966	Below Normal	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-2%	-1%
1967	Wet	-2%	-1%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1970	Wet	-4%	-2%	0%	0%	0%	0%	1%	0%	0%	0%	-2%	-2%	-1%
1971	Wet	-3%	-1%	-1%	0%	0%	1%	0%	0%	-1%	-2%	1%	-1%	0%
1972	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	-1%	-1%
1973	Above Normal	-1%	-1%	-2%	0%	0%	0%	0%	0%	0%	1%	-2%	-1%	0%
1974	Wet	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1975	Wet	-3%	-3%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%
1976	Critical	-2%	-2%	0%	2%	0%	-1%	0%	0%	0%	-1%	-1%	-2%	0%
1977	Critical	0%	-1%	1%	0%	0%	0%	0%	0%	1%	-1%	-1%	1%	0%
1978	Above Normal	1%	0%	0%	0%	2%	4%	-1%	-1%	-1%	-1%	0%	0%	0%
1979	Below Normal	-4%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%
1980	Above Normal	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-3%	-1%	0%
1982	Wet	-1%	-1%	0%	0%	1%	0%	0%	0%	-1%	0%	1%	-2%	0%
1983	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1984	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1985	Dry	-1%	-1%	0%	1%	1%	1%	1%	1%	-2%	1%	-2%	-2%	0%
1986	Wet	-1%	-1%	0%	0%	0%	-1%	0%	0%	0%	0%	-1%	-1%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	1%	1%	0%	0%	-2%	-3%	0%
1988	Critical	-1%	-1%	0%	0%	1%	0%	0%	0%	0%	-4%	2%	0%	0%
1989	Dry	-1%	0%	1%	0%	0%	0%	-2%	0%	0%	1%	0%	-3%	0%
1990	Critical	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-3%	1%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1992	Critical	0%	1%	0%	0%	0%	0%	1%	0%	1%	0%	-1%	0%	0%
1993	Above Normal	-1%	0%	0%	0%	0%	0%	0%	5%	3%	-1%	1%	-3%	0%
1994	Critical	-4%	-2%	-1%	1%	0%	1%	0%	0%	-2%	0%	-2%	-3%	-1%
1995	Wet	-3%	-4%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1996	Wet	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1997	Wet	-3%	-1%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	-2%	0%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1999	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%
2000	Above Normal	-2%	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	-1%
2001	Dry	-2%	-2%	0%	0%	0%	0%	1%	1%	-1%	-1%	-1%	0%	0%
2002	Dry	-1%	-1%	1%	-1%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
2003	Above Normal	-2%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-2%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Below Normal		-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%

Sacramento River Water Temperatures at Bend Bridge (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	54	49	47	45	47	51	54	56	54	55	56	57	52
1924	Critical	53	52	48	45	48	51	54	58	56	59	61	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	57	52	47	44	47	52	55	56	56	56	58	60	53
1927	Wet	56	52	45	45	46	50	52	54	54	55	56	57	52
1928	Above Normal	54	50	46	45	47	49	55	54	54	55	57	59	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	59	52
1930	Dry	56	52	47	44	48	51	53	55	55	56	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	64	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	59	63	54
1933	Critical	59	54	47	44	45	50	53	56	58	59	59	62	54
1934	Critical	60	53	47	46	48	53	54	56	57	59	65	65	55
1935	Below Normal	59	51	46	45	46	49	54	57	57	56	59	60	53
1936	Below Normal	57	51	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	53	48	44	46	50	54	57	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	57	52
1939	Dry	55	52	47	45	46	50	52	53	54	55	57	58	52
1940	Above Normal	55	53	48	45	47	49	55	57	55	55	57	58	53
1941	Wet	55	51	48	46	47	50	52	54	57	57	57	57	52
1942	Wet	55	52	48	46	47	50	54	54	57	56	55	56	52
1943	Wet	55	52	47	46	47	49	54	56	55	55	56	58	52
1944	Dry	55	53	49	46	47	50	51	55	54	55	57	58	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	51	48	45	44	49	51	53	53	54	54	56	51
1947	Dry	53	51	47	45	47	50	53	53	55	55	57	59	52
1948	Below Normal	56	51	47	45	46	49	52	58	56	56	57	56	52
1949	Dry	54	51	47	45	45	48	54	55	54	54	56	57	52
1950	Below Normal	53	52	48	44	45	48	53	55	55	57	56	57	52
1951	Above Normal	53	50	46	44	44	48	51	54	54	54	56	57	51
1952	Wet	51	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	57	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	53	54	55	57	58	51
1955	Dry	54	51	45	44	46	49	50	56	53	55	58	58	52
1956	Wet	54	49	47	44	44	49	53	52	55	57	55	54	51
1957	Above Normal	52	51	48	44	46	48	50	56	57	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	56	51	48	46	46	48	52	53	54	56	58	60	52
1960	Dry	56	53	49	45	46	49	51	55	54	56	57	59	52
1961	Dry	54	50	45	44	46	47	52	53	54	54	56	58	51
1962	Below Normal	54	51	45	44	46	47	53	53	54	55	56	57	51
1963	Wet	54	51	48	45	47	48	49	57	56	55	58	57	52
1964	Dry	53	50	46	44	46	48	50	53	54	56	57	57	51
1965	Wet	54	49	47	44	46	48	50	53	54	55	57	57	51
1966	Below Normal	53	50	45	44	45	47	52	54	53	54	56	57	51
1967	Wet	54	51	46	45	46	46	48	53	56	57	55	55	51
1968	Below Normal	53	52	46	44	46	50	51	54	53	55	58	58	52
1969	Wet	54	50	44	44	44	48	49	53	55	56	56	55	51
1970	Wet	53	51	48	46	46	49	49	53	54	55	57	58	52
1971	Wet	54	50	45	44	45	46	51	53	56	57	57	55	51
1972	Below Normal	53	50	45	44	45	48	50	54	54	55	57	57	51
1973	Above Normal	52	49	45	44	45	47	53	56	54	55	57	57	51
1974	Wet	51	50	46	44	44	45	52	55	57	57	55	55	51
1975	Wet	54	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	53	50	47	44	46	50	51	55	53	56	58	59	52
1977	Critical	54	52	49	45	47	49	52	54	56	60	65	63	54
1978	Above Normal	58	50	45	45	45	48	51	53	54	56	56	55	51
1979	Below Normal	54	51	48	46	46	50	53	56	54	56	57	58	52
1980	Above Normal	54	50	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	58	59	52
1982	Wet	53	50	46	43	44	47	48	58	56	56	56	55	51
1983	Wet	53	50	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	59	52
1985	Dry	53	49	46	44	46	49	54	54	55	56	57	58	52
1986	Wet	55	50	46	46	48	50	53	54	56	57	57	58	52
1987	Dry	56	52	48	44	46	49	52	53	54	55	59	59	52
1988	Critical	57	53	45	44	47	49	52	54	54	59	58	59	53
1989	Dry	58	50	45	44	44	49	55	52	55	55	56	58	52
1990	Critical	54	52	48	45	45	51	52	55	56	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	57	52	47	44	47	50	53	54	55	58	61	63	54
1993	Above Normal	60	52	44	43	45	50	52	53	55	55	57	56	52
1994	Critical	54	51	47	46	46	50	52	55	55	56	58	60	52
1995	Wet	57	51	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	53	47	45	47	49	53	54	56	57	58	56	53
1997	Wet	55	51	48	46	47	50	50	53	55	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	57	57	57	51
1999	Wet	56	51	47	46	45	47	53	53	55	55	57	55	52
2000	Above Normal	54	51	47	48	49	51	56	57	56	56	59	60	54
2001	Dry	56	53	50	46	46	52	52	55	54	57	60	61	54
2002	Dry	57	53	46	46	47	49	53	55	56	57	60	60	53
2003	Above Normal	57	54	47	46	47	51	51	54	58	56	59	60	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		54	51	47	45	46	48	51	54	56	56	57	56	52
Above Normal		55	51	46	45	46	49	53	55	55	55	57	58	52
Below Normal		55	51	47	45	46	49	53	55	54	55	57	58	52
Dry		55	51	47	45	46	49	53	55	55	56	58	59	52
Critical		56	52	47	45	47	50	52	55	56	58	60	61	53

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP3 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	53	49	47	45	47	51	55	57	55	56	56	56	52
1924	Critical	52	51	48	45	48	51	53	58	57	58	59	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	57	59	52
1926	Dry	56	52	47	44	47	52	55	55	56	56	58	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	55	55	56	52
1928	Above Normal	53	49	46	45	47	49	55	54	54	55	56	58	52
1929	Critical	54	51	46	44	46	49	51	54	55	55	57	58	52
1930	Dry	56	52	47	44	48	51	53	55	55	56	56	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	61	64	54
1932	Dry	59	51	45	44	45	52	53	58	59	59	59	63	54
1933	Critical	59	54	46	44	45	50	53	56	58	59	59	62	54
1934	Critical	61	53	47	46	48	53	55	57	57	60	65	64	55
1935	Below Normal	58	51	46	44	46	49	54	57	57	58	57	60	53
1936	Below Normal	57	52	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	53	47	44	46	50	54	58	56	56	56	58	53
1938	Wet	55	51	46	44	46	48	51	57	57	55	56	56	52
1939	Dry	54	51	47	46	46	49	52	53	53	55	56	57	52
1940	Above Normal	55	53	48	45	47	49	55	56	55	55	56	57	53
1941	Wet	54	51	47	46	47	50	52	54	57	56	56	56	52
1942	Wet	54	52	48	46	47	50	54	54	57	56	55	55	52
1943	Wet	54	51	47	46	47	49	54	56	55	55	56	57	52
1944	Dry	54	51	48	46	47	50	51	55	54	54	56	57	52
1945	Below Normal	55	50	46	44	47	49	53	55	55	54	55	55	52
1946	Below Normal	54	50	47	45	45	48	51	53	53	53	54	55	51
1947	Dry	52	50	46	45	47	50	54	53	55	54	56	57	51
1948	Below Normal	55	50	47	46	46	49	52	58	58	56	57	55	52
1949	Dry	53	50	47	45	45	48	54	54	54	54	56	57	51
1950	Below Normal	52	51	47	44	45	48	53	55	55	56	56	57	52
1951	Above Normal	51	49	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	51	48	46	43	45	47	49	55	56	57	56	55	51
1953	Wet	54	51	46	46	47	49	52	53	55	56	56	55	52
1954	Above Normal	52	50	46	46	46	48	51	52	54	55	56	57	51
1955	Dry	53	50	45	43	46	49	50	55	54	54	57	57	51
1956	Wet	53	49	46	44	44	49	53	53	55	56	56	53	51
1957	Above Normal	51	50	48	44	46	48	50	56	56	55	56	58	52
1958	Wet	52	50	47	45	46	47	52	56	56	56	57	55	52
1959	Below Normal	54	50	48	46	46	49	53	54	53	56	57	59	52
1960	Dry	54	53	51	45	46	49	51	55	55	56	57	57	52
1961	Dry	53	50	45	44	46	48	52	53	54	55	54	57	51
1962	Below Normal	53	50	45	45	46	47	53	53	54	55	54	56	51
1963	Wet	53	50	48	45	47	48	49	57	56	55	58	58	52
1964	Dry	53	50	46	44	46	48	50	53	54	55	55	56	51
1965	Wet	55	49	46	44	46	48	51	52	54	55	57	55	51
1966	Below Normal	52	49	45	44	45	47	52	54	53	54	55	56	51
1967	Wet	53	51	46	45	46	47	48	53	55	57	55	55	51
1968	Below Normal	52	51	45	44	46	50	52	54	53	55	57	58	51
1969	Wet	53	50	44	44	44	48	49	53	54	56	56	54	50
1970	Wet	51	50	47	47	46	50	49	53	54	55	56	57	51
1971	Wet	53	50	45	44	45	46	51	53	55	56	58	65	51
1972	Below Normal	52	50	45	44	45	48	50	54	53	55	55	56	51
1973	Above Normal	52	48	44	44	45	47	53	56	54	55	56	57	51
1974	Wet	51	49	46	44	45	45	52	55	56	57	55	55	51
1975	Wet	52	49	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	52	50	46	45	46	49	51	55	53	56	58	58	51
1977	Critical	54	52	49	45	47	49	52	54	56	60	64	64	54
1978	Above Normal	58	49	45	45	46	49	51	53	54	55	56	56	51
1979	Below Normal	53	49	47	46	46	50	53	56	54	55	57	58	52
1980	Above Normal	54	49	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	57	58	52
1982	Wet	53	50	46	43	45	47	48	58	56	56	56	54	51
1983	Wet	52	49	46	45	46	47	51	55	55	55	55	56	51
1984	Wet	54	51	47	45	46	49	50	54	54	56	57	58	52
1985	Dry	52	49	46	45	46	49	54	54	54	56	56	57	51
1986	Wet	55	49	46	46	48	49	53	54	56	57	56	58	52
1987	Dry	55	52	48	44	46	49	52	54	54	55	58	57	52
1988	Critical	56	52	45	44	47	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	54	52	55	56	56	57	52
1990	Critical	54	52	48	45	44	51	52	55	55	56	58	59	52
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	59	53
1992	Critical	57	52	47	44	47	50	53	54	55	58	61	63	54
1993	Above Normal	60	52	45	43	45	50	52	56	57	55	57	54	52
1994	Critical	52	50	47	46	46	51	52	55	53	56	57	58	52
1995	Wet	56	49	45	45	47	47	52	53	56	57	57	57	52
1996	Wet	54	52	47	45	47	49	53	54	56	57	58	56	52
1997	Wet	53	50	48	46	47	51	50	53	54	55	57	56	52
1998	Wet	53	50	45	45	45	47	52	51	54	56	56	57	51
1999	Wet	54	51	47	46	45	47	53	53	54	54	57	56	51
2000	Above Normal	53	50	47	48	49	51	56	56	56	56	58	60	53
2001	Dry	55	52	50	46	46	53	52	55	54	57	59	61	53
2002	Dry	56	53	46	45	47	49	54	55	56	57	59	60	53
2003	Above Normal	56	54	47	46	47	51	51	55	58	56	59	58	53
Average		54	51	46	45	46	49	52	55	55	56	57	57	52
Wet		53	50	46	45	46	48	51	54	55	56	56	56	51
Above Normal		54	50	46	45	46	49	53	55	55	55	56	57	52
Below Normal		54	50	46	45	46	49	53	55	55	55	56	57	52
Dry		55	51	47	45	46	50	53	55	55	55	57	58	52
Critical		55	52	47	45	47	50	52	55	56	58	60	61	53

Change in Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP3 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	1	0	0	0
1924	Critical	-1	-1	0	0	0	0	-1	0	1	0	-2	-1	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-1	-1	0	0	0	0	-1	-1	0	0	-2	-1	0
1929	Critical	-1	0	0	1	0	0	0	0	0	-1	-1	-1	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	Critical	0	0	0	0	0	0	1	1	0	0	1	-2	0
1935	Below Normal	-1	0	0	0	0	0	0	0	0	2	-2	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	-1	0	0	0
1939	Dry	-1	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1940	Above Normal	-1	0	0	0	0	0	0	-1	0	0	-1	-1	0
1941	Wet	-1	0	-1	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	-1	-2	-1	0	0	0	0	0	-1	-1	-1	-1	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1946	Below Normal	0	-1	-1	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-2	0
1948	Below Normal	-1	0	0	0	0	0	0	0	2	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1955	Dry	-1	0	-1	0	0	0	0	0	0	-1	-1	-1	0
1956	Wet	0	0	-1	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-2	-1	0
1960	Dry	-1	0	2	0	0	0	0	0	1	0	0	-2	0
1961	Dry	-1	-1	0	0	0	1	0	0	0	0	-2	-1	0
1962	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-2	-1	0
1963	Wet	0	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	0	0	0	0	0	0	0	-1	-1	-1	-1	0
1965	Wet	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-1	0	-1	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-1	0	-1	0	0	0	0	0	0	-1	1	0	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-2	-1	0
1973	Above Normal	0	-1	-1	0	0	0	0	0	0	0	-1	0	0
1974	Wet	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	-1	-1	-1	0
1977	Critical	0	0	1	0	0	0	0	0	0	0	0	1	0
1978	Above Normal	0	0	0	0	1	2	0	0	-1	-1	0	0	0
1979	Below Normal	-2	-2	-1	0	0	0	0	0	0	-1	0	0	0
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	0	-2	0	0
1982	Wet	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	0	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-2	0
1988	Critical	0	0	0	0	0	0	0	0	0	-2	1	0	0
1989	Dry	-1	0	0	0	0	0	-1	0	0	0	0	-2	0
1990	Critical	0	0	-1	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	2	0	0	-1	0
1994	Critical	-2	-1	0	0	0	1	0	0	-1	0	-1	-2	0
1995	Wet	-2	-2	0	0	0	0	0	0	0	0	-1	0	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	0	0	0	0	0	0	0	0	-1	0	-1	0
1998	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	0	0	0	0	0	0	1	0	0	0	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Bend Bridge (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	0%
1924	Critical	-2%	-1%	-1%	0%	0%	0%	-1%	0%	1%	-1%	-3%	-1%	-1%
1925	Dry	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1926	Dry	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%	0%
1927	Wet	1%	0%	-1%	0%	1%	0%	0%	0%	-1%	-1%	-1%	-1%	0%
1928	Above Normal	-2%	-2%	0%	0%	0%	0%	-1%	-1%	0%	0%	-3%	-1%	-1%
1929	Critical	-1%	-1%	0%	2%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1932	Dry	0%	-1%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	1%	0%
1934	Critical	1%	-1%	0%	0%	0%	0%	1%	1%	0%	0%	1%	-2%	0%
1935	Below Normal	-2%	0%	0%	0%	0%	0%	0%	0%	1%	-3%	-3%	0%	0%
1936	Below Normal	0%	0%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	0%
1937	Below Normal	0%	0%	-1%	0%	0%	0%	1%	1%	1%	1%	-1%	0%	0%
1938	Wet	0%	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%
1939	Dry	-2%	0%	0%	0%	0%	-1%	0%	0%	-2%	1%	-2%	-2%	-1%
1940	Above Normal	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-2%	0%
1941	Wet	-2%	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1942	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1943	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1944	Dry	-1%	-3%	-1%	0%	0%	0%	1%	0%	-1%	-1%	-2%	-1%	-1%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1946	Below Normal	0%	-1%	-2%	0%	0%	-1%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-3%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-3%	-1%
1948	Below Normal	-1%	-1%	-1%	0%	0%	0%	0%	0%	3%	0%	0%	-2%	0%
1949	Dry	-2%	-1%	0%	0%	0%	1%	0%	-1%	0%	0%	-1%	-1%	0%
1950	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	1%	-1%	0%	-1%	0%
1951	Above Normal	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-2%	-1%
1953	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	-1%	-1%
1955	Dry	-1%	-1%	-2%	-1%	0%	0%	0%	-1%	1%	-2%	-2%	-1%	-1%
1956	Wet	0%	0%	-2%	0%	0%	0%	0%	0%	-1%	-1%	1%	-1%	0%
1957	Above Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	-1%	-3%	-1%	-1%
1960	Dry	-2%	1%	3%	0%	0%	0%	0%	0%	1%	0%	1%	-3%	0%
1961	Dry	-1%	-1%	0%	0%	1%	1%	0%	0%	0%	0%	-3%	-2%	0%
1962	Below Normal	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-3%	-1%	-1%
1963	Wet	-1%	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	-1%	-1%	-2%	-2%	-1%
1965	Wet	0%	0%	-3%	0%	0%	0%	0%	-1%	0%	0%	0%	-2%	0%
1966	Below Normal	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-2%	-1%
1967	Wet	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1969	Wet	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	-1%	0%
1970	Wet	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	0%	-3%	-2%	-1%
1971	Wet	-2%	-1%	-1%	0%	0%	0%	0%	0%	-1%	-2%	1%	-1%	0%
1972	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	-1%	-1%
1973	Above Normal	-1%	-1%	-3%	0%	0%	0%	0%	0%	0%	1%	-2%	-1%	0%
1974	Wet	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1975	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%
1976	Critical	-2%	-1%	0%	2%	0%	-1%	0%	0%	0%	-1%	-1%	-2%	-1%
1977	Critical	0%	0%	2%	1%	0%	0%	0%	0%	1%	0%	-1%	1%	0%
1978	Above Normal	1%	0%	0%	0%	1%	4%	-1%	-1%	-1%	0%	0%	0%	0%
1979	Below Normal	-3%	-3%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%
1980	Above Normal	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-3%	-1%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	-1%	0%
1983	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1984	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1985	Dry	-1%	-1%	0%	1%	1%	0%	0%	1%	-2%	1%	-2%	-2%	0%
1986	Wet	-1%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-3%	-1%
1988	Critical	-1%	-1%	0%	0%	1%	0%	0%	0%	0%	-3%	1%	0%	0%
1989	Dry	-1%	0%	1%	0%	0%	0%	-1%	0%	0%	1%	0%	-3%	0%
1990	Critical	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1992	Critical	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
1993	Above Normal	-1%	0%	0%	0%	0%	0%	0%	5%	4%	-1%	1%	-2%	1%
1994	Critical	-3%	-2%	-1%	0%	0%	1%	0%	0%	-2%	1%	-2%	-3%	-1%
1995	Wet	-3%	-4%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1999	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	-1%
2001	Dry	-2%	-2%	0%	0%	0%	0%	1%	1%	-1%	-1%	-1%	0%	0%
2002	Dry	-1%	-1%	0%	-1%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-2%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Below Normal		-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Critical		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	45	50	54	59	57	57	56	58	53
1923	Below Normal	54	49	46	44	47	51	55	57	55	57	57	57	53
1924	Critical	54	52	48	44	48	51	55	59	57	60	62	65	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	60	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	55	50	45	45	47	49	56	55	55	56	58	60	53
1929	Critical	55	51	46	43	46	50	52	56	56	57	59	60	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	51	45	44	45	52	54	59	60	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	61	62	54
1934	Critical	60	53	47	46	48	53	55	58	58	61	65	66	56
1935	Below Normal	59	51	46	44	46	49	55	58	58	60	61	61	54
1936	Below Normal	57	51	47	45	46	50	54	55	56	56	57	59	53
1937	Below Normal	55	52	47	43	46	50	55	58	57	57	58	59	53
1938	Wet	56	51	47	44	46	48	51	57	58	57	58	57	53
1939	Dry	55	51	47	45	46	50	53	54	56	56	58	59	53
1940	Above Normal	56	53	48	45	47	49	56	58	57	56	58	59	53
1941	Wet	55	51	48	46	47	50	52	55	58	58	58	57	53
1942	Wet	55	52	48	46	47	50	54	55	58	58	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	57	58	59	53
1944	Dry	55	53	48	46	47	50	52	57	56	56	58	59	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	51	47	45	44	49	52	55	54	55	56	57	52
1947	Dry	54	51	46	44	47	50	54	54	56	56	58	60	52
1948	Below Normal	56	50	47	45	46	49	52	58	57	57	58	57	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	59	52
1950	Below Normal	54	51	47	43	45	48	54	56	56	59	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	56	57	58	52
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	57	51
1953	Wet	55	51	45	46	47	49	52	53	56	58	57	57	52
1954	Above Normal	54	51	46	45	46	48	52	53	55	56	58	59	52
1955	Dry	54	50	45	43	46	50	50	57	55	57	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	53	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	57	58	57	52
1959	Below Normal	56	51	48	46	46	49	53	54	55	58	59	60	53
1960	Dry	56	52	49	45	46	49	51	56	56	58	58	60	53
1961	Dry	54	50	45	44	46	48	52	54	55	56	57	59	52
1962	Below Normal	55	51	45	44	46	47	54	54	56	56	57	58	52
1963	Wet	54	51	48	45	47	48	49	57	58	57	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	56	57	58	58	52
1965	Wet	55	49	47	44	46	49	51	54	56	57	59	58	52
1966	Below Normal	54	50	45	44	45	47	53	55	55	55	58	58	52
1967	Wet	55	51	46	45	46	47	48	54	57	58	57	56	52
1968	Below Normal	54	52	45	44	46	50	52	55	55	57	59	60	52
1969	Wet	54	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	49	54	56	56	59	59	52
1971	Wet	54	50	45	44	45	46	52	54	57	58	59	56	52
1972	Below Normal	54	50	45	44	45	48	51	55	55	56	59	58	52
1973	Above Normal	53	49	44	44	45	47	54	57	56	56	59	58	52
1974	Wet	52	50	46	44	44	46	52	56	58	58	57	56	52
1975	Wet	54	50	46	45	45	47	51	55	57	58	57	57	52
1976	Critical	53	50	46	44	46	50	51	56	54	58	60	60	52
1977	Critical	54	52	48	44	47	49	53	55	57	61	66	63	54
1978	Above Normal	58	49	44	45	45	48	52	54	56	58	58	57	52
1979	Below Normal	55	51	47	46	46	50	53	58	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	59	52
1981	Dry	54	50	47	46	47	49	53	55	55	57	60	60	53
1982	Wet	54	50	46	43	44	47	49	59	58	58	57	56	52
1983	Wet	53	49	46	45	45	47	51	55	56	57	57	57	52
1984	Wet	56	51	47	45	46	49	51	55	56	57	60	60	53
1985	Dry	53	49	45	44	46	50	54	55	56	57	58	59	52
1986	Wet	56	49	46	46	48	50	54	55	57	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	60	60	53
1988	Critical	57	52	45	44	47	50	53	55	56	60	60	60	53
1989	Dry	58	50	45	43	44	49	56	54	56	57	58	60	52
1990	Critical	54	52	48	45	44	51	53	56	57	59	60	61	53
1991	Critical	57	51	46	45	48	48	53	55	58	61	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	62	64	54
1993	Above Normal	60	51	44	43	45	51	52	54	56	57	59	57	52
1994	Critical	54	51	47	46	46	50	52	56	56	58	59	61	53
1995	Wet	58	50	45	45	47	47	53	54	57	59	59	58	53
1996	Wet	55	53	47	45	47	49	53	55	58	59	60	57	53
1997	Wet	55	50	48	46	47	51	51	54	56	57	59	58	53
1998	Wet	54	50	45	45	45	47	52	51	55	58	58	58	52
1999	Wet	56	51	47	46	45	47	53	54	56	56	58	56	52
2000	Above Normal	54	51	47	48	49	52	56	58	58	60	62	62	54
2001	Dry	57	53	50	46	46	53	53	57	56	59	61	62	54
2002	Dry	57	53	46	46	47	50	54	56	58	59	61	61	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	61	54
Average		55	51	46	45	46	49	53	56	56	58	59	59	53
Wet		55	51	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	51	46	45	46	49	53	56	56	57	58	59	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	59	52
Dry		55	51	46	44	46	50	53	56	56	57	59	60	53
Critical		56	52	46	44	47	50	53	56	57	59	61	62	54

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP3 (2005)

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	56	49	48	45	45	49	54	59	57	57	56	58	53
1923	Below Normal	54	49	46	44	47	51	55	58	56	57	57	58	53
1924	Critical	52	51	47	44	48	51	54	59	58	59	60	64	54
1925	Dry	55	49	42	43	47	49	55	57	57	58	58	59	53
1926	Dry	56	52	47	44	47	52	55	56	57	57	59	60	54
1927	Wet	56	52	45	45	46	50	52	55	55	56	56	57	52
1928	Above Normal	54	49	45	45	47	50	55	55	55	56	57	59	52
1929	Critical	55	50	46	43	46	50	52	55	56	56	58	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	62	64	54
1932	Dry	58	51	45	44	45	52	54	59	60	60	60	63	54
1933	Critical	59	54	46	43	45	50	54	57	60	61	60	63	54
1934	Critical	61	53	46	46	48	53	56	58	59	61	66	64	56
1935	Below Normal	58	51	46	44	46	49	55	58	58	59	58	61	54
1936	Below Normal	57	51	46	45	46	50	54	55	56	56	57	59	53
1937	Below Normal	55	53	47	43	46	50	55	59	58	58	58	59	53
1938	Wet	56	51	46	44	46	48	51	57	58	57	58	57	52
1939	Dry	54	51	47	45	46	50	53	55	54	56	57	58	52
1940	Above Normal	55	52	48	45	47	49	56	58	57	56	57	58	53
1941	Wet	54	51	47	46	47	50	52	55	58	58	57	57	53
1942	Wet	54	52	48	46	47	50	55	55	58	57	56	56	53
1943	Wet	54	50	47	46	47	49	55	57	56	56	57	58	53
1944	Dry	55	51	48	46	47	51	52	57	55	55	57	58	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	56	52
1946	Below Normal	54	50	47	45	45	49	52	55	54	55	56	56	51
1947	Dry	52	50	46	44	47	50	54	55	56	55	57	58	52
1948	Below Normal	55	50	47	45	46	49	52	58	59	57	58	56	53
1949	Dry	54	50	46	44	45	48	55	56	56	56	57	58	52
1950	Below Normal	53	51	47	43	45	48	54	56	57	58	58	58	52
1951	Above Normal	52	49	46	44	44	48	52	55	56	55	57	57	51
1952	Wet	51	48	46	43	45	47	49	55	57	59	57	56	51
1953	Wet	54	50	45	46	47	49	53	54	56	58	57	56	52
1954	Above Normal	53	50	46	45	46	48	52	53	55	56	57	58	52
1955	Dry	53	50	44	43	46	50	50	56	55	56	58	58	52
1956	Wet	54	49	46	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	51	49	47	44	46	48	51	57	58	56	57	59	52
1958	Wet	52	50	46	45	46	47	52	56	57	57	58	56	52
1959	Below Normal	54	50	47	46	46	49	53	55	55	57	58	60	53
1960	Dry	55	53	50	45	46	49	52	56	57	58	59	58	53
1961	Dry	54	50	45	44	46	48	52	54	55	56	55	58	51
1962	Below Normal	54	50	45	45	46	47	54	54	56	56	55	58	52
1963	Wet	54	50	47	45	47	48	49	57	58	56	59	59	53
1964	Dry	53	50	46	44	46	48	51	54	55	56	57	57	51
1965	Wet	55	49	46	44	46	49	51	53	56	57	59	57	52
1966	Below Normal	53	49	45	44	45	47	53	55	54	55	57	57	51
1967	Wet	54	51	46	45	46	47	48	54	56	58	57	56	51
1968	Below Normal	53	51	45	44	46	50	52	55	54	56	58	59	52
1969	Wet	54	50	44	44	44	48	50	54	56	58	58	55	51
1970	Wet	52	50	47	47	46	50	50	54	56	56	57	58	52
1971	Wet	53	50	44	44	45	46	52	53	57	57	60	56	51
1972	Below Normal	53	49	45	44	45	49	50	55	55	56	57	57	51
1973	Above Normal	52	48	43	44	45	47	54	57	56	57	57	58	52
1974	Wet	52	49	46	44	45	46	52	56	57	58	57	56	52
1975	Wet	52	49	45	45	45	47	52	55	57	58	57	57	52
1976	Critical	52	49	46	45	47	49	51	56	54	57	59	59	52
1977	Critical	55	52	49	45	48	49	53	55	58	61	65	64	54
1978	Above Normal	58	49	44	45	46	50	51	54	55	57	58	57	52
1979	Below Normal	53	49	46	45	46	50	53	57	55	57	58	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	58	52
1981	Dry	53	50	47	46	47	49	53	55	55	57	58	59	52
1982	Wet	53	50	46	43	45	47	49	59	57	58	58	55	52
1983	Wet	52	49	46	45	46	47	51	55	56	56	57	56	51
1984	Wet	54	51	47	45	46	49	51	55	56	57	59	59	52
1985	Dry	53	49	45	45	46	50	55	55	55	58	57	57	52
1986	Wet	55	49	46	46	48	50	53	55	57	58	58	58	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	59	58	53
1988	Critical	57	52	45	44	47	50	53	55	55	58	60	60	53
1989	Dry	58	50	45	44	44	49	55	54	56	57	58	58	52
1990	Critical	54	52	47	45	44	51	53	56	57	57	60	60	53
1991	Critical	57	51	46	45	49	48	53	55	58	60	60	60	54
1992	Critical	58	52	46	44	47	51	54	56	57	59	62	64	54
1993	Above Normal	59	51	44	43	45	51	52	56	58	57	59	56	53
1994	Critical	53	50	46	46	46	51	52	56	55	58	58	59	53
1995	Wet	56	48	45	45	47	47	53	54	57	58	58	58	52
1996	Wet	54	52	47	45	47	50	53	55	58	58	60	57	53
1997	Wet	54	50	48	46	47	51	51	54	56	56	58	58	52
1998	Wet	53	50	45	45	45	47	52	51	55	58	57	57	51
1999	Wet	55	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	53	50	46	48	49	52	57	58	58	58	59	61	54
2001	Dry	56	52	49	46	46	53	53	57	55	58	61	62	54
2002	Dry	57	53	46	45	48	50	54	56	58	58	60	61	54
2003	Above Normal	56	54	47	46	47	51	51	56	60	58	60	60	54
Average		55	50	46	45	46	49	53	56	56	57	58	58	52
Wet		54	50	46	45	46	48	52	55	57	57	58	57	52
Above Normal		54	50	46	45	46	49	53	56	57	57	58	58	52
Below Normal		54	50	46	44	46	49	53	56	56	57	57	58	52
Dry		55	51	46	44	46	50	53	56	56	57	58	59	53
Critical		56	52	46	45	47	51	53	56	57	59	61	62	54

Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP3 (2005) - Existing Condition

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	1	1	0	0	0
1924	Critical	-1	-1	0	0	0	0	0	0	1	0	-2	-1	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	-1	-1	-1	0
1928	Above Normal	-1	-1	0	0	0	0	-1	-1	0	0	-2	-1	0
1929	Critical	-1	0	0	1	0	0	0	0	0	-1	-1	-1	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	Critical	0	0	0	0	0	0	0	1	0	0	1	-1	0
1935	Below Normal	-1	0	0	0	0	0	0	0	0	2	-2	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	-1	0	0	0
1939	Dry	-1	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1940	Above Normal	-1	0	0	0	0	0	0	-1	0	0	-1	-1	0
1941	Wet	-1	0	-1	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	-1	-1	-1	0	0	0	-1	0	-1	-1	-1	-1	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1946	Below Normal	0	-1	-1	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-2	0
1948	Below Normal	0	0	0	0	0	0	0	0	2	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1955	Dry	-1	0	-1	0	0	0	0	0	0	-1	-1	-1	0
1956	Wet	0	0	-1	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	-1	0	2	0	0	0	0	0	1	0	0	-2	0
1961	Dry	-1	-1	0	0	0	0	0	0	0	0	-2	-1	0
1962	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-2	-1	0
1963	Wet	0	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	-1	-1	-1	-2	0
1965	Wet	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1967	Wet	-1	0	-1	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-2	-1	0
1971	Wet	-1	0	-1	0	0	0	0	0	0	-1	1	0	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-2	-1	0
1973	Above Normal	0	-1	-1	0	0	0	0	0	0	0	-1	0	0
1974	Wet	0	-1	0	0	0	0	0	0	0	0	0	0	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	-1	-1	-1	0
1977	Critical	0	0	1	0	0	0	0	0	0	0	0	1	0
1978	Above Normal	0	0	0	0	0	2	0	0	-1	-1	0	0	0
1979	Below Normal	-2	-1	-1	0	0	0	0	0	0	-1	0	0	0
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	0	-2	0	0
1982	Wet	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	0	0	0	0	0	0	0	0	-1	0	-1	-1	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	-2	0
1988	Critical	0	0	0	0	0	0	0	0	0	-2	1	0	0
1989	Dry	-1	0	0	0	0	0	-1	0	0	0	0	-2	0
1990	Critical	0	0	-1	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	2	0	0	-1	0
1994	Critical	-1	-1	0	0	0	1	0	0	-1	0	-1	-2	0
1995	Wet	-1	-2	0	0	0	0	0	0	0	0	-1	0	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	0	0	0	0	0	0	0	0	-1	0	-1	0
1998	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	1	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
2001	Dry	-1	-1	0	0	0	0	0	0	0	-1	0	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	-1	-1	-1	0
2003	Above Normal	-1	0	0	0	0	0	0	1	0	0	0	-1	0
Average		-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	0	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Critical		0	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	-1%	0%
1924	Critical	-2%	-1%	-1%	0%	0%	0%	-1%	0%	1%	-1%	-3%	-1%	-1%
1925	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1926	Dry	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%	0%
1927	Wet	0%	0%	-1%	0%	1%	0%	0%	0%	-1%	-1%	-1%	-1%	0%
1928	Above Normal	-1%	-2%	0%	0%	0%	0%	-1%	-1%	0%	0%	-3%	-1%	-1%
1929	Critical	-1%	-1%	0%	2%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1932	Dry	0%	-1%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%
1934	Critical	1%	-1%	0%	0%	0%	0%	1%	1%	0%	0%	1%	-2%	0%
1935	Below Normal	-2%	0%	0%	0%	0%	0%	0%	0%	1%	3%	-3%	0%	0%
1936	Below Normal	0%	0%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	0%
1937	Below Normal	0%	0%	-1%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
1938	Wet	0%	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%
1939	Dry	-2%	-1%	0%	0%	0%	-1%	0%	0%	-2%	1%	-2%	-2%	-1%
1940	Above Normal	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-2%	0%
1941	Wet	-2%	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1942	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1944	Dry	-1%	-3%	-1%	0%	0%	0%	1%	0%	-1%	-2%	-2%	-1%	-1%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1946	Below Normal	0%	-1%	-2%	0%	0%	-1%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-2%	-1%	-1%	0%	0%	0%	0%	0%	1%	-1%	-2%	-3%	-1%
1948	Below Normal	-1%	-1%	-1%	0%	0%	0%	0%	0%	3%	0%	0%	-1%	0%
1949	Dry	-1%	-1%	0%	0%	0%	1%	0%	-1%	0%	0%	-1%	-1%	0%
1950	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	1%	-1%	0%	-1%	0%
1951	Above Normal	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-1%	-2%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-2%	-1%
1953	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-2%	-1%	-1%
1955	Dry	-1%	-1%	-2%	-1%	0%	0%	0%	-1%	1%	-2%	-2%	-2%	-1%
1956	Wet	0%	0%	-2%	0%	0%	0%	0%	0%	-1%	-1%	1%	-1%	0%
1957	Above Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1959	Below Normal	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	-1%	-2%	-1%	-1%
1960	Dry	-2%	1%	4%	0%	0%	0%	0%	0%	1%	0%	1%	-3%	0%
1961	Dry	-1%	-1%	0%	0%	1%	1%	0%	0%	0%	0%	-3%	-2%	0%
1962	Below Normal	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-3%	-1%	-1%
1963	Wet	-1%	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	-1%	-1%	-2%	-3%	-1%
1965	Wet	0%	0%	-3%	0%	0%	-1%	1%	-1%	0%	0%	0%	-2%	0%
1966	Below Normal	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-2%	-1%
1967	Wet	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1969	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1970	Wet	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	0%	-3%	-1%	-1%
1971	Wet	-2%	-1%	-1%	0%	0%	0%	0%	0%	-1%	-2%	2%	0%	0%
1972	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-3%	-2%	-1%
1973	Above Normal	-1%	-1%	-3%	0%	0%	0%	0%	0%	0%	1%	-2%	-1%	0%
1974	Wet	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1975	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%
1976	Critical	-2%	-1%	0%	1%	0%	-1%	0%	0%	0%	-1%	-1%	-2%	-1%
1977	Critical	0%	0%	2%	1%	0%	0%	0%	0%	1%	0%	-1%	1%	0%
1978	Above Normal	1%	0%	0%	0%	1%	4%	-1%	-1%	-1%	-1%	-1%	0%	0%
1979	Below Normal	-3%	-3%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%
1980	Above Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-3%	-1%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	-1%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1984	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1985	Dry	-1%	-1%	0%	1%	0%	0%	0%	0%	-2%	1%	-2%	-2%	0%
1986	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1987	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-3%	-1%
1988	Critical	-1%	-1%	0%	0%	1%	0%	0%	0%	0%	-3%	1%	0%	0%
1989	Dry	-1%	0%	1%	0%	0%	0%	-1%	0%	0%	1%	0%	-3%	0%
1990	Critical	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1992	Critical	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1993	Above Normal	-1%	0%	0%	0%	0%	0%	0%	5%	4%	-1%	1%	-2%	1%
1994	Critical	-3%	-2%	0%	0%	0%	1%	0%	0%	-2%	1%	-1%	-3%	-1%
1995	Wet	-2%	-4%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1999	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	1%	0%	0%	0%	-2%	-1%	-1%
2001	Dry	-2%	-1%	0%	0%	0%	0%	1%	0%	-1%	-1%	-1%	0%	0%
2002	Dry	-1%	-1%	0%	-1%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-2%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Critical		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%

Sacramento River Water Temperatures Below Shasta Dam (°F)

Existing Condition		SVI												
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	49	49
1923	Below Normal	50	51	51	49	47	47	51	52	49	48	48	50	49
1924	Critical	53	53	52	48	47	49	52	54	51	53	57	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	51	55	48
1926	Dry	57	54	52	47	45	46	46	47	48	49	52	55	50
1927	Wet	56	54	49	46	45	45	46	47	48	48	49	51	49
1928	Above Normal	52	52	50	47	46	46	47	48	48	50	52	53	49
1929	Critical	54	54	52	47	45	45	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	50	53	49
1931	Critical	54	54	52	48	46	46	47	49	51	53	58	64	52
1932	Dry	60	54	48	44	44	45	47	49	52	53	53	60	51
1933	Critical	60	56	52	46	44	45	47	48	51	53	54	60	51
1934	Critical	60	56	52	46	45	46	47	49	52	55	63	65	53
1935	Below Normal	60	52	49	45	44	45	46	47	49	49	53	56	50
1936	Below Normal	58	54	52	47	45	45	46	47	48	48	49	52	49
1937	Below Normal	54	54	53	48	45	46	46	47	48	48	50	53	49
1938	Wet	54	53	49	46	45	46	46	48	48	50	51	53	49
1939	Dry	55	54	51	48	46	46	47	48	49	49	52	54	50
1940	Above Normal	56	55	52	47	46	47	47	48	48	49	51	53	50
1941	Wet	54	53	50	47	46	46	47	48	48	50	52	53	50
1942	Wet	55	54	50	46	46	46	46	47	48	48	50	52	49
1943	Wet	54	54	51	47	46	46	47	48	48	49	50	52	49
1944	Dry	53	54	53	49	47	47	47	48	48	49	51	52	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	48	49	50	48
1946	Below Normal	52	52	49	45	44	44	45	46	47	48	48	50	48
1947	Dry	52	53	51	47	46	46	46	47	48	49	51	54	49
1948	Below Normal	56	53	52	47	45	46	46	47	48	48	49	51	49
1949	Dry	52	53	51	48	46	45	46	46	47	48	48	50	48
1950	Below Normal	52	53	52	47	44	44	45	45	47	48	48	49	48
1951	Above Normal	51	51	48	45	44	44	45	45	46	47	48	48	47
1952	Wet	49	51	48	44	44	44	45	46	47	48	49	52	47
1953	Wet	54	54	50	47	45	45	46	46	47	48	49	51	48
1954	Above Normal	53	53	50	46	45	45	46	47	48	48	50	51	48
1955	Dry	53	53	49	46	45	45	46	46	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	43	44	46	47	48	48	47
1957	Above Normal	52	52	51	48	46	46	47	47	48	48	50	51	49
1958	Wet	53	52	49	46	46	45	46	47	48	48	49	52	48
1959	Below Normal	55	54	52	47	46	46	46	47	48	49	53	56	50
1960	Dry	57	55	53	48	45	45	45	46	47	48	49	51	49
1961	Dry	53	53	48	46	45	45	46	46	47	48	49	52	48
1962	Below Normal	54	53	49	46	45	44	45	45	46	47	48	49	48
1963	Wet	52	53	50	47	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	52	52	49	44	43	43	44	45	46	47	48	48	47
1966	Below Normal	49	51	50	45	44	45	45	46	47	48	49	51	48
1967	Wet	53	53	49	46	44	45	46	47	48	48	49	50	48
1968	Below Normal	52	54	51	47	46	46	47	47	48	48	50	52	49
1969	Wet	53	53	49	45	43	43	44	45	46	48	48	50	47
1970	Wet	53	53	50	47	44	44	45	45	46	48	49	51	48
1971	Wet	53	52	48	44	44	44	45	46	47	48	48	51	47
1972	Below Normal	53	53	50	46	44	45	46	47	48	48	49	51	48
1973	Above Normal	52	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	48	51	47	45	43	44	44	45	46	48	48	49	47
1975	Wet	53	53	50	47	45	46	46	47	48	48	49	51	49
1976	Critical	53	52	50	47	46	46	46	47	48	48	49	50	49
1977	Critical	52	53	52	48	47	47	48	49	51	57	66	64	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	49	47
1979	Below Normal	51	53	52	48	46	45	46	47	48	48	49	50	49
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	49	48
1981	Dry	50	51	50	47	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	46	46	47	48	48	50	47
1983	Wet	53	52	49	46	45	46	45	47	48	48	50	53	48
1984	Wet	55	54	49	45	44	45	46	46	48	48	49	50	48
1985	Dry	52	52	49	46	45	45	46	46	48	48	50	53	48
1986	Wet	55	53	50	47	47	47	48	48	48	49	51	53	49
1987	Dry	54	54	52	48	45	45	46	47	48	49	51	54	49
1988	Critical	56	55	50	45	45	45	46	47	49	51	49	54	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	49	50	48
1990	Critical	52	53	52	48	45	45	46	46	48	50	49	53	49
1991	Critical	55	54	52	48	46	47	47	48	49	51	49	52	50
1992	Critical	56	55	52	48	45	45	46	47	50	53	58	64	51
1993	Above Normal	61	54	48	43	42	42	43	45	46	48	48	50	48
1994	Critical	53	53	51	48	46	47	47	48	49	50	53	56	50
1995	Wet	58	54	50	45	43	46	46	47	48	49	51	53	49
1996	Wet	55	55	51	47	47	46	46	47	48	49	50	52	49
1997	Wet	54	53	50	46	44	44	45	46	47	48	49	51	48
1998	Wet	53	52	49	46	45	44	44	46	48	49	52	54	49
1999	Wet	56	54	49	46	45	45	45	46	47	48	48	49	48
2000	Above Normal	52	53	51	48	48	47	48	48	49	50	52	53	50
2001	Dry	55	55	53	49	46	46	47	47	48	49	51	53	50
2002	Dry	56	56	49	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	52	49
Average		54	53	50	46	45	45	46	47	48	49	50	53	49
Wet		54	53	49	46	45	45	46	47	48	49	50	51	48
Above Normal		54	53	50	46	45	45	46	47	48	49	50	51	48
Below Normal		54	53	51	47	45	45	46	47	48	48	50	51	49
Dry		54	53	50	47	45	45	46	47	48	49	50	53	49
Critical		55	54	52	47	46	46	47	48	50	52	55	58	51

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP3 (2005)**

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	48	49
1923	Below Normal	50	51	51	48	47	47	52	53	49	48	48	48	49
1924	Critical	50	52	52	48	47	49	51	54	51	53	54	63	52
1925	Dry	57	50	46	42	43	44	45	46	47	48	50	54	48
1926	Dry	56	54	52	48	46	46	46	47	49	49	52	55	50
1927	Wet	57	54	49	46	45	45	46	46	47	48	48	49	48
1928	Above Normal	51	51	50	47	46	47	47	48	48	49	51	52	49
1929	Critical	53	53	52	48	45	46	46	47	48	48	50	53	49
1930	Dry	55	55	51	47	46	46	46	47	48	48	50	52	49
1931	Critical	54	54	52	48	46	47	48	49	52	53	57	64	52
1932	Dry	60	53	48	44	44	45	48	50	52	53	52	60	51
1933	Critical	60	56	52	46	44	45	47	49	52	53	53	61	52
1934	Critical	61	55	52	46	45	46	48	50	52	55	64	65	53
1935	Below Normal	59	52	49	45	44	45	46	48	50	52	51	56	50
1936	Below Normal	58	54	52	47	45	45	45	46	47	48	49	51	49
1937	Below Normal	54	54	53	48	46	46	46	47	48	48	49	52	49
1938	Wet	54	53	49	46	45	46	46	47	48	48	50	52	49
1939	Dry	53	53	51	48	46	47	47	48	48	49	51	54	50
1940	Above Normal	56	55	53	47	46	47	47	48	48	49	50	51	50
1941	Wet	53	53	50	47	46	46	47	48	48	49	51	52	49
1942	Wet	53	53	50	46	46	46	46	47	48	48	49	51	49
1943	Wet	52	53	51	47	46	46	47	47	48	49	50	51	49
1944	Dry	51	52	52	49	47	47	48	48	48	49	51	52	50
1945	Below Normal	54	53	50	47	46	46	46	47	48	48	48	50	48
1946	Below Normal	52	52	49	46	45	45	45	46	47	48	48	48	48
1947	Dry	50	52	51	48	46	46	47	47	48	48	50	53	49
1948	Below Normal	55	53	52	47	46	46	46	47	48	48	49	50	49
1949	Dry	51	52	51	48	46	45	46	46	47	48	48	48	48
1950	Below Normal	50	52	52	47	44	44	45	46	47	48	48	48	48
1951	Above Normal	49	50	48	45	44	44	45	45	46	47	48	47	47
1952	Wet	47	49	48	44	44	44	44	45	46	47	48	48	50
1953	Wet	52	52	50	47	45	45	46	46	47	48	49	50	48
1954	Above Normal	51	52	50	47	45	45	46	47	48	48	49	50	48
1955	Dry	51	52	49	46	45	45	46	47	48	48	48	50	48
1956	Wet	51	51	48	44	43	43	44	44	45	47	48	48	46
1957	Above Normal	49	51	51	48	46	46	47	47	48	48	49	50	48
1958	Wet	51	51	49	46	46	45	46	46	47	48	49	50	48
1959	Below Normal	52	53	52	48	46	46	47	48	48	49	51	53	49
1960	Dry	54	54	54	48	45	45	45	46	47	48	48	49	49
1961	Dry	52	52	48	46	45	45	46	46	47	48	48	50	48
1962	Below Normal	52	52	49	46	45	44	45	45	46	47	48	48	47
1963	Wet	49	51	50	48	46	46	47	48	48	49	50	50	48
1964	Dry	51	51	50	47	45	45	46	47	47	48	49	51	48
1965	Wet	53	52	49	44	43	44	44	45	46	48	48	47	47
1966	Below Normal	48	50	49	46	45	45	45	46	47	48	48	50	47
1967	Wet	51	52	49	46	45	45	46	47	47	48	48	50	48
1968	Below Normal	50	51	50	47	46	46	46	47	48	48	49	50	48
1969	Wet	51	52	49	45	43	43	44	45	46	47	48	48	47
1970	Wet	50	52	50	47	44	45	45	46	47	48	48	49	47
1971	Wet	50	51	48	45	44	44	45	46	46	48	48	49	47
1972	Below Normal	50	51	50	46	45	45	46	46	47	48	49	50	48
1973	Above Normal	51	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	47	50	47	45	43	44	44	45	46	47	48	48	46
1975	Wet	50	51	50	47	46	46	46	47	47	48	49	50	48
1976	Critical	51	51	50	47	46	46	47	48	48	48	49	50	48
1977	Critical	51	53	53	49	47	47	48	49	52	56	65	64	53
1978	Above Normal	59	51	46	42	42	43	43	44	45	47	48	47	47
1979	Below Normal	48	50	51	48	46	46	46	47	48	48	49	50	48
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	48	48
1981	Dry	49	50	50	48	46	46	47	47	48	48	50	51	48
1982	Wet	52	51	48	44	44	44	45	46	46	48	48	49	47
1983	Wet	50	51	49	46	45	46	46	46	47	48	49	51	48
1984	Wet	52	53	49	45	45	45	46	46	47	48	49	50	48
1985	Dry	51	51	49	47	45	46	46	47	48	48	49	52	48
1986	Wet	55	53	50	47	47	47	47	48	48	49	50	51	49
1987	Dry	52	53	52	48	46	46	47	47	48	48	50	53	49
1988	Critical	56	55	50	45	45	45	46	47	48	49	51	54	49
1989	Dry	57	54	50	46	44	44	45	46	47	48	48	50	48
1990	Critical	52	52	52	48	45	45	46	46	47	48	50	53	49
1991	Critical	55	54	52	48	47	47	47	48	49	51	49	52	50
1992	Critical	56	55	52	48	45	45	46	47	50	53	57	64	51
1993	Above Normal	61	54	49	43	42	43	43	44	45	47	48	48	47
1994	Critical	50	51	51	48	46	47	47	48	48	49	52	54	49
1995	Wet	55	53	50	45	44	46	46	47	48	48	50	52	49
1996	Wet	53	53	51	48	47	46	46	47	48	48	50	51	49
1997	Wet	52	52	50	46	44	45	45	46	47	48	48	49	48
1998	Wet	51	52	49	46	45	44	45	46	47	48	50	53	48
1999	Wet	54	53	49	47	46	45	45	46	47	48	48	49	48
2000	Above Normal	50	51	51	48	48	48	48	48	49	50	51	52	49
2001	Dry	53	53	53	49	47	47	47	48	48	49	51	52	50
2002	Dry	54	55	50	47	46	47	47	48	48	49	51	52	50
2003	Above Normal	54	55	51	46	46	46	46	47	48	48	50	50	49
Average		53	52	50	47	45	45	46	47	48	49	50	52	49
Wet		52	52	49	46	45	45	46	46	47	48	49	50	48
Above Normal		52	52	50	46	45	45	46	47	47	48	49	49	48
Below Normal		52	52	51	47	45	45	46	47	48	48	49	50	48
Dry		53	53	50	47	45	46	46	47	48	49	50	52	49
Critical		54	54	52	47	46	46	47	48	50	51	54	58	51

Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP3 (2005) - Existing Condition

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1923	Below Normal	-1	0	0	0	0	0	1	1	0	0	0	-2	0
1924	Critical	-2	-1	0	0	0	0	0	1	1	-1	-4	-1	-1
1925	Dry	1	1	1	0	0	0	0	0	0	-1	-1	-1	0
1926	Dry	-1	0	0	1	0	0	0	0	0	0	0	1	0
1927	Wet	1	0	0	0	0	0	0	-1	0	0	-1	-2	0
1928	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1929	Critical	-1	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1931	Critical	-1	0	0	0	0	0	0	0	0	0	-2	0	0
1932	Dry	0	0	0	0	0	0	1	1	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	1	1	1	0	0	1	0
1934	Critical	1	0	-1	0	0	0	1	1	0	0	1	0	0
1935	Below Normal	-1	0	0	0	0	0	0	1	0	3	-3	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1938	Wet	-1	0	0	0	0	0	0	-1	0	-1	-1	-1	0
1939	Dry	-2	-1	0	0	0	0	1	0	-1	0	0	0	0
1940	Above Normal	0	0	0	0	0	0	0	0	0	0	-1	-2	0
1941	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-2	-2	-1	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	0	0	0	0	0	0	-1	-1	-2	-1
1948	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1950	Below Normal	-2	-2	0	0	0	0	0	1	0	0	0	-2	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-2	-2	0	0	0	0	0	0	-1	0	-1	-2	-1
1953	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-2	0	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	-1	0	-1	0
1957	Above Normal	-3	-2	-1	0	0	0	0	0	0	0	-1	-1	-1
1958	Wet	-2	-1	0	0	0	0	0	0	-1	0	-1	-2	0
1959	Below Normal	-3	-2	0	0	0	0	0	0	0	-1	-2	-3	-1
1960	Dry	-3	0	1	0	0	0	0	0	0	0	0	-2	0
1961	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-2	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1963	Wet	-3	-2	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	0	0	0	0	1	0	0	0	0	0
1965	Wet	1	0	0	0	0	1	0	0	0	0	0	-1	0
1966	Below Normal	-1	-2	0	0	0	0	0	0	0	0	-1	-2	0
1967	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-1	-1
1969	Wet	-2	-1	0	0	0	0	0	0	-1	0	0	-2	0
1970	Wet	-3	-2	0	0	0	0	1	1	0	0	-1	-2	0
1971	Wet	-2	-1	0	0	0	0	0	0	-1	0	0	-2	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1973	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1974	Wet	-1	-1	0	0	0	0	0	0	-1	-1	0	-1	0
1975	Wet	-3	-2	0	0	0	0	0	0	0	0	0	-1	-1
1976	Critical	-2	0	0	0	0	0	0	1	0	0	0	0	0
1977	Critical	-1	-1	0	0	0	0	0	0	1	0	-1	0	0
1978	Above Normal	0	0	0	0	0	0	0	-1	-1	-1	0	-1	0
1979	Below Normal	-3	-2	-1	0	0	0	0	0	0	0	0	0	-1
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1983	Wet	-3	-1	0	0	0	0	0	0	0	0	-1	-2	-1
1984	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	-1	-1	0	0	0	0	1	1	0	0	-1	0	0
1986	Wet	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	-1	0	0	0	0	0	0	0	0	-2	2	0	0
1989	Dry	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1990	Critical	0	0	0	0	0	0	0	0	0	-2	1	1	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1993	Above Normal	0	0	0	0	0	0	0	0	-1	0	0	-2	0
1994	Critical	-3	-2	0	0	0	0	0	0	-1	0	-1	-2	-1
1995	Wet	-3	-1	0	1	1	0	0	0	0	-1	-1	-1	0
1996	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-2	-1	0	0	0	0	1	1	0	0	0	-2	0
1998	Wet	-2	-1	0	0	0	0	0	0	0	-1	-2	-2	-1
1999	Wet	-2	-1	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-2	-1
2001	Dry	-3	-1	0	0	0	1	1	1	0	0	0	-1	0
2002	Dry	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-1	0	0	0	0	0	0	0	0	0	0	0	0

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	-1%	0%	0%	0%	0%	1%	2%	0%	0%	-1%	-3%	0%
1924	Critical	-4%	-2%	0%	0%	0%	-1%	-1%	0%	1%	-1%	-6%	-1%	-1%
1925	Dry	1%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-3%	-2%	0%
1926	Dry	-1%	0%	1%	1%	1%	0%	0%	0%	1%	0%	0%	1%	0%
1927	Wet	1%	0%	0%	0%	-1%	0%	-1%	-1%	-1%	0%	-2%	-3%	-1%
1928	Above Normal	-3%	-2%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-1%	-1%
1929	Critical	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1930	Dry	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1931	Critical	-1%	-1%	0%	1%	1%	0%	0%	0%	1%	0%	-3%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-2%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	2%	0%
1934	Critical	1%	0%	-1%	0%	0%	1%	2%	2%	0%	1%	2%	0%	1%
1935	Below Normal	-2%	0%	0%	0%	1%	0%	1%	1%	1%	6%	-5%	0%	0%
1936	Below Normal	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1938	Wet	-1%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%	-3%	-1%
1939	Dry	-4%	-2%	0%	1%	0%	1%	1%	1%	-1%	0%	-1%	0%	-1%
1940	Above Normal	0%	0%	1%	1%	-1%	0%	0%	0%	0%	-2%	-3%	0%	0%
1941	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	-1%	-3%	-1%	-2%	-1%
1942	Wet	-4%	-2%	0%	1%	0%	1%	1%	0%	0%	-1%	-1%	-2%	-1%
1943	Wet	-4%	-3%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1944	Dry	-3%	-3%	-2%	0%	1%	1%	1%	1%	0%	0%	0%	0%	0%
1945	Below Normal	0%	0%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	0%	-1%	-1%	1%	1%	1%	0%	0%	0%	1%	-1%	-3%	0%
1947	Dry	-4%	-2%	0%	0%	0%	0%	1%	0%	-1%	-3%	-3%	-3%	-1%
1948	Below Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	0%
1949	Dry	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	-1%	-3%	-1%
1950	Below Normal	-4%	-3%	-1%	0%	1%	0%	1%	0%	0%	0%	-1%	-3%	-1%
1951	Above Normal	-4%	-1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	-2%	0%
1952	Wet	-4%	0%	0%	1%	1%	1%	0%	-1%	-2%	-1%	0%	-4%	-1%
1953	Wet	-5%	-3%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1954	Above Normal	-4%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-2%	-2%	-1%
1955	Dry	-2%	-1%	0%	0%	0%	1%	1%	1%	1%	0%	0%	-1%	0%
1956	Wet	-1%	0%	-1%	1%	1%	1%	0%	0%	-1%	0%	0%	-2%	0%
1957	Above Normal	-6%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1958	Wet	-3%	-2%	0%	1%	0%	0%	0%	-1%	-1%	0%	-1%	-3%	-1%
1959	Below Normal	-6%	-3%	0%	1%	1%	1%	1%	1%	0%	-2%	-4%	-5%	-2%
1960	Dry	-5%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-3%	-1%
1961	Dry	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-3%	-1%
1962	Below Normal	-4%	-2%	0%	1%	0%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1963	Wet	-5%	-4%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1964	Dry	-2%	-2%	0%	1%	1%	1%	1%	1%	0%	0%	0%	1%	0%
1965	Wet	1%	0%	0%	1%	1%	1%	0%	0%	-1%	0%	0%	-1%	0%
1966	Below Normal	-3%	-3%	-1%	1%	1%	0%	0%	-1%	0%	0%	-1%	-3%	-1%
1967	Wet	-4%	-2%	0%	1%	1%	1%	0%	0%	-1%	0%	0%	-2%	-1%
1968	Below Normal	-4%	-4%	-1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-3%	-1%
1969	Wet	-3%	-2%	0%	0%	1%	1%	0%	-1%	0%	-1%	0%	-3%	-1%
1970	Wet	-6%	-3%	0%	0%	1%	1%	1%	1%	1%	0%	-1%	-4%	-1%
1971	Wet	-4%	-1%	0%	1%	1%	1%	0%	-1%	-1%	0%	0%	-3%	-1%
1972	Below Normal	-5%	-3%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1973	Above Normal	-2%	-1%	0%	0%	1%	1%	0%	0%	-1%	0%	0%	-1%	0%
1974	Wet	-3%	-2%	0%	1%	1%	0%	0%	-1%	-1%	-1%	0%	-2%	-1%
1975	Wet	-6%	-3%	-1%	0%	1%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1976	Critical	-4%	-2%	0%	1%	1%	1%	0%	1%	0%	0%	-1%	0%	0%
1977	Critical	-1%	-1%	0%	1%	1%	0%	0%	1%	1%	0%	-1%	0%	0%
1978	Above Normal	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%	0%	-3%	-1%
1979	Below Normal	-6%	-5%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	1%	0%	-1%	0%
1981	Dry	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%
1982	Wet	-2%	-1%	0%	1%	1%	1%	0%	-1%	-1%	0%	0%	-3%	-1%
1983	Wet	-5%	-2%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-2%	-3%	-1%
1984	Wet	-5%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%
1985	Dry	-2%	-2%	0%	1%	1%	1%	1%	1%	0%	0%	-2%	-1%	0%
1986	Wet	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	-2%	-2%	0%
1987	Dry	-2%	-1%	0%	1%	0%	0%	1%	1%	0%	-1%	-2%	-1%	0%
1988	Critical	-1%	-1%	1%	1%	0%	0%	0%	0%	0%	-5%	4%	0%	0%
1989	Dry	-1%	0%	1%	1%	0%	0%	1%	1%	0%	0%	-1%	-1%	0%
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-4%	2%	1%	0%
1991	Critical	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
1992	Critical	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1993	Above Normal	0%	0%	1%	1%	1%	0%	0%	-1%	-2%	0%	-1%	-5%	-1%
1994	Critical	-6%	-3%	-1%	0%	0%	0%	0%	0%	-2%	-1%	-2%	-4%	-2%
1995	Wet	-4%	-2%	0%	1%	0%	0%	0%	-1%	0%	-2%	-2%	-2%	-1%
1996	Wet	-4%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1997	Wet	-4%	-2%	0%	1%	1%	1%	1%	1%	0%	0%	-1%	-4%	0%
1998	Wet	-4%	-2%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-4%	-3%	-1%
1999	Wet	-4%	-1%	0%	1%	1%	1%	0%	0%	-1%	0%	0%	-1%	0%
2000	Above Normal	-4%	-4%	-1%	0%	0%	1%	0%	0%	0%	0%	-1%	-3%	-1%
2001	Dry	-5%	-3%	-1%	0%	1%	1%	1%	1%	0%	0%	-1%	-2%	-1%
2002	Dry	-3%	-2%	1%	0%	1%	1%	1%	1%	0%	-1%	-1%	-2%	-1%
2003	Above Normal	-3%	-1%	0%	0%	0%	1%	0%	-1%	-1%	-1%	-1%	-3%	-1%
Average		-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Wet		-3%	-2%	0%	1%	1%	1%	0%	0%	-1%	-1%	-1%	-2%	-1%
Above Normal		-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
Below Normal		-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Dry		-2%	-1%	0%	1%	0%	0%	1%	1%	0%	0%	-1%	-1%	0%
Critical		-2%	-1%	0%	1%	0%	0%	0%	1%	0%	-1%	-1%	0%	0%

Sacramento River Water Temperatures at Keswick Dam (°F)
Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	48	52	52	50	51	51	52	50
1923	Below Normal	52	51	51	48	47	48	52	53	51	51	51	53	51
1924	Critical	53	53	51	47	47	50	53	55	52	55	58	64	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	54	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	54	56	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	52	53	50
1928	Above Normal	53	52	49	47	46	47	50	50	50	51	54	55	50
1929	Critical	55	53	51	45	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	51
1931	Critical	55	54	51	47	47	48	49	51	53	55	59	65	53
1932	Dry	60	54	48	46	44	47	49	52	54	55	56	61	52
1933	Critical	60	56	51	46	45	47	49	51	53	55	56	61	52
1934	Critical	61	56	51	47	46	48	49	51	54	56	63	65	54
1935	Below Normal	61	53	49	46	45	46	48	50	52	52	55	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	55	54	52	48	46	47	48	50	50	51	53	55	51
1938	Wet	55	53	49	46	45	46	48	50	50	51	53	54	50
1939	Dry	55	54	51	48	46	48	48	49	51	51	54	55	51
1940	Above Normal	55	54	51	47	47	47	50	51	50	51	53	55	51
1941	Wet	55	53	50	47	46	47	48	50	51	53	53	55	51
1942	Wet	55	54	50	46	46	47	49	49	50	51	52	53	50
1943	Wet	54	54	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	54	54	52	48	47	48	48	50	50	52	53	55	51
1945	Below Normal	54	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	52	49	45	45	46	47	48	49	50	51	52	49
1947	Dry	53	52	50	47	46	47	48	49	50	51	53	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	53	50
1949	Dry	53	53	51	47	46	46	48	49	49	50	51	53	50
1950	Below Normal	53	53	51	46	44	45	47	48	49	51	51	53	49
1951	Above Normal	52	51	48	45	44	45	47	48	48	49	51	52	48
1952	Wet	50	51	48	44	44	44	46	48	50	51	51	53	48
1953	Wet	54	54	49	47	45	46	48	48	49	51	51	53	50
1954	Above Normal	53	53	49	46	45	46	47	48	50	50	53	54	50
1955	Dry	53	52	49	46	45	47	47	49	49	51	52	53	49
1956	Wet	52	51	49	44	43	45	47	46	48	50	50	51	48
1957	Above Normal	52	52	51	47	46	46	48	50	50	50	52	54	50
1958	Wet	53	52	49	46	46	46	47	49	50	51	51	54	49
1959	Below Normal	55	54	51	47	46	46	48	49	50	52	55	56	51
1960	Dry	56	54	52	47	46	46	47	48	49	51	52	54	50
1961	Dry	54	53	48	46	45	46	47	48	49	50	52	54	49
1962	Below Normal	54	53	48	46	45	45	47	48	49	50	51	53	49
1963	Wet	53	53	50	47	46	47	48	50	50	51	53	53	50
1964	Dry	53	52	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	53	51	49	44	44	45	45	47	49	50	51	52	48
1966	Below Normal	51	51	49	45	45	45	48	49	49	50	52	53	49
1967	Wet	54	53	48	46	45	45	46	48	50	51	51	52	49
1968	Below Normal	53	54	50	46	46	47	48	49	50	51	53	54	50
1969	Wet	54	52	48	45	43	44	45	47	49	51	51	52	48
1970	Wet	53	53	50	47	45	46	46	48	49	50	52	54	49
1971	Wet	53	52	48	44	44	45	47	48	49	51	52	52	49
1972	Below Normal	53	52	49	45	45	46	47	49	49	50	52	53	49
1973	Above Normal	52	51	48	45	44	45	47	48	49	50	52	52	48
1974	Wet	50	51	47	45	43	45	47	48	49	51	50	52	48
1975	Wet	53	53	49	47	45	46	48	49	50	52	51	53	50
1976	Critical	53	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	51	53	57	62	63	53
1978	Above Normal	58	52	47	45	43	44	46	47	49	51	51	51	48
1979	Below Normal	52	52	51	48	46	47	48	50	50	51	52	53	50
1980	Above Normal	52	51	49	46	46	47	48	49	49	50	51	53	49
1981	Dry	52	51	50	47	46	47	49	50	50	51	53	54	50
1982	Wet	53	52	48	44	44	45	46	49	50	50	50	52	49
1983	Wet	53	52	48	46	45	46	47	49	50	51	52	54	49
1984	Wet	55	53	49	45	45	46	47	49	50	50	53	53	50
1985	Dry	52	51	48	46	45	46	48	49	50	51	53	54	50
1986	Wet	55	53	49	47	47	48	50	50	51	52	53	55	51
1987	Dry	54	54	51	47	46	47	48	49	50	51	54	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	54	53	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	54	50
1990	Critical	53	53	51	47	45	47	48	49	50	53	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	55	51
1992	Critical	57	55	51	47	46	47	48	49	51	54	58	62	52
1993	Above Normal	61	54	48	43	43	45	46	47	49	50	51	52	49
1994	Critical	54	53	50	47	46	48	49	50	51	52	55	56	51
1995	Wet	58	54	49	45	44	46	47	49	50	52	53	54	50
1996	Wet	55	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	52	50	46	45	46	47	48	49	50	52	54	49
1998	Wet	53	52	48	46	45	45	48	47	49	51	53	55	49
1999	Wet	56	53	49	46	45	45	47	48	49	50	51	51	49
2000	Above Normal	53	53	50	48	49	49	51	51	51	52	55	56	52
2001	Dry	56	55	53	49	46	48	48	50	51	53	55	56	52
2002	Dry	56	56	49	47	47	47	49	50	51	52	55	56	51
2003	Above Normal	56	56	50	46	46	48	48	49	51	51	53	55	51
Average		54	53	50	46	45	46	48	49	50	51	53	55	50
Wet		54	53	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	46	45	46	48	49	50	51	52	54	50
Dry		55	53	50	47	46	47	48	49	50	51	53	55	50
Critical		55	54	51	47	46	48	49	50	52	54	56	59	52

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP4 (2005)**

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	49	52	52	50	51	51	52	51
1923	Below Normal	51	50	50	48	47	51	54	54	52	51	51	52	51
1924	Critical	50	51	51	47	47	49	52	55	54	53	53	60	52
1925	Dry	58	51	46	44	45	46	49	49	50	51	51	53	49
1926	Dry	55	54	51	48	47	48	49	50	51	51	53	55	51
1927	Wet	55	54	49	47	46	47	47	49	50	50	51	52	50
1928	Above Normal	52	51	50	47	47	47	50	50	50	51	53	54	50
1929	Critical	53	52	51	47	46	47	48	49	50	51	51	53	50
1930	Dry	54	53	50	47	47	48	49	49	50	51	51	53	50
1931	Critical	53	53	51	48	48	49	50	51	53	55	53	57	52
1932	Dry	59	54	50	46	45	48	50	52	54	55	52	53	51
1933	Critical	57	56	52	47	45	48	50	51	53	55	52	54	52
1934	Critical	57	55	52	48	47	49	50	52	55	55	54	61	53
1935	Below Normal	60	55	50	47	46	47	49	50	51	51	53	56	51
1936	Below Normal	56	54	51	48	46	47	48	49	49	50	51	52	50
1937	Below Normal	52	53	52	48	47	48	49	50	50	51	51	52	50
1938	Wet	53	53	49	46	46	47	48	50	50	50	52	53	50
1939	Dry	53	53	51	49	47	48	49	50	50	51	52	54	51
1940	Above Normal	54	53	52	47	47	48	50	51	50	51	52	54	51
1941	Wet	53	52	50	47	46	47	48	50	50	51	52	54	50
1942	Wet	54	53	51	47	47	47	49	49	50	51	51	52	50
1943	Wet	53	52	51	48	46	47	49	50	50	50	52	53	50
1944	Dry	52	52	52	49	48	48	49	51	50	51	52	54	51
1945	Below Normal	53	52	50	47	47	47	48	50	50	50	51	52	50
1946	Below Normal	52	51	49	46	45	47	47	48	49	50	51	51	49
1947	Dry	50	50	50	47	47	47	49	49	50	50	52	54	50
1948	Below Normal	55	53	51	48	46	47	48	51	51	51	52	52	50
1949	Dry	51	51	51	48	46	46	48	49	49	50	51	52	49
1950	Below Normal	50	51	51	47	45	46	48	49	50	51	51	51	49
1951	Above Normal	49	50	48	45	44	45	47	48	48	50	51	51	48
1952	Wet	48	48	48	44	44	45	46	48	49	51	50	51	48
1953	Wet	52	52	50	47	46	47	48	48	49	51	51	52	49
1954	Above Normal	52	51	49	47	46	46	47	48	50	50	52	52	49
1955	Dry	51	52	49	46	46	47	47	49	50	51	52	53	49
1956	Wet	50	50	49	45	44	45	47	46	48	50	50	50	48
1957	Above Normal	49	50	51	48	46	47	48	50	50	50	51	53	49
1958	Wet	51	51	49	46	46	46	47	49	50	51	50	52	49
1959	Below Normal	53	52	51	48	46	47	49	50	50	51	53	55	50
1960	Dry	54	54	53	48	46	46	48	49	50	51	51	53	50
1961	Dry	51	51	49	46	46	46	48	48	49	50	51	52	49
1962	Below Normal	51	52	49	47	46	45	47	48	49	50	51	51	49
1963	Wet	49	50	50	48	47	47	48	50	50	50	52	52	50
1964	Dry	52	51	49	47	46	47	48	49	50	51	51	52	49
1965	Wet	51	50	49	45	44	45	46	47	49	50	52	50	48
1966	Below Normal	48	50	49	46	45	46	48	49	49	50	51	51	48
1967	Wet	50	51	49	46	45	46	46	48	49	51	50	51	49
1968	Below Normal	51	52	50	47	46	47	48	49	50	50	52	53	50
1969	Wet	52	51	49	45	43	44	45	47	48	50	51	50	48
1970	Wet	50	51	50	47	45	46	46	48	50	50	52	52	49
1971	Wet	50	50	48	45	44	45	47	47	49	51	51	51	48
1972	Below Normal	51	51	50	46	45	46	47	49	49	50	52	52	49
1973	Above Normal	50	50	48	45	44	45	47	48	48	50	52	51	48
1974	Wet	48	50	47	45	44	45	47	48	49	51	50	50	48
1975	Wet	50	50	50	48	46	46	48	49	50	52	50	52	49
1976	Critical	51	51	50	47	47	48	48	50	50	51	53	53	50
1977	Critical	51	51	51	48	48	48	50	51	54	55	57	61	52
1978	Above Normal	59	53	48	45	44	44	46	47	48	50	52	49	49
1979	Below Normal	49	50	50	48	47	47	48	50	50	51	52	52	49
1980	Above Normal	51	50	50	47	46	47	48	49	49	51	51	50	49
1981	Dry	50	50	50	48	47	47	49	50	50	51	52	54	50
1982	Wet	52	51	48	44	44	45	46	49	49	50	50	50	48
1983	Wet	51	50	49	46	45	46	47	49	50	50	51	52	49
1984	Wet	53	52	49	45	46	46	47	49	50	51	52	51	49
1985	Dry	51	51	48	47	46	47	49	49	50	51	52	52	49
1986	Wet	52	51	50	48	47	48	50	50	51	51	52	54	50
1987	Dry	53	53	51	48	46	47	48	49	50	51	52	54	50
1988	Critical	54	54	50	46	46	47	49	50	51	52	53	54	50
1989	Dry	56	53	50	47	45	46	49	48	49	51	51	53	50
1990	Critical	50	50	51	48	46	47	48	49	50	51	52	53	50
1991	Critical	53	53	51	48	48	48	49	50	52	54	53	53	51
1992	Critical	53	53	51	47	46	47	49	50	52	51	55	61	51
1993	Above Normal	61	55	49	44	44	46	46	48	48	50	51	49	49
1994	Critical	50	51	51	48	47	48	49	50	51	51	53	55	50
1995	Wet	54	52	50	45	45	46	48	48	50	51	51	53	50
1996	Wet	53	53	50	47	48	47	48	49	50	51	52	52	50
1997	Wet	53	52	50	46	45	47	47	48	50	51	52	52	49
1998	Wet	50	50	49	46	45	45	48	47	49	51	51	54	49
1999	Wet	54	53	49	47	46	46	48	48	49	50	51	51	49
2000	Above Normal	51	51	50	48	49	49	51	51	52	53	54	55	51
2001	Dry	54	53	53	50	47	49	49	50	50	52	54	55	51
2002	Dry	54	55	49	47	47	48	49	50	51	51	53	54	51
2003	Above Normal	54	54	50	46	46	48	48	49	51	51	53	54	50
Average		52	52	50	47	46	47	48	49	50	51	52	53	50
Wet		52	51	49	46	45	46	47	48	50	51	52	52	49
Above Normal		53	52	50	47	46	47	48	49	50	51	52	52	50
Below Normal		52	52	50	47	46	47	48	50	50	51	52	52	50
Dry		53	52	50	47	46	47	49	50	50	51	52	53	50
Critical		53	53	51	48	47	48	49	51	52	53	53	56	51

Change in Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP4 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	2	1	0	0	0	0	0	0
1923	Below Normal	-1	-1	0	0	0	3	2	1	1	0	0	-1	0
1924	Critical	-3	-2	0	0	0	-1	-1	0	2	-2	-5	-5	-1
1925	Dry	0	1	1	0	0	1	0	0	0	0	-2	-3	0
1926	Dry	-2	0	0	1	1	0	0	0	0	-1	-1	-2	0
1927	Wet	-2	0	1	1	0	0	0	0	0	0	-1	-2	0
1928	Above Normal	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1929	Critical	-1	-1	0	1	1	0	0	0	0	0	-1	-2	0
1930	Dry	-2	-1	0	1	1	0	0	0	0	0	-2	-2	0
1931	Critical	-2	-1	0	1	1	1	0	0	0	0	-6	-8	-1
1932	Dry	-2	1	2	0	0	1	1	0	0	0	-3	-8	-1
1933	Critical	-4	-1	0	1	1	1	1	1	0	0	-4	-7	-1
1934	Critical	-4	-1	0	1	1	1	1	1	1	-1	-8	-4	-1
1935	Below Normal	0	1	1	0	1	1	1	0	-1	-1	-2	-2	0
1936	Below Normal	-2	0	0	1	1	0	1	0	0	0	-1	-2	0
1937	Below Normal	-3	-2	0	0	1	0	0	0	0	0	-1	-2	0
1938	Wet	-2	-1	0	1	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-2	-1	1	1	1	0	1	0	0	-1	-1	-1	0
1940	Above Normal	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1941	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	-1	1	1	0	0	0	0	0	0	-1	-1	0
1943	Wet	-2	-1	0	1	0	0	0	0	0	-1	0	-1	0
1944	Dry	-1	-1	0	1	1	0	1	1	0	-1	-1	-1	0
1945	Below Normal	-1	-1	1	1	0	0	0	0	0	0	0	-1	0
1946	Below Normal	-1	-1	0	0	1	1	0	0	0	0	0	-1	0
1947	Dry	-3	-2	0	1	0	0	0	0	0	-1	-1	-1	-1
1948	Below Normal	-1	0	0	1	1	0	0	0	1	0	0	-1	0
1949	Dry	-2	-1	0	1	0	0	0	0	0	0	0	-2	0
1950	Below Normal	-3	-2	0	1	1	0	1	1	1	0	0	-1	0
1951	Above Normal	-3	-1	0	1	1	0	0	0	0	0	0	0	0
1952	Wet	-2	-2	0	0	0	0	0	0	-1	0	-1	-2	-1
1953	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-2	-1	0	1	0	0	0	0	0	0	-1	-2	0
1955	Dry	-2	-1	0	1	1	0	0	0	1	0	-1	-1	0
1956	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-3	-2	0	1	1	0	0	0	0	0	-1	-1	-1
1958	Wet	-1	-1	0	1	0	0	0	0	0	0	-1	-2	0
1959	Below Normal	-2	-2	0	1	1	0	1	1	0	-1	-2	-2	0
1960	Dry	-2	-1	0	1	1	0	1	1	1	0	-1	-2	0
1961	Dry	-3	-1	1	1	0	0	0	0	0	0	-1	-2	0
1962	Below Normal	-3	-1	1	1	0	0	0	0	0	0	0	-1	0
1963	Wet	-4	-3	0	1	1	0	0	0	0	0	0	-1	-1
1964	Dry	-1	-1	0	1	1	1	1	1	0	0	-1	-2	0
1965	Wet	-2	-1	0	0	0	0	1	0	0	0	0	-2	0
1966	Below Normal	-2	-2	0	1	0	0	0	0	0	0	-1	-2	0
1967	Wet	-3	-2	0	1	0	0	0	0	0	0	-1	-1	0
1968	Below Normal	-2	-2	0	1	0	0	0	0	0	0	-1	-2	0
1969	Wet	-2	-1	0	1	0	0	0	0	0	0	0	-2	0
1970	Wet	-3	-2	0	0	0	0	1	1	0	0	-1	-1	0
1971	Wet	-4	-2	0	1	0	0	0	0	0	0	0	-2	0
1972	Below Normal	-2	-1	0	1	1	0	0	0	0	0	-1	-1	0
1973	Above Normal	-2	-1	0	1	0	0	0	0	0	0	0	-1	0
1974	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-3	-2	0	1	0	0	0	0	0	0	-1	-1	0
1976	Critical	-2	-1	0	1	1	1	0	1	0	0	-1	-1	0
1977	Critical	-2	-2	0	1	1	0	0	1	1	-3	-5	-1	-1
1978	Above Normal	1	1	1	0	1	1	0	0	0	0	0	-1	0
1979	Below Normal	-3	-3	0	1	0	0	0	0	0	0	0	-2	-1
1980	Above Normal	-1	-1	0	1	0	0	0	0	0	0	0	-2	0
1981	Dry	-2	-1	0	1	0	1	0	0	0	-1	-1	-1	0
1982	Wet	-1	-1	0	1	1	0	0	0	0	0	0	-2	0
1983	Wet	-2	-1	1	1	0	0	0	0	0	0	-1	-2	0
1984	Wet	-2	-1	1	0	1	0	0	0	0	0	-1	-2	0
1985	Dry	-2	-1	0	1	1	0	1	1	0	0	-1	-2	0
1986	Wet	-3	-2	1	1	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	-1	0	1	1	0	1	1	0	-1	-2	-1	0
1988	Critical	-2	-1	1	1	1	1	0	0	0	-2	0	-2	0
1989	Dry	-3	-1	1	1	1	0	1	1	0	0	0	-1	0
1990	Critical	-3	-2	0	1	1	0	0	0	0	-2	0	-2	-1
1991	Critical	-3	-1	0	1	1	0	0	0	0	0	0	-2	0
1992	Critical	-3	-2	0	0	0	0	0	0	0	-3	-4	-1	-1
1993	Above Normal	-1	1	1	1	1	0	1	1	0	0	0	-3	0
1994	Critical	-4	-2	0	1	1	1	0	0	0	-1	-1	-2	-1
1995	Wet	-4	-1	0	1	1	0	0	0	0	-1	-2	-1	-1
1996	Wet	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1997	Wet	-2	-1	0	0	0	1	0	1	1	0	-1	-2	0
1998	Wet	-3	-2	0	0	0	0	0	0	0	-1	-2	-1	-1
1999	Wet	-2	0	1	1	1	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-2	-1	0	1	1	0	1	1	-1	-1	-1	-1	0
2002	Dry	-1	-1	1	0	1	0	1	0	0	-1	-1	-1	0
2003	Above Normal	-2	-1	0	0	0	0	1	0	0	0	-1	-1	0
Average		-2	-1	0	1	0	0	0	0	0	0	-1	-2	0
Wet		-2	-1	0	1	0	0	0	0	0	0	-1	-1	0
Above Normal		-1	-1	0	1	0	0	0	0	0	0	0	-1	0
Below Normal		-2	-1	0	1	1	1	0	0	0	0	-1	-1	0
Dry		-2	-1	0	1	1	0	0	0	0	0	-1	-2	0
Critical		-3	-1	0	1	1	0	0	0	0	-1	-3	-3	-1

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Keswick Dam (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	1%	1%	3%	1%	0%	0%	0%	0%	-1%	0%
1923	Below Normal	-2%	-2%	-1%	0%	1%	5%	4%	2%	3%	0%	0%	-2%	1%
1924	Critical	-5%	-4%	-1%	0%	0%	-2%	-2%	0%	4%	-3%	-9%	-7%	-3%
1925	Dry	1%	2%	3%	1%	0%	1%	0%	1%	0%	-1%	-4%	-6%	0%
1926	Dry	-4%	-1%	1%	2%	1%	1%	1%	1%	0%	-1%	-3%	-3%	-1%
1927	Wet	-3%	-1%	1%	2%	1%	1%	0%	0%	0%	0%	-1%	-3%	0%
1928	Above Normal	-3%	-2%	1%	2%	1%	1%	0%	0%	0%	-1%	-2%	-2%	-1%
1929	Critical	-3%	-2%	0%	3%	1%	1%	1%	0%	0%	-1%	-3%	-3%	0%
1930	Dry	-3%	-2%	0%	2%	1%	1%	1%	1%	1%	0%	-3%	-3%	-1%
1931	Critical	-4%	-2%	0%	1%	2%	1%	1%	1%	1%	0%	-11%	-12%	-2%
1932	Dry	-3%	1%	3%	0%	1%	2%	2%	1%	0%	1%	-6%	-13%	-1%
1933	Critical	-6%	-1%	1%	2%	1%	1%	2%	1%	1%	1%	-6%	-11%	-2%
1934	Critical	-6%	-1%	1%	3%	2%	2%	2%	1%	1%	-2%	-13%	-7%	-2%
1935	Below Normal	0%	2%	3%	1%	2%	2%	1%	1%	-2%	-2%	-4%	-3%	0%
1936	Below Normal	-3%	-1%	0%	2%	1%	1%	1%	2%	1%	0%	-1%	-4%	0%
1937	Below Normal	-5%	-3%	-1%	0%	2%	1%	1%	1%	1%	0%	-2%	-4%	-1%
1938	Wet	-3%	-2%	1%	1%	1%	0%	1%	0%	0%	-2%	-3%	-2%	-1%
1939	Dry	-3%	-2%	1%	2%	1%	1%	2%	1%	-1%	-1%	-2%	-2%	0%
1940	Above Normal	-3%	-1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1941	Wet	-3%	-2%	1%	1%	1%	1%	0%	0%	0%	-2%	-2%	-2%	-1%
1942	Wet	-3%	-1%	1%	2%	0%	1%	0%	0%	0%	0%	-2%	-2%	0%
1943	Wet	-3%	-3%	1%	2%	1%	1%	0%	0%	0%	-1%	-1%	-2%	-1%
1944	Dry	-3%	-3%	0%	2%	2%	1%	1%	1%	0%	-1%	-2%	-1%	0%
1945	Below Normal	-2%	-1%	2%	2%	1%	1%	1%	1%	0%	0%	0%	-2%	0%
1946	Below Normal	-3%	-2%	0%	1%	1%	1%	1%	0%	1%	1%	0%	-2%	0%
1947	Dry	-5%	-4%	0%	1%	1%	0%	1%	1%	-1%	-1%	-2%	-2%	-1%
1948	Below Normal	-2%	-1%	0%	2%	2%	1%	1%	1%	2%	1%	-1%	-2%	0%
1949	Dry	-3%	-3%	0%	2%	1%	0%	0%	0%	0%	1%	-1%	-3%	0%
1950	Below Normal	-5%	-4%	-1%	1%	1%	1%	1%	2%	1%	0%	0%	-2%	0%
1951	Above Normal	-6%	-3%	1%	1%	1%	1%	0%	0%	0%	1%	0%	-1%	0%
1952	Wet	-5%	0%	0%	1%	1%	1%	0%	-1%	-1%	0%	-2%	-4%	-1%
1953	Wet	-4%	-3%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1954	Above Normal	-3%	-3%	1%	1%	1%	1%	0%	0%	0%	-2%	-2%	-4%	-1%
1955	Dry	-3%	-2%	1%	2%	1%	1%	1%	0%	1%	0%	-1%	-2%	0%
1956	Wet	-4%	-2%	0%	1%	1%	1%	0%	0%	0%	-1%	1%	-2%	-1%
1957	Above Normal	-6%	-4%	0%	2%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1958	Wet	-3%	-1%	1%	1%	0%	0%	0%	0%	-1%	0%	-2%	-3%	-1%
1959	Below Normal	-4%	-3%	0%	2%	1%	1%	1%	1%	0%	-2%	-4%	-3%	-1%
1960	Dry	-4%	-1%	1%	2%	1%	1%	1%	2%	2%	0%	-1%	-3%	0%
1961	Dry	-5%	-3%	1%	1%	1%	1%	0%	0%	0%	1%	-2%	-4%	-1%
1962	Below Normal	-5%	-3%	1%	2%	1%	1%	1%	0%	1%	1%	0%	-2%	0%
1963	Wet	-7%	-6%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-1%	-1%
1964	Dry	-2%	-2%	1%	2%	1%	1%	1%	1%	0%	0%	-2%	-3%	0%
1965	Wet	-4%	-2%	0%	1%	1%	1%	1%	0%	1%	1%	0%	-4%	0%
1966	Below Normal	-4%	-3%	0%	1%	1%	1%	0%	0%	0%	1%	-1%	-4%	-1%
1967	Wet	-6%	-3%	1%	1%	1%	1%	0%	0%	-1%	0%	-1%	-2%	-1%
1968	Below Normal	-3%	-4%	0%	2%	1%	1%	0%	0%	1%	-1%	-3%	-3%	-1%
1969	Wet	-4%	-2%	1%	1%	1%	1%	0%	0%	-1%	0%	0%	-4%	-1%
1970	Wet	-6%	-3%	1%	0%	1%	1%	1%	1%	1%	0%	-1%	-3%	-1%
1971	Wet	-7%	-3%	1%	1%	1%	1%	0%	0%	-1%	0%	0%	-3%	-1%
1972	Below Normal	-4%	-3%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-3%	-1%
1973	Above Normal	-4%	-2%	1%	1%	1%	0%	0%	0%	0%	1%	0%	-2%	0%
1974	Wet	-3%	-3%	1%	1%	1%	0%	0%	0%	-1%	-1%	1%	-3%	-1%
1975	Wet	-5%	-4%	1%	2%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1976	Critical	-3%	-2%	0%	3%	1%	1%	1%	1%	1%	0%	-1%	-2%	0%
1977	Critical	-3%	-3%	0%	1%	2%	1%	1%	1%	2%	-4%	-9%	-2%	-1%
1978	Above Normal	1%	2%	3%	0%	2%	1%	0%	0%	-1%	0%	0%	-3%	0%
1979	Below Normal	-7%	-5%	-1%	1%	1%	1%	1%	0%	0%	0%	-1%	-3%	-1%
1980	Above Normal	-2%	-2%	1%	1%	0%	0%	0%	0%	0%	1%	0%	-4%	-1%
1981	Dry	-4%	-2%	0%	1%	1%	1%	0%	0%	1%	-1%	-3%	-1%	-1%
1982	Wet	-3%	-2%	1%	1%	1%	1%	0%	0%	-1%	0%	0%	-3%	-1%
1983	Wet	-4%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	-3%	-3%	-1%
1984	Wet	-4%	-1%	1%	1%	1%	1%	0%	0%	0%	1%	-1%	-4%	-1%
1985	Dry	-3%	-2%	1%	3%	2%	1%	1%	1%	0%	0%	-2%	-4%	0%
1986	Wet	-5%	-3%	1%	1%	0%	0%	0%	1%	0%	-1%	-2%	-1%	-1%
1987	Dry	-2%	-2%	0%	2%	1%	1%	1%	1%	0%	-1%	-3%	-3%	-1%
1988	Critical	-4%	-1%	2%	2%	1%	1%	1%	1%	0%	-4%	0%	-4%	0%
1989	Dry	-5%	-1%	2%	2%	1%	1%	1%	2%	1%	1%	-1%	-3%	0%
1990	Critical	-6%	-4%	0%	1%	1%	1%	0%	0%	0%	-3%	-1%	-4%	-1%
1991	Critical	-5%	-2%	0%	1%	2%	1%	1%	1%	0%	0%	-1%	-4%	-1%
1992	Critical	-6%	-4%	-1%	1%	1%	1%	1%	1%	0%	-5%	-6%	-2%	-2%
1993	Above Normal	-1%	1%	2%	2%	1%	1%	1%	3%	0%	0%	0%	-5%	0%
1994	Critical	-7%	-4%	0%	2%	1%	1%	1%	0%	-1%	-1%	-3%	-3%	-1%
1995	Wet	-6%	-2%	0%	1%	1%	0%	1%	0%	0%	-1%	-3%	-2%	-1%
1996	Wet	-3%	-2%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-2%	0%
1997	Wet	-3%	-2%	1%	1%	1%	1%	1%	1%	1%	0%	-1%	-4%	0%
1998	Wet	-6%	-4%	1%	1%	0%	1%	0%	0%	0%	-1%	-4%	-3%	-1%
1999	Wet	-3%	-1%	1%	2%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-4%	-4%	0%	1%	0%	0%	0%	1%	0%	1%	-1%	-2%	-1%
2001	Dry	-4%	-3%	0%	2%	1%	1%	1%	1%	-1%	-1%	-2%	-2%	-1%
2002	Dry	-3%	-2%	1%	0%	1%	1%	1%	1%	0%	-1%	-2%	-2%	0%
2003	Above Normal	-3%	-2%	0%	1%	1%	0%	1%	0%	0%	-1%	-1%	-2%	-1%
Average		-4%	-2%	1%	1%	1%	1%	1%	0%	0%	-1%	-2%	-3%	-1%
Wet		-4%	-3%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-3%	-1%
Above Normal		-3%	-2%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	0%
Below Normal		-4%	-2%	0%	1%	1%	1%	1%	1%	1%	0%	-1%	-3%	0%
Dry		-3%	-2%	1%	2%	1%	1%	1%	1%	0%	0%	-2%	-3%	0%
Critical		-5%	-3%	0%	2%	1%	1%	1%	1%	1%	-2%	-5%	-5%	-1%

Sacramento River Water Temperatures at Balls Ferry (°F)

Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	57	53	53	53	55	52
1923	Below Normal	53	50	48	45	47	50	54	55	53	54	54	55	51
1924	Critical	53	53	49	45	48	50	53	57	54	57	60	64	54
1925	Dry	56	49	43	43	47	48	54	54	54	54	56	58	51
1926	Dry	56	53	48	45	47	50	53	54	54	54	57	58	53
1927	Wet	56	53	46	45	46	50	50	52	52	53	54	56	51
1928	Above Normal	54	51	47	45	47	48	54	52	52	53	56	57	51
1929	Critical	55	52	47	44	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
1931	Critical	55	52	48	46	47	50	51	54	55	57	60	64	53
1932	Dry	59	52	46	44	45	50	51	56	57	57	58	62	53
1933	Critical	60	55	48	44	45	50	52	54	56	57	58	61	53
1934	Critical	60	54	48	46	48	51	52	55	56	58	64	65	55
1935	Below Normal	59	52	47	45	46	49	54	55	54	54	57	59	53
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	56	52
1938	Wet	55	52	47	45	45	47	49	54	54	54	55	56	51
1939	Dry	55	52	48	46	46	49	50	52	53	53	55	57	51
1940	Above Normal	55	53	49	46	47	48	54	55	53	53	55	57	52
1941	Wet	55	52	48	47	46	49	50	52	54	55	55	56	52
1942	Wet	55	53	49	46	47	49	53	52	55	54	54	55	52
1943	Wet	55	52	48	46	47	48	53	54	53	53	55	56	52
1944	Dry	54	53	50	47	47	49	50	53	53	53	55	57	52
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	55	51
1946	Below Normal	53	51	48	45	44	48	49	51	51	52	53	54	50
1947	Dry	53	51	48	45	46	49	52	51	53	53	55	58	51
1948	Below Normal	56	51	48	46	46	48	52	57	54	53	55	55	52
1949	Dry	54	52	48	45	45	47	52	52	52	52	54	56	51
1950	Below Normal	53	52	49	44	45	47	51	52	52	54	54	55	51
1951	Above Normal	52	50	47	44	44	47	49	52	52	52	54	55	50
1952	Wet	51	50	46	43	44	46	47	53	54	55	54	55	50
1953	Wet	55	52	47	46	46	48	51	51	53	54	54	55	51
1954	Above Normal	53	52	47	46	45	47	50	51	52	53	55	56	51
1955	Dry	53	51	46	44	45	48	49	54	52	53	56	56	51
1956	Wet	53	49	48	44	44	48	51	50	52	54	53	53	50
1957	Above Normal	52	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	53	51	47	45	46	46	50	53	54	54	55	55	51
1959	Below Normal	55	52	49	46	46	47	50	51	52	54	57	58	52
1960	Dry	56	53	50	46	46	48	49	53	52	54	55	57	51
1961	Dry	54	51	46	45	46	47	50	51	52	53	54	56	50
1962	Below Normal	54	52	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	53	52	49	46	47	47	48	55	54	53	56	56	51
1964	Dry	53	51	47	45	46	47	49	51	52	54	55	56	50
1965	Wet	54	50	48	44	45	47	49	51	52	53	55	55	50
1966	Below Normal	52	51	46	44	45	46	50	51	51	52	54	56	50
1967	Wet	54	51	47	45	45	46	48	51	53	54	53	54	50
1968	Below Normal	53	53	47	45	46	49	50	52	52	53	56	57	51
1969	Wet	54	51	45	44	43	47	47	50	52	54	54	54	50
1970	Wet	53	52	48	47	45	49	47	51	52	53	55	56	51
1971	Wet	54	50	46	44	44	45	50	51	53	54	55	54	50
1972	Below Normal	53	51	46	44	45	47	49	52	52	53	55	55	50
1973	Above Normal	52	49	46	44	44	46	51	53	52	53	55	55	50
1974	Wet	51	51	46	44	44	45	51	53	54	55	53	54	50
1975	Wet	53	51	47	46	45	47	50	52	54	55	54	55	51
1976	Critical	53	51	47	45	46	49	50	52	51	54	56	57	51
1977	Critical	53	52	49	46	47	49	51	53	55	59	63	63	53
1978	Above Normal	58	50	45	45	44	46	50	51	52	54	54	54	50
1979	Below Normal	53	51	49	46	46	49	51	54	52	54	55	56	51
1980	Above Normal	53	50	47	46	46	49	51	52	52	53	54	56	51
1981	Dry	53	51	48	46	47	48	51	53	52	54	56	57	51
1982	Wet	53	50	47	43	44	46	47	55	54	54	54	54	50
1983	Wet	53	50	47	45	45	46	49	52	53	53	54	55	50
1984	Wet	55	52	47	45	46	47	49	52	53	53	56	57	51
1985	Dry	53	50	46	45	46	48	51	52	53	54	55	57	51
1986	Wet	55	50	47	47	47	49	52	53	54	55	55	57	52
1987	Dry	55	53	49	45	46	48	50	51	52	54	57	57	51
1988	Critical	57	53	46	44	46	48	50	52	53	57	56	57	52
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	56	51
1990	Critical	53	52	49	46	45	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	58	52
1992	Critical	57	53	48	45	47	49	51	52	53	56	60	63	53
1993	Above Normal	60	52	45	43	45	49	51	51	53	53	54	54	51
1994	Critical	54	52	48	46	46	49	50	53	53	54	56	58	52
1995	Wet	57	52	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	55	53	48	46	47	48	52	52	54	55	56	55	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	56	51
1998	Wet	54	51	46	46	46	45	51	49	52	54	56	57	50
1999	Wet	55	52	47	46	45	46	51	51	52	53	55	54	51
2000	Above Normal	53	52	48	48	49	51	54	54	54	54	57	59	53
2001	Dry	56	53	51	47	46	51	50	53	52	55	58	60	53
2002	Dry	56	54	46	46	47	49	52	53	54	55	58	59	52
2003	Above Normal	56	54	47	46	46	50	50	52	55	54	57	58	52
Average		55	52	47	45	46	48	51	53	53	54	56	57	51
Wet		54	51	47	45	45	47	50	52	53	54	55	55	51
Above Normal		55	51	47	45	46	48	51	53	53	53	55	56	51
Below Normal		54	52	48	45	46	48	51	53	52	53	55	56	51
Dry		55	52	47	45	46	49	51	53	53	54	56	57	51
Critical		55	53	48	45	47	49	51	53	54	56	58	60	53

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP4 (2005)

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	50	54	57	53	53	54	55	52
1923	Below Normal	52	49	47	45	47	51	55	56	54	54	54	55	52
1924	Critical	51	51	49	45	48	50	52	56	56	56	56	61	52
1925	Dry	56	50	43	44	47	48	54	54	54	54	54	56	51
1926	Dry	55	52	49	45	47	51	53	54	54	53	56	57	52
1927	Wet	55	53	46	45	46	50	50	52	52	53	53	54	51
1928	Above Normal	52	50	47	46	47	49	55	52	52	53	55	56	51
1929	Critical	54	51	47	44	46	48	50	52	53	53	54	56	51
1930	Dry	55	52	48	45	48	50	52	53	53	54	54	56	52
1931	Critical	53	51	48	46	48	50	51	54	56	57	55	58	52
1932	Dry	58	52	46	44	45	50	52	57	57	57	55	56	53
1933	Critical	57	54	48	45	45	50	52	54	56	58	55	56	53
1934	Critical	57	54	48	47	48	52	53	55	56	57	57	62	54
1935	Below Normal	59	52	48	45	46	49	54	55	54	53	55	58	52
1936	Below Normal	56	52	48	46	46	49	52	53	53	53	53	55	51
1937	Below Normal	53	52	49	45	46	50	53	55	54	54	54	55	52
1938	Wet	54	51	47	45	46	47	50	54	54	53	54	55	51
1939	Dry	53	51	49	47	47	49	51	52	52	53	54	56	51
1940	Above Normal	54	53	49	46	47	49	55	55	53	53	54	56	52
1941	Wet	53	51	49	47	47	49	50	52	54	54	54	55	51
1942	Wet	53	52	49	46	47	49	53	52	55	54	53	54	51
1943	Wet	53	51	49	47	47	48	53	54	53	53	54	55	51
1944	Dry	53	52	50	47	47	50	50	54	52	53	54	56	51
1945	Below Normal	54	51	47	45	47	48	51	53	53	52	53	54	51
1946	Below Normal	52	50	48	45	45	48	50	51	51	52	53	53	50
1947	Dry	51	49	48	46	47	49	52	51	52	52	54	56	51
1948	Below Normal	55	51	49	46	46	49	52	57	56	54	55	55	52
1949	Dry	52	50	48	46	45	47	52	52	52	53	54	54	50
1950	Below Normal	51	50	48	45	45	47	52	53	53	54	54	54	51
1951	Above Normal	50	49	47	44	44	48	49	52	52	52	54	54	50
1952	Wet	49	48	46	43	44	46	47	52	53	55	53	53	49
1953	Wet	53	51	47	47	46	48	51	51	53	54	54	54	51
1954	Above Normal	52	51	47	46	46	47	50	50	52	53	54	55	50
1955	Dry	52	50	46	45	46	49	49	53	52	53	55	56	50
1956	Wet	51	48	47	44	44	48	51	50	52	54	53	52	50
1957	Above Normal	50	49	49	46	46	48	49	54	54	53	54	56	51
1958	Wet	52	50	48	45	46	47	50	53	54	54	54	54	51
1959	Below Normal	53	51	49	47	46	48	51	52	52	53	55	57	51
1960	Dry	54	53	50	46	46	48	50	53	53	54	54	56	51
1961	Dry	52	50	46	45	46	47	50	51	52	53	53	55	50
1962	Below Normal	52	51	46	45	46	47	51	51	52	53	54	55	50
1963	Wet	51	50	49	46	47	47	49	55	54	53	55	55	51
1964	Dry	52	50	47	45	46	48	49	52	52	54	54	54	50
1965	Wet	52	49	48	44	45	47	50	50	52	53	55	53	50
1966	Below Normal	50	49	46	45	45	46	50	51	51	52	54	54	50
1967	Wet	51	50	47	45	46	46	48	51	53	54	53	53	50
1968	Below Normal	51	51	47	45	46	49	50	52	52	53	55	56	51
1969	Wet	52	50	45	44	43	47	47	50	52	54	54	52	49
1970	Wet	50	50	48	47	46	49	48	51	52	53	55	55	50
1971	Wet	51	49	46	44	45	46	50	51	53	54	55	53	50
1972	Below Normal	51	50	46	45	45	47	49	52	52	53	54	54	50
1973	Above Normal	51	49	46	45	45	46	51	53	52	53	55	55	50
1974	Wet	50	49	46	45	44	45	51	53	54	55	53	53	50
1975	Wet	51	49	47	46	45	47	50	52	53	55	53	54	50
1976	Critical	51	50	48	46	47	49	50	53	52	54	55	56	51
1977	Critical	52	51	50	48	48	49	51	53	55	57	59	62	53
1978	Above Normal	58	51	46	45	45	47	50	51	52	54	54	53	50
1979	Below Normal	51	49	48	47	46	49	51	54	52	54	55	55	51
1980	Above Normal	52	49	48	46	46	49	51	52	52	54	54	54	51
1981	Dry	51	50	48	46	47	49	51	52	52	54	55	56	51
1982	Wet	52	50	47	43	45	46	47	55	54	54	54	52	50
1983	Wet	51	49	47	46	45	46	50	52	53	53	53	54	50
1984	Wet	53	51	48	45	46	48	49	52	53	54	55	55	51
1985	Dry	51	49	47	46	46	49	52	52	53	54	54	55	51
1986	Wet	53	49	47	47	48	49	52	53	54	54	55	56	51
1987	Dry	54	52	49	45	47	49	51	52	52	53	55	56	51
1988	Critical	55	53	46	44	46	49	51	53	53	55	56	56	51
1989	Dry	56	51	47	45	45	48	54	51	53	54	54	55	51
1990	Critical	51	50	49	46	45	50	50	53	53	54	55	56	51
1991	Critical	54	52	48	47	48	48	52	52	54	57	56	56	52
1992	Critical	54	51	48	45	47	50	51	52	53	54	57	62	52
1993	Above Normal	60	53	46	43	45	50	51	53	53	53	54	52	51
1994	Critical	51	50	48	47	47	50	51	53	53	54	55	57	51
1995	Wet	55	51	46	45	46	47	51	52	54	54	54	55	51
1996	Wet	54	52	48	46	48	49	52	52	54	54	55	54	51
1997	Wet	53	51	49	46	46	50	49	51	53	54	55	54	51
1998	Wet	51	49	46	46	45	46	51	49	52	54	54	55	50
1999	Wet	54	51	48	46	45	46	51	51	52	53	55	53	51
2000	Above Normal	52	50	48	48	49	51	54	54	54	54	57	58	52
2001	Dry	54	52	50	47	46	51	51	53	52	54	56	59	52
2002	Dry	55	53	47	46	47	49	52	54	54	55	57	58	52
2003	Above Normal	55	53	47	46	47	50	51	53	55	54	57	57	52
Average		53	51	48	46	46	48	51	53	53	54	55	55	51
Wet		52	50	47	45	46	47	50	52	53	54	54	54	50
Above Normal		53	50	47	46	46	48	51	53	53	53	55	55	51
Below Normal		53	51	48	45	46	48	51	53	53	53	54	55	51
Dry		54	51	48	46	46	49	51	53	53	54	55	56	51
Critical		53	51	48	46	47	49	51	53	54	55	56	58	52

Change in Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP4 (2005) - Existing Condition

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	1	0	0	0	0	0	0	0
1923	Below Normal	-1	-1	0	0	0	2	1	1	1	0	0	0	-1
1924	Critical	-2	-2	0	0	0	-1	-1	0	2	-1	-4	-4	-1
1925	Dry	0	1	1	0	0	0	0	0	0	0	-2	-2	0
1926	Dry	-2	0	0	0	0	0	0	0	0	-1	-1	-1	0
1927	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1929	Critical	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1930	Dry	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1931	Critical	-2	-1	0	0	0	0	0	0	1	0	-5	-6	-1
1932	Dry	-1	0	1	0	0	0	1	0	0	0	-3	-6	-1
1933	Critical	-3	0	0	1	0	0	1	0	0	0	-3	-5	-1
1934	Critical	-3	-1	0	1	1	1	1	0	1	-1	-7	-3	-1
1935	Below Normal	0	1	1	0	0	0	0	0	-1	-1	-2	-1	0
1936	Below Normal	-1	0	0	0	0	0	0	1	0	0	-1	-2	0
1937	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1938	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-1	-1	0	1	1	0	0	0	0	-1	-1	-1	0
1940	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1943	Wet	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	0	1	0	0	0	0	0	0	-1	-1	-1	0
1945	Below Normal	-1	0	0	1	0	0	0	0	0	0	0	-1	0
1946	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-2	0	0	0	0	0	0	-1	-1	-1	-1	-1
1948	Below Normal	-1	0	0	0	1	0	0	0	2	0	0	0	0
1949	Dry	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-2	0	0	0	0	0	1	0	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-2	-2	0	0	0	0	0	0	0	0	-1	-2	-1
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1956	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-1	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1960	Dry	-2	0	0	0	0	0	0	1	1	0	0	-1	0
1961	Dry	-2	-1	0	0	0	1	0	0	0	0	-1	-2	0
1962	Below Normal	-2	-1	0	1	0	0	0	0	0	0	0	-1	0
1963	Wet	-2	-2	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1965	Wet	-2	-1	0	0	0	0	1	0	0	0	0	-2	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1970	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1971	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1977	Critical	-1	-1	0	1	1	0	0	0	1	-2	-4	-1	-1
1978	Above Normal	1	1	1	0	1	1	0	0	0	0	0	-1	0
1979	Below Normal	-3	-2	0	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	-1	-1	1	0	0	0	0	0	0	0	0	-2	0
1981	Dry	-1	-1	0	0	0	0	1	0	0	0	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	-1	-1	0	1	1	0	0	1	0	0	-1	-2	0
1986	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	-1	0	1	0	0	0	1	0	-1	-2	-1	0
1988	Critical	-2	-1	0	0	0	0	0	0	0	-2	0	-2	0
1989	Dry	-2	0	1	1	1	0	0	1	0	0	0	-1	0
1990	Critical	-2	-2	0	0	0	0	0	0	0	-1	0	-1	-1
1991	Critical	-2	-1	0	0	1	0	0	0	0	0	0	-2	0
1992	Critical	-3	-1	0	0	0	0	0	0	0	-2	-3	-1	-1
1993	Above Normal	-1	0	0	0	0	0	0	2	0	0	0	-2	0
1994	Critical	-3	-1	0	1	0	0	0	0	0	-1	-1	-1	-1
1995	Wet	-3	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1997	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1998	Wet	-3	-1	0	0	0	0	0	0	0	-1	-2	-1	-1
1999	Wet	-1	0	1	1	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-2	-1	0	1	0	0	0	0	0	-1	-1	-1	0
2002	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
2003	Above Normal	-1	-1	0	0	0	0	1	0	0	0	0	-1	0
Average		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-2	-1	0	0	0	0	0	0	0	-1	-3	-2	-1

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Balls Ferry (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	-1%	-1%	0%	0%	4%	2%	1%	2%	0%	0%	-1%	0%
1924	Critical	-4%	-3%	-1%	0%	0%	-1%	-2%	0%	3%	-3%	-7%	-6%	-2%
1925	Dry	0%	1%	2%	0%	0%	1%	0%	0%	0%	-1%	-3%	-4%	0%
1926	Dry	-3%	-1%	0%	1%	0%	1%	0%	1%	0%	-1%	-2%	-2%	-1%
1927	Wet	-3%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%
1928	Above Normal	-2%	-2%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-1%	-1%
1929	Critical	-2%	-1%	0%	2%	1%	1%	0%	0%	0%	-1%	-2%	-2%	-1%
1930	Dry	-3%	-2%	0%	1%	1%	0%	1%	0%	1%	0%	-2%	-2%	-1%
1931	Critical	-3%	-2%	0%	1%	1%	1%	1%	1%	1%	0%	-9%	-9%	-2%
1932	Dry	-2%	1%	1%	0%	1%	1%	1%	1%	0%	0%	-4%	-10%	-1%
1933	Critical	-5%	-1%	1%	1%	1%	0%	1%	1%	0%	1%	-5%	-8%	-1%
1934	Critical	-5%	-1%	0%	1%	1%	1%	1%	1%	1%	-1%	-11%	-5%	-2%
1935	Below Normal	0%	1%	2%	0%	1%	1%	0%	0%	-1%	-2%	-3%	-2%	0%
1936	Below Normal	-2%	-1%	0%	0%	1%	1%	1%	0%	1%	0%	-1%	-3%	0%
1937	Below Normal	-4%	-2%	0%	0%	1%	0%	0%	0%	1%	0%	-2%	-3%	-1%
1938	Wet	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	-2%	-2%	-2%	-1%
1939	Dry	-3%	-1%	1%	1%	1%	1%	0%	0%	-1%	-1%	-2%	-2%	0%
1940	Above Normal	-2%	-1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-2%	0%
1941	Wet	-2%	-1%	0%	1%	0%	1%	0%	0%	0%	-2%	-1%	-1%	-1%
1942	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
1943	Wet	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1944	Dry	-2%	-2%	0%	1%	1%	1%	1%	1%	0%	-1%	-2%	-1%	0%
1945	Below Normal	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-2%	-2%	0%	1%	1%	1%	0%	0%	1%	0%	0%	-2%	0%
1947	Dry	-4%	-3%	0%	1%	1%	0%	1%	1%	-1%	-1%	-2%	-2%	-1%
1948	Below Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	3%	0%	-1%	0%	0%
1949	Dry	-3%	-2%	0%	1%	0%	-1%	0%	0%	0%	1%	-1%	-2%	-1%
1950	Below Normal	-4%	-3%	-1%	1%	1%	1%	1%	1%	0%	0%	0%	-2%	0%
1951	Above Normal	-4%	-2%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-1%	0%
1952	Wet	-4%	-3%	0%	1%	1%	0%	0%	0%	-1%	0%	-2%	-4%	-1%
1953	Wet	-3%	-2%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-2%	0%
1954	Above Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-3%	-1%
1955	Dry	-3%	-1%	-1%	1%	1%	0%	1%	0%	1%	-1%	-1%	-2%	0%
1956	Wet	-3%	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	1%	-1%	0%
1957	Above Normal	-5%	-3%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-3%	-1%
1959	Below Normal	-4%	-2%	0%	1%	1%	1%	1%	0%	0%	-2%	-3%	-2%	-1%
1960	Dry	-3%	-1%	1%	1%	0%	0%	1%	1%	1%	0%	-1%	-2%	0%
1961	Dry	-4%	-2%	1%	1%	1%	1%	0%	0%	0%	1%	-2%	-3%	-1%
1962	Below Normal	-4%	-2%	1%	1%	1%	0%	0%	0%	1%	0%	0%	-1%	0%
1963	Wet	-4%	-4%	0%	1%	1%	1%	0%	0%	0%	-1%	0%	-1%	-1%
1964	Dry	-2%	-1%	0%	1%	0%	1%	1%	1%	0%	0%	-1%	-2%	0%
1965	Wet	-3%	-1%	0%	1%	0%	0%	1%	0%	1%	0%	0%	-3%	0%
1966	Below Normal	-3%	-3%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	-3%	-1%
1967	Wet	-5%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1968	Below Normal	-3%	-3%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1969	Wet	-3%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-3%	-1%
1970	Wet	-5%	-3%	0%	0%	1%	0%	1%	1%	1%	0%	-1%	-2%	-1%
1971	Wet	-5%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-3%	-1%
1972	Below Normal	-4%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1973	Above Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-1%	0%
1974	Wet	-2%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1975	Wet	-4%	-3%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1976	Critical	-3%	-2%	0%	2%	1%	1%	1%	1%	1%	0%	-1%	-1%	0%
1977	Critical	-3%	-2%	0%	1%	1%	1%	1%	1%	2%	-4%	-7%	-2%	-1%
1978	Above Normal	1%	1%	0%	0%	2%	1%	0%	0%	-1%	0%	0%	-2%	0%
1979	Below Normal	-5%	-4%	-1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1980	Above Normal	-1%	-2%	2%	1%	0%	0%	0%	0%	0%	1%	0%	-3%	0%
1981	Dry	-3%	-2%	0%	1%	1%	1%	0%	0%	0%	-1%	-2%	-1%	0%
1982	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-3%	0%
1983	Wet	-4%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1984	Wet	-3%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-3%	0%
1985	Dry	-2%	-1%	1%	2%	1%	1%	1%	1%	-1%	0%	-2%	-3%	0%
1986	Wet	-4%	-2%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1987	Dry	-2%	-2%	0%	1%	1%	0%	1%	1%	0%	-1%	-3%	-2%	-1%
1988	Critical	-3%	-1%	1%	1%	1%	1%	1%	1%	1%	-3%	0%	-3%	0%
1989	Dry	-4%	-1%	1%	1%	1%	0%	1%	1%	1%	0%	0%	-2%	0%
1990	Critical	-4%	-4%	0%	1%	1%	0%	0%	0%	0%	-3%	-1%	-2%	-1%
1991	Critical	-4%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-3%	0%
1992	Critical	-4%	-3%	0%	1%	0%	0%	1%	1%	0%	-4%	-5%	-2%	-1%
1993	Above Normal	-1%	1%	1%	1%	1%	0%	1%	5%	0%	0%	0%	-4%	0%
1994	Critical	-5%	-3%	0%	2%	1%	1%	1%	0%	-1%	-1%	-2%	-2%	-1%
1995	Wet	-5%	-2%	0%	1%	1%	0%	0%	0%	0%	-1%	-3%	-1%	-1%
1996	Wet	-2%	-1%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-2%	0%
1997	Wet	-3%	-1%	1%	1%	0%	1%	0%	1%	1%	0%	-1%	-3%	0%
1998	Wet	-5%	-3%	0%	1%	0%	0%	0%	0%	0%	-1%	-4%	-2%	-1%
1999	Wet	-2%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-3%	-3%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-1%	-1%
2001	Dry	-3%	-2%	-1%	1%	1%	0%	1%	1%	-1%	-1%	-2%	-2%	-1%
2002	Dry	-2%	-1%	1%	-1%	1%	1%	1%	1%	0%	-1%	-2%	-2%	-1%
2003	Above Normal	-3%	-2%	0%	1%	0%	-1%	2%	1%	0%	-1%	-1%	-1%	0%
Average		-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
Wet		-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Above Normal		-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%
Below Normal		-3%	-2%	0%	1%	1%	1%	0%	1%	1%	0%	-1%	-2%	0%
Dry		-3%	-1%	0%	1%	1%	1%	1%	1%	0%	0%	-2%	-2%	-1%
Critical		-4%	-2%	0%	1%	1%	0%	0%	0%	1%	-2%	-4%	-4%	-1%

Sacramento River Water Temperatures at Bend Bridge (°F)
Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	54	49	47	45	47	51	54	56	54	55	56	57	52
1924	Critical	53	52	48	45	48	51	54	58	56	59	61	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	57	52	47	44	47	52	55	56	56	56	58	60	53
1927	Wet	56	52	45	45	46	50	52	54	54	55	56	57	52
1928	Above Normal	54	50	46	45	47	49	55	54	54	55	57	59	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	59	52
1930	Dry	56	52	47	44	48	51	53	55	55	56	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	64	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	59	63	54
1933	Critical	59	54	47	44	45	50	53	56	58	59	59	62	54
1934	Critical	60	53	47	46	48	53	54	56	57	59	65	65	55
1935	Below Normal	59	51	46	45	46	49	54	57	57	56	59	60	53
1936	Below Normal	57	51	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	53	48	44	46	50	54	57	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	57	52
1939	Dry	55	52	47	45	46	50	52	53	54	55	57	58	52
1940	Above Normal	55	53	48	45	47	49	55	57	55	55	57	58	53
1941	Wet	55	51	48	46	47	50	52	54	57	57	57	57	52
1942	Wet	55	52	48	46	47	50	54	54	57	56	55	56	52
1943	Wet	55	52	47	46	47	49	54	56	55	55	56	58	52
1944	Dry	55	53	49	46	47	50	51	55	54	55	57	58	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	51	48	45	44	49	51	53	53	54	54	56	51
1947	Dry	53	51	47	45	47	50	53	53	55	55	57	59	52
1948	Below Normal	56	51	47	45	46	49	52	58	56	56	57	56	52
1949	Dry	54	51	47	45	45	48	54	55	54	54	56	57	52
1950	Below Normal	53	52	48	44	45	48	53	55	55	57	56	57	52
1951	Above Normal	53	50	46	44	44	48	51	54	54	54	56	57	51
1952	Wet	51	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	57	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	53	54	55	57	58	51
1955	Dry	54	51	45	44	46	49	50	56	53	55	58	58	52
1956	Wet	54	49	47	44	44	49	53	52	55	57	55	54	51
1957	Above Normal	52	51	48	44	46	48	50	56	57	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	56	51	48	46	46	48	52	53	54	56	58	60	52
1960	Dry	56	53	49	45	46	49	51	55	54	56	57	59	52
1961	Dry	54	50	45	44	46	47	52	53	54	54	56	58	51
1962	Below Normal	54	51	45	44	46	47	53	53	54	55	56	57	51
1963	Wet	54	51	48	45	47	48	49	57	56	55	58	57	52
1964	Dry	53	50	46	44	46	48	50	53	54	56	57	57	51
1965	Wet	54	49	47	44	46	48	50	53	54	55	57	57	51
1966	Below Normal	53	50	45	44	45	47	52	54	53	54	56	57	51
1967	Wet	54	51	46	45	46	46	48	53	56	57	55	55	51
1968	Below Normal	53	52	46	44	46	50	51	54	53	55	58	58	52
1969	Wet	54	50	44	44	44	48	49	53	55	56	56	55	51
1970	Wet	53	51	48	46	46	49	49	53	54	55	57	58	52
1971	Wet	54	50	45	44	45	46	51	53	56	57	57	55	51
1972	Below Normal	53	50	45	44	45	48	50	54	54	55	57	57	51
1973	Above Normal	52	49	45	44	45	47	53	56	54	55	57	57	51
1974	Wet	51	50	46	44	44	45	52	55	57	57	55	55	51
1975	Wet	54	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	53	50	47	44	46	50	51	55	53	56	58	59	52
1977	Critical	54	52	49	45	47	49	52	54	56	60	65	63	54
1978	Above Normal	58	50	45	45	45	48	51	53	54	56	56	55	51
1979	Below Normal	54	51	48	46	46	50	53	56	54	56	57	58	52
1980	Above Normal	54	50	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	58	59	52
1982	Wet	53	50	46	43	44	47	48	58	56	56	56	55	51
1983	Wet	53	50	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	59	52
1985	Dry	53	49	46	44	46	49	54	54	55	56	57	58	52
1986	Wet	55	50	46	46	48	50	53	54	56	57	57	58	52
1987	Dry	56	52	48	44	46	49	52	53	54	55	59	59	52
1988	Critical	57	53	45	44	47	49	52	54	54	59	58	59	53
1989	Dry	58	50	45	44	44	49	55	52	55	55	56	58	52
1990	Critical	54	52	48	45	45	51	52	55	56	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	57	52	47	44	47	50	53	54	55	58	61	63	54
1993	Above Normal	60	52	44	43	45	50	52	53	55	55	57	56	52
1994	Critical	54	51	47	46	46	50	52	55	55	56	58	60	52
1995	Wet	57	51	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	53	47	45	47	49	53	54	56	57	58	56	53
1997	Wet	55	51	48	46	47	50	50	53	55	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	57	57	57	51
1999	Wet	56	51	47	46	45	47	53	53	55	55	57	55	52
2000	Above Normal	54	51	47	48	49	51	56	57	56	56	59	60	54
2001	Dry	56	53	50	46	46	52	52	55	54	57	60	61	54
2002	Dry	57	53	46	46	47	49	53	55	56	57	60	60	53
2003	Above Normal	57	54	47	46	47	51	51	54	58	56	59	60	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		54	51	47	45	46	48	51	54	56	56	57	56	52
Above Normal		55	51	46	45	46	49	53	55	55	55	57	58	52
Below Normal		55	51	47	45	46	49	53	55	54	55	57	58	52
Dry		55	51	47	45	46	49	53	55	55	56	58	59	52
Critical		56	52	47	45	47	50	52	55	56	58	60	61	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP4 (2005)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	50	54	59	56	55	55	57	52
1923	Below Normal	53	49	47	45	47	52	55	57	55	55	55	56	52
1924	Critical	52	51	48	45	48	50	53	58	57	57	58	61	53
1925	Dry	55	49	43	44	47	49	55	56	56	56	56	57	52
1926	Dry	55	52	47	45	47	52	55	56	56	55	57	59	53
1927	Wet	55	52	46	45	46	50	52	54	54	55	55	56	52
1928	Above Normal	53	50	46	45	47	49	55	54	54	54	57	58	52
1929	Critical	54	50	46	44	46	50	51	54	55	55	56	58	52
1930	Dry	55	52	47	45	48	51	53	55	55	56	56	57	52
1931	Critical	54	51	46	45	48	51	53	56	57	59	57	59	53
1932	Dry	57	52	46	44	46	52	53	58	59	59	57	58	53
1933	Critical	57	54	47	44	45	50	54	56	58	59	57	58	53
1934	Critical	58	53	47	46	48	53	55	57	58	59	59	62	55
1935	Below Normal	59	52	47	45	46	49	54	57	56	55	57	59	53
1936	Below Normal	56	51	47	45	46	50	54	55	55	55	55	57	52
1937	Below Normal	53	52	48	44	46	50	54	57	56	56	56	56	52
1938	Wet	54	51	47	45	46	48	51	57	57	55	56	56	52
1939	Dry	53	51	48	46	46	50	52	54	54	54	55	58	52
1940	Above Normal	54	52	48	46	47	49	55	57	55	54	56	57	53
1941	Wet	54	51	48	47	47	50	52	54	57	56	56	56	52
1942	Wet	54	52	48	46	47	50	54	54	57	56	55	55	52
1943	Wet	54	51	48	46	47	49	54	56	55	55	56	57	52
1944	Dry	54	52	49	46	47	50	51	56	54	54	56	57	52
1945	Below Normal	54	50	46	45	47	48	53	55	55	54	55	56	52
1946	Below Normal	53	50	47	45	45	49	51	53	53	54	54	55	51
1947	Dry	51	49	47	45	47	50	54	53	54	54	55	58	51
1948	Below Normal	55	50	48	46	46	49	52	58	58	56	57	56	53
1949	Dry	53	50	47	45	45	48	54	55	54	55	56	56	51
1950	Below Normal	52	50	47	44	45	48	53	55	55	57	56	56	52
1951	Above Normal	51	49	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	50	48	46	43	45	47	49	55	56	58	55	54	50
1953	Wet	53	51	46	46	47	49	52	53	55	57	56	55	52
1954	Above Normal	52	50	46	46	46	48	51	52	54	55	56	57	51
1955	Dry	52	50	45	44	46	49	50	56	54	55	57	57	51
1956	Wet	52	48	47	44	44	49	53	53	55	56	56	53	51
1957	Above Normal	50	49	48	45	46	48	50	56	56	55	56	58	52
1958	Wet	52	50	47	45	46	47	52	56	56	56	56	55	51
1959	Below Normal	54	50	48	47	46	49	53	54	54	55	57	58	52
1960	Dry	54	52	49	45	46	49	51	55	55	56	56	58	52
1961	Dry	52	49	45	45	46	48	52	53	54	55	55	56	51
1962	Below Normal	52	50	45	45	46	47	53	53	55	55	56	57	51
1963	Wet	52	50	48	46	47	48	49	57	56	55	57	57	52
1964	Dry	53	50	46	45	46	48	50	53	54	55	56	56	51
1965	Wet	53	48	47	44	46	48	51	53	55	56	57	55	51
1966	Below Normal	52	49	45	44	45	47	52	54	53	54	56	56	51
1967	Wet	52	50	47	45	46	47	48	53	55	57	55	54	51
1968	Below Normal	52	51	46	44	46	50	51	54	53	55	57	57	51
1969	Wet	53	49	44	44	44	48	49	53	55	56	57	54	50
1970	Wet	51	50	48	47	46	50	49	53	54	55	57	57	51
1971	Wet	52	49	45	44	45	46	51	53	55	57	57	54	51
1972	Below Normal	52	50	45	44	45	48	50	54	54	55	56	56	51
1973	Above Normal	51	48	45	44	45	47	53	56	54	55	57	57	51
1974	Wet	51	49	46	45	45	46	52	55	56	57	55	54	51
1975	Wet	51	49	46	46	45	47	51	54	56	57	55	55	51
1976	Critical	51	50	47	45	47	50	51	55	53	56	58	58	52
1977	Critical	53	51	49	45	48	49	52	54	57	58	61	62	53
1978	Above Normal	58	50	45	45	46	48	51	53	54	56	57	55	51
1979	Below Normal	52	49	47	46	46	50	53	56	54	56	57	57	52
1980	Above Normal	53	49	47	46	46	50	52	55	53	56	56	56	52
1981	Dry	52	49	47	46	47	49	53	54	54	56	57	58	52
1982	Wet	52	50	47	43	45	47	48	58	56	56	56	54	51
1983	Wet	52	49	46	46	45	47	51	55	55	55	55	55	51
1984	Wet	54	51	47	45	46	49	50	54	55	56	58	58	52
1985	Dry	52	49	46	45	46	49	54	54	54	56	56	56	52
1986	Wet	54	49	47	47	48	50	53	55	56	56	56	57	52
1987	Dry	55	52	48	45	47	49	52	54	54	55	57	57	52
1988	Critical	55	52	45	44	47	50	52	55	55	57	58	57	52
1989	Dry	56	50	46	44	45	49	55	53	55	56	56	58	52
1990	Critical	52	50	48	46	45	51	52	55	56	56	58	58	52
1991	Critical	55	51	47	46	49	48	53	54	56	59	58	59	53
1992	Critical	55	51	47	45	47	50	53	54	55	56	58	62	53
1993	Above Normal	60	52	45	43	45	50	52	55	55	56	57	54	52
1994	Critical	52	50	47	46	46	50	52	55	54	55	57	59	52
1995	Wet	55	50	45	45	47	47	52	54	56	57	56	57	52
1996	Wet	54	52	47	46	48	49	53	54	56	57	57	55	52
1997	Wet	53	50	49	46	47	51	50	53	55	56	57	56	52
1998	Wet	52	49	45	46	45	47	52	51	55	56	55	56	51
1999	Wet	54	51	47	46	45	47	53	53	55	55	57	55	52
2000	Above Normal	52	50	47	48	49	51	56	57	56	56	59	60	53
2001	Dry	55	52	50	47	46	53	52	55	54	56	58	60	53
2002	Dry	56	53	46	45	48	50	54	55	56	57	59	60	53
2003	Above Normal	55	53	47	46	47	51	52	55	58	56	59	59	53
Average		53	50	47	45	46	49	52	55	55	56	56	57	52
Wet		53	50	47	45	46	48	51	54	56	56	56	55	51
Above Normal		54	50	47	45	46	49	53	55	55	55	57	57	52
Below Normal		53	50	47	45	46	49	53	55	55	55	56	57	52
Dry		54	51	47	45	46	50	53	55	55	55	56	58	52
Critical		54	51	47	45	47	50	53	55	56	57	58	59	53

Change in Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP4 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	1	0	0	0	0	0	0	0
1923	Below Normal	-1	-1	0	0	0	1	1	1	1	0	0	-1	0
1924	Critical	-2	-2	0	0	0	-1	-1	2	2	-1	-3	-3	-1
1925	Dry	0	0	0	0	0	0	0	0	0	0	-2	-2	0
1926	Dry	-2	0	0	0	0	0	0	0	0	0	-1	-1	0
1927	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1928	Above Normal	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1929	Critical	-1	-1	0	1	0	0	0	0	0	-1	-1	-1	0
1930	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1931	Critical	-1	-1	0	0	0	0	0	0	1	0	-5	-5	-1
1932	Dry	-1	0	0	0	0	0	1	0	0	0	-2	-5	-1
1933	Critical	-3	0	0	0	0	0	0	0	0	0	-2	-4	-1
1934	Critical	-3	0	0	0	0	0	1	0	1	-1	-6	-3	-1
1935	Below Normal	0	0	1	0	0	0	0	0	-1	-1	-2	-1	0
1936	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1937	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1938	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-1	-1	0	1	0	0	0	0	0	-1	-1	-1	0
1940	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	0	0	1	0	0	0	0	0	0	-1	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1945	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1946	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	0	0	0	0	0	-1	-1	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	0	0	2	0	0	0	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	-1	0	0	0	0	0	0	0	-1	-1	0
1956	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1960	Dry	-1	0	0	0	0	0	0	0	1	0	0	-1	0
1961	Dry	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1963	Wet	-2	-2	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1965	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1971	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1977	Critical	-1	-1	0	0	1	0	0	0	1	-2	-4	-1	-1
1978	Above Normal	0	0	0	0	1	1	0	0	0	0	0	-1	0
1979	Below Normal	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	-1	-1	1	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	1	0	0	0	0	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1986	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1988	Critical	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
1989	Dry	-2	0	0	0	0	0	0	1	0	0	0	-1	0
1990	Critical	-2	-2	0	0	0	0	0	0	0	-1	0	-1	0
1991	Critical	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	-2	-1	0	0	0	0	0	0	0	-2	-3	-1	-1
1993	Above Normal	0	0	0	0	0	0	0	3	0	0	0	-2	0
1994	Critical	-2	-1	0	1	0	0	0	0	0	-1	-1	-1	0
1995	Wet	-3	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1997	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-2	-1	0	0	0	0	0	0	0	0	-2	-1	-1
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
2002	Dry	-1	-1	0	-1	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	-1	0	0	0	0	1	0	0	0	0	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-2	-1	0	0	0	0	0	0	0	-1	-2	-2	-1

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Bend Bridge (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	-1%	0%	0%	0%	3%	1%	0%	2%	0%	0%	-1%	0%
1924	Critical	-3%	-3%	-1%	0%	0%	-1%	-1%	0%	3%	-2%	-6%	-5%	-2%
1925	Dry	0%	1%	1%	0%	0%	1%	0%	0%	0%	0%	-3%	-3%	0%
1926	Dry	-3%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1927	Wet	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%
1928	Above Normal	-2%	-2%	0%	1%	0%	1%	0%	0%	-1%	-1%	-1%	-1%	-1%
1929	Critical	-2%	-1%	0%	2%	1%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1930	Dry	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	0%
1931	Critical	-2%	-2%	0%	0%	1%	0%	0%	0%	1%	0%	-8%	-8%	-2%
1932	Dry	-2%	1%	1%	0%	0%	1%	0%	1%	0%	0%	-4%	-8%	-1%
1933	Critical	-4%	-1%	1%	1%	1%	0%	1%	1%	0%	1%	-4%	-7%	-1%
1934	Critical	-4%	-1%	0%	1%	1%	1%	1%	1%	1%	-1%	-9%	-4%	-1%
1935	Below Normal	0%	1%	1%	0%	1%	1%	0%	0%	-1%	-1%	-3%	-2%	0%
1936	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	-2%	0%
1937	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1938	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	-2%	-2%	-2%	-1%
1939	Dry	-2%	-1%	1%	1%	0%	1%	0%	0%	-1%	-1%	-2%	-1%	0%
1940	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%	-1%
1942	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1943	Wet	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1944	Dry	-2%	-2%	0%	1%	1%	0%	1%	1%	0%	-1%	-2%	-1%	0%
1945	Below Normal	-1%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-4%	-3%	0%	1%	0%	0%	0%	0%	-1%	-1%	-2%	-2%	-1%
1948	Below Normal	-1%	-1%	0%	1%	1%	0%	0%	0%	3%	0%	-1%	0%	0%
1949	Dry	-2%	-2%	0%	1%	0%	-1%	0%	0%	0%	1%	0%	-2%	-1%
1950	Below Normal	-3%	-3%	-1%	1%	0%	0%	0%	1%	1%	0%	0%	-1%	0%
1951	Above Normal	-4%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-3%	-3%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-3%	-1%
1953	Wet	-3%	-2%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-2%	0%
1954	Above Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%
1955	Dry	-2%	-1%	-1%	1%	1%	0%	0%	-1%	1%	-1%	-1%	-2%	-1%
1956	Wet	-3%	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-4%	-3%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-3%	-2%	0%	1%	1%	1%	1%	1%	0%	-1%	-3%	-2%	-1%
1960	Dry	-2%	0%	0%	1%	0%	0%	1%	1%	1%	0%	-1%	-2%	0%
1961	Dry	-3%	-2%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-3%	-1%
1962	Below Normal	-4%	-2%	1%	1%	1%	0%	0%	0%	1%	0%	0%	-1%	0%
1963	Wet	-3%	-3%	0%	1%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%
1964	Dry	-1%	-1%	0%	1%	1%	0%	1%	1%	0%	0%	-1%	-2%	0%
1965	Wet	-3%	-1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Normal	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	-2%	-1%
1967	Wet	-4%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-1%	-1%
1968	Below Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1969	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-3%	0%
1970	Wet	-4%	-2%	0%	0%	0%	0%	1%	1%	0%	0%	-1%	-1%	-1%
1971	Wet	-4%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%
1972	Below Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1973	Above Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-1%	0%
1974	Wet	-2%	-2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1975	Wet	-4%	-3%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1976	Critical	-2%	-1%	0%	2%	1%	0%	0%	1%	0%	0%	-1%	-1%	0%
1977	Critical	-2%	-2%	0%	1%	1%	0%	1%	1%	1%	-3%	-6%	-2%	-1%
1978	Above Normal	1%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1979	Below Normal	-4%	-4%	-1%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%
1980	Above Normal	-1%	-2%	2%	1%	0%	0%	0%	0%	0%	1%	0%	-2%	0%
1981	Dry	-2%	-2%	0%	1%	0%	1%	0%	0%	0%	-1%	-2%	-1%	0%
1982	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1983	Wet	-3%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1984	Wet	-3%	-1%	1%	0%	0%	1%	0%	0%	0%	0%	-1%	-2%	0%
1985	Dry	-2%	-1%	1%	2%	1%	0%	1%	1%	-1%	0%	-2%	-2%	0%
1986	Wet	-3%	-2%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1987	Dry	-1%	-2%	0%	1%	0%	0%	1%	1%	0%	-1%	-3%	-2%	-1%
1988	Critical	-3%	-1%	1%	1%	1%	1%	1%	1%	1%	-2%	0%	-2%	0%
1989	Dry	-3%	-1%	1%	1%	1%	0%	0%	1%	0%	1%	0%	-1%	0%
1990	Critical	-3%	-3%	0%	1%	1%	0%	0%	0%	0%	-2%	-1%	-2%	-1%
1991	Critical	-3%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1992	Critical	-4%	-2%	0%	0%	0%	0%	0%	0%	0%	-4%	-5%	-1%	-1%
1993	Above Normal	-1%	1%	1%	0%	0%	0%	0%	5%	0%	0%	0%	-3%	0%
1994	Critical	-4%	-2%	0%	1%	0%	1%	0%	0%	-1%	-1%	-2%	-2%	-1%
1995	Wet	-4%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	-2%	0%
1998	Wet	-4%	-2%	0%	1%	0%	0%	0%	0%	0%	-1%	-3%	-2%	-1%
1999	Wet	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-3%	-3%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
2001	Dry	-3%	-2%	-1%	1%	0%	0%	1%	1%	-1%	-2%	-2%	-2%	-1%
2002	Dry	-2%	-1%	0%	-1%	0%	1%	1%	0%	0%	-1%	-2%	-1%	-1%
2003	Above Normal	-2%	-1%	0%	1%	0%	-1%	1%	1%	0%	-1%	-1%	-1%	0%
Average		-3%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Wet		-3%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Above Normal		-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-2%	-2%	0%	1%	1%	1%	0%	1%	0%	-1%	-2%	-2%	0%
Dry		-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
Critical		-3%	-2%	0%	1%	1%	0%	0%	0%	1%	-1%	-4%	-3%	-1%

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	45	50	54	59	57	57	56	58	53
1923	Below Normal	54	49	46	44	47	51	55	57	55	57	57	58	53
1924	Critical	54	52	48	44	48	51	55	59	57	60	62	65	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	60	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	55	50	45	45	47	49	56	55	55	56	58	60	53
1929	Critical	55	51	46	43	46	50	52	56	56	57	59	60	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	51	45	44	45	52	54	59	60	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	61	62	54
1934	Critical	60	53	47	46	48	53	55	58	58	61	65	66	56
1935	Below Normal	59	51	46	44	46	49	55	58	58	58	60	61	54
1936	Below Normal	57	51	47	45	46	50	54	55	55	56	57	59	53
1937	Below Normal	55	52	47	43	46	50	55	58	57	57	58	59	53
1938	Wet	56	51	47	44	46	48	51	57	58	57	58	57	53
1939	Dry	55	51	47	45	46	50	53	54	56	56	58	59	53
1940	Above Normal	56	53	48	45	47	49	56	58	57	56	58	59	53
1941	Wet	55	51	48	46	47	50	52	55	58	58	58	57	53
1942	Wet	55	52	48	46	47	50	54	55	58	58	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	57	58	59	53
1944	Dry	55	53	48	46	47	50	52	57	56	56	58	59	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	51	47	45	44	49	52	55	54	55	56	57	52
1947	Dry	54	51	46	44	47	50	54	54	56	56	58	60	52
1948	Below Normal	56	50	47	45	46	49	52	58	57	57	58	57	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	59	52
1950	Below Normal	54	51	47	43	45	48	54	56	56	59	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	56	57	58	52
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	57	51
1953	Wet	55	51	45	46	47	49	52	53	56	58	57	57	52
1954	Above Normal	54	51	46	45	46	48	52	53	55	56	58	59	52
1955	Dry	54	50	45	43	46	50	50	57	55	57	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	53	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	57	58	57	52
1959	Below Normal	56	51	48	46	46	49	53	54	55	58	59	60	53
1960	Dry	56	52	49	45	46	49	51	56	56	58	58	60	53
1961	Dry	54	50	45	44	46	48	52	54	55	56	57	59	52
1962	Below Normal	55	51	45	44	46	47	54	54	56	56	57	58	52
1963	Wet	54	51	48	45	47	48	49	57	58	57	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	56	57	58	58	52
1965	Wet	55	49	47	44	46	49	51	54	56	57	59	58	52
1966	Below Normal	54	50	45	44	45	47	53	55	55	55	58	58	52
1967	Wet	55	51	46	45	46	47	48	54	57	58	57	56	52
1968	Below Normal	54	52	45	44	46	50	52	55	55	57	59	60	52
1969	Wet	54	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	49	54	56	56	59	59	52
1971	Wet	54	50	45	44	45	46	52	54	57	58	59	56	52
1972	Below Normal	54	50	45	44	45	48	51	55	55	56	59	58	52
1973	Above Normal	53	49	44	44	45	47	54	57	56	56	59	58	52
1974	Wet	52	50	46	44	44	46	52	56	58	58	57	56	52
1975	Wet	54	50	46	45	45	47	51	55	57	58	57	57	52
1976	Critical	53	50	46	44	46	50	51	56	54	58	60	60	52
1977	Critical	54	52	48	44	47	49	53	55	57	61	66	63	54
1978	Above Normal	58	49	44	45	45	48	52	54	56	58	58	57	52
1979	Below Normal	55	51	47	46	46	50	53	58	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	59	52
1981	Dry	54	50	47	46	47	49	53	55	55	57	60	60	53
1982	Wet	54	50	46	43	44	47	49	59	58	58	57	56	52
1983	Wet	53	49	46	45	45	47	51	55	56	57	57	57	52
1984	Wet	56	51	47	45	46	49	51	55	56	57	60	60	53
1985	Dry	53	49	45	44	46	50	54	55	56	57	58	59	52
1986	Wet	56	49	46	46	48	50	54	55	57	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	60	60	53
1988	Critical	57	52	45	44	47	50	53	55	56	60	60	60	53
1989	Dry	58	50	45	43	44	49	56	54	56	57	58	60	52
1990	Critical	54	52	48	45	44	51	53	56	57	59	60	61	53
1991	Critical	57	51	46	45	48	48	53	55	58	61	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	62	64	54
1993	Above Normal	60	51	44	43	45	51	52	54	56	57	59	57	52
1994	Critical	54	51	47	46	46	50	52	56	56	58	59	61	53
1995	Wet	58	50	45	45	47	47	53	54	57	59	59	58	53
1996	Wet	55	53	47	45	47	49	53	55	58	59	60	57	53
1997	Wet	55	50	48	46	47	51	51	54	56	57	59	58	53
1998	Wet	54	50	45	45	45	47	52	51	55	58	58	58	52
1999	Wet	56	51	47	46	45	47	53	54	56	56	58	56	52
2000	Above Normal	54	51	47	48	49	52	56	58	58	58	60	62	54
2001	Dry	57	53	50	46	46	53	53	57	56	59	61	62	54
2002	Dry	57	53	46	46	47	50	54	56	58	59	61	61	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	61	54
Average		55	51	46	45	46	49	53	56	56	58	59	59	53
Wet		55	51	46	45	46	48	52	55	56	58	58	57	52
Above Normal		55	51	46	45	46	49	53	56	56	57	58	59	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	59	52
Dry		55	51	46	44	46	50	53	56	56	57	59	60	53
Critical		56	52	46	44	47	50	53	56	57	59	61	62	54

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP4 (2005)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	50	55	59	57	57	57	58	53
1923	Below Normal	53	48	46	44	47	53	55	58	56	57	57	57	53
1924	Critical	52	51	47	44	48	51	54	59	59	59	59	62	54
1925	Dry	55	49	42	43	47	49	55	57	57	58	58	58	52
1926	Dry	55	51	47	44	47	53	55	57	58	57	59	60	54
1927	Wet	55	52	45	45	46	50	52	55	56	56	56	57	52
1928	Above Normal	54	50	46	45	47	50	56	55	55	56	58	59	52
1929	Critical	54	50	46	43	46	50	52	56	56	57	58	59	52
1930	Dry	56	51	47	44	48	51	54	56	56	57	57	58	53
1931	Critical	54	51	46	45	48	52	54	57	59	60	59	60	54
1932	Dry	57	51	45	44	46	52	54	59	60	60	59	59	54
1933	Critical	57	53	46	44	45	51	54	57	59	61	59	59	54
1934	Critical	58	53	47	46	48	54	56	58	59	60	60	63	55
1935	Below Normal	59	52	46	45	47	50	55	58	58	57	58	60	54
1936	Below Normal	56	51	47	45	46	51	54	56	56	56	57	58	53
1937	Below Normal	54	51	47	43	46	50	55	58	57	57	57	57	53
1938	Wet	55	50	47	45	46	48	52	57	58	57	57	56	52
1939	Dry	54	51	47	46	46	50	53	55	55	55	56	59	52
1940	Above Normal	55	52	48	45	48	50	56	58	57	56	57	58	53
1941	Wet	54	51	48	47	47	50	52	55	58	57	57	57	53
1942	Wet	54	52	48	46	47	50	55	55	58	57	56	56	53
1943	Wet	54	50	47	46	47	49	55	57	56	56	57	58	53
1944	Dry	54	52	48	46	47	51	52	57	55	56	57	59	53
1945	Below Normal	55	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	54	50	47	45	45	49	52	55	54	55	56	56	51
1947	Dry	52	49	46	44	47	50	54	55	55	55	57	59	52
1948	Below Normal	55	50	47	46	46	49	52	58	59	57	58	57	53
1949	Dry	53	50	46	45	45	48	55	56	56	56	57	58	52
1950	Below Normal	52	50	47	44	45	48	54	56	57	59	58	58	52
1951	Above Normal	51	49	46	44	44	48	52	55	56	56	57	58	51
1952	Wet	50	48	46	43	45	47	49	55	57	59	57	55	51
1953	Wet	54	50	46	46	47	49	53	54	56	58	57	56	52
1954	Above Normal	53	50	46	46	46	48	52	53	55	56	58	58	52
1955	Dry	53	50	45	44	46	50	50	57	55	56	59	59	52
1956	Wet	53	48	47	44	44	50	53	53	56	58	57	54	52
1957	Above Normal	51	49	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	52	50	47	45	46	47	52	56	57	57	58	56	52
1959	Below Normal	54	50	48	46	46	49	54	55	55	57	58	59	53
1960	Dry	55	52	49	45	46	49	52	56	56	58	58	59	53
1961	Dry	53	49	45	45	46	48	53	54	55	56	56	57	51
1962	Below Normal	53	50	45	45	46	47	54	54	56	57	57	58	52
1963	Wet	52	50	48	45	47	48	49	57	58	56	59	58	52
1964	Dry	53	50	46	44	47	48	51	54	56	57	57	57	52
1965	Wet	53	48	47	44	46	49	51	54	56	57	59	57	52
1966	Below Normal	53	49	45	44	45	47	53	55	55	55	57	57	51
1967	Wet	52	50	46	45	46	47	48	54	56	58	57	55	51
1968	Below Normal	52	51	45	44	46	50	52	55	55	56	58	58	52
1969	Wet	53	49	44	44	44	48	50	54	56	58	58	55	51
1970	Wet	51	50	48	47	46	50	50	55	56	56	58	58	52
1971	Wet	52	49	45	44	45	46	52	53	57	58	59	65	51
1972	Below Normal	52	49	45	44	45	49	51	55	55	56	58	57	51
1973	Above Normal	52	48	44	44	45	47	54	57	56	56	59	58	52
1974	Wet	51	49	46	44	45	46	52	56	58	58	57	55	51
1975	Wet	52	49	46	46	45	47	52	55	57	58	57	56	52
1976	Critical	52	49	46	45	47	50	52	56	55	57	59	59	52
1977	Critical	53	51	48	45	48	49	53	55	58	59	62	62	54
1978	Above Normal	58	50	45	45	46	48	51	54	55	58	58	56	52
1979	Below Normal	53	49	47	46	46	50	53	57	56	57	59	58	53
1980	Above Normal	54	49	47	46	46	50	53	56	54	57	58	57	52
1981	Dry	53	49	47	46	47	49	53	55	55	57	58	59	52
1982	Wet	53	50	47	43	45	47	49	59	58	58	57	55	52
1983	Wet	52	49	46	45	45	47	51	55	56	56	56	56	51
1984	Wet	54	51	47	45	46	49	51	55	56	57	59	59	52
1985	Dry	52	49	46	45	46	50	55	55	56	57	58	57	52
1986	Wet	54	48	46	47	48	50	54	55	57	58	57	58	53
1987	Dry	55	52	47	44	46	49	53	55	55	56	58	59	53
1988	Critical	56	52	45	44	47	50	53	56	56	59	60	59	53
1989	Dry	57	50	45	44	44	49	56	54	56	57	58	59	52
1990	Critical	53	50	48	45	45	51	53	56	57	58	60	60	53
1991	Critical	55	51	46	45	49	48	53	55	58	61	60	60	54
1992	Critical	56	51	46	44	48	51	54	56	56	57	59	63	53
1993	Above Normal	59	52	44	43	45	51	52	56	56	57	59	55	52
1994	Critical	52	50	47	46	46	51	53	56	56	57	58	60	53
1995	Wet	55	49	45	45	47	47	53	54	57	58	57	58	52
1996	Wet	54	52	47	45	48	50	53	55	58	58	59	56	53
1997	Wet	54	50	48	46	47	51	51	55	56	57	58	57	53
1998	Wet	52	49	45	46	45	47	52	52	55	58	57	57	51
1999	Wet	55	51	47	46	45	47	53	54	56	56	58	56	52
2000	Above Normal	53	50	47	48	49	52	56	58	58	58	60	61	54
2001	Dry	55	52	49	46	46	53	53	57	55	58	60	61	54
2002	Dry	56	53	46	45	48	50	55	56	58	59	61	61	54
2003	Above Normal	56	53	46	46	47	51	52	55	60	58	60	60	54
Average		54	50	46	45	46	49	53	56	57	57	58	58	52
Wet		53	50	46	45	46	48	52	55	57	57	58	56	52
Above Normal		54	50	46	45	46	49	53	56	56	57	58	58	52
Below Normal		54	50	46	45	46	49	53	56	56	57	57	58	52
Dry		54	51	46	45	46	50	54	56	56	57	58	59	53
Critical		54	51	46	45	47	51	53	56	57	59	59	60	53

Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP4 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	1	0	0	0	0	0	0	0
1923	Below Normal	0	-1	0	0	0	1	1	0	1	0	0	0	0
1924	Critical	-2	-1	0	0	0	0	-1	0	1	-1	-3	-3	-1
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	-2	0
1926	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1927	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1928	Above Normal	-1	-1	0	0	0	0	-1	0	0	-1	-1	-1	0
1929	Critical	-1	-1	0	1	0	0	0	0	0	-1	-1	-1	0
1930	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1931	Critical	-1	-1	0	0	0	0	0	0	1	0	-4	-4	-1
1932	Dry	-1	0	0	0	0	0	0	0	0	0	-2	-5	0
1933	Critical	-2	0	0	0	0	0	0	0	0	0	-2	-4	-1
1934	Critical	-2	0	0	0	0	0	0	1	-1	-5	-3	-1	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	-1	-2	-1	0
1936	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1937	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1938	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1940	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1943	Wet	-1	-1	0	0	0	0	-1	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1945	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1946	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	0	0	0	0	-1	-1	-1	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	0	2	0	0	0	0	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-2	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	-1	0	0	0	0	0	0	-1	-1	-1	0
1956	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1960	Dry	-1	0	0	0	0	0	0	1	0	0	0	-1	0
1961	Dry	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1963	Wet	-2	-2	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1965	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1971	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1977	Critical	-1	-1	0	0	1	0	0	0	1	-2	-4	-1	0
1978	Above Normal	0	0	0	0	1	1	0	0	0	0	0	-1	0
1979	Below Normal	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	-1	-1	1	0	0	0	-1	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	1	0	0	0	0	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1986	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1987	Dry	-1	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1988	Critical	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
1989	Dry	-2	0	0	0	0	0	0	1	0	0	0	-1	0
1990	Critical	-1	-2	0	0	0	0	0	0	0	-1	0	-1	0
1991	Critical	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	-2	-1	0	0	0	0	0	0	0	-2	-3	-1	-1
1993	Above Normal	0	0	0	0	0	0	0	2	0	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1995	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-2	-1	0	0	0	0	0	0	0	0	-2	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
2002	Dry	-1	-1	0	-1	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	-1	0	0	0	0	1	0	0	0	0	0	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-2	-1	0	0	0	0	0	0	0	-1	-2	-2	0

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
1923	Below Normal	-1%	-1%	0%	0%	0%	2%	1%	0%	2%	0%	0%	-1%	0%
1924	Critical	-3%	-3%	-1%	0%	0%	-1%	-1%	0%	3%	-2%	-5%	-4%	-2%
1925	Dry	0%	1%	1%	0%	0%	1%	0%	0%	0%	0%	-2%	-3%	0%
1926	Dry	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1927	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%
1928	Above Normal	-2%	-1%	0%	1%	0%	1%	0%	-1%	-1%	-1%	-1%	-1%	-1%
1929	Critical	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	-1%	-2%	-2%	0%
1930	Dry	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
1931	Critical	-2%	-2%	0%	0%	1%	0%	0%	0%	1%	0%	-7%	-7%	-1%
1932	Dry	-2%	1%	1%	0%	0%	1%	0%	0%	0%	0%	-3%	-7%	-1%
1933	Critical	-4%	-1%	0%	1%	1%	0%	1%	1%	0%	0%	-4%	-6%	-1%
1934	Critical	-4%	-1%	0%	1%	1%	1%	1%	1%	1%	-1%	-8%	-4%	-1%
1935	Below Normal	0%	1%	1%	0%	1%	0%	0%	0%	-1%	-1%	-3%	-1%	0%
1936	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	-2%	0%
1937	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1938	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1939	Dry	-2%	-1%	1%	1%	0%	1%	0%	0%	-1%	-1%	-3%	-1%	0%
1940	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1942	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1943	Wet	-2%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1944	Dry	-2%	-2%	0%	1%	1%	0%	1%	0%	0%	-1%	-2%	-1%	0%
1945	Below Normal	-1%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-2%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-3%	-3%	0%	1%	0%	0%	0%	0%	-2%	-1%	-2%	-1%	-1%
1948	Below Normal	-1%	-1%	0%	1%	1%	0%	0%	0%	3%	0%	0%	1%	0%
1949	Dry	-2%	-2%	0%	1%	-1%	-1%	0%	0%	0%	1%	0%	-1%	0%
1950	Below Normal	-3%	-2%	-1%	1%	0%	0%	0%	1%	1%	0%	0%	-1%	0%
1951	Above Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-3%	-3%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-3%	-1%
1953	Wet	-3%	-2%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-1%	0%
1954	Above Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%
1955	Dry	-2%	-1%	-1%	1%	1%	0%	0%	-1%	1%	-1%	-1%	-1%	-1%
1956	Wet	-2%	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-4%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-3%	-2%	0%	1%	1%	1%	1%	1%	0%	-1%	-3%	-2%	-1%
1960	Dry	-2%	0%	0%	1%	0%	0%	1%	1%	1%	0%	-1%	-1%	0%
1961	Dry	-3%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-2%	-2%	0%
1962	Below Normal	-3%	-2%	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1963	Wet	-3%	-3%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	1%	1%	0%	1%	0%	0%	0%	-1%	-2%	0%
1965	Wet	-2%	-1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Normal	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	-2%	0%
1967	Wet	-4%	-2%	0%	1%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%
1968	Below Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1969	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1970	Wet	-4%	-2%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%
1971	Wet	-4%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%
1972	Below Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1973	Above Normal	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1974	Wet	-1%	-2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1975	Wet	-4%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1976	Critical	-2%	-1%	0%	1%	1%	0%	0%	1%	0%	0%	-1%	-1%	0%
1977	Critical	-2%	-2%	0%	1%	1%	0%	1%	1%	1%	-3%	-5%	-1%	-1%
1978	Above Normal	1%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1979	Below Normal	-4%	-3%	-1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	-1%	-2%	2%	1%	0%	0%	0%	0%	0%	1%	0%	-2%	0%
1981	Dry	-2%	-2%	0%	0%	0%	1%	0%	0%	0%	-1%	-2%	0%	0%
1982	Wet	-2%	-1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	-2%	0%
1983	Wet	-3%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1984	Wet	-3%	-1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1985	Dry	-2%	-1%	0%	-2%	1%	0%	1%	1%	-1%	0%	-1%	-2%	0%
1986	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1987	Dry	-1%	-1%	0%	1%	0%	0%	1%	1%	0%	-1%	-3%	-2%	-1%
1988	Critical	-3%	-1%	1%	1%	1%	1%	1%	1%	1%	-2%	0%	-2%	0%
1989	Dry	-3%	-1%	1%	1%	1%	0%	0%	1%	0%	1%	0%	-1%	0%
1990	Critical	-2%	-3%	0%	0%	1%	0%	0%	0%	0%	-2%	-1%	-2%	-1%
1991	Critical	-3%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	0%
1992	Critical	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	-3%	-4%	-1%	-1%
1993	Above Normal	-1%	0%	1%	0%	0%	0%	0%	5%	0%	0%	0%	-3%	0%
1994	Critical	-4%	-2%	0%	1%	0%	1%	0%	0%	0%	-1%	-2%	-2%	-1%
1995	Wet	-4%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	1%	1%	1%	-1%	-2%	0%
1998	Wet	-4%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-3%	-2%	-1%
1999	Wet	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-3%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
2001	Dry	-2%	-2%	-1%	1%	0%	0%	1%	1%	-1%	-2%	-2%	-1%	-1%
2002	Dry	-2%	-1%	0%	-1%	0%	1%	0%	0%	0%	-1%	-1%	-1%	0%
2003	Above Normal	-2%	-1%	0%	1%	0%	-1%	1%	1%	0%	0%	-1%	-1%	0%
Average		-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Wet		-3%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Above Normal		-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-2%	-2%	0%	1%	0%	0%	0%	1%	0%	-1%	-1%	-1%	0%
Dry		-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
Critical		-3%	-2%	0%	1%	1%	0%	0%	0%	1%	-1%	-3%	-3%	-1%

Sacramento River Water Temperatures below Shasta Dam (°F)
Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	49	49
1923	Below Normal	50	51	51	49	47	47	51	52	49	48	48	50	49
1924	Critical	53	53	52	48	47	49	52	54	51	53	57	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	51	55	48
1926	Dry	57	54	52	47	45	46	46	47	48	49	52	55	50
1927	Wet	56	54	49	46	45	45	46	47	48	48	49	51	49
1928	Above Normal	52	52	50	47	46	46	47	48	48	50	52	53	49
1929	Critical	54	54	52	47	45	45	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	50	53	49
1931	Critical	54	54	52	48	46	46	47	49	51	53	58	64	52
1932	Dry	60	54	48	44	44	45	47	49	52	53	53	60	51
1933	Critical	60	56	52	46	44	45	47	48	51	53	54	60	51
1934	Critical	60	56	52	46	45	46	47	49	52	55	63	65	53
1935	Below Normal	60	52	49	45	44	45	46	47	49	49	53	56	50
1936	Below Normal	58	54	52	47	45	45	46	47	48	48	49	52	49
1937	Below Normal	54	54	53	48	45	46	46	47	48	48	50	53	49
1938	Wet	54	53	49	46	45	46	46	48	48	50	51	53	49
1939	Dry	55	54	51	48	46	46	47	48	49	49	52	54	50
1940	Above Normal	56	55	52	47	46	47	47	48	48	49	51	53	50
1941	Wet	54	53	50	47	46	46	47	48	48	50	52	53	50
1942	Wet	55	54	50	46	46	46	46	47	48	48	50	52	49
1943	Wet	54	54	51	47	46	46	47	48	48	49	50	52	49
1944	Dry	53	54	53	49	47	47	47	48	48	49	51	52	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	48	49	50	48
1946	Below Normal	52	52	49	45	44	44	45	46	47	48	48	50	48
1947	Dry	52	53	51	47	46	46	46	47	48	49	51	54	49
1948	Below Normal	56	53	52	47	45	46	46	47	48	48	49	51	49
1949	Dry	52	53	51	48	46	45	46	46	47	48	48	50	48
1950	Below Normal	52	53	52	47	44	44	45	45	47	48	48	49	48
1951	Above Normal	51	51	48	45	44	44	45	45	46	47	48	48	47
1952	Wet	49	51	48	44	44	44	45	46	47	48	49	52	47
1953	Wet	54	54	50	47	45	45	46	46	47	48	49	51	48
1954	Above Normal	53	53	50	46	45	45	46	47	48	48	50	51	48
1955	Dry	53	53	49	46	45	45	46	46	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	43	44	46	47	48	48	47
1957	Above Normal	52	52	51	48	46	46	47	47	48	48	50	51	49
1958	Wet	53	52	49	46	46	45	46	47	48	48	49	52	48
1959	Below Normal	55	54	52	47	46	46	46	47	48	49	53	56	50
1960	Dry	57	55	53	48	45	45	45	46	47	48	49	51	49
1961	Dry	53	53	48	46	45	45	46	46	47	48	49	52	48
1962	Below Normal	54	53	49	46	45	44	45	45	46	47	48	49	48
1963	Wet	52	53	50	47	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	52	52	49	44	43	43	44	45	46	47	48	48	47
1966	Below Normal	49	51	50	45	44	45	45	46	47	48	49	51	48
1967	Wet	53	53	49	46	44	45	46	47	48	48	49	50	48
1968	Below Normal	52	54	51	47	46	46	47	47	48	48	50	52	49
1969	Wet	53	53	49	45	43	43	44	45	46	48	48	50	47
1970	Wet	53	53	50	47	44	44	45	45	46	48	49	51	48
1971	Wet	53	52	48	44	44	44	45	46	47	48	48	51	47
1972	Below Normal	53	53	50	46	44	45	46	47	48	48	49	51	48
1973	Above Normal	52	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	48	51	47	45	43	44	44	45	46	48	48	49	47
1975	Wet	53	53	50	47	45	46	46	47	48	48	49	51	49
1976	Critical	53	52	50	47	46	46	46	47	48	48	49	50	49
1977	Critical	52	53	52	48	47	47	48	49	51	57	66	64	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	49	47
1979	Below Normal	51	53	52	48	46	45	46	47	48	48	49	50	49
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	49	48
1981	Dry	50	51	50	47	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	46	46	47	48	48	50	47
1983	Wet	53	52	49	46	45	46	45	47	48	48	50	53	48
1984	Wet	55	54	49	45	44	45	46	46	48	48	49	50	48
1985	Dry	52	52	49	46	45	45	46	46	48	48	50	53	48
1986	Wet	55	53	50	47	47	47	48	48	48	49	51	53	49
1987	Dry	54	54	52	48	45	45	46	47	48	49	51	54	49
1988	Critical	56	55	50	45	45	45	46	47	49	51	49	54	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	49	50	48
1990	Critical	52	53	52	48	45	45	46	46	48	50	49	53	49
1991	Critical	55	54	52	48	46	47	47	48	49	51	49	52	50
1992	Critical	56	55	52	48	45	45	46	47	50	53	58	64	51
1993	Above Normal	61	54	48	43	42	42	43	45	46	48	48	50	48
1994	Critical	53	53	51	48	46	47	47	48	49	50	53	56	50
1995	Wet	58	54	50	45	43	46	46	47	48	49	51	53	49
1996	Wet	55	55	51	47	47	46	46	47	48	49	50	52	49
1997	Wet	54	53	50	46	44	44	45	46	47	48	49	51	48
1998	Wet	53	52	49	46	45	44	44	46	48	49	52	54	49
1999	Wet	56	54	49	46	45	45	45	46	47	48	48	49	48
2000	Above Normal	52	53	51	48	48	47	48	48	49	50	52	53	50
2001	Dry	55	55	53	49	46	46	47	47	48	49	51	53	50
2002	Dry	56	56	49	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	52	49
Average		54	53	50	46	45	45	46	47	48	49	50	53	49
Wet		54	53	49	46	45	45	46	47	48	48	49	51	48
Above Normal		54	53	50	46	45	45	46	47	47	48	49	50	48
Below Normal		54	53	51	47	45	45	46	47	48	48	50	51	49
Dry		54	53	50	47	45	45	46	47	48	49	50	53	49
Critical		55	54	52	47	46	46	47	48	50	52	55	58	51

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures below Shasta Dam (°F)
Alternative CP4 (2005)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	49	51	50	48	48	48	48	49
1923	Below Normal	49	50	51	48	47	50	53	53	51	48	48	48	50
1924	Critical	49	51	52	48	47	48	51	53	53	51	50	59	51
1925	Dry	58	51	47	43	44	45	45	46	48	48	48	51	48
1926	Dry	54	54	52	48	46	46	47	47	48	48	50	52	49
1927	Wet	54	54	50	47	45	45	46	47	48	48	48	49	48
1928	Above Normal	50	51	51	48	46	47	47	48	48	49	50	51	49
1929	Critical	52	53	52	48	46	46	47	47	48	48	49	51	49
1930	Dry	53	54	52	48	46	46	47	47	48	48	48	50	49
1931	Critical	52	53	52	48	47	47	48	49	52	54	49	56	51
1932	Dry	59	54	50	45	44	46	48	50	52	53	48	51	50
1933	Critical	56	55	53	48	45	46	48	49	51	53	48	52	50
1934	Critical	57	55	53	48	47	47	48	50	53	53	52	60	52
1935	Below Normal	60	54	51	46	45	45	46	47	48	48	51	54	50
1936	Below Normal	56	54	52	48	45	45	46	47	47	48	48	48	49
1937	Below Normal	51	53	53	49	46	46	46	47	48	48	48	50	49
1938	Wet	52	52	49	46	46	46	47	47	48	48	50	52	49
1939	Dry	53	53	52	49	47	47	48	48	48	48	50	52	50
1940	Above Normal	54	54	53	48	47	47	47	48	48	49	50	51	50
1941	Wet	52	52	51	47	46	46	47	48	48	48	50	52	49
1942	Wet	53	53	51	47	46	46	46	47	48	48	49	51	49
1943	Wet	52	53	52	48	46	47	47	48	48	48	50	50	49
1944	Dry	51	52	53	50	47	47	48	49	48	48	50	51	50
1945	Below Normal	52	53	51	47	46	46	46	47	48	48	48	49	48
1946	Below Normal	50	51	50	46	45	45	46	46	47	48	48	47	47
1947	Dry	48	50	51	48	46	46	47	47	48	48	50	52	49
1948	Below Normal	54	53	52	48	46	46	46	47	48	48	49	49	49
1949	Dry	50	51	51	49	46	45	46	46	47	48	48	48	48
1950	Below Normal	49	51	52	48	45	45	45	46	47	48	48	47	48
1951	Above Normal	48	49	48	46	44	44	45	45	46	47	48	47	46
1952	Wet	46	48	48	45	44	44	45	46	47	48	48	49	47
1953	Wet	51	52	51	47	45	46	46	47	47	48	48	49	48
1954	Above Normal	51	51	51	47	45	45	46	47	48	48	49	48	48
1955	Dry	50	51	50	47	46	46	46	47	48	48	48	48	48
1956	Wet	49	50	49	44	43	43	44	44	45	47	48	47	46
1957	Above Normal	47	50	51	49	46	46	47	47	48	48	48	49	48
1958	Wet	51	51	50	46	46	46	46	46	47	48	48	50	48
1959	Below Normal	52	53	52	48	46	46	47	48	48	48	50	52	49
1960	Dry	54	54	53	49	46	45	46	47	48	48	48	48	49
1961	Dry	50	52	49	47	45	45	46	46	47	48	48	48	48
1962	Below Normal	50	52	50	47	45	45	45	46	47	48	48	47	47
1963	Wet	48	50	51	48	46	47	47	48	48	48	49	50	48
1964	Dry	51	51	50	47	46	46	46	47	48	48	48	48	48
1965	Wet	49	50	49	45	44	44	44	45	46	48	48	47	47
1966	Below Normal	47	49	50	46	45	45	46	46	47	48	48	48	47
1967	Wet	49	51	49	46	45	45	46	47	47	48	48	49	48
1968	Below Normal	50	51	51	48	46	46	47	47	48	48	48	49	48
1969	Wet	51	51	50	46	43	43	44	45	46	47	48	47	47
1970	Wet	49	51	50	47	45	45	45	46	47	48	48	47	47
1971	Wet	48	50	48	45	44	45	45	46	47	48	48	48	47
1972	Below Normal	50	51	51	47	45	45	46	46	48	48	48	48	48
1973	Above Normal	49	50	49	45	44	44	45	45	46	48	48	47	47
1974	Wet	46	50	47	45	43	44	44	45	46	47	48	47	46
1975	Wet	49	51	51	48	46	46	46	47	48	48	48	49	48
1976	Critical	51	51	51	48	47	46	47	48	48	48	48	48	48
1977	Critical	50	51	53	49	48	48	49	50	52	53	55	61	52
1978	Above Normal	59	53	48	43	43	43	44	45	46	48	48	47	47
1979	Below Normal	47	50	51	49	46	46	46	47	48	48	48	48	48
1980	Above Normal	49	50	50	47	46	45	46	46	47	48	48	47	48
1981	Dry	48	50	50	48	46	46	47	47	48	48	49	50	48
1982	Wet	51	51	48	45	44	44	45	46	47	48	48	48	47
1983	Wet	50	51	49	46	45	46	46	46	47	48	48	50	48
1984	Wet	52	53	49	45	45	45	46	47	48	48	48	48	48
1985	Dry	50	51	49	47	46	46	46	47	48	48	48	49	48
1986	Wet	51	52	51	48	47	47	47	48	48	48	50	51	49
1987	Dry	52	52	52	49	46	46	47	48	48	48	49	51	49
1988	Critical	54	54	51	46	45	46	46	47	49	48	49	52	49
1989	Dry	55	53	51	47	45	45	46	46	47	48	48	47	48
1990	Critical	48	50	52	48	46	46	46	47	48	48	48	49	48
1991	Critical	52	53	52	49	47	47	48	48	49	51	48	49	49
1992	Critical	51	53	52	48	46	46	46	47	50	49	53	61	50
1993	Above Normal	61	55	50	44	43	43	44	45	46	48	48	47	48
1994	Critical	49	51	51	49	47	47	48	48	48	49	51	52	49
1995	Wet	54	53	51	46	44	46	46	47	48	48	49	52	49
1996	Wet	52	53	52	48	48	46	47	47	48	48	49	51	49
1997	Wet	52	52	50	46	45	45	46	46	47	48	48	48	48
1998	Wet	48	50	50	47	45	44	45	46	48	48	49	52	48
1999	Wet	54	53	50	47	46	45	45	46	47	48	48	48	48
2000	Above Normal	49	51	51	49	49	48	48	49	49	50	51	51	50
2001	Dry	53	53	53	50	47	47	47	48	48	49	50	52	50
2002	Dry	54	55	51	48	47	47	48	48	48	48	50	51	49
2003	Above Normal	53	54	52	46	46	46	47	47	48	48	50	50	49
Average		51	52	51	47	46	46	46	47	48	49	49	50	48
Wet		50	51	50	46	45	45	46	46	47	48	49	49	48
Above Normal		52	52	51	47	46	46	46	47	47	48	49	49	48
Below Normal		51	52	51	47	46	46	47	47	48	48	49	49	48
Dry		52	52	51	48	46	46	47	47	48	48	49	50	49
Critical		52	53	52	48	47	47	47	49	50	51	50	54	50

Change in Sacramento River Water Temperatures below Shasta Dam (°F)
Alternative CP4 (2005) - Existing Condition

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	2	0	0	0	0	0	0	0
1923	Below Normal	-1	-1	0	0	1	3	-2	1	2	0	0	-2	0
1924	Critical	-3	-2	0	0	0	-1	-1	0	2	-2	-7	-5	-2
1925	Dry	1	1	2	1	1	1	0	0	0	0	-3	-4	0
1926	Dry	-2	0	0	1	1	1	1	0	0	-1	-2	-2	0
1927	Wet	-2	0	1	1	0	1	0	0	0	0	-1	-2	0
1928	Above Normal	-2	-1	1	1	1	1	0	0	0	-1	-1	-1	0
1929	Critical	-2	-1	0	1	1	1	0	0	0	0	-2	-2	0
1930	Dry	-2	-1	1	1	1	1	0	0	0	0	-2	-2	0
1931	Critical	-2	-1	0	1	1	1	0	0	0	0	-9	-8	-1
1932	Dry	-1	1	2	1	1	1	1	0	0	0	-5	-9	-1
1933	Critical	-4	-1	1	1	1	1	1	1	0	0	-5	-8	-1
1934	Critical	-4	-1	1	2	1	1	1	1	1	-2	-11	-5	-1
1935	Below Normal	0	1	2	1	1	1	1	0	-1	-1	-3	-2	0
1936	Below Normal	-2	0	0	1	1	1	1	0	0	0	-1	-3	0
1937	Below Normal	-3	-2	0	0	1	1	0	1	0	0	-2	-3	-1
1938	Wet	-2	-1	0	1	0	0	0	0	0	-1	-2	-2	-1
1939	Dry	-2	-1	1	1	1	1	1	0	0	-1	-1	-2	0
1940	Above Normal	-2	-1	1	1	0	0	0	0	0	-1	-1	-2	0
1941	Wet	-2	-1	1	0	0	1	-2	0	0	-2	-1	-1	0
1942	Wet	-2	-1	1	1	0	0	0	0	0	0	-1	-1	0
1943	Wet	-2	-2	1	1	0	0	0	0	0	-1	-1	-1	0
1944	Dry	-2	-2	0	1	1	1	1	1	0	-1	-1	-1	0
1945	Below Normal	-1	-1	1	1	1	1	0	0	0	0	0	-1	0
1946	Below Normal	-2	-1	0	1	1	1	0	0	0	1	0	-2	0
1947	Dry	-4	-3	0	1	1	0	1	0	0	-1	-2	-2	-1
1948	Below Normal	-2	0	0	1	1	1	0	0	0	0	-1	-2	0
1949	Dry	-2	-1	0	1	1	0	0	0	1	0	0	-2	0
1950	Below Normal	-4	-2	0	1	1	1	1	1	1	0	0	-2	0
1951	Above Normal	-4	-2	0	1	1	0	0	0	0	1	0	-1	0
1952	Wet	-3	-3	0	1	0	0	0	0	-1	0	-1	-3	-1
1953	Wet	-3	-2	1	0	0	1	0	0	0	0	0	-2	0
1954	Above Normal	-2	-1	1	1	1	0	0	0	0	0	-1	-3	0
1955	Dry	-2	-1	1	1	1	1	1	1	1	0	-1	-2	0
1956	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-4	-2	0	1	1	0	0	0	0	0	-1	-2	-1
1958	Wet	-2	-1	1	1	0	0	0	0	0	0	-1	-2	0
1959	Below Normal	-3	-2	0	1	1	1	1	1	0	-1	-3	-3	-1
1960	Dry	-3	-1	0	1	1	0	1	1	1	0	-1	-3	0
1961	Dry	-3	-1	1	1	0	0	0	0	0	0	-1	-4	-1
1962	Below Normal	-4	-2	1	1	1	0	0	0	1	1	0	-2	0
1963	Wet	-5	-3	0	1	1	0	0	0	0	0	0	-1	-1
1964	Dry	-1	-1	1	1	1	1	1	1	0	0	-1	-3	0
1965	Wet	-3	0	1	1	1	1	0	0	0	0	0	-1	0
1966	Below Normal	-3	-2	0	1	0	0	0	0	0	0	-1	-3	-1
1967	Wet	-4	-2	0	1	1	1	0	0	0	0	-1	-1	-1
1968	Below Normal	-2	-2	0	1	1	0	0	0	0	0	-2	-3	-1
1969	Wet	-3	-1	1	1	0	0	0	0	0	0	0	-3	0
1970	Wet	-5	-2	0	0	0	1	1	1	1	0	-1	-3	-1
1971	Wet	-5	-2	0	1	1	0	0	0	0	0	0	-2	-1
1972	Below Normal	-3	-2	1	1	1	0	0	0	0	0	-1	-3	0
1973	Above Normal	-3	-1	1	1	0	0	0	0	0	1	0	-1	0
1974	Wet	-2	-2	1	0	0	0	0	0	0	0	0	-2	0
1975	Wet	-4	-2	0	1	1	0	0	0	0	0	-1	-1	-1
1976	Critical	-2	-1	0	1	1	1	1	0	0	0	-1	-2	0
1977	Critical	-2	-2	0	1	1	0	0	1	1	-3	-11	-3	-1
1978	Above Normal	0	1	1	1	0	1	0	0	0	0	0	-2	0
1979	Below Normal	-4	-3	0	1	1	1	0	0	0	0	0	-2	-1
1980	Above Normal	-2	-1	0	1	0	0	0	0	0	1	0	-1	0
1981	Dry	-2	-2	0	1	1	0	0	0	0	0	-2	-2	0
1982	Wet	-2	-1	0	1	1	0	0	0	0	0	0	-2	0
1983	Wet	-3	-1	1	1	0	0	0	0	0	0	-2	-2	-1
1984	Wet	-3	-1	1	1	1	0	0	0	0	0	0	-2	0
1985	Dry	-2	-1	1	1	1	1	1	1	0	0	-2	-4	0
1986	Wet	-4	-1	1	1	0	0	0	0	0	-1	-1	-2	0
1987	Dry	-2	-1	0	1	1	1	1	1	0	-1	-2	-2	0
1988	Critical	-3	-1	1	1	1	1	1	0	0	-3	-1	-3	0
1989	Dry	-3	0	1	1	1	1	1	1	0	0	-1	-3	0
1990	Critical	-4	-3	0	1	1	0	0	0	0	-2	-1	-3	-1
1991	Critical	-3	-1	0	1	1	1	-3	0	0	0	-1	-3	0
1992	Critical	-4	-2	0	1	1	1	1	0	0	-4	-4	-3	-1
1993	Above Normal	-1	1	1	1	1	1	1	0	0	0	0	-3	0
1994	Critical	-4	-2	0	1	1	1	0	0	-1	-1	-2	-4	-1
1995	Wet	-4	-1	0	1	1	0	0	0	0	-1	-2	-1	-1
1996	Wet	-2	-1	1	1	0	1	0	0	0	-1	-1	-1	0
1997	Wet	-2	-1	0	0	1	1	1	1	1	0	-1	-4	0
1998	Wet	-5	-2	1	0	0	0	0	0	0	-1	-3	-2	-1
1999	Wet	-2	-1	1	1	1	0	0	0	0	0	0	-1	0
2000	Above Normal	-3	-2	0	1	0	0	1	0	0	0	-1	-2	0
2001	Dry	-2	-2	0	1	1	1	1	1	0	0	-1	-1	0
2002	Dry	-2	-1	1	0	1	1	1	1	0	-1	-1	-2	0
2003	Above Normal	-3	-2	1	1	1	1	0	0	0	0	-1	-2	0
Average		-3	-1	1	1	1	1	0	0	0	0	-2	-2	0
Wet		-3	-1	1	1	0	0	0	0	0	0	-1	-2	0
Above Normal		-2	-1	1	1	0	1	0	0	0	0	-1	-2	0
Below Normal		-2	-1	0	1	1	1	0	0	0	0	-1	-2	0
Dry		-2	-1	1	1	1	1	1	1	0	0	-2	-3	0
Critical		-3	-1	0	1	1	0	0	0	0	-1	-5	-4	-1

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures below Shasta Dam (°F)
From Existing Condition**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	-1%	-1%	0%	1%	1%	5%	1%	0%	0%	0%	0%	-1%	0%
1923	Below Normal	-3%	-2%	-1%	0%	1%	7%	3%	2%	3%	1%	-1%	-4%	1%
1924	Critical	-6%	-4%	-1%	0%	0%	-3%	-2%	0%	4%	-4%	-13%	-7%	-3%
1925	Dry	2%	3%	4%	2%	1%	1%	1%	1%	0%	-1%	-6%	-8%	0%
1926	Dry	-4%	-1%	1%	2%	2%	1%	1%	1%	0%	-2%	-4%	-4%	-1%
1927	Wet	-4%	-1%	2%	2%	1%	1%	0%	0%	0%	0%	-2%	-4%	-1%
1928	Above Normal	-4%	-2%	1%	2%	1%	1%	0%	0%	0%	-2%	-2%	-3%	-1%
1929	Critical	-3%	-2%	1%	3%	2%	1%	1%	1%	0%	-1%	-3%	-4%	-1%
1930	Dry	-4%	-2%	2%	3%	2%	1%	1%	1%	1%	-1%	-4%	-5%	-1%
1931	Critical	-4%	-3%	0%	2%	2%	1%	1%	1%	1%	0%	-15%	-13%	-3%
1932	Dry	-2%	1%	4%	2%	1%	2%	2%	1%	0%	1%	-9%	-15%	-1%
1933	Critical	-6%	-1%	1%	3%	1%	2%	2%	1%	1%	1%	-9%	-14%	-2%
1934	Critical	-6%	-1%	1%	4%	3%	2%	2%	2%	2%	-3%	-18%	-8%	-2%
1935	Below Normal	0%	3%	4%	2%	2%	2%	2%	1%	-2%	-3%	-5%	-4%	0%
1936	Below Normal	-3%	-1%	0%	3%	2%	1%	1%	2%	1%	1%	-2%	-6%	0%
1937	Below Normal	-6%	-3%	0%	1%	2%	1%	1%	1%	1%	0%	-3%	-5%	-1%
1938	Wet	-4%	-2%	1%	2%	1%	0%	1%	-1%	0%	-3%	-3%	-3%	-1%
1939	Dry	-4%	-2%	1%	2%	2%	1%	2%	1%	-1%	-2%	-3%	-4%	-1%
1940	Above Normal	-4%	-1%	1%	3%	0%	1%	1%	0%	0%	-1%	-3%	-3%	-1%
1941	Wet	-4%	-2%	1%	1%	1%	1%	0%	0%	-1%	-3%	-2%	-2%	-1%
1942	Wet	-4%	-2%	1%	2%	0%	1%	1%	0%	0%	-1%	-2%	-3%	-1%
1943	Wet	-5%	-3%	1%	2%	1%	1%	0%	0%	0%	-1%	-1%	-3%	-1%
1944	Dry	-3%	-3%	0%	2%	2%	1%	1%	2%	0%	-1%	-2%	-2%	0%
1945	Below Normal	-3%	-1%	2%	2%	1%	1%	1%	1%	0%	0%	-1%	-3%	0%
1946	Below Normal	-3%	-2%	1%	1%	1%	1%	1%	0%	1%	1%	0%	-5%	0%
1947	Dry	-7%	-5%	1%	2%	1%	1%	1%	1%	0%	-1%	-3%	-4%	-1%
1948	Below Normal	-3%	-1%	1%	2%	2%	1%	1%	1%	0%	0%	-1%	-3%	0%
1949	Dry	-4%	-3%	0%	2%	1%	1%	1%	0%	1%	1%	-1%	-5%	-1%
1950	Below Normal	-7%	-5%	-1%	2%	2%	1%	2%	1%	1%	0%	0%	-5%	-1%
1951	Above Normal	-7%	-3%	1%	1%	1%	1%	0%	0%	0%	1%	0%	-2%	-1%
1952	Wet	-6%	-6%	0%	1%	1%	1%	0%	-1%	0%	0%	-2%	-6%	-2%
1953	Wet	-5%	-3%	1%	1%	1%	1%	1%	0%	0%	0%	-1%	-3%	-1%
1954	Above Normal	-4%	-2%	1%	2%	1%	1%	0%	0%	0%	0%	-3%	-5%	-1%
1955	Dry	-4%	-2%	1%	2%	1%	1%	1%	1%	1%	0%	-1%	-4%	0%
1956	Wet	-5%	-3%	0%	1%	1%	1%	1%	0%	0%	-1%	1%	-3%	-1%
1957	Above Normal	-8%	-5%	0%	2%	1%	1%	0%	0%	0%	0%	-2%	-3%	-1%
1958	Wet	-4%	-2%	1%	1%	0%	0%	0%	-1%	0%	-2%	-2%	-5%	-1%
1959	Below Normal	-6%	-3%	1%	2%	1%	1%	1%	1%	1%	-3%	-6%	-6%	-2%
1960	Dry	-5%	-1%	1%	3%	1%	1%	2%	1%	2%	1%	-1%	-5%	0%
1961	Dry	-6%	-3%	2%	2%	1%	1%	0%	0%	1%	1%	-3%	-7%	-1%
1962	Below Normal	-7%	-3%	2%	2%	1%	1%	1%	1%	1%	0%	0%	-4%	0%
1963	Wet	-9%	-6%	1%	2%	1%	1%	0%	0%	0%	-1%	-1%	-2%	-1%
1964	Dry	-3%	-2%	1%	2%	2%	1%	1%	1%	1%	0%	-2%	-5%	0%
1965	Wet	-6%	-3%	1%	1%	1%	1%	1%	0%	0%	1%	0%	-2%	0%
1966	Below Normal	-5%	-5%	1%	2%	1%	1%	0%	0%	0%	1%	-2%	-7%	-1%
1967	Wet	-8%	-4%	1%	2%	1%	1%	0%	0%	-1%	0%	-1%	-3%	-1%
1968	Below Normal	-4%	-4%	1%	2%	1%	1%	0%	1%	1%	-1%	-4%	-6%	-1%
1969	Wet	-5%	-3%	2%	1%	1%	1%	0%	0%	-1%	0%	0%	-5%	-1%
1970	Wet	-9%	-4%	1%	0%	1%	1%	1%	2%	2%	0%	-1%	-7%	-1%
1971	Wet	-9%	-4%	1%	2%	1%	1%	0%	0%	-1%	0%	-1%	-5%	-1%
1972	Below Normal	-6%	-3%	1%	2%	1%	1%	0%	0%	0%	0%	-2%	-5%	-1%
1973	Above Normal	-5%	-2%	1%	1%	1%	1%	0%	0%	0%	1%	0%	-2%	0%
1974	Wet	-5%	-3%	1%	1%	1%	0%	1%	0%	-1%	-1%	1%	-4%	-1%
1975	Wet	-7%	-4%	1%	2%	1%	1%	0%	0%	-1%	0%	-1%	-3%	-1%
1976	Critical	-4%	-2%	1%	2%	1%	1%	1%	2%	1%	0%	-2%	-4%	0%
1977	Critical	-4%	-3%	0%	2%	2%	1%	1%	2%	2%	-6%	-16%	-5%	-3%
1978	Above Normal	0%	2%	3%	2%	1%	1%	0%	0%	-1%	0%	1%	-4%	0%
1979	Below Normal	-8%	-6%	-1%	2%	1%	1%	1%	0%	0%	0%	-1%	-3%	-1%
1980	Above Normal	-4%	-3%	1%	1%	0%	1%	1%	0%	0%	1%	0%	-2%	0%
1981	Dry	-4%	-3%	1%	2%	1%	1%	0%	0%	1%	-1%	-3%	-4%	-1%
1982	Wet	-4%	-2%	1%	2%	1%	1%	0%	0%	-1%	0%	0%	-5%	-1%
1983	Wet	-6%	-3%	1%	1%	0%	0%	1%	0%	0%	-1%	-3%	-4%	-1%
1984	Wet	-6%	-2%	1%	2%	1%	1%	1%	0%	0%	0%	-1%	-4%	-1%
1985	Dry	-4%	-2%	1%	2%	2%	1%	2%	2%	0%	0%	-4%	-7%	-1%
1986	Wet	-7%	-3%	2%	2%	1%	0%	1%	1%	0%	-1%	-3%	-3%	-1%
1987	Dry	-3%	-3%	0%	2%	2%	1%	1%	2%	1%	-1%	-4%	-4%	-1%
1988	Critical	-5%	-1%	3%	3%	2%	2%	1%	1%	1%	-5%	-1%	-5%	-1%
1989	Dry	-5%	-1%	3%	3%	2%	1%	2%	2%	1%	1%	-1%	-6%	0%
1990	Critical	-9%	-5%	0%	2%	2%	1%	0%	0%	0%	-4%	-2%	-6%	-2%
1991	Critical	-6%	-2%	0%	2%	2%	1%	1%	1%	0%	1%	-1%	-6%	-1%
1992	Critical	-8%	-4%	0%	1%	2%	1%	1%	1%	1%	-7%	-8%	-5%	-2%
1993	Above Normal	-1%	1%	3%	3%	0%	2%	0%	0%	-1%	0%	0%	-6%	0%
1994	Critical	-8%	-4%	1%	2%	1%	1%	1%	0%	-2%	-2%	-4%	-6%	-2%
1995	Wet	-8%	-2%	1%	3%	2%	1%	1%	0%	0%	-2%	-4%	-3%	-1%
1996	Wet	-4%	-2%	1%	2%	1%	1%	1%	0%	0%	-1%	-2%	-2%	0%
1997	Wet	-4%	-2%	1%	1%	1%	1%	2%	2%	1%	0%	-1%	-7%	-1%
1998	Wet	-9%	-4%	1%	1%	0%	1%	1%	0%	0%	-2%	-5%	-4%	-2%
1999	Wet	-4%	-1%	2%	2%	1%	1%	0%	0%	0%	0%	0%	-2%	0%
2000	Above Normal	-6%	-5%	1%	1%	0%	1%	1%	1%	0%	1%	-1%	-4%	-1%
2001	Dry	-5%	-3%	1%	2%	2%	2%	2%	2%	0%	-1%	-2%	-3%	0%
2002	Dry	-4%	-2%	1%	1%	1%	1%	1%	1%	0%	-2%	-3%	-4%	-1%
2003	Above Normal	-5%	-3%	1%	1%	1%	1%	1%	0%	0%	-1%	-2%	-3%	-1%
Average		-5%	-2%	1%	2%	1%	1%	1%	1%	0%	-1%	-3%	-5%	-1%
Wet		-6%	-3%	1%	1%	1%	1%	1%	0%	0%	-1%	-1%	-4%	-1%
Above Normal		-4%	-2%	1%	2%	1%	1%	1%	0%	0%	0%	-1%	-3%	0%
Below Normal		-5%	-3%	1%	2%	1%	2%	1%	1%	1%	0%	-2%	-5%	-1%
Dry		-4%	-2%	1%	2%	2%	1%	1%	1%	0%	0%	-3%	-5%	-1%
Critical		-6%	-3%	0%	2%	2%	1%	1%	1%	1%	-3%	-8%	-7%	-2%

Sacramento River Water Temperatures at Keswick Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	48	52	55	53	51	51	52	51
1923	Below Normal	51	50	50	48	47	48	52	53	51	51	51	53	50
1924	Critical	54	54	51	47	47	51	53	53	52	55	62	62	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	54	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	55	57	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	52	54	50
1928	Above Normal	54	52	49	47	46	47	50	50	50	52	53	55	50
1929	Critical	55	54	51	45	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	50
1931	Critical	55	54	51	47	47	48	49	51	53	55	60	65	53
1932	Dry	60	53	48	45	44	47	49	52	54	55	56	62	52
1933	Critical	61	56	51	46	45	47	49	51	53	55	57	62	53
1934	Critical	62	56	51	47	46	48	49	52	54	57	64	63	54
1935	Below Normal	59	53	49	46	45	46	48	50	52	54	54	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	52	55	50
1937	Below Normal	55	55	52	47	46	47	49	50	50	51	52	55	51
1938	Wet	55	53	49	46	45	46	48	50	51	51	53	55	50
1939	Dry	55	54	50	48	46	47	48	49	51	51	54	56	51
1940	Above Normal	54	53	51	47	47	47	50	51	50	51	53	55	51
1941	Wet	55	53	50	47	46	47	48	50	51	53	53	55	51
1942	Wet	55	54	50	46	46	47	49	49	50	51	52	54	50
1943	Wet	54	54	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	54	54	52	48	47	48	48	50	51	52	53	54	51
1945	Below Normal	55	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	53	49	45	44	46	47	48	49	50	51	52	49
1947	Dry	53	53	50	47	46	47	48	49	50	51	54	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	53	50
1949	Dry	54	53	50	47	46	46	48	49	49	50	52	53	50
1950	Below Normal	53	53	51	46	44	45	47	48	48	49	51	52	49
1951	Above Normal	52	51	48	45	44	45	47	48	48	49	51	52	48
1952	Wet	51	51	48	44	44	44	46	48	50	51	51	53	48
1953	Wet	54	54	49	47	45	46	48	48	49	51	52	53	50
1954	Above Normal	53	52	49	46	45	46	47	48	50	50	53	54	49
1955	Dry	54	53	48	45	45	47	47	49	49	51	52	53	49
1956	Wet	53	51	49	44	43	45	47	46	48	50	50	51	48
1957	Above Normal	52	52	51	47	46	46	48	50	50	50	53	54	50
1958	Wet	53	52	49	46	46	46	47	49	50	51	51	54	49
1959	Below Normal	55	54	51	47	46	46	48	49	50	52	55	56	51
1960	Dry	56	54	52	47	45	46	47	48	49	51	52	54	50
1961	Dry	55	53	48	46	45	46	47	48	49	50	52	55	49
1962	Below Normal	55	53	48	46	45	45	47	48	48	50	51	52	49
1963	Wet	53	53	50	47	46	47	48	50	50	51	53	54	50
1964	Dry	53	52	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	54	52	49	44	44	45	45	47	49	50	52	51	48
1966	Below Normal	51	51	49	45	45	45	48	49	49	50	52	54	49
1967	Wet	54	53	48	45	45	45	46	48	50	51	51	52	49
1968	Below Normal	53	54	49	46	46	47	48	49	49	51	53	55	50
1969	Wet	54	52	48	45	43	44	45	47	49	51	51	52	48
1970	Wet	53	53	49	47	45	46	46	48	49	50	53	54	49
1971	Wet	54	52	47	44	44	45	47	48	49	50	52	53	49
1972	Below Normal	53	52	49	45	45	46	47	49	49	50	52	54	49
1973	Above Normal	53	50	47	45	44	45	47	48	49	50	51	52	48
1974	Wet	50	51	47	45	43	45	47	48	49	51	50	52	48
1975	Wet	53	53	49	47	45	46	48	49	50	51	51	53	50
1976	Critical	53	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	50	53	55	63	63	53
1978	Above Normal	57	52	47	46	44	44	46	47	49	50	51	51	48
1979	Below Normal	53	53	51	48	46	47	48	50	50	50	53	54	50
1980	Above Normal	53	51	49	46	46	47	48	49	49	50	51	53	49
1981	Dry	52	52	50	47	46	47	49	49	50	51	53	54	50
1982	Wet	54	52	48	44	44	45	46	49	50	50	51	52	49
1983	Wet	53	52	48	46	45	46	47	49	50	51	52	54	49
1984	Wet	55	53	49	45	45	46	47	49	50	50	53	54	50
1985	Dry	52	51	48	46	45	47	48	48	50	51	52	55	50
1986	Wet	56	53	49	47	47	48	50	50	51	52	53	55	51
1987	Dry	54	53	51	47	46	47	48	49	50	51	54	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	52	55	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	53	50
1990	Critical	54	53	51	47	45	47	48	49	50	52	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	56	51
1992	Critical	58	55	51	47	46	47	48	49	51	54	59	62	52
1993	Above Normal	61	54	48	43	43	45	45	47	49	50	52	53	49
1994	Critical	54	53	50	47	46	48	49	50	51	52	55	57	51
1995	Wet	58	53	49	45	44	46	48	49	50	52	53	54	50
1996	Wet	55	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	53	50	46	45	46	47	48	49	50	52	54	49
1998	Wet	54	53	48	46	45	45	48	47	49	51	54	55	49
1999	Wet	56	53	49	46	45	45	47	48	49	50	51	52	49
2000	Above Normal	53	53	50	48	49	49	51	51	51	52	55	56	52
2001	Dry	55	55	53	49	46	48	48	50	51	53	55	56	52
2002	Dry	56	55	49	47	47	47	49	50	51	52	55	55	51
2003	Above Normal	56	55	50	46	46	48	48	49	51	51	53	55	51
Average		55	53	49	46	45	46	48	49	50	51	53	55	50
Wet		54	53	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	46	45	46	48	49	50	51	52	54	50
Dry		55	53	50	46	46	47	48	49	50	51	53	55	50
Critical		56	54	51	47	46	48	49	50	51	54	57	59	52

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP1 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	47	52	52	50	51	51	52	50
1923	Below Normal	52	51	50	48	47	48	52	54	51	51	51	52	51
1924	Critical	52	53	51	47	47	50	52	55	53	54	56	63	53
1925	Dry	57	51	45	44	45	45	49	49	50	51	53	56	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	54	57	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	53	54	50
1928	Above Normal	54	53	50	47	46	47	49	50	50	51	53	55	50
1929	Critical	55	53	51	46	46	47	48	49	50	51	52	55	50
1930	Dry	55	55	50	46	46	47	48	49	50	51	52	55	50
1931	Critical	55	54	51	48	47	48	49	51	53	55	59	65	53
1932	Dry	60	53	48	45	44	47	49	53	55	55	55	61	52
1933	Critical	61	56	51	46	45	47	49	51	54	55	56	62	53
1934	Critical	62	55	51	47	46	48	50	53	54	57	64	62	54
1935	Below Normal	59	53	49	45	45	46	49	50	52	54	53	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	51	55	50
1937	Below Normal	55	55	52	48	46	47	49	50	50	51	52	55	51
1938	Wet	55	53	49	46	45	46	48	50	50	51	53	54	50
1939	Dry	54	53	51	48	47	47	49	49	50	51	53	55	51
1940	Above Normal	55	54	52	47	47	47	50	51	51	51	53	54	51
1941	Wet	54	53	50	47	46	47	48	50	50	52	53	54	50
1942	Wet	54	54	50	46	46	47	49	49	50	51	52	53	50
1943	Wet	54	53	50	47	46	47	49	50	50	51	52	54	50
1944	Dry	54	53	52	49	47	48	49	50	50	52	53	54	51
1945	Below Normal	55	53	49	46	46	47	48	49	50	50	51	53	50
1946	Below Normal	53	52	49	46	45	46	47	48	49	50	51	52	49
1947	Dry	52	52	50	47	46	47	48	49	50	51	53	55	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	52	50
1949	Dry	53	52	51	47	46	46	48	49	49	50	51	52	50
1950	Below Normal	52	53	51	47	44	45	47	48	49	51	51	52	49
1951	Above Normal	52	51	48	45	44	45	46	48	48	49	51	51	48
1952	Wet	50	50	48	44	44	44	46	48	49	51	51	53	48
1953	Wet	53	53	49	47	46	46	48	48	49	51	52	52	50
1954	Above Normal	52	52	49	46	45	46	47	48	50	50	52	54	49
1955	Dry	53	52	48	45	45	47	47	49	49	50	52	53	49
1956	Wet	52	51	49	44	43	45	47	46	48	50	50	50	48
1957	Above Normal	51	52	51	47	46	46	48	50	50	50	52	54	50
1958	Wet	52	51	49	46	46	46	47	49	50	51	51	53	49
1959	Below Normal	54	53	51	47	46	47	48	49	50	52	54	56	51
1960	Dry	56	54	53	47	46	46	47	48	49	51	52	54	50
1961	Dry	54	53	48	46	46	46	47	48	49	50	51	53	49
1962	Below Normal	53	52	49	46	45	45	47	48	49	50	51	52	49
1963	Wet	52	52	50	47	46	47	48	50	50	51	52	53	50
1964	Dry	52	52	49	46	45	46	47	49	50	51	52	53	49
1965	Wet	53	51	49	44	44	45	46	47	49	50	52	50	48
1966	Below Normal	50	51	49	45	45	45	48	49	49	50	51	53	49
1967	Wet	54	53	48	46	45	46	46	48	50	51	51	52	49
1968	Below Normal	52	53	49	46	46	47	48	49	50	51	52	54	50
1969	Wet	53	52	48	45	43	44	45	47	48	50	51	51	48
1970	Wet	52	52	50	47	45	46	46	48	49	50	51	53	49
1971	Wet	53	52	48	44	44	45	47	48	49	50	52	52	49
1972	Below Normal	52	52	49	46	45	46	47	49	50	50	51	53	49
1973	Above Normal	52	50	48	45	44	45	47	48	48	50	51	51	48
1974	Wet	50	51	47	45	44	45	47	48	49	51	50	51	48
1975	Wet	52	52	49	47	45	46	48	49	50	51	51	52	49
1976	Critical	52	52	49	47	47	47	48	50	51	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	51	53	57	61	63	53
1978	Above Normal	59	52	47	45	44	44	45	47	48	50	51	51	48
1979	Below Normal	51	52	51	48	46	47	48	50	50	50	52	54	50
1980	Above Normal	53	51	49	47	46	47	48	49	49	50	51	52	49
1981	Dry	51	51	50	47	46	47	49	49	50	51	53	54	50
1982	Wet	53	52	48	44	44	45	46	49	49	50	51	51	48
1983	Wet	52	51	48	46	45	46	47	49	50	50	52	53	49
1984	Wet	54	53	49	45	45	46	47	49	50	50	52	53	49
1985	Dry	52	51	48	46	46	47	48	49	50	51	53	54	50
1986	Wet	55	53	49	47	47	47	49	50	51	52	53	54	51
1987	Dry	54	53	51	47	46	47	48	49	50	51	53	55	50
1988	Critical	55	55	49	45	45	47	48	49	50	52	54	56	50
1989	Dry	58	54	49	46	45	46	48	47	49	50	51	53	50
1990	Critical	53	53	51	48	45	47	48	49	50	51	54	56	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	55	51
1992	Critical	57	55	51	47	46	47	48	49	52	54	57	63	52
1993	Above Normal	61	54	48	43	43	45	46	47	48	50	52	51	49
1994	Critical	52	52	50	48	47	48	49	50	51	52	54	57	51
1995	Wet	59	53	49	45	44	46	47	48	50	52	53	54	50
1996	Wet	54	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	53	52	50	46	45	46	47	48	49	50	52	53	49
1998	Wet	53	52	48	46	45	45	47	47	49	51	53	55	49
1999	Wet	55	53	49	47	45	45	48	48	49	50	51	51	49
2000	Above Normal	52	52	50	48	49	49	51	51	51	52	54	56	51
2001	Dry	55	54	53	49	47	48	49	50	50	53	55	56	51
2002	Dry	56	55	49	47	47	48	49	50	50	52	54	55	51
2003	Above Normal	55	55	50	46	46	47	48	49	51	51	53	54	50
Average		54	53	50	46	46	47	48	49	50	51	53	54	50
Wet		53	52	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	46	46	48	49	50	51	52	53	50
Below Normal		54	53	50	47	45	46	48	49	50	51	52	54	50
Dry		55	53	50	47	46	47	48	49	50	51	53	55	50
Critical		55	54	51	47	46	48	49	51	52	54	56	59	52

Change in Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP1 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-3	-2	0	0	0	0
1923	Below Normal	1	1	0	0	0	0	0	1	0	0	0	-1	0
1924	Critical	-2	-1	0	0	0	-1	-1	2	1	-1	-6	1	-1
1925	Dry	0	0	1	0	0	0	0	0	0	-1	-1	-1	0
1926	Dry	-1	0	0	1	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	1	0	0
1928	Above Normal	1	0	0	0	0	0	-1	0	0	0	0	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	1	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	1	1	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	1	1	0	-1	0	0
1934	Critical	0	0	0	0	0	1	1	0	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1940	Above Normal	0	1	0	0	0	0	0	0	0	0	0	-1	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	1	0	0	0	-1	0
1949	Dry	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1960	Dry	-1	0	1	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-1	-2	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1973	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	0	0	1	0	0	0	0	1	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	2	-2	0	0
1978	Above Normal	2	0	0	0	1	0	0	0	0	0	0	-1	0
1979	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	-1	0	0	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	1	0	0	0	0	0	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-2	1	0
1993	Above Normal	0	0	0	0	0	0	0	1	0	0	0	-2	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1995	Wet	1	0	0	0	0	0	0	0	0	0	0	-1	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1998	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
2003	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Average		0	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		-1	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Keswick Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-6%	-4%	0%	0%	0%	-1%
1923	Below Normal	2%	2%	0%	0%	0%	0%	1%	2%	0%	0%	0%	-1%	1%
1924	Critical	-3%	-2%	0%	0%	1%	-1%	-2%	4%	1%	-1%	-10%	2%	-1%
1925	Dry	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%
1928	Above Normal	1%	0%	1%	0%	0%	0%	-1%	0%	0%	0%	-1%	0%	0%
1929	Critical	-1%	0%	1%	3%	1%	0%	0%	0%	0%	0%	-1%	0%	0%
1930	Dry	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	1%	1%	2%	1%	0%	-2%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	1%	1%	1%	1%	0%	-2%	0%	0%
1934	Critical	0%	0%	0%	1%	0%	0%	1%	2%	0%	0%	0%	-1%	0%
1935	Below Normal	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1939	Dry	-1%	-1%	0%	1%	0%	1%	0%	0%	-1%	1%	-2%	-1%	0%
1940	Above Normal	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1944	Dry	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	0%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	0%
1947	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1948	Below Normal	-1%	0%	1%	0%	0%	0%	0%	2%	1%	0%	-1%	-1%	0%
1949	Dry	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1950	Below Normal	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1951	Above Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-1%	0%	0%	0%	0%	1%	0%	1%	0%	-1%	0%	0%	0%
1956	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	-1%	-2%	-1%	0%
1960	Dry	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1961	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-3%	0%
1962	Below Normal	-4%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%
1963	Wet	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	0%
1965	Wet	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-2%	0%
1966	Below Normal	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1967	Wet	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1969	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	1%	1%	0%	1%	-2%	-2%	0%
1971	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1973	Above Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	2%	1%	1%	1%	2%	0%	0%	0%	0%	0%
1977	Critical	0%	0%	0%	1%	0%	0%	1%	1%	2%	4%	-3%	0%	0%
1978	Above Normal	3%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	-2%	0%
1979	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1980	Above Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1984	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-3%	0%
1985	Dry	0%	-1%	0%	1%	1%	-1%	1%	0%	-1%	0%	0%	0%	0%
1986	Wet	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	-1%	0%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1989	Dry	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	1%	0%
1991	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-4%	1%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	1%	-1%	0%	0%	-3%	0%
1994	Critical	-3%	-2%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
1995	Wet	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1996	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	1%	0%	1%	0%	0%	-1%	-1%	0%
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2001	Dry	-1%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%
2002	Dry	0%	0%	1%	0%	0%	0%	1%	1%	0%	-1%	-1%	0%	0%
2003	Above Normal	-1%	-1%	0%	0%	0%	-1%	0%	0%	0%	0%	-1%	-1%	0%
Average		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Critical		-1%	0%	0%	1%	0%	0%	0%	1%	1%	0%	-2%	0%	0%

Sacramento River Water Temperatures at Balls Ferry (°F)

No Action

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	59	55	53	53	55	52
1923	Below Normal	52	49	47	45	47	49	54	55	53	53	54	55	51
1924	Critical	54	53	49	45	48	51	53	55	54	57	63	63	54
1925	Dry	55	49	43	43	47	48	54	54	54	54	57	58	51
1926	Dry	57	53	48	45	47	50	53	54	54	54	57	59	53
1927	Wet	57	53	45	45	46	50	50	52	52	53	54	56	51
1928	Above Normal	54	51	47	45	47	49	54	52	52	54	55	57	51
1929	Critical	55	52	47	43	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
1931	Critical	55	53	48	46	47	50	51	54	55	57	61	64	53
1932	Dry	59	51	46	44	45	50	51	56	57	57	58	63	53
1933	Critical	60	55	48	44	45	50	52	54	56	57	59	62	53
1934	Critical	61	54	48	46	48	51	53	55	56	59	65	63	55
1935	Below Normal	58	51	47	45	46	49	54	55	55	56	56	59	52
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	57	52
1938	Wet	55	52	47	45	45	47	49	54	54	54	55	56	51
1939	Dry	55	52	48	46	46	48	50	52	53	53	56	57	51
1940	Above Normal	54	52	49	46	47	48	54	55	53	53	55	56	52
1941	Wet	55	52	48	46	46	49	50	52	54	55	55	56	52
1942	Wet	55	53	48	46	47	49	53	52	55	54	54	55	52
1943	Wet	55	52	48	46	47	48	53	54	53	53	55	56	52
1944	Dry	55	53	49	47	47	49	50	53	53	54	55	56	52
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	54	51
1946	Below Normal	54	51	48	45	44	47	49	51	51	52	53	54	50
1947	Dry	53	51	47	45	46	49	52	51	53	53	55	57	51
1948	Below Normal	56	51	48	46	46	48	52	55	54	53	55	55	52
1949	Dry	54	52	48	45	45	48	52	52	52	52	54	56	51
1950	Below Normal	53	52	49	44	45	47	51	52	52	54	55	55	51
1951	Above Normal	53	50	47	44	44	47	49	52	52	52	54	54	50
1952	Wet	52	50	46	43	44	46	47	53	54	55	54	55	50
1953	Wet	55	52	47	46	46	48	51	51	53	54	54	55	51
1954	Above Normal	53	51	47	46	45	47	50	51	52	53	55	57	50
1955	Dry	54	51	45	44	45	48	49	53	52	53	56	56	50
1956	Wet	53	49	48	44	44	48	50	50	52	54	53	53	50
1957	Above Normal	52	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	53	51	47	45	46	46	50	53	54	54	55	55	51
1959	Below Normal	55	52	49	46	46	47	50	51	52	54	57	58	52
1960	Dry	56	53	50	45	46	48	49	53	52	54	54	56	51
1961	Dry	54	51	46	45	46	47	50	51	52	53	53	57	50
1962	Below Normal	55	51	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	54	52	48	46	47	47	49	55	54	53	56	57	51
1964	Dry	53	51	47	45	46	47	49	51	52	54	54	55	50
1965	Wet	54	50	48	44	45	48	49	51	52	53	55	55	50
1966	Below Normal	52	51	46	44	45	46	50	51	51	52	54	55	50
1967	Wet	55	51	47	45	45	46	48	51	53	54	53	54	50
1968	Below Normal	53	53	47	44	46	49	50	52	51	54	55	57	51
1969	Wet	54	51	45	44	43	47	47	50	52	54	54	54	50
1970	Wet	53	52	48	47	45	49	47	51	52	52	55	57	51
1971	Wet	54	51	46	44	44	45	50	51	53	54	56	55	50
1972	Below Normal	53	51	46	44	45	47	49	52	52	53	54	56	50
1973	Above Normal	53	49	45	44	44	46	51	54	52	53	54	55	50
1974	Wet	51	51	46	44	44	45	51	53	54	55	53	54	50
1975	Wet	53	51	47	46	45	47	50	52	54	54	54	55	51
1976	Critical	53	51	47	45	46	48	50	52	52	54	56	57	51
1977	Critical	54	52	50	46	47	48	50	52	54	57	64	63	53
1978	Above Normal	57	50	45	45	44	46	50	51	52	54	54	54	50
1979	Below Normal	54	51	49	46	46	49	51	54	52	53	55	57	51
1980	Above Normal	54	50	47	46	46	49	51	52	52	53	54	56	51
1981	Dry	53	51	48	46	47	48	51	52	52	55	56	56	51
1982	Wet	54	50	47	43	44	46	47	55	54	54	54	54	50
1983	Wet	53	50	47	45	45	46	49	52	53	54	55	55	50
1984	Wet	55	52	47	45	46	47	49	52	53	54	55	57	51
1985	Dry	53	50	46	45	46	49	52	51	53	54	55	56	51
1986	Wet	56	50	47	46	47	49	52	53	54	55	56	57	52
1987	Dry	55	52	49	45	46	48	50	51	52	54	57	57	51
1988	Critical	56	53	46	44	46	48	50	52	52	55	57	58	51
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	55	51
1990	Critical	54	52	49	46	44	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	56	56	58	52
1992	Critical	58	53	48	45	47	49	51	52	53	56	60	62	53
1993	Above Normal	60	52	45	43	45	49	50	50	53	53	55	55	51
1994	Critical	54	52	48	46	46	50	50	53	53	55	56	58	52
1995	Wet	58	50	46	45	46	47	51	52	54	55	56	56	51
1996	Wet	55	53	48	46	47	48	52	52	54	54	56	55	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	56	51
1998	Wet	54	51	46	45	45	46	51	49	52	55	56	57	51
1999	Wet	55	52	47	46	45	46	51	51	52	53	54	54	51
2000	Above Normal	54	52	48	48	49	51	54	54	54	54	57	59	53
2001	Dry	56	54	51	47	46	51	50	53	53	55	58	60	53
2002	Dry	56	53	46	46	47	49	52	53	54	55	58	58	52
2003	Above Normal	56	54	47	46	46	50	50	52	56	54	57	58	52
Average		55	52	47	45	46	48	51	53	53	54	56	57	51
Wet		54	51	47	45	45	47	50	52	53	54	55	55	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Below Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Dry		55	52	47	45	46	49	51	53	53	54	56	57	51
Critical		56	53	48	45	47	49	51	53	54	56	59	60	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP1 (2030)**

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	57	54	53	53	55	52
1923	Below Normal	53	50	47	45	47	50	54	56	53	54	54	54	51
1924	Critical	52	52	49	45	48	50	53	57	55	57	58	64	53
1925	Dry	56	49	43	43	47	48	54	54	54	54	56	58	51
1926	Dry	56	53	48	45	47	50	53	53	54	54	57	59	52
1927	Wet	57	53	46	45	46	49	50	52	52	52	55	56	51
1928	Above Normal	54	51	47	45	47	49	54	52	52	54	55	57	51
1929	Critical	55	51	48	44	46	48	50	52	54	54	55	57	51
1930	Dry	56	53	48	45	48	50	51	53	53	54	55	57	52
1931	Critical	55	52	48	46	48	50	51	54	55	57	61	64	53
1932	Dry	58	51	46	44	45	50	52	57	58	57	58	62	53
1933	Critical	60	55	48	44	45	50	52	54	57	57	58	62	53
1934	Critical	61	54	48	46	48	51	53	55	56	59	65	63	55
1935	Below Normal	58	51	47	45	46	49	54	55	55	56	55	59	53
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	57	52
1938	Wet	55	51	47	45	46	47	49	54	54	54	55	55	51
1939	Dry	54	52	48	46	46	48	50	52	52	53	55	56	51
1940	Above Normal	55	53	49	46	47	48	54	54	53	53	55	56	52
1941	Wet	54	52	48	47	46	49	50	52	54	55	55	55	51
1942	Wet	54	52	49	46	47	49	53	52	55	54	54	54	52
1943	Wet	54	52	48	46	47	48	53	54	53	53	54	56	52
1944	Dry	54	52	49	47	47	49	50	53	52	54	54	56	51
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	53	54	51
1946	Below Normal	54	51	48	45	45	47	49	51	51	51	53	54	50
1947	Dry	52	51	47	45	46	49	52	51	53	53	55	57	51
1948	Below Normal	56	51	48	46	46	48	52	57	56	53	55	54	52
1949	Dry	53	51	48	45	45	48	52	52	52	52	54	55	51
1950	Below Normal	53	52	49	44	45	47	52	52	53	54	54	55	51
1951	Above Normal	52	50	47	44	44	47	49	52	52	52	54	54	50
1952	Wet	51	49	46	43	44	46	47	53	54	55	54	54	50
1953	Wet	54	52	47	46	46	48	51	51	53	54	54	54	51
1954	Above Normal	53	51	47	46	46	47	50	51	52	53	54	56	50
1955	Dry	53	51	45	44	45	48	49	53	52	53	56	56	50
1956	Wet	53	49	47	44	44	48	51	50	52	54	53	52	50
1957	Above Normal	51	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	52	51	47	45	46	46	50	53	54	54	55	55	51
1959	Below Normal	54	52	49	47	46	48	51	52	52	54	56	58	51
1960	Dry	55	53	50	46	46	48	49	53	52	54	54	56	51
1961	Dry	54	51	46	45	46	47	50	51	52	52	53	56	50
1962	Below Normal	54	51	46	45	45	47	51	51	52	53	53	55	50
1963	Wet	54	51	48	46	47	47	49	55	54	53	55	56	51
1964	Dry	53	51	47	45	46	47	49	51	52	54	54	55	50
1965	Wet	54	50	48	44	45	47	49	50	52	53	55	54	50
1966	Below Normal	52	50	46	44	45	46	50	51	51	52	54	55	50
1967	Wet	54	51	47	45	45	46	48	51	53	54	53	53	50
1968	Below Normal	52	52	47	45	46	49	50	52	52	54	55	57	51
1969	Wet	54	51	45	44	43	47	47	50	52	54	54	53	50
1970	Wet	52	51	48	47	46	49	47	51	52	53	54	56	51
1971	Wet	53	50	46	44	44	46	50	51	53	54	56	54	50
1972	Below Normal	53	51	46	44	45	47	49	52	52	53	53	55	50
1973	Above Normal	52	49	45	44	44	46	51	54	52	53	55	55	50
1974	Wet	51	50	46	44	44	45	51	53	54	55	53	53	50
1975	Wet	52	50	47	46	45	47	50	52	53	54	54	54	50
1976	Critical	52	50	47	45	47	49	50	53	53	54	56	57	51
1977	Critical	54	52	50	48	47	49	51	53	55	59	63	63	53
1978	Above Normal	58	50	45	45	45	47	50	51	52	53	54	54	50
1979	Below Normal	52	51	48	46	46	49	51	54	52	53	55	57	51
1980	Above Normal	53	50	47	46	46	49	51	52	52	53	54	55	51
1981	Dry	52	51	48	46	47	49	51	52	52	54	56	56	51
1982	Wet	53	50	47	43	44	46	47	55	54	54	54	53	50
1983	Wet	52	50	47	45	45	46	50	52	53	53	54	55	50
1984	Wet	54	52	47	45	46	48	49	52	53	54	55	56	51
1985	Dry	53	50	46	45	46	48	52	52	52	54	55	56	51
1986	Wet	55	50	47	47	47	49	52	53	54	55	55	57	52
1987	Dry	55	52	49	45	46	48	50	52	52	53	56	56	51
1988	Critical	56	53	46	44	46	48	50	52	52	55	57	57	51
1989	Dry	58	51	46	44	44	48	52	50	53	54	55	55	51
1990	Critical	53	52	49	46	45	50	50	53	53	54	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	58	52
1992	Critical	57	53	48	45	47	49	51	52	54	56	59	63	53
1993	Above Normal	60	52	45	43	45	49	51	52	53	53	55	53	51
1994	Critical	53	51	48	46	46	50	50	53	53	54	55	58	51
1995	Wet	58	50	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	54	53	48	46	47	48	52	52	54	54	56	55	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	55	51
1998	Wet	53	51	46	45	45	46	51	49	52	54	55	56	50
1999	Wet	55	52	48	46	45	46	51	51	52	53	55	54	51
2000	Above Normal	53	51	48	48	49	51	54	54	54	54	56	59	52
2001	Dry	55	53	51	47	46	51	50	53	52	55	58	60	53
2002	Dry	56	53	47	46	47	49	52	53	54	55	57	58	52
2003	Above Normal	56	54	47	46	46	50	50	52	55	54	57	58	52
Average		54	51	47	45	46	48	51	53	53	54	55	56	51
Wet		54	51	47	45	46	47	50	52	53	54	55	55	51
Above Normal		54	51	47	45	46	48	51	53	53	53	54	56	51
Below Normal		54	51	47	45	46	48	51	53	53	53	54	56	51
Dry		55	52	47	45	46	49	51	53	53	54	55	57	51
Critical		55	52	48	45	47	49	51	53	54	56	58	60	53

Change in Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP1 (2030) - No Action

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-2	-2	0	0	0	0
1923	Below Normal	1	1	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	-1	-1	0	0	0	0	-1	1	1	-1	-5	1	-1
1925	Dry	0	0	0	0	0	0	0	0	0	-1	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	-1	1	0	0
1928	Above Normal	0	0	0	0	0	1	-1	0	0	0	0	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	1	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	0	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1940	Above Normal	0	1	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	2	1	0	-1	-1	0
1949	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1955	Dry	-1	0	0	0	0	1	0	0	0	-1	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1960	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	0	-2	0
1962	Below Normal	-2	0	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	0	-1	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1973	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	0	0	1	0	0	0	0	1	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	2	-1	0	0
1978	Above Normal	1	0	0	0	1	0	0	0	0	0	0	-1	0
1979	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	-1	0	1	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	-1	0	0	-1	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	-1	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-2	0	0
1993	Above Normal	0	0	0	0	0	0	0	2	0	0	0	-1	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1995	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1998	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
2003	Above Normal	0	0	0	0	0	-1	0	0	0	0	0	0	0
Average		0	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Balls Ferry (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average	
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-3%	-3%	0%	0%	0%	-1%	
1923	Below Normal	1%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	-1%	0%	
1924	Critical	-2%	-1%	-1%	0%	0%	-1%	-1%	3%	1%	-1%	-8%	1%	-1%	
1925	Dry	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%	
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%	
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	1%	0%	
1928	Above Normal	1%	0%	0%	0%	0%	1%	-2%	-1%	-1%	0%	0%	0%	0%	
1929	Critical	-1%	0%	1%	2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%	
1932	Dry	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	0%	0%	
1933	Critical	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	0%	0%	
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	-1%	0%	
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
1938	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	
1939	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	1%	-1%	-1%	0%	
1940	Above Normal	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
1941	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	
1942	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1943	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
1946	Below Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	
1947	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	1%	-1%	-1%	0%	0%	
1948	Below Normal	0%	0%	0%	0%	0%	0%	0%	3%	2%	0%	-1%	-1%	0%	
1949	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1950	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
1951	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
1952	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1954	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
1955	Dry	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	0%	
1956	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1957	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
1958	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1959	Below Normal	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	
1960	Dry	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
1961	Dry	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-3%	0%
1962	Below Normal	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	
1963	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	0%	
1965	Wet	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	-2%	0%	
1966	Below Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	
1967	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	
1969	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	
1970	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	1%	-2%	-1%	0%	
1971	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1972	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%	
1973	Above Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	-1%	0%	
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1975	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1976	Critical	-1%	-1%	0%	1%	1%	1%	1%	1%	2%	0%	0%	0%	0%	
1977	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	-2%	0%	0%	
1978	Above Normal	2%	0%	0%	0%	2%	1%	-1%	0%	-1%	0%	0%	-1%	0%	
1979	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
1980	Above Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1981	Dry	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-2%	0%	1%	0%	
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1983	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1984	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%	
1985	Dry	0%	0%	0%	1%	0%	-1%	0%	0%	-1%	0%	0%	0%	0%	
1986	Wet	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	-1%	-1%	0%	
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
1989	Dry	0%	0%	1%	0%	0%	0%	-1%	0%	0%	0%	0%	-1%	0%	
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	1%	0%	
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	0%	
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	4%	0%	0%	0%	-3%	0%	
1994	Critical	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%	0%	
1995	Wet	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	
1996	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
1997	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
2000	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
2001	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	0%	
2002	Dry	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-2%	0%	0%	
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	-1%	0%	
Average		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	
Wet		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
Above Normal		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	
Below Normal		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	
Critical		-1%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%	0%	

Sacramento River Water Temperatures at Bend Bridge (°F)

No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	60	57	55	55	57	53
1923	Below Normal	53	49	47	45	47	51	54	56	54	55	56	56	52
1924	Critical	54	53	48	45	48	51	54	57	56	59	64	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	57	52	47	44	47	52	54	56	56	56	59	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	55	56	57	52
1928	Above Normal	55	50	46	45	47	49	55	54	54	55	57	58	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	58	52
1930	Dry	57	53	47	44	48	51	53	55	55	55	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	65	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	60	63	54
1933	Critical	60	54	46	43	45	50	53	56	58	59	60	63	54
1934	Critical	61	53	47	46	48	53	54	56	57	60	66	64	55
1935	Below Normal	58	51	46	44	46	49	54	57	57	58	57	60	53
1936	Below Normal	57	52	47	45	46	50	53	54	55	55	56	59	52
1937	Below Normal	56	53	47	44	46	50	54	58	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	57	52
1939	Dry	55	52	47	45	46	49	52	54	54	54	57	58	52
1940	Above Normal	55	52	48	45	47	49	55	57	55	55	57	57	53
1941	Wet	55	52	48	46	47	50	52	54	57	57	57	57	52
1942	Wet	55	52	48	46	47	50	54	54	57	56	56	56	52
1943	Wet	55	52	47	46	47	49	54	56	55	55	56	58	52
1944	Dry	55	52	48	46	47	50	51	55	55	55	56	57	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	51	48	45	44	48	51	53	53	54	55	56	51
1947	Dry	53	51	46	44	47	50	53	53	54	55	57	58	52
1948	Below Normal	56	50	47	45	46	49	52	57	56	56	57	56	52
1949	Dry	54	51	47	44	45	48	54	55	54	54	56	58	52
1950	Below Normal	54	52	48	44	45	48	53	54	55	57	57	57	52
1951	Above Normal	53	50	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	52	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	56	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	52	54	55	56	58	51
1955	Dry	54	51	45	43	46	49	50	56	54	55	58	58	51
1956	Wet	54	49	47	44	44	49	53	53	55	56	56	54	51
1957	Above Normal	52	51	48	44	46	48	50	56	56	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	56	51	48	46	46	49	52	53	54	56	58	60	52
1960	Dry	56	53	49	45	46	49	51	55	54	56	56	58	52
1961	Dry	55	50	45	44	46	47	52	53	54	54	55	59	51
1962	Below Normal	55	51	45	45	46	47	53	53	54	55	56	56	51
1963	Wet	55	52	48	45	47	48	49	57	56	55	58	58	52
1964	Dry	54	50	46	44	46	48	50	53	54	56	56	56	51
1965	Wet	54	49	47	44	46	49	50	53	54	55	57	56	51
1966	Below Normal	53	50	46	44	45	47	52	54	53	54	56	57	51
1967	Wet	55	51	46	45	46	46	48	53	56	57	56	55	51
1968	Below Normal	53	52	45	44	46	50	52	54	53	56	57	58	52
1969	Wet	54	50	44	44	43	48	49	53	55	56	56	55	51
1970	Wet	53	51	48	46	46	49	49	53	54	54	57	58	52
1971	Wet	55	50	45	44	45	46	51	53	56	56	58	56	51
1972	Below Normal	54	50	45	44	45	48	50	54	54	55	56	57	51
1973	Above Normal	53	48	44	44	45	47	53	56	55	55	56	57	51
1974	Wet	52	50	46	44	44	45	52	55	56	57	55	55	51
1975	Wet	54	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	53	50	47	44	46	49	51	55	53	56	58	59	52
1977	Critical	55	52	49	45	48	49	52	54	56	58	65	64	54
1978	Above Normal	57	49	45	45	45	48	51	53	54	56	56	56	51
1979	Below Normal	55	51	48	46	46	50	53	56	54	55	57	58	52
1980	Above Normal	54	49	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	54	50	47	46	47	49	53	54	54	56	58	57	52
1982	Wet	54	50	46	43	44	47	48	58	56	56	56	55	51
1983	Wet	53	50	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	59	52
1985	Dry	53	49	45	44	46	50	54	54	55	56	56	57	52
1986	Wet	56	50	46	46	48	49	53	55	56	57	57	58	53
1987	Dry	56	52	48	44	46	49	52	53	54	55	59	58	52
1988	Critical	57	53	45	44	47	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	55	52	55	56	56	57	52
1990	Critical	54	52	48	45	44	51	52	55	55	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	58	53	47	44	47	50	53	54	55	58	62	63	54
1993	Above Normal	60	51	44	43	45	50	51	52	56	55	57	56	52
1994	Critical	54	51	47	46	46	50	52	55	54	57	58	59	52
1995	Wet	58	49	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	53	47	45	47	49	53	54	56	57	58	56	53
1997	Wet	55	51	48	46	47	50	50	53	55	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	57	57	57	51
1999	Wet	56	51	47	46	45	47	53	53	55	55	57	56	52
2000	Above Normal	54	51	47	48	49	51	56	56	56	56	58	60	54
2001	Dry	56	53	50	46	46	53	52	55	55	57	60	62	54
2002	Dry	57	53	46	46	46	49	54	55	56	57	60	59	53
2003	Above Normal	57	54	47	46	47	51	51	54	58	57	59	59	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		55	51	46	45	46	48	51	54	56	56	57	57	52
Above Normal		55	51	46	45	46	49	53	55	55	55	57	58	52
Below Normal		55	51	47	45	46	49	53	55	55	55	56	57	52
Dry		55	51	46	45	46	49	53	55	55	56	57	58	52
Critical		56	52	47	45	47	50	52	55	56	58	61	61	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP1 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	54	49	47	45	47	51	55	57	54	56	56	56	52
1924	Critical	53	52	48	45	48	51	53	58	57	58	59	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	57	59	52
1926	Dry	56	52	47	44	47	52	55	55	56	56	58	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	53	56	57	52
1928	Above Normal	55	50	46	45	47	50	55	54	54	55	56	58	52
1929	Critical	55	51	46	43	46	49	51	54	56	56	57	58	52
1930	Dry	56	52	47	44	48	51	53	55	55	55	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	65	54
1932	Dry	58	51	45	44	45	52	53	58	59	59	59	63	54
1933	Critical	60	54	46	43	45	50	54	56	59	59	59	63	54
1934	Critical	61	53	47	46	48	53	55	57	58	60	66	64	55
1935	Below Normal	58	51	46	44	46	49	54	57	57	58	57	60	53
1936	Below Normal	57	52	47	45	46	50	53	54	55	55	56	59	52
1937	Below Normal	56	53	47	44	46	50	54	58	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	56	52
1939	Dry	54	51	47	45	46	49	52	54	54	55	56	57	52
1940	Above Normal	55	52	48	45	47	49	55	57	55	55	56	57	53
1941	Wet	54	51	48	46	47	50	52	54	57	57	56	56	52
1942	Wet	54	52	48	46	47	50	54	54	57	56	55	55	52
1943	Wet	54	51	47	46	47	49	54	56	55	55	56	57	52
1944	Dry	55	52	48	46	47	50	51	55	54	55	56	57	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	55	52
1946	Below Normal	54	50	47	45	45	48	51	53	53	53	54	56	51
1947	Dry	53	51	47	45	47	50	53	53	55	54	57	58	52
1948	Below Normal	56	50	47	46	46	49	52	58	58	56	57	55	52
1949	Dry	54	51	47	45	45	48	54	55	54	54	56	57	52
1950	Below Normal	53	51	48	44	45	48	53	54	55	57	56	57	52
1951	Above Normal	52	49	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	51	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	56	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	52	54	55	56	58	51
1955	Dry	54	51	45	43	46	49	50	55	54	55	58	58	51
1956	Wet	53	49	47	44	44	49	53	53	55	56	56	54	51
1957	Above Normal	52	50	48	44	46	48	50	56	56	55	56	58	52
1958	Wet	53	50	47	45	46	47	52	56	56	56	57	56	52
1959	Below Normal	55	51	48	46	46	49	53	53	53	56	57	59	52
1960	Dry	56	53	49	45	46	49	51	55	55	56	56	57	52
1961	Dry	54	50	45	44	46	48	52	53	54	54	55	57	51
1962	Below Normal	54	51	45	45	46	47	53	53	55	55	55	57	51
1963	Wet	54	51	48	45	47	48	49	57	56	55	57	58	52
1964	Dry	53	50	46	44	46	48	50	53	54	56	56	56	51
1965	Wet	54	49	47	44	46	49	51	53	55	55	57	56	51
1966	Below Normal	53	50	45	44	45	47	52	54	53	54	55	57	51
1967	Wet	54	51	46	45	46	47	48	53	55	57	56	55	51
1968	Below Normal	53	52	45	44	46	50	52	54	53	55	56	58	52
1969	Wet	54	50	44	44	44	48	49	53	54	56	56	55	51
1970	Wet	52	51	48	47	46	50	49	53	54	55	56	58	51
1971	Wet	54	50	45	44	45	46	51	53	56	56	58	65	51
1972	Below Normal	53	50	45	44	45	48	50	54	54	55	55	56	51
1973	Above Normal	52	48	44	44	45	47	53	56	54	55	57	57	51
1974	Wet	52	50	46	44	45	45	52	55	56	57	55	55	51
1975	Wet	53	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	52	50	47	45	47	49	51	55	54	56	58	58	52
1977	Critical	55	52	49	45	48	49	52	54	56	60	64	64	54
1978	Above Normal	58	49	45	45	46	48	51	53	54	56	56	56	51
1979	Below Normal	53	50	47	46	46	50	53	56	54	55	57	58	52
1980	Above Normal	54	49	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	57	58	52
1982	Wet	53	50	46	43	44	47	48	58	56	56	56	54	51
1983	Wet	53	49	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	49	50	54	55	56	57	58	52
1985	Dry	53	49	46	45	46	49	54	54	54	56	56	57	52
1986	Wet	55	49	46	46	48	49	53	55	56	57	57	58	52
1987	Dry	55	52	48	44	46	49	52	54	54	55	59	58	52
1988	Critical	56	52	45	44	47	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	54	52	55	56	57	56	52
1990	Critical	54	52	48	45	44	51	52	55	55	56	58	59	52
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	59	53
1992	Critical	58	53	47	44	47	50	53	54	55	58	60	63	54
1993	Above Normal	60	52	45	43	45	50	52	54	55	55	57	55	52
1994	Critical	53	51	47	46	46	51	52	55	54	56	56	59	52
1995	Wet	58	49	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	52	47	45	47	49	53	54	56	57	58	56	52
1997	Wet	54	51	48	46	47	50	50	53	54	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	56	57	57	51
1999	Wet	55	51	47	46	45	47	53	53	55	55	57	56	52
2000	Above Normal	53	51	47	48	49	51	56	56	56	56	58	60	53
2001	Dry	56	53	50	46	46	53	52	55	54	57	60	62	54
2002	Dry	57	53	46	46	47	49	54	55	56	57	59	60	53
2003	Above Normal	56	54	47	46	47	51	51	54	58	56	59	59	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		54	50	46	45	46	48	51	54	55	56	57	56	52
Above Normal		55	50	46	45	46	49	53	55	55	55	57	57	52
Below Normal		55	51	47	45	46	49	53	55	55	55	56	57	52
Dry		55	51	47	45	46	50	53	55	55	56	57	58	52
Critical		56	52	47	45	47	50	52	55	56	58	60	61	53

Change in Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP1 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-1	-2	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	-1	-1	0	0	0	0	-1	1	1	-1	-4	0	-1
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	-2	1	0	0
1928	Above Normal	0	0	0	0	0	1	-1	0	0	0	0	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	0	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	Dry	-1	0	0	0	0	0	0	0	-1	0	-1	-1	0
1940	Above Normal	0	1	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1942	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	0	0	0	0	0	0	0	0	-1	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	-1	0	0	0
1947	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	1	1	0	-1	-1	0
1949	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	Dry	-1	0	0	0	0	1	0	0	0	-1	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1960	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	0	-1	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1969	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1973	Above Normal	0	0	0	0	0	0	0	0	0	0	1	0	0
1974	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	0	0	0	0	0	0	0	0	1	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	2	0	0	0
1978	Above Normal	1	0	0	0	1	0	0	0	0	0	0	0	0
1979	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	-1	0	1	0
1982	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	-1	0	0	-1	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	-1	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-2	0	0
1993	Above Normal	0	0	0	0	0	0	0	2	0	0	0	-1	0
1994	Critical	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1995	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1998	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
2003	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
Average		0	0	0	0	0	0	0	0	0	0	0	0	0
Wet		0	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Bend Bridge (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-2%	-3%	0%	0%	0%	0%
1923	Below Normal	1%	1%	0%	0%	0%	0%	0%	2%	0%	1%	1%	0%	0%
1924	Critical	-2%	-1%	-1%	0%	0%	-1%	-1%	2%	1%	-1%	-7%	1%	-1%
1925	Dry	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1926	Dry	-1%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	1%	0%
1928	Above Normal	1%	0%	0%	0%	0%	1%	-1%	-1%	0%	0%	0%	0%	0%
1929	Critical	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1939	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	1%	-1%	-1%	0%
1940	Above Normal	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1941	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1947	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	1%	-1%	-1%	0%	0%
1948	Below Normal	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	-1%	-1%	0%
1949	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1951	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	0%
1956	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1958	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Normal	-1%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	0%
1960	Dry	-1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-2%	0%
1962	Below Normal	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	0%
1963	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	0%
1965	Wet	0%	0%	0%	0%	0%	-1%	1%	0%	0%	0%	-1%	-1%	0%
1966	Below Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1967	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1969	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	1%	-2%	-1%	0%
1971	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1973	Above Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	1%	1%	1%	0%	1%	2%	0%	0%	0%	0%
1977	Critical	0%	0%	1%	0%	0%	0%	0%	0%	1%	3%	-1%	0%	0%
1978	Above Normal	2%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
1979	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1980	Above Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-2%	0%	1%	0%
1982	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1984	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	0%	0%	0%	1%	0%	-1%	0%	0%	-1%	0%	0%	0%	0%
1986	Wet	-1%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	-1%	0%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1989	Dry	0%	0%	1%	0%	0%	0%	-1%	0%	1%	0%	0%	-1%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	4%	0%	0%	0%	-2%	0%
1994	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1995	Wet	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1996	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1998	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2001	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	0%
2002	Dry	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%
Average		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Wet		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Dry		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Critical		-1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	56	49	48	45	45	50	54	60	58	57	57	58	53
1923	Below Normal	54	48	46	44	47	51	55	57	55	57	57	57	52
1924	Critical	54	52	48	44	48	52	55	58	57	60	64	64	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	61	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	55	50	45	45	47	49	56	55	56	57	58	59	53
1929	Critical	56	51	46	42	46	50	52	55	57	57	59	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	50	45	44	45	52	54	59	60	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	61	63	54
1934	Critical	61	53	46	46	48	53	55	58	59	61	66	64	56
1935	Below Normal	58	51	46	44	46	49	55	58	58	59	59	61	54
1936	Below Normal	57	51	46	45	46	50	54	55	55	56	57	60	53
1937	Below Normal	56	53	47	43	46	50	55	59	57	57	58	59	53
1938	Wet	56	51	47	44	46	48	51	57	58	57	58	57	53
1939	Dry	55	51	47	45	46	49	53	55	56	56	58	59	52
1940	Above Normal	55	52	47	45	47	49	56	58	57	56	58	58	53
1941	Wet	55	51	47	46	47	50	52	55	58	58	58	57	53
1942	Wet	55	52	48	46	47	50	54	55	58	58	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	56	58	59	53
1944	Dry	56	52	48	46	47	50	52	57	56	57	57	58	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	50	47	45	44	49	52	55	54	55	56	57	52
1947	Dry	54	51	46	44	47	50	54	55	56	56	58	59	52
1948	Below Normal	56	50	46	45	46	49	52	57	57	57	59	57	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	59	52
1950	Below Normal	54	52	47	43	45	48	54	56	56	58	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	55	57	58	52
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	57	51
1953	Wet	55	51	45	46	47	49	53	53	56	58	58	57	52
1954	Above Normal	54	51	46	45	46	48	52	53	55	56	58	59	52
1955	Dry	54	51	44	43	46	49	50	57	55	57	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	53	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	58	59	57	52
1959	Below Normal	56	51	48	46	46	49	53	54	55	58	59	61	53
1960	Dry	56	52	49	44	46	49	51	56	56	58	58	59	53
1961	Dry	55	50	45	44	46	47	52	54	56	56	56	59	52
1962	Below Normal	55	50	45	45	46	47	54	54	56	56	57	57	52
1963	Wet	55	51	48	45	47	48	49	57	58	56	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	56	58	58	57	52
1965	Wet	55	49	47	44	46	49	50	54	56	57	59	58	52
1966	Below Normal	54	50	45	44	45	47	53	55	54	55	58	58	51
1967	Wet	55	51	46	44	46	47	48	54	57	58	57	56	52
1968	Below Normal	54	52	45	44	46	50	52	55	54	57	58	59	52
1969	Wet	55	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	49	54	56	56	59	59	52
1971	Wet	55	50	45	44	45	46	52	54	57	57	60	60	52
1972	Below Normal	54	50	45	44	45	48	51	55	55	57	57	58	52
1973	Above Normal	53	48	44	44	45	47	54	57	56	56	57	58	52
1974	Wet	52	50	46	44	44	46	52	57	58	59	57	56	52
1975	Wet	54	50	45	45	45	47	51	55	57	58	57	57	52
1976	Critical	53	50	46	44	46	49	51	56	55	58	59	60	52
1977	Critical	55	52	48	45	48	49	53	55	57	59	66	64	54
1978	Above Normal	57	49	44	45	45	48	52	54	56	57	58	57	52
1979	Below Normal	55	51	47	45	46	50	53	57	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	59	52
1981	Dry	54	50	47	46	47	49	53	55	55	58	59	58	53
1982	Wet	54	50	46	43	44	47	49	59	58	58	58	56	52
1983	Wet	53	49	46	45	45	47	51	55	56	57	57	57	52
1984	Wet	56	51	47	45	46	49	51	55	56	57	59	60	53
1985	Dry	53	49	45	44	46	50	55	55	56	58	58	58	52
1986	Wet	56	49	46	46	48	50	54	56	58	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	61	59	53
1988	Critical	57	52	45	43	47	50	53	55	55	58	61	60	53
1989	Dry	58	50	45	43	44	49	56	53	56	57	58	58	52
1990	Critical	54	52	47	45	44	51	53	56	57	58	60	60	53
1991	Critical	57	51	46	45	48	48	53	55	58	60	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	63	64	54
1993	Above Normal	59	51	44	43	45	51	52	53	57	57	59	57	52
1994	Critical	55	51	47	46	46	51	52	56	55	58	59	60	53
1995	Wet	58	49	45	45	47	47	52	54	57	59	59	58	52
1996	Wet	55	53	47	45	47	49	53	55	58	58	60	57	53
1997	Wet	55	50	48	46	47	51	51	54	56	57	59	59	53
1998	Wet	54	50	45	45	45	47	52	51	55	58	58	58	52
1999	Wet	56	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	54	51	47	48	49	52	57	58	58	58	60	61	54
2001	Dry	57	53	50	46	46	53	53	57	56	59	62	63	54
2002	Dry	57	53	46	46	48	50	54	56	58	59	62	60	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	60	54
Average		55	51	46	45	46	49	53	56	57	57	59	59	53
Wet		55	50	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	50	46	45	46	49	53	56	57	57	58	59	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	58	52
Dry		56	51	46	44	46	50	53	56	56	57	59	59	53
Critical		56	52	46	44	47	50	53	56	57	59	62	62	54

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP1 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	56	49	48	45	45	49	54	59	57	57	56	58	53
1923	Below Normal	54	49	46	44	47	51	55	58	56	57	58	57	53
1924	Critical	53	52	47	44	48	51	54	59	58	60	60	64	54
1925	Dry	55	49	42	43	47	49	55	57	57	57	59	59	53
1926	Dry	56	52	47	44	47	52	55	56	57	57	59	60	54
1927	Wet	56	52	45	45	46	50	52	55	56	54	57	58	52
1928	Above Normal	55	50	45	45	47	50	55	55	55	56	58	59	53
1929	Critical	55	51	46	43	46	50	52	56	57	57	58	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	50	45	44	45	52	54	59	61	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	57	60	61	61	63	54
1934	Critical	61	53	46	46	48	53	56	58	59	61	66	64	56
1935	Below Normal	58	51	46	44	46	49	55	58	58	59	58	61	54
1936	Below Normal	57	51	46	45	46	50	54	55	56	56	57	60	53
1937	Below Normal	56	53	47	43	46	50	55	59	58	57	58	59	53
1938	Wet	56	51	46	44	46	48	51	57	58	57	58	57	52
1939	Dry	54	51	47	45	46	49	53	55	55	56	57	58	52
1940	Above Normal	55	52	47	45	47	49	56	58	57	56	57	58	53
1941	Wet	55	51	47	46	47	50	52	55	58	58	57	57	53
1942	Wet	54	52	48	46	47	50	54	55	58	57	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	56	57	58	53
1944	Dry	55	52	48	46	47	51	52	57	55	57	57	58	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	50	47	45	45	49	52	55	54	55	56	57	52
1947	Dry	53	50	46	44	47	50	54	55	56	56	58	59	52
1948	Below Normal	56	50	47	45	46	49	52	58	58	57	58	56	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	58	52
1950	Below Normal	53	51	47	43	45	48	54	56	56	58	58	58	52
1951	Above Normal	53	49	46	44	44	48	52	55	56	55	57	57	51
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	56	51
1953	Wet	55	51	45	46	47	49	53	54	56	58	58	57	52
1954	Above Normal	53	51	46	45	46	48	52	53	55	56	57	59	52
1955	Dry	54	50	44	43	46	50	50	56	55	56	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	52	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	57	58	57	52
1959	Below Normal	55	51	48	46	46	49	53	55	55	58	58	60	53
1960	Dry	56	53	49	45	46	49	52	56	56	57	58	59	53
1961	Dry	55	50	45	44	46	48	52	54	56	56	56	58	52
1962	Below Normal	54	50	45	45	46	47	54	54	56	56	56	58	52
1963	Wet	54	51	48	45	47	48	49	57	58	56	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	55	57	58	57	52
1965	Wet	55	49	47	44	46	49	51	54	56	57	59	57	52
1966	Below Normal	53	50	45	44	45	47	53	55	54	55	57	58	51
1967	Wet	55	51	46	45	46	47	48	54	57	58	57	56	52
1968	Below Normal	53	52	45	44	46	50	52	55	54	57	58	59	52
1969	Wet	54	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	50	54	55	56	58	59	52
1971	Wet	54	50	45	44	45	46	52	54	57	57	60	66	52
1972	Below Normal	53	50	45	44	45	48	51	55	55	56	57	57	51
1973	Above Normal	53	48	44	44	45	47	54	57	56	56	58	58	52
1974	Wet	52	50	46	44	45	46	52	57	58	59	57	56	52
1975	Wet	53	49	46	45	45	47	52	55	57	58	57	57	52
1976	Critical	52	50	46	45	47	50	52	56	56	58	60	59	52
1977	Critical	55	52	48	45	48	49	53	55	58	61	65	64	54
1978	Above Normal	58	49	44	45	46	48	51	54	56	57	58	57	52
1979	Below Normal	54	50	47	46	46	50	53	57	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	58	52
1981	Dry	54	50	47	46	47	49	53	55	55	57	59	59	53
1982	Wet	53	50	46	43	45	47	49	59	58	58	58	55	52
1983	Wet	53	49	46	45	45	47	51	55	56	56	57	57	52
1984	Wet	55	51	47	45	46	49	51	55	56	57	59	60	52
1985	Dry	53	49	45	45	46	50	55	55	55	58	58	58	52
1986	Wet	55	49	46	46	48	50	54	55	57	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	60	59	53
1988	Critical	57	52	45	43	47	50	53	55	55	58	60	60	53
1989	Dry	58	50	45	44	44	49	55	53	57	57	58	57	52
1990	Critical	54	52	47	45	44	51	53	56	57	57	60	60	53
1991	Critical	57	51	46	45	49	48	53	55	58	60	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	57	59	61	64	54
1993	Above Normal	60	51	44	43	45	51	52	55	56	57	59	56	52
1994	Critical	54	50	47	46	46	51	52	56	56	58	57	60	53
1995	Wet	58	49	45	45	47	47	53	54	57	58	59	58	52
1996	Wet	55	52	47	45	47	50	53	55	58	58	60	57	53
1997	Wet	54	50	48	46	47	51	51	54	56	56	58	58	53
1998	Wet	54	50	45	45	45	47	52	52	55	58	58	58	52
1999	Wet	55	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	54	51	47	48	49	52	57	58	58	58	60	61	54
2001	Dry	56	53	50	46	46	53	53	56	56	59	61	63	54
2002	Dry	57	53	46	45	48	50	54	56	58	59	60	61	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	60	54
Average		55	51	46	45	46	49	53	56	57	57	58	59	53
Wet		54	50	46	45	46	48	52	55	57	57	58	57	52
Above Normal		55	50	46	45	46	49	53	56	56	57	58	58	53
Below Normal		55	51	46	44	46	49	53	56	56	57	57	58	52
Dry		55	51	46	44	46	50	53	56	56	57	58	59	53
Critical		56	52	46	44	47	51	53	56	57	59	61	62	54

Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP1 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-1	-1	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	-1	-1	0	0	0	0	-1	1	1	-1	-4	0	0
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	-2	0	0	0
1928	Above Normal	0	0	0	0	0	1	-1	0	0	0	0	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	0	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1939	Dry	0	0	0	0	0	0	0	0	-1	0	-1	0	0
1940	Above Normal	0	1	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1942	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1943	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	0	0	0	0	0	0	0	0	-1	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	-1	0	0	0
1947	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	Below Normal	0	0	0	0	0	0	0	1	1	0	-1	-1	0
1949	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	Dry	-1	0	0	0	0	1	0	0	0	-1	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1958	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1960	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	0	-1	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1969	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1973	Above Normal	0	0	0	0	0	0	0	0	0	0	1	0	0
1974	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	0	0	0	0	0	0	0	0	1	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	1	0	0	0
1978	Above Normal	1	0	0	0	0	0	0	0	0	0	0	0	0
1979	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	Dry	0	0	0	0	0	0	0	0	0	-1	0	1	0
1982	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	-1	0	0	-1	0	0	0	0
1986	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	-1	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-2	0	0
1993	Above Normal	0	0	0	0	0	0	0	2	0	0	0	-1	0
1994	Critical	-1	0	0	0	0	0	0	0	0	0	-2	0	0
1995	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1998	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
2003	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
Average		0	0	0	0	0	0	0	0	0	0	0	0	0
Wet		0	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	0	0	0
Critical		0	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%	0%	0%	0%
1923	Below Normal	1%	1%	0%	0%	0%	0%	0%	2%	0%	1%	1%	0%	0%
1924	Critical	-2%	-1%	-1%	-1%	0%	0%	-1%	2%	1%	-1%	-6%	0%	-1%
1925	Dry	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1926	Dry	-1%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	1%	0%
1928	Above Normal	1%	0%	0%	0%	0%	1%	-1%	-1%	0%	0%	0%	0%	0%
1929	Critical	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1939	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	1%	-1%	-1%	0%
1940	Above Normal	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1941	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%
1947	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	1%	-1%	0%	0%	0%
1948	Below Normal	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	-1%	-1%	0%
1949	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1951	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1955	Dry	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	0%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1958	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1960	Dry	-1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1961	Dry	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	-2%	0%
1962	Below Normal	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	0%
1963	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1964	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	1%	0%
1965	Wet	0%	0%	-1%	0%	0%	-1%	1%	0%	0%	0%	-1%	-1%	0%
1966	Below Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1967	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1969	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-1%	-1%	0%	0%	0%	0%	1%	0%	0%	1%	-2%	-1%	0%
1971	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1973	Above Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	1%	0%	0%
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	1%	1%	1%	0%	1%	1%	0%	0%	0%	0%
1977	Critical	0%	0%	1%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
1978	Above Normal	2%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
1979	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1980	Above Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-2%	0%	1%	0%
1982	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1984	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	0%	0%	0%	1%	0%	-1%	0%	0%	-1%	0%	0%	0%	0%
1986	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1989	Dry	0%	0%	1%	0%	0%	0%	-1%	0%	1%	0%	1%	0%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	1%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	4%	0%	0%	0%	-2%	0%
1994	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-3%	-1%	0%
1995	Wet	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1996	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1998	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2001	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	0%
2002	Dry	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%
Average		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Wet		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Below Normal		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Dry		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Critical		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%

Sacramento River Water Temperatures Below Shasta Dam (°F)

No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	54	51	48	48	48	50
1923	Below Normal	49	50	51	48	46	47	51	52	49	48	48	50	49
1924	Critical	53	54	52	48	47	50	52	51	51	54	62	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	52	55	48
1926	Dry	57	54	51	47	45	46	46	47	48	49	53	56	50
1927	Wet	57	54	48	46	45	45	46	47	48	48	50	51	49
1928	Above Normal	53	53	50	47	46	46	47	48	48	50	52	53	49
1929	Critical	55	54	52	47	45	45	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	51	53	49
1931	Critical	54	54	52	47	46	46	47	49	51	53	59	65	52
1932	Dry	60	53	48	44	44	45	47	49	52	53	54	61	51
1933	Critical	60	56	52	46	44	45	47	48	51	53	55	62	52
1934	Critical	61	55	51	46	45	46	47	49	52	56	65	65	53
1935	Below Normal	59	52	49	45	44	45	46	47	50	52	52	57	50
1936	Below Normal	58	54	52	46	44	45	45	46	47	48	49	52	49
1937	Below Normal	54	55	53	48	45	46	46	47	48	48	50	52	49
1938	Wet	54	53	49	46	45	46	46	48	48	49	51	53	49
1939	Dry	55	54	51	48	46	46	47	47	48	49	52	55	50
1940	Above Normal	57	55	52	47	46	47	47	48	48	49	51	53	50
1941	Wet	55	54	50	47	46	46	47	48	48	50	52	53	50
1942	Wet	55	54	50	46	46	46	47	48	49	50	52	53	49
1943	Wet	54	54	51	47	46	46	47	48	48	49	51	52	49
1944	Dry	53	54	52	49	47	47	47	48	48	49	51	53	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	48	49	50	48
1946	Below Normal	52	53	49	45	44	44	45	46	47	48	48	50	48
1947	Dry	52	53	51	47	46	46	46	47	48	49	52	55	49
1948	Below Normal	56	53	51	47	45	46	46	47	48	48	49	51	49
1949	Dry	53	53	51	48	46	45	45	46	47	48	49	50	48
1950	Below Normal	53	53	52	47	44	44	45	45	47	48	48	50	48
1951	Above Normal	52	51	48	45	44	44	44	45	46	47	48	48	47
1952	Wet	50	51	48	44	44	44	45	46	47	48	49	52	47
1953	Wet	54	54	50	47	45	45	46	46	47	48	49	51	48
1954	Above Normal	53	53	50	46	45	45	46	47	48	48	50	52	49
1955	Dry	53	53	49	46	45	45	46	46	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	43	44	46	47	48	48	47
1957	Above Normal	52	52	51	48	46	46	47	47	48	48	50	51	49
1958	Wet	53	52	49	46	46	45	46	47	47	48	49	52	48
1959	Below Normal	55	54	52	47	46	46	46	47	48	50	53	56	50
1960	Dry	57	55	53	48	45	45	45	46	47	48	49	52	49
1961	Dry	54	53	48	46	45	45	46	46	47	48	50	54	48
1962	Below Normal	55	53	49	46	45	44	45	45	46	47	48	50	48
1963	Wet	53	53	50	47	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	53	52	49	44	43	43	44	45	46	47	48	48	47
1966	Below Normal	49	51	50	45	44	45	45	46	47	48	49	52	48
1967	Wet	55	54	49	46	44	45	46	47	48	48	49	50	48
1968	Below Normal	52	54	51	47	45	46	47	47	48	48	51	53	49
1969	Wet	54	53	49	45	43	43	44	45	46	48	48	50	47
1970	Wet	54	53	50	47	44	44	45	45	46	48	50	52	48
1971	Wet	54	52	48	44	43	44	45	46	47	48	49	51	48
1972	Below Normal	53	53	50	46	44	45	46	47	48	48	49	52	48
1973	Above Normal	53	51	48	45	44	44	45	45	46	47	48	48	47
1974	Wet	49	52	47	45	43	44	44	45	46	48	48	50	47
1975	Wet	53	53	50	47	45	46	46	47	48	48	49	51	49
1976	Critical	53	53	50	47	46	46	46	47	48	48	50	51	49
1977	Critical	52	53	52	48	47	47	48	49	51	54	65	65	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	49	47
1979	Below Normal	51	53	52	48	46	45	46	47	48	48	49	51	49
1980	Above Normal	52	52	50	46	46	45	46	46	47	48	48	49	48
1981	Dry	51	52	50	47	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	45	46	47	48	48	50	47
1983	Wet	53	52	49	46	45	46	45	47	48	48	50	53	48
1984	Wet	55	54	49	45	44	45	46	47	48	48	49	51	48
1985	Dry	52	52	49	46	45	45	46	46	47	48	50	54	48
1986	Wet	56	53	49	47	47	47	47	48	48	49	51	52	50
1987	Dry	53	54	52	47	45	45	46	47	48	49	51	53	49
1988	Critical	56	55	50	45	45	45	46	47	48	49	52	55	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	49	51	48
1990	Critical	53	53	52	47	45	45	46	46	47	50	49	53	49
1991	Critical	56	54	52	48	46	46	47	48	49	51	49	54	50
1992	Critical	57	55	52	47	45	45	46	47	50	53	58	64	52
1993	Above Normal	61	54	48	43	42	42	43	45	47	48	48	51	48
1994	Critical	53	53	51	48	46	46	47	48	48	50	53	56	50
1995	Wet	58	54	50	45	43	46	46	47	48	49	51	53	49
1996	Wet	55	55	51	47	47	46	46	47	48	49	50	52	49
1997	Wet	54	53	50	46	44	44	45	46	47	48	49	52	48
1998	Wet	54	53	49	46	45	44	44	46	48	49	52	54	49
1999	Wet	56	54	49	46	45	45	45	46	47	48	48	49	48
2000	Above Normal	52	53	51	48	48	47	48	48	49	50	52	53	50
2001	Dry	55	55	53	49	46	46	47	47	48	49	51	53	50
2002	Dry	55	55	49	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	52	49
Average		54	53	50	46	45	45	46	47	48	49	51	53	49
Wet		54	53	49	46	45	45	45	46	47	48	49	51	48
Above Normal		54	53	50	46	45	45	46	47	48	48	50	51	48
Below Normal		54	53	51	47	45	45	46	47	48	48	50	52	49
Dry		55	53	50	47	45	45	46	47	48	49	51	53	49
Critical		55	54	52	47	46	46	47	48	50	52	56	59	51

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP1 (2030)**

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	48	49
1923	Below Normal	50	51	51	49	47	47	52	53	49	48	48	49	49
1924	Critical	51	53	52	48	47	49	51	54	51	53	54	63	52
1925	Dry	57	50	46	42	43	44	45	46	47	48	51	55	48
1926	Dry	56	54	52	48	45	46	46	47	49	49	52	55	50
1927	Wet	57	54	49	46	45	45	46	47	48	49	50	52	49
1928	Above Normal	54	53	50	47	46	46	47	48	48	49	51	53	49
1929	Critical	54	54	52	47	45	46	46	47	48	48	50	53	49
1930	Dry	55	55	51	47	46	46	46	47	48	48	50	52	49
1931	Critical	54	54	52	48	46	47	48	49	52	53	59	65	52
1932	Dry	60	53	48	44	44	45	48	50	53	53	53	60	51
1933	Critical	60	56	52	46	44	46	47	49	52	53	54	62	52
1934	Critical	61	55	51	46	45	46	48	50	52	56	65	65	53
1935	Below Normal	59	52	49	45	44	45	46	48	50	52	51	56	50
1936	Below Normal	58	54	52	47	45	45	45	46	47	48	49	52	49
1937	Below Normal	54	55	53	48	46	46	46	47	48	48	50	52	49
1938	Wet	54	53	49	46	45	46	46	48	48	49	51	53	49
1939	Dry	54	54	51	48	46	46	47	47	48	49	51	54	50
1940	Above Normal	56	55	52	47	46	47	47	48	48	49	51	52	50
1941	Wet	54	53	50	47	46	46	47	48	48	50	51	53	49
1942	Wet	54	54	50	46	46	46	46	47	48	48	50	51	49
1943	Wet	53	54	51	47	46	46	47	48	48	49	50	51	49
1944	Dry	52	53	52	49	47	47	47	48	48	49	51	52	50
1945	Below Normal	54	53	50	46	46	46	46	47	48	48	48	50	48
1946	Below Normal	52	52	49	46	44	45	45	46	47	48	48	49	48
1947	Dry	51	53	51	48	46	46	46	47	48	49	51	54	49
1948	Below Normal	56	53	52	47	46	46	46	47	48	48	49	51	49
1949	Dry	52	52	51	48	46	45	46	46	47	48	48	49	48
1950	Below Normal	51	53	52	47	44	44	45	45	46	48	48	49	48
1951	Above Normal	51	51	48	45	44	44	45	45	46	47	48	48	47
1952	Wet	49	50	48	44	44	44	45	46	47	48	49	51	47
1953	Wet	53	53	50	47	45	45	46	46	47	48	49	50	48
1954	Above Normal	52	52	50	46	45	45	46	47	48	48	49	51	48
1955	Dry	52	53	49	46	45	45	46	47	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	44	44	45	47	48	48	46
1957	Above Normal	50	52	51	48	46	46	47	47	48	48	49	51	49
1958	Wet	52	52	49	46	46	45	46	47	47	48	49	51	48
1959	Below Normal	54	54	52	47	46	46	47	47	48	49	52	55	50
1960	Dry	56	55	53	48	45	45	45	46	47	48	49	51	49
1961	Dry	54	53	49	46	45	45	46	46	47	48	49	51	48
1962	Below Normal	53	53	49	46	45	44	45	46	47	47	48	49	48
1963	Wet	52	52	50	48	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	47	45	45	46	47	47	48	49	51	48
1965	Wet	52	52	49	44	43	44	44	45	46	48	48	48	47
1966	Below Normal	49	51	50	46	45	45	45	46	47	48	49	51	48
1967	Wet	53	53	49	46	44	45	46	47	47	48	49	50	48
1968	Below Normal	51	53	51	47	46	46	47	47	48	48	50	52	49
1969	Wet	53	52	49	45	43	43	44	45	46	47	48	49	47
1970	Wet	52	53	50	47	44	44	45	46	46	48	48	50	48
1971	Wet	52	52	48	44	44	44	45	46	47	48	48	50	47
1972	Below Normal	52	52	50	46	44	45	46	47	48	48	49	51	48
1973	Above Normal	52	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	48	51	47	45	43	44	44	45	46	47	48	49	46
1975	Wet	51	52	50	47	45	46	46	47	48	48	49	50	48
1976	Critical	52	52	50	47	47	46	47	47	48	48	49	51	49
1977	Critical	52	53	52	49	47	47	48	49	52	57	66	64	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	48	47
1979	Below Normal	50	52	51	48	46	46	46	47	48	48	49	50	48
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	48	48
1981	Dry	50	51	50	48	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	45	46	47	48	48	49	47
1983	Wet	52	52	49	46	45	46	45	46	48	48	50	52	48
1984	Wet	54	53	49	45	45	45	46	47	48	48	49	50	48
1985	Dry	51	51	49	46	45	45	46	46	48	48	50	54	48
1986	Wet	56	53	50	47	47	47	47	48	48	49	51	52	50
1987	Dry	53	53	52	48	46	46	47	47	48	48	51	54	49
1988	Critical	56	55	50	45	45	45	46	47	48	49	52	55	49
1989	Dry	58	54	50	46	44	44	45	46	47	48	48	50	48
1990	Critical	52	53	52	48	45	45	46	46	47	48	50	54	49
1991	Critical	56	54	52	48	47	47	47	48	49	51	49	53	50
1992	Critical	56	55	52	48	45	45	46	47	50	53	56	63	51
1993	Above Normal	61	54	49	43	42	43	43	45	46	48	48	49	48
1994	Critical	52	52	51	48	46	47	47	48	48	49	53	57	50
1995	Wet	59	54	50	45	43	46	46	47	48	49	51	52	49
1996	Wet	54	54	51	47	47	46	46	47	48	49	50	51	49
1997	Wet	53	52	50	46	44	45	45	46	47	48	49	51	48
1998	Wet	53	52	49	46	45	44	44	46	47	48	51	53	48
1999	Wet	55	53	49	47	45	45	45	46	47	48	48	49	48
2000	Above Normal	51	52	51	48	48	47	48	48	49	50	51	53	50
2001	Dry	54	54	53	49	47	46	47	47	48	49	51	53	50
2002	Dry	55	55	50	47	46	47	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	51	49
Average		54	53	50	46	45	45	46	47	48	49	50	52	49
Wet		53	53	49	46	45	45	46	46	47	48	49	51	48
Above Normal		53	52	50	46	45	45	46	47	47	48	49	50	48
Below Normal		53	53	51	47	45	45	46	47	48	48	49	51	49
Dry		54	53	50	47	45	45	46	47	48	49	50	53	49
Critical		55	54	52	47	46	46	47	48	50	52	55	59	51

Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP1 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-4	-3	0	0	0	-1
1923	Below Normal	1	1	0	0	0	0	1	1	0	0	0	-1	0
1924	Critical	-2	-1	0	0	0	-1	-1	2	0	-1	-8	-1	-1
1925	Dry	1	1	1	0	0	0	0	0	0	0	-1	-1	0
1926	Dry	-1	0	1	1	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	1	1	1	0
1928	Above Normal	1	0	0	0	0	0	0	0	0	0	0	-1	0
1929	Critical	-1	0	1	1	0	0	0	0	0	0	-1	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	1	0	0	0	0	1	0	-1	0	0
1932	Dry	0	0	0	0	0	0	1	1	1	0	-1	0	0
1933	Critical	0	0	0	0	0	0	1	1	1	0	-1	0	0
1934	Critical	0	0	0	0	0	0	1	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1940	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	0	0	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1948	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	1	0	0	-1	-1	-1	0
1960	Dry	-1	0	1	0	0	0	0	0	0	0	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	-2	-3	0
1962	Below Normal	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1963	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1971	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	0	0	1	1	0	0	0	0	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	3	1	-1	0
1978	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1979	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1985	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1990	Critical	-1	0	0	0	0	0	0	0	0	-2	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-2	-1	0
1993	Above Normal	0	0	0	0	0	0	0	0	-1	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	0	-1	0	1	0
1995	Wet	1	0	0	0	0	0	0	0	0	-1	0	-1	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	1	0	0	0	-1	-1	0
1998	Wet	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
2002	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Average		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Dry		0	0	0	0	0	0	0	0	0	0	0	-1	0
Critical		-1	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures Below Shasta Dam (°F)

From No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-8%	-5%	0%	0%	1%	-1%
1923	Below Normal	2%	2%	1%	0%	0%	0%	1%	2%	-1%	0%	0%	-3%	0%
1924	Critical	-4%	-2%	0%	0%	0%	-2%	-2%	5%	1%	-2%	-13%	-1%	-2%
1925	Dry	1%	1%	2%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1927	Wet	0%	0%	1%	1%	0%	0%	0%	0%	0%	1%	2%	1%	0%
1928	Above Normal	2%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1929	Critical	-1%	0%	1%	2%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1930	Dry	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1931	Critical	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	1%	1%	2%	1%	0%	-2%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	1%	1%	1%	2%	0%	-2%	0%	0%
1934	Critical	0%	0%	0%	1%	0%	1%	2%	2%	0%	-1%	0%	0%	0%
1935	Below Normal	0%	0%	0%	0%	1%	0%	1%	1%	1%	1%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-2%	0%
1939	Dry	-2%	-1%	0%	1%	0%	1%	0%	0%	0%	-1%	-2%	-3%	-1%
1940	Above Normal	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-2%	0%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1943	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1944	Dry	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1945	Below Normal	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-1%	-1%	0%	0%	0%	1%	0%	0%	1%	0%	0%	-1%	0%
1947	Dry	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1948	Below Normal	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1949	Dry	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-3%	0%
1950	Below Normal	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1951	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1953	Wet	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1955	Dry	-2%	-1%	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%
1956	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-3%	-1%	0%	1%	0%	1%	1%	0%	0%	-1%	-2%	-3%	-1%
1960	Dry	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1961	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	-5%	-1%
1962	Below Normal	-5%	-1%	0%	1%	1%	1%	1%	0%	1%	0%	0%	-2%	0%
1963	Wet	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	0%
1964	Dry	-1%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
1965	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1966	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1967	Wet	-2%	-1%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	-2%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	0%
1970	Wet	-3%	-1%	0%	0%	0%	1%	1%	1%	0%	0%	-3%	-4%	-1%
1971	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1972	Below Normal	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1973	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%
1974	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1975	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-2%	-1%	0%	1%	1%	1%	1%	1%	1%	0%	-1%	0%	0%
1977	Critical	0%	0%	0%	1%	1%	0%	1%	1%	2%	8%	1%	-1%	1%
1978	Above Normal	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	-2%	0%
1979	Below Normal	-4%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1982	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%
1984	Wet	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	-1%	-1%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%
1986	Wet	-1%	0%	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%
1987	Dry	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	1%	0%
1988	Critical	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1989	Dry	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1990	Critical	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-3%	2%	1%	0%
1991	Critical	0%	0%	0%	1%	1%	0%	0%	0%	0%	1%	-1%	-2%	0%
1992	Critical	-1%	0%	0%	1%	0%	0%	0%	0%	1%	0%	-4%	-2%	0%
1993	Above Normal	0%	0%	1%	1%	0%	0%	0%	-1%	-1%	0%	0%	-4%	0%
1994	Critical	-3%	-2%	0%	1%	0%	0%	0%	0%	0%	-1%	0%	1%	0%
1995	Wet	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1996	Wet	-2%	-1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	1%	1%	1%	0%	0%	-1%	-2%	0%
1998	Wet	-1%	-1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	0%
1999	Wet	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
2001	Dry	-2%	-1%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%
2002	Dry	0%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-1%	-1%	0%
2003	Above Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
Above Normal		-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Critical		-1%	0%	0%	1%	0%	0%	0%	1%	1%	0%	-2%	0%	0%

Sacramento River Water Temperatures at Keswick Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	48	52	55	53	51	51	52	51
1923	Below Normal	51	50	50	48	47	48	52	53	51	51	51	53	50
1924	Critical	54	54	51	47	47	51	53	53	52	55	62	62	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	54	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	55	57	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	52	54	50
1928	Above Normal	54	52	49	47	46	47	50	50	50	52	53	55	50
1929	Critical	55	54	51	45	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	50
1931	Critical	55	54	51	47	47	48	49	51	53	55	60	65	53
1932	Dry	60	53	48	45	44	47	49	52	54	55	56	62	52
1933	Critical	61	56	51	46	45	47	49	51	53	55	57	62	53
1934	Critical	62	56	51	47	46	48	49	52	54	57	64	63	54
1935	Below Normal	59	53	49	46	45	46	48	50	52	54	54	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	52	55	50
1937	Below Normal	55	55	52	47	46	47	49	50	50	51	52	55	51
1938	Wet	55	53	49	46	45	46	48	50	51	51	53	55	50
1939	Dry	55	54	50	48	46	47	48	49	51	51	54	56	51
1940	Above Normal	54	53	51	47	47	47	50	51	50	51	53	55	51
1941	Wet	55	53	50	47	46	47	48	50	51	53	53	55	51
1942	Wet	55	54	50	46	46	47	49	49	50	51	52	54	50
1943	Wet	54	54	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	54	54	52	48	47	48	48	50	51	52	53	54	51
1945	Below Normal	55	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	53	49	45	44	46	47	48	49	50	51	52	49
1947	Dry	53	53	50	47	46	47	48	49	50	51	54	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	53	50
1949	Dry	54	53	50	47	46	46	48	49	49	50	52	53	50
1950	Below Normal	53	53	51	46	44	45	47	48	48	49	51	52	49
1951	Above Normal	52	51	48	45	44	45	47	48	48	49	51	52	48
1952	Wet	51	51	48	44	44	44	46	48	50	51	51	53	48
1953	Wet	54	54	49	47	45	46	48	48	49	51	52	53	50
1954	Above Normal	53	52	49	46	45	46	47	48	50	50	53	54	49
1955	Dry	54	53	48	45	45	47	47	49	49	51	52	53	49
1956	Wet	53	51	49	44	43	45	47	46	48	50	50	51	48
1957	Above Normal	52	52	51	47	46	46	48	50	50	50	53	54	50
1958	Wet	53	52	49	46	46	46	47	49	50	51	51	54	49
1959	Below Normal	55	54	51	47	46	46	48	49	50	52	55	56	51
1960	Dry	56	54	52	47	45	46	47	48	49	51	52	54	50
1961	Dry	55	53	48	46	45	46	47	48	49	50	52	55	49
1962	Below Normal	55	53	48	46	45	45	47	48	48	50	51	52	49
1963	Wet	53	53	50	47	46	47	48	50	50	51	53	54	50
1964	Dry	53	52	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	54	52	49	44	44	45	45	47	49	50	52	51	48
1966	Below Normal	51	51	49	45	45	45	48	49	49	50	52	54	49
1967	Wet	54	53	48	45	45	45	46	48	50	51	51	52	49
1968	Below Normal	53	54	49	46	46	47	48	49	49	51	53	55	50
1969	Wet	54	52	48	45	43	44	45	47	49	51	51	52	48
1970	Wet	53	53	49	47	45	46	46	48	49	50	53	54	49
1971	Wet	54	52	47	44	44	45	47	48	49	50	52	53	49
1972	Below Normal	53	52	49	45	45	46	47	49	49	50	52	54	49
1973	Above Normal	53	50	47	45	44	45	47	48	49	50	51	52	48
1974	Wet	50	51	47	45	43	45	47	48	49	51	50	52	48
1975	Wet	53	53	49	47	45	46	48	49	50	51	51	53	50
1976	Critical	53	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	50	53	55	63	63	53
1978	Above Normal	57	52	47	46	44	44	46	47	49	50	51	51	48
1979	Below Normal	53	53	51	48	46	47	48	50	50	50	53	54	50
1980	Above Normal	53	51	49	46	46	47	48	49	49	50	51	53	49
1981	Dry	52	52	50	47	46	47	49	49	50	51	53	54	50
1982	Wet	54	52	48	44	44	45	46	49	50	50	51	52	49
1983	Wet	53	52	48	46	45	46	47	49	50	51	52	54	49
1984	Wet	55	53	49	45	45	46	47	49	50	50	53	54	50
1985	Dry	52	51	48	46	45	47	48	48	50	51	52	55	50
1986	Wet	56	53	49	47	47	48	50	50	51	52	53	55	51
1987	Dry	54	53	51	47	46	47	48	49	50	51	54	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	52	55	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	53	50
1990	Critical	54	53	51	47	45	47	48	49	50	52	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	56	51
1992	Critical	58	55	51	47	46	47	48	49	51	54	59	62	52
1993	Above Normal	61	54	48	43	43	45	45	47	49	50	52	53	49
1994	Critical	54	53	50	47	46	48	49	50	51	52	55	57	51
1995	Wet	58	53	49	45	44	46	48	49	50	52	53	54	50
1996	Wet	55	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	53	50	46	45	46	47	48	49	50	52	54	49
1998	Wet	54	53	48	46	45	45	48	47	49	51	54	55	49
1999	Wet	56	53	49	46	45	45	47	48	49	50	51	52	49
2000	Above Normal	53	53	50	48	49	49	51	51	51	52	55	56	52
2001	Dry	55	55	53	49	46	48	48	50	51	53	55	56	52
2002	Dry	56	55	49	47	47	47	49	50	51	52	55	55	51
2003	Above Normal	56	55	50	46	46	48	48	49	51	51	53	55	51
Average		55	53	49	46	45	46	48	49	50	51	53	55	50
Wet		54	53	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	46	45	46	48	49	50	51	52	54	50
Dry		55	53	50	46	46	47	48	49	50	51	53	55	50
Critical		56	54	51	47	46	48	49	50	51	54	57	59	52

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP2 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
Year	Year Type													
1922	Above Normal	51	50	52	49	47	47	52	52	50	51	51	52	50
1923	Below Normal	51	51	50	48	47	48	53	54	51	51	51	52	51
1924	Critical	51	53	51	47	48	50	52	55	53	54	55	63	53
1925	Dry	58	51	45	44	45	45	49	49	50	51	53	56	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	54	57	51
1927	Wet	57	55	48	46	45	47	47	48	49	50	52	54	50
1928	Above Normal	54	52	50	47	46	47	49	49	50	51	53	55	50
1929	Critical	55	53	51	46	46	47	48	49	50	51	52	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	52	55	50
1931	Critical	55	54	51	48	47	48	49	51	53	55	59	65	53
1932	Dry	60	53	48	45	44	47	49	53	55	55	55	61	52
1933	Critical	61	56	51	46	45	47	49	51	54	55	56	62	53
1934	Critical	62	55	51	47	46	48	50	53	54	57	64	63	54
1935	Below Normal	59	53	49	46	45	46	49	50	52	54	53	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	55	54	52	48	46	47	49	50	50	51	52	55	51
1938	Wet	55	53	49	46	45	46	48	50	50	51	53	54	50
1939	Dry	54	53	51	48	47	47	49	49	50	51	53	55	51
1940	Above Normal	54	54	52	47	46	47	50	50	51	51	53	54	51
1941	Wet	54	53	50	47	46	47	48	50	50	52	53	54	50
1942	Wet	54	53	50	46	47	47	49	49	50	51	52	53	50
1943	Wet	53	53	50	47	46	47	49	50	50	51	52	54	50
1944	Dry	53	53	51	49	47	48	49	51	50	51	53	54	51
1945	Below Normal	54	53	49	46	46	47	48	49	50	50	51	52	50
1946	Below Normal	53	52	49	46	45	46	47	48	49	50	51	52	49
1947	Dry	52	52	50	47	46	47	48	49	50	51	53	55	50
1948	Below Normal	56	53	51	47	46	47	48	50	51	50	52	52	50
1949	Dry	53	52	50	47	46	46	48	49	49	50	51	52	49
1950	Below Normal	52	52	51	47	44	45	47	49	49	51	51	52	49
1951	Above Normal	51	51	48	45	44	45	47	48	48	49	51	51	48
1952	Wet	50	50	48	44	44	44	46	48	49	51	51	52	48
1953	Wet	53	53	49	47	46	47	48	48	49	51	52	52	49
1954	Above Normal	52	52	49	46	45	46	47	48	50	50	52	53	49
1955	Dry	53	52	48	45	45	47	47	49	49	50	52	53	49
1956	Wet	52	51	48	44	43	45	47	46	48	50	50	50	48
1957	Above Normal	50	51	50	47	46	46	48	50	50	50	52	54	50
1958	Wet	52	51	49	46	46	46	47	49	49	51	51	52	49
1959	Below Normal	53	53	51	47	46	47	48	49	50	51	53	55	50
1960	Dry	55	54	53	48	46	46	47	48	49	51	52	53	50
1961	Dry	54	53	48	46	46	46	47	48	49	50	51	53	49
1962	Below Normal	53	52	49	46	45	45	47	48	49	50	50	52	49
1963	Wet	52	52	50	47	46	47	48	50	50	51	52	53	50
1964	Dry	52	51	49	46	45	46	47	49	49	51	52	53	49
1965	Wet	54	52	49	44	44	45	46	47	49	50	52	50	48
1966	Below Normal	50	51	48	45	45	45	48	48	49	50	51	53	49
1967	Wet	53	53	48	46	45	46	46	48	50	51	51	52	49
1968	Below Normal	52	52	49	46	46	47	48	49	50	51	52	54	50
1969	Wet	53	52	48	45	43	44	45	47	48	50	51	51	48
1970	Wet	51	52	49	47	45	46	46	48	49	50	51	53	49
1971	Wet	52	52	47	44	44	45	47	47	49	50	52	52	48
1972	Below Normal	52	52	49	46	45	46	47	49	49	50	51	53	49
1973	Above Normal	52	50	47	45	44	45	47	48	48	50	51	52	48
1974	Wet	49	51	47	45	44	45	47	48	49	51	50	51	48
1975	Wet	51	51	49	47	46	46	48	49	50	51	51	52	49
1976	Critical	52	51	49	47	47	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	51	53	57	61	63	53
1978	Above Normal	59	52	47	45	44	44	45	46	48	50	51	50	48
1979	Below Normal	50	51	50	48	46	47	48	50	50	50	52	53	50
1980	Above Normal	53	51	49	47	46	47	48	49	49	50	51	52	49
1981	Dry	51	51	49	47	46	47	49	49	50	51	52	54	50
1982	Wet	53	51	48	44	44	45	46	49	49	50	51	51	48
1983	Wet	52	51	48	46	45	46	47	49	50	50	52	53	49
1984	Wet	54	53	49	45	45	46	47	49	50	51	52	53	49
1985	Dry	52	51	48	46	46	47	48	49	50	51	52	54	49
1986	Wet	55	52	49	47	47	47	49	50	51	52	53	54	51
1987	Dry	54	53	51	47	46	47	48	49	50	51	53	54	50
1988	Critical	56	55	49	45	45	47	48	49	50	52	54	56	50
1989	Dry	58	54	49	46	45	46	48	47	49	51	51	53	50
1990	Critical	53	53	51	48	45	47	48	49	50	51	54	56	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	55	51
1992	Critical	57	55	51	47	46	47	48	49	52	54	58	62	52
1993	Above Normal	61	54	48	43	43	45	46	48	48	50	52	50	49
1994	Critical	52	52	50	48	47	48	49	50	50	52	54	55	51
1995	Wet	56	53	49	45	45	46	48	48	50	51	53	54	50
1996	Wet	54	54	50	47	47	47	48	49	50	51	53	52	50
1997	Wet	53	52	50	46	45	46	47	48	49	50	52	53	49
1998	Wet	53	52	48	46	45	45	47	47	49	51	53	54	49
1999	Wet	55	53	49	47	45	45	48	48	49	50	51	51	49
2000	Above Normal	52	52	50	48	49	49	51	51	51	52	54	56	51
2001	Dry	54	54	53	49	47	49	49	50	50	52	54	56	51
2002	Dry	55	55	49	47	47	48	49	50	51	52	54	55	51
2003	Above Normal	55	55	50	46	46	47	48	49	51	51	53	54	50
Average		54	53	50	46	46	47	48	49	50	51	53	54	50
Wet		53	52	49	46	45	46	47	48	49	51	52	52	49
Above Normal		54	52	49	46	46	46	48	49	50	51	52	53	50
Below Normal		53	52	50	47	45	46	48	49	50	51	52	53	50
Dry		54	53	50	47	46	47	48	49	50	51	53	55	50
Critical		55	54	51	47	46	48	49	51	52	54	56	59	52

Change in Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP2 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-3	-2	0	0	0	0
1923	Below Normal	1	1	0	0	0	0	1	1	0	0	0	-1	0
1924	Critical	-2	-1	0	0	0	-1	-1	2	1	-1	-6	1	-1
1925	Dry	1	0	1	0	0	0	0	0	0	0	-1	-1	0
1926	Dry	-1	0	0	1	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	Above Normal	0	0	0	0	0	0	-1	0	0	0	-1	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	1	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	1	1	0	-1	0	0
1933	Critical	0	0	0	0	0	0	1	1	1	0	-1	0	0
1934	Critical	0	0	0	0	1	0	1	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	-1	0	-1	0
1939	Dry	-1	-1	0	0	0	0	1	0	-1	1	-1	-1	0
1940	Above Normal	0	1	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	-1	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	0	1	1	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-1	0	0	0	0	0	1	0	0	0	-1	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1960	Dry	-2	0	1	0	0	0	0	0	0	0	0	-1	0
1961	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-2	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	-1	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	2	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	0	0	0	0	0	0	1	2	-2	0	0
1978	Above Normal	1	0	0	0	1	0	0	-1	-1	0	0	-1	0
1979	Below Normal	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	-1	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	0	0	0	0	0	0	0	0	0	0	-2	0
1985	Dry	-1	0	0	1	0	0	0	0	0	0	0	-1	0
1986	Wet	-1	-1	0	0	0	0	-1	0	0	0	0	0	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1990	Critical	-1	0	0	0	0	0	0	0	0	-1	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	0	1	-1	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1995	Wet	-2	0	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	-1	0	0	0	0	0	1	0	0	-1	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-1	-1	0	0	0	0	0	0	-1	0	0	0	0
2002	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
Average		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-1	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Keswick Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-6%	-4%	0%	0%	1%	-1%
1923	Below Normal	1%	1%	0%	0%	0%	0%	1%	3%	0%	1%	0%	-2%	0%
1924	Critical	-4%	-2%	-1%	1%	1%	-1%	-2%	4%	1%	-2%	-10%	2%	-1%
1925	Dry	1%	1%	1%	0%	0%	0%	0%	0%	1%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	1%	0%	0%
1928	Above Normal	0%	0%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%	0%
1929	Critical	-1%	0%	1%	3%	1%	0%	0%	0%	0%	0%	-1%	0%	0%
1930	Dry	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	1%	1%	2%	1%	0%	-2%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	1%	1%	1%	1%	0%	-2%	0%	0%
1934	Critical	0%	0%	0%	1%	0%	0%	1%	2%	0%	-1%	0%	0%	0%
1935	Below Normal	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-2%	0%
1939	Dry	-2%	-1%	0%	1%	1%	1%	1%	0%	-2%	1%	-1%	-1%	0%
1940	Above Normal	0%	1%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1941	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	-1%	-1%
1942	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1943	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1944	Dry	-2%	-2%	0%	0%	0%	0%	1%	1%	-1%	-1%	0%	0%	0%
1945	Below Normal	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-1%	-1%	-1%	0%	1%	1%	0%	0%	1%	0%	0%	-2%	0%
1947	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1948	Below Normal	-1%	0%	1%	1%	0%	0%	0%	2%	1%	0%	-1%	-2%	0%
1949	Dry	-1%	-2%	0%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	0%
1950	Below Normal	-3%	-2%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-2%	0%
1951	Above Normal	-3%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-3%	-3%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-2%	-1%
1953	Wet	-2%	-2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-2%	-1%	0%	0%	0%	1%	0%	1%	1%	-1%	0%	-1%	0%
1956	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1957	Above Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1959	Below Normal	-3%	-2%	0%	1%	1%	1%	1%	1%	0%	-1%	-3%	-2%	-1%
1960	Dry	-3%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1961	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-2%	-4%	-1%
1962	Below Normal	-4%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1963	Wet	-3%	-2%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%
1964	Dry	-2%	-1%	0%	0%	1%	1%	1%	0%	-1%	-1%	0%	0%	0%
1965	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-3%	0%
1966	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1967	Wet	-3%	-1%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	-1%
1970	Wet	-3%	-2%	0%	0%	0%	0%	1%	1%	0%	1%	-2%	-3%	-1%
1971	Wet	-4%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	-2%	-1%
1972	Below Normal	-2%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1973	Above Normal	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%
1974	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-2%	-1%
1975	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1976	Critical	-2%	-1%	0%	3%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1977	Critical	-1%	-1%	-1%	0%	0%	1%	1%	1%	2%	4%	-2%	0%	0%
1978	Above Normal	-1%	0%	0%	0%	1%	1%	-1%	-1%	-1%	-1%	0%	-2%	0%
1979	Below Normal	-4%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%	0%
1982	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	-2%	0%
1983	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1984	Wet	-3%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-3%	-1%
1985	Dry	-1%	-1%	0%	1%	1%	0%	1%	1%	-1%	0%	0%	-1%	0%
1986	Wet	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	0%
1987	Dry	-1%	0%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-1%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1989	Dry	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	1%	0%
1991	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	2%	-1%	0%	0%	-4%	0%
1994	Critical	-4%	-2%	0%	1%	0%	0%	0%	0%	-1%	0%	-1%	-3%	-1%
1995	Wet	-3%	-1%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1997	Wet	-3%	-1%	0%	0%	0%	1%	0%	1%	0%	0%	-1%	-2%	0%
1998	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1999	Wet	-2%	-1%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-2%	-3%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%
2001	Dry	-2%	-2%	0%	1%	0%	0%	1%	1%	-1%	0%	-1%	0%	0%
2002	Dry	-1%	-1%	1%	0%	0%	0%	1%	1%	0%	-1%	-2%	-1%	0%
2003	Above Normal	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Average		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	-1%	0%
Below Normal		-2%	-1%	0%	0%	0%	0%	1%	0%	0%	-1%	-1%	-1%	0%
Dry		-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	1%	0%	0%	-2%	0%	0%

Sacramento River Water Temperatures at Balls Ferry (°F)

No Action

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	59	55	53	53	55	52
1923	Below Normal	52	49	47	45	47	49	54	55	53	53	54	55	51
1924	Critical	54	53	49	45	48	51	53	55	54	57	63	63	54
1925	Dry	55	49	43	43	47	48	54	54	54	54	57	58	51
1926	Dry	57	53	48	45	47	50	53	54	54	54	57	59	53
1927	Wet	57	53	45	45	46	50	50	52	52	53	54	56	51
1928	Above Normal	54	51	47	45	47	49	54	52	52	54	55	57	51
1929	Critical	55	52	47	43	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
1931	Critical	55	53	48	46	47	50	51	54	55	57	61	64	53
1932	Dry	59	51	46	44	45	50	51	56	57	57	58	63	53
1933	Critical	60	55	48	44	45	50	52	54	56	57	59	62	53
1934	Critical	61	54	48	46	48	51	53	55	56	59	65	63	55
1935	Below Normal	58	51	47	45	46	49	54	55	55	56	56	59	52
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	57	52
1938	Wet	55	52	47	45	45	47	49	54	54	54	55	56	51
1939	Dry	55	52	48	46	46	48	50	52	53	53	56	57	51
1940	Above Normal	54	52	49	46	47	48	54	55	53	53	55	56	52
1941	Wet	55	52	48	46	46	49	50	52	54	55	55	56	52
1942	Wet	55	53	48	46	47	49	53	52	55	54	54	55	52
1943	Wet	55	52	48	46	47	48	53	54	53	53	55	56	52
1944	Dry	55	53	49	47	47	49	50	53	53	54	55	56	52
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	54	51
1946	Below Normal	54	51	48	45	44	47	49	51	51	52	53	54	50
1947	Dry	53	51	47	45	46	49	52	51	53	53	55	57	51
1948	Below Normal	56	51	48	46	46	48	52	55	54	53	55	55	52
1949	Dry	54	52	48	45	45	48	52	52	52	52	54	56	51
1950	Below Normal	53	52	49	44	45	47	51	52	52	54	55	55	51
1951	Above Normal	53	50	47	44	44	47	49	52	52	52	54	54	50
1952	Wet	52	50	46	43	44	46	47	53	54	55	54	55	50
1953	Wet	55	52	47	46	46	48	51	51	53	54	54	55	51
1954	Above Normal	53	51	47	46	45	47	50	51	52	53	55	57	50
1955	Dry	54	51	45	44	45	48	49	53	52	53	56	56	50
1956	Wet	53	49	48	44	44	48	50	50	52	54	53	53	50
1957	Above Normal	52	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	53	51	47	45	46	46	50	53	54	54	55	55	51
1959	Below Normal	55	52	49	46	46	47	50	51	52	54	57	58	52
1960	Dry	56	53	50	45	46	48	49	53	52	54	54	56	51
1961	Dry	54	51	46	45	46	47	50	51	52	53	53	57	50
1962	Below Normal	55	51	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	54	52	48	46	47	47	49	55	54	53	56	57	51
1964	Dry	53	51	47	45	46	47	49	51	52	54	54	55	50
1965	Wet	54	50	48	44	45	48	49	51	52	53	55	55	50
1966	Below Normal	52	51	46	44	45	46	50	51	51	52	54	55	50
1967	Wet	55	51	47	45	45	46	48	51	53	54	53	54	50
1968	Below Normal	53	53	47	44	46	49	50	52	51	54	55	57	51
1969	Wet	54	51	45	44	43	47	47	50	52	54	54	54	50
1970	Wet	53	52	48	47	45	49	47	51	52	52	55	57	51
1971	Wet	54	51	46	44	44	45	50	51	53	54	56	55	50
1972	Below Normal	53	51	46	44	45	47	49	52	52	53	54	56	50
1973	Above Normal	53	49	45	44	44	46	51	54	52	53	54	55	50
1974	Wet	51	51	46	44	44	45	51	53	54	55	53	54	50
1975	Wet	53	51	47	46	45	47	50	52	54	54	54	55	51
1976	Critical	53	51	47	45	46	48	50	52	52	54	56	57	51
1977	Critical	54	52	50	46	47	48	50	52	54	57	64	63	53
1978	Above Normal	57	50	45	45	44	46	50	51	52	54	54	54	50
1979	Below Normal	54	51	49	46	46	49	51	54	52	53	55	57	51
1980	Above Normal	54	50	47	46	46	49	51	52	52	53	54	56	51
1981	Dry	53	51	48	46	47	48	51	52	52	55	56	56	51
1982	Wet	54	50	47	43	44	46	47	55	54	54	54	54	50
1983	Wet	53	50	47	45	45	46	49	52	53	54	55	55	50
1984	Wet	55	52	47	45	46	47	49	52	53	54	55	57	51
1985	Dry	53	50	46	45	46	49	52	51	53	54	55	56	51
1986	Wet	56	50	47	46	47	49	52	53	54	55	56	57	52
1987	Dry	55	52	49	45	46	48	50	51	52	54	57	57	51
1988	Critical	56	53	46	44	46	48	50	52	52	55	57	58	51
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	55	51
1990	Critical	54	52	49	46	44	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	56	56	58	52
1992	Critical	58	53	48	45	47	49	51	52	53	56	60	62	53
1993	Above Normal	60	52	45	43	45	49	50	50	53	53	55	55	51
1994	Critical	54	52	48	46	46	50	50	53	53	55	56	58	52
1995	Wet	58	50	46	45	46	47	51	52	54	55	56	56	51
1996	Wet	55	53	48	46	47	48	52	52	54	54	56	55	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	56	51
1998	Wet	54	51	46	45	45	46	51	49	52	55	56	57	51
1999	Wet	55	52	47	46	45	46	51	51	52	53	54	54	51
2000	Above Normal	54	52	48	48	49	51	54	54	54	54	57	59	53
2001	Dry	56	54	51	47	46	51	50	53	53	55	58	60	53
2002	Dry	56	53	46	46	47	49	52	53	54	55	58	58	52
2003	Above Normal	56	54	47	46	46	50	50	52	56	54	57	58	52
Average		55	52	47	45	46	48	51	53	53	54	56	57	51
Wet		54	51	47	45	45	47	50	52	53	54	55	55	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Below Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Dry		55	52	47	45	46	49	51	53	53	54	56	57	51
Critical		56	53	48	45	47	49	51	53	54	56	59	60	53

Shasta Lake Water Resources Investigation
Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP2 (2030)

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	57	54	53	53	55	52
1923	Below Normal	53	50	47	45	47	50	54	56	53	54	54	54	51
1924	Critical	52	52	49	46	48	50	53	57	55	57	58	64	53
1925	Dry	56	49	43	43	47	48	54	54	54	54	55	58	51
1926	Dry	56	53	48	45	47	50	53	53	54	54	57	59	52
1927	Wet	57	53	46	45	46	49	50	52	52	52	54	56	51
1928	Above Normal	54	51	47	45	47	49	54	52	52	53	55	57	51
1929	Critical	55	51	48	44	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	48	50	51	53	53	54	55	57	52
1931	Critical	55	52	48	46	48	50	51	54	55	57	60	64	53
1932	Dry	59	51	46	44	45	50	52	57	58	57	58	62	53
1933	Critical	60	55	48	44	45	50	52	54	57	57	58	62	53
1934	Critical	61	54	48	46	48	51	53	55	56	58	65	63	55
1935	Below Normal	58	51	47	45	46	49	54	55	55	56	55	59	52
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	57	52
1938	Wet	55	51	47	45	46	47	49	54	54	53	55	55	51
1939	Dry	54	52	48	46	46	48	51	52	52	53	55	56	51
1940	Above Normal	54	53	49	46	47	48	54	54	53	53	55	56	52
1941	Wet	54	52	48	47	46	49	50	52	54	55	55	55	51
1942	Wet	54	52	49	46	47	49	53	52	55	54	54	54	52
1943	Wet	54	51	48	46	47	48	53	54	53	53	54	56	51
1944	Dry	54	52	49	47	47	49	50	53	52	53	55	56	51
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	54	51
1946	Below Normal	53	51	48	45	45	48	50	51	51	52	53	53	50
1947	Dry	52	51	47	45	46	49	52	51	53	53	55	56	51
1948	Below Normal	55	51	48	46	46	48	52	57	56	53	55	54	52
1949	Dry	53	51	48	45	45	48	52	52	52	52	54	55	51
1950	Below Normal	52	51	49	44	45	47	52	52	52	54	54	55	51
1951	Above Normal	52	50	46	44	44	48	49	52	52	52	54	54	50
1952	Wet	50	49	46	43	44	46	47	52	53	55	54	54	50
1953	Wet	54	51	47	46	46	48	51	51	53	54	54	54	51
1954	Above Normal	52	51	47	46	46	47	50	50	52	53	54	56	50
1955	Dry	53	51	45	44	45	48	49	53	52	53	55	56	50
1956	Wet	53	49	47	44	44	48	51	50	52	54	54	52	50
1957	Above Normal	51	50	49	45	46	47	49	54	54	53	54	56	51
1958	Wet	52	50	47	45	46	46	50	53	54	54	55	54	51
1959	Below Normal	54	51	49	47	46	48	51	52	52	54	55	58	51
1960	Dry	55	53	50	46	46	48	49	53	52	53	55	56	51
1961	Dry	54	51	46	45	46	47	50	51	52	53	53	55	50
1962	Below Normal	53	51	46	45	46	47	51	51	52	53	53	55	50
1963	Wet	53	51	48	46	47	47	49	55	54	53	55	56	51
1964	Dry	53	50	47	45	46	47	49	51	52	53	54	54	50
1965	Wet	54	50	47	44	45	47	49	50	52	53	55	53	50
1966	Below Normal	51	50	46	44	45	46	50	51	51	52	53	55	50
1967	Wet	53	51	47	45	45	46	48	51	53	54	53	53	50
1968	Below Normal	52	52	46	45	46	49	50	52	52	53	55	56	51
1969	Wet	53	50	45	44	43	47	47	50	52	54	54	53	49
1970	Wet	52	51	48	47	46	49	48	51	52	53	54	56	50
1971	Wet	53	50	45	44	45	46	50	51	53	54	56	54	50
1972	Below Normal	52	50	46	44	45	47	49	52	52	53	54	55	50
1973	Above Normal	52	49	45	44	45	46	51	53	52	53	54	55	50
1974	Wet	50	50	46	44	44	45	51	53	54	55	53	53	50
1975	Wet	52	50	47	46	45	47	50	52	53	54	54	54	50
1976	Critical	52	50	47	46	46	48	50	52	51	54	56	56	51
1977	Critical	54	52	50	48	47	49	51	53	55	59	63	63	53
1978	Above Normal	58	50	45	45	45	47	50	51	51	53	54	54	50
1979	Below Normal	52	50	48	46	46	49	51	54	52	53	55	56	51
1980	Above Normal	53	50	47	46	46	49	51	52	52	53	54	55	51
1981	Dry	52	50	48	46	47	49	51	52	52	54	55	57	51
1982	Wet	53	50	47	43	44	46	47	55	54	54	54	53	50
1983	Wet	52	49	47	45	45	46	50	52	53	53	54	54	50
1984	Wet	54	51	47	45	46	48	49	52	53	54	55	56	51
1985	Dry	52	50	46	45	46	48	52	52	52	54	54	56	51
1986	Wet	55	50	47	47	47	49	51	53	54	55	55	57	52
1987	Dry	55	52	49	45	46	49	50	52	52	54	56	56	51
1988	Critical	56	53	46	44	46	48	50	52	52	55	57	57	51
1989	Dry	57	51	46	44	44	48	52	50	53	54	54	55	51
1990	Critical	53	52	49	46	45	50	50	53	53	54	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	58	52
1992	Critical	57	53	48	45	47	49	51	52	54	56	59	62	53
1993	Above Normal	60	52	45	43	45	49	51	53	53	53	55	53	51
1994	Critical	53	51	48	46	46	50	50	53	52	55	56	57	51
1995	Wet	56	50	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	54	53	48	46	47	48	52	52	54	54	56	54	52
1997	Wet	53	51	49	46	46	49	49	51	52	53	55	55	51
1998	Wet	53	50	46	45	45	46	51	49	52	54	55	56	50
1999	Wet	55	52	48	46	45	46	51	51	52	52	55	54	51
2000	Above Normal	53	51	48	48	49	51	54	54	54	54	56	58	52
2001	Dry	55	53	51	47	46	51	51	53	52	55	57	60	53
2002	Dry	56	53	47	46	47	49	52	53	54	55	57	58	52
2003	Above Normal	56	54	47	46	46	50	50	53	55	54	57	57	52
Average		54	51	47	45	46	48	51	53	53	54	55	56	51
Wet		53	51	47	45	46	47	50	52	53	54	55	55	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Below Normal		54	51	47	45	46	48	51	53	53	53	54	56	51
Dry		54	51	47	45	46	49	51	53	53	54	55	57	51
Critical		55	52	48	45	47	49	51	53	54	56	58	60	52

Change in Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP2 (2030) - No Action

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-2	-2	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	1	0	0	0
1924	Critical	-2	-1	0	0	0	0	-1	1	1	-1	-5	0	-1
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1926	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	-1	0	0	0
1928	Above Normal	0	0	0	0	0	1	-1	0	0	0	-1	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	1	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	1	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	-1	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	-1	1	-1	-1	0
1940	Above Normal	0	1	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	0	0	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	0	0	0	0	0	0	-1	-1	-1	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1948	Below Normal	0	0	0	0	0	0	0	2	2	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	0	0	0	1	0	0	0	-1	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	-1	0	1	0	0	0	0	0	0	0	0	-1	0
1961	Dry	-1	0	0	0	0	1	0	0	0	0	-1	-2	0
1962	Below Normal	-2	0	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	0	0	0	0	0	0	0	0	-1	-1	0	0
1965	Wet	0	0	-1	0	0	0	1	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	0	0	-1	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1977	Critical	0	0	0	0	0	0	0	0	1	2	-1	0	0
1978	Above Normal	1	0	0	0	1	1	0	0	-1	0	0	-1	0
1979	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	-1	-1	1	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	-1	0	0	-1	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	-1	0	0	0	0	-1	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	0	0	0	-2	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1995	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
2001	Dry	-1	-1	0	0	0	0	0	0	-1	0	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	-1	0	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
Average		-1	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	0	0
Critical		-1	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Balls Ferry (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-3%	-3%	0%	0%	1%	-1%
1923	Below Normal	1%	1%	0%	0%	0%	0%	1%	2%	0%	1%	0%	-1%	0%
1924	Critical	-3%	-2%	-1%	0%	0%	-1%	-2%	3%	1%	-1%	-8%	1%	-1%
1925	Dry	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	0%	0%
1928	Above Normal	0%	-1%	0%	0%	0%	1%	-2%	-1%	-1%	-1%	0%	0%	0%
1929	Critical	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	0%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	0%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	-1%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1939	Dry	-2%	-1%	0%	0%	0%	1%	1%	0%	-2%	1%	-2%	-1%	0%
1940	Above Normal	0%	1%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1944	Dry	-1%	-2%	0%	0%	0%	0%	1%	0%	-1%	-2%	0%	1%	0%
1945	Below Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	-1%	-1%	-1%	0%
1948	Below Normal	-1%	0%	0%	0%	0%	0%	0%	3%	3%	0%	-1%	-2%	0%
1949	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1950	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	-1%	0%
1951	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1953	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	-1%	0%
1956	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1957	Above Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-2%	-1%	0%	0%	0%	1%	1%	0%	-1%	-2%	-1%	-1%	-1%
1960	Dry	-2%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1961	Dry	-1%	0%	0%	0%	1%	1%	0%	-1%	0%	0%	-1%	-4%	0%
1962	Below Normal	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1963	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	1%	0%	1%	0%	-1%	-2%	-1%	-1%	0%
1965	Wet	0%	0%	-1%	0%	0%	-1%	1%	0%	0%	0%	-1%	-2%	0%
1966	Below Normal	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1967	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	0%
1970	Wet	-3%	-1%	0%	0%	0%	0%	1%	1%	0%	1%	-2%	-2%	-1%
1971	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1973	Above Normal	-1%	0%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-2%	-1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1977	Critical	-1%	0%	1%	0%	0%	1%	0%	1%	2%	3%	-1%	0%	0%
1978	Above Normal	2%	0%	0%	0%	2%	2%	-1%	-1%	-1%	0%	0%	-1%	0%
1979	Below Normal	-3%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	2%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1984	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1985	Dry	-1%	-1%	0%	1%	0%	-1%	0%	1%	-1%	0%	0%	-1%	0%
1986	Wet	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	-1%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1989	Dry	-1%	0%	1%	0%	0%	0%	-1%	0%	0%	0%	0%	-1%	0%
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	1%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	6%	-1%	0%	0%	-3%	0%
1994	Critical	-3%	-2%	0%	1%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1995	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1996	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	-2%	0%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1999	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
2001	Dry	-2%	-2%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%	0%	0%
2002	Dry	-1%	0%	0%	-1%	0%	0%	0%	0%	-1%	-1%	-3%	0%	0%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-1%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	0%	0%

Sacramento River Water Temperatures at Bend Bridge (°F)

No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	60	57	55	55	57	53
1923	Below Normal	53	49	47	45	47	51	54	56	54	55	56	56	52
1924	Critical	54	53	48	45	48	51	54	57	56	59	64	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	57	52	47	44	47	52	54	56	56	56	59	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	55	56	57	52
1928	Above Normal	55	50	46	45	47	49	55	54	54	55	57	58	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	58	52
1930	Dry	57	53	47	44	48	51	53	55	55	55	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	65	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	60	63	54
1933	Critical	60	54	46	43	45	50	53	56	58	59	60	63	54
1934	Critical	61	53	47	46	48	53	54	56	57	60	66	64	55
1935	Below Normal	58	51	46	44	46	49	54	57	57	58	57	60	53
1936	Below Normal	57	52	47	45	46	50	53	54	55	55	56	59	52
1937	Below Normal	56	53	47	44	46	50	54	58	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	57	52
1939	Dry	55	52	47	45	46	49	52	54	54	54	57	58	52
1940	Above Normal	55	52	48	45	47	49	55	57	55	55	57	57	53
1941	Wet	55	52	48	46	47	50	52	54	57	57	57	57	52
1942	Wet	55	52	48	46	47	50	54	54	57	56	56	56	52
1943	Wet	55	52	47	46	47	49	54	56	55	55	56	58	52
1944	Dry	55	52	48	46	47	50	51	55	55	55	56	57	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	51	48	45	44	48	51	53	53	54	55	56	51
1947	Dry	53	51	46	44	47	50	53	53	54	55	57	58	52
1948	Below Normal	56	50	47	45	46	49	52	57	56	56	57	56	52
1949	Dry	54	51	47	44	45	48	54	55	54	54	56	58	52
1950	Below Normal	54	52	48	44	45	48	53	54	55	57	57	57	52
1951	Above Normal	53	50	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	52	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	56	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	52	54	55	56	58	51
1955	Dry	54	51	45	43	46	49	50	56	54	55	58	58	51
1956	Wet	54	49	47	44	44	49	53	53	55	56	56	54	51
1957	Above Normal	52	51	48	44	46	48	50	56	56	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	56	51	48	46	46	49	52	53	54	56	58	60	52
1960	Dry	56	53	49	45	46	49	51	55	54	56	56	58	52
1961	Dry	55	50	45	44	46	47	52	53	54	54	55	59	51
1962	Below Normal	55	51	45	45	46	47	53	53	54	55	56	56	51
1963	Wet	55	52	48	45	47	48	49	57	56	55	58	58	52
1964	Dry	54	50	46	44	46	48	50	53	54	56	56	56	51
1965	Wet	54	49	47	44	46	49	50	53	54	55	57	56	51
1966	Below Normal	53	50	46	44	45	47	52	54	53	54	56	57	51
1967	Wet	55	51	46	45	46	46	48	53	56	57	56	55	51
1968	Below Normal	53	52	45	44	46	50	52	54	53	56	57	58	52
1969	Wet	54	50	44	44	43	48	49	53	55	56	56	55	51
1970	Wet	53	51	48	46	46	49	49	53	54	54	57	58	52
1971	Wet	55	50	45	44	45	46	51	53	56	56	58	56	51
1972	Below Normal	54	50	45	44	45	48	50	54	54	55	56	57	51
1973	Above Normal	53	48	44	44	45	47	53	56	55	55	56	57	51
1974	Wet	52	50	46	44	44	45	52	55	56	57	55	55	51
1975	Wet	54	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	53	50	47	44	46	49	51	55	53	56	58	59	52
1977	Critical	55	52	49	45	48	49	52	54	56	58	65	64	54
1978	Above Normal	57	49	45	45	45	48	51	53	54	56	56	56	51
1979	Below Normal	55	51	48	46	46	50	53	56	54	55	57	58	52
1980	Above Normal	54	49	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	54	50	47	46	47	49	53	54	54	56	58	57	52
1982	Wet	54	50	46	43	44	47	48	58	56	56	56	55	51
1983	Wet	53	50	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	59	52
1985	Dry	53	49	45	44	46	50	54	54	55	56	56	57	52
1986	Wet	56	50	46	46	48	49	53	55	56	57	57	58	53
1987	Dry	56	52	48	44	46	49	52	53	54	55	59	58	52
1988	Critical	57	53	45	44	47	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	55	52	55	56	56	57	52
1990	Critical	54	52	48	45	44	51	52	55	55	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	58	53	47	44	47	50	53	54	55	58	62	63	54
1993	Above Normal	60	51	44	43	45	50	51	52	56	55	57	56	52
1994	Critical	54	51	47	46	46	50	52	55	54	57	58	59	52
1995	Wet	58	49	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	53	47	45	47	49	53	54	56	57	58	56	53
1997	Wet	55	51	48	46	47	50	50	53	55	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	57	57	57	51
1999	Wet	56	51	47	46	45	47	53	53	55	55	57	56	52
2000	Above Normal	54	51	47	48	49	51	56	56	56	56	58	60	54
2001	Dry	56	53	50	46	46	53	52	55	55	57	60	62	54
2002	Dry	57	53	46	46	46	49	54	55	56	57	60	59	53
2003	Above Normal	57	54	47	46	47	51	51	54	58	57	59	59	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		55	51	46	45	46	48	51	54	56	56	57	57	52
Above Normal		55	51	46	45	46	49	53	55	55	55	57	58	52
Below Normal		55	51	47	45	46	49	53	55	55	55	56	57	52
Dry		55	51	46	45	46	49	53	55	55	56	57	58	52
Critical		56	52	47	45	47	50	52	55	56	58	61	61	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP2 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	53	49	47	45	47	51	55	57	55	56	56	56	52
1924	Critical	52	52	48	45	48	51	53	58	57	58	59	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	57	59	52
1926	Dry	56	52	47	44	47	52	55	55	56	56	58	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	53	56	57	52
1928	Above Normal	55	50	46	45	47	50	55	54	54	55	56	58	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	58	52
1930	Dry	56	53	47	44	48	51	53	55	55	55	56	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	65	54
1932	Dry	58	51	45	44	45	52	53	58	59	59	59	63	54
1933	Critical	60	54	46	43	45	50	54	56	59	59	59	63	54
1934	Critical	61	53	47	46	48	53	55	57	58	60	66	64	55
1935	Below Normal	58	51	46	44	46	49	54	57	57	58	57	60	53
1936	Below Normal	57	52	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	53	47	44	46	50	54	58	56	56	57	58	53
1938	Wet	55	51	46	44	46	48	51	57	57	55	57	56	52
1939	Dry	54	51	47	45	46	49	52	53	53	55	56	57	52
1940	Above Normal	55	52	48	45	47	49	55	57	55	55	56	57	53
1941	Wet	54	51	47	46	47	50	52	54	57	57	56	56	52
1942	Wet	54	52	48	46	47	50	54	54	57	56	55	55	52
1943	Wet	54	51	47	46	47	49	54	56	55	55	56	57	52
1944	Dry	54	52	48	46	47	50	51	56	54	54	56	58	52
1945	Below Normal	55	50	46	44	47	49	53	55	55	54	55	55	52
1946	Below Normal	54	50	47	45	45	48	51	53	53	53	54	55	51
1947	Dry	52	50	46	45	47	50	53	53	55	54	56	58	52
1948	Below Normal	56	50	47	46	46	49	52	58	58	55	57	55	52
1949	Dry	54	51	47	45	45	48	54	54	54	54	56	57	52
1950	Below Normal	53	51	48	44	45	48	53	55	55	57	56	57	52
1951	Above Normal	52	49	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	51	49	46	43	45	47	49	55	56	58	56	55	51
1953	Wet	54	51	46	46	47	49	52	53	55	56	56	55	52
1954	Above Normal	53	51	46	45	46	48	51	52	54	55	56	57	51
1955	Dry	53	50	45	43	46	49	50	55	54	54	58	58	51
1956	Wet	53	49	47	44	44	49	53	53	55	56	56	53	51
1957	Above Normal	51	50	48	44	46	48	50	56	56	55	56	58	52
1958	Wet	52	50	47	45	46	47	52	56	56	56	57	56	52
1959	Below Normal	54	51	48	46	46	49	53	54	53	56	57	59	52
1960	Dry	55	53	50	45	46	49	51	55	55	55	57	57	52
1961	Dry	54	50	45	44	46	48	52	53	54	54	54	57	51
1962	Below Normal	54	51	45	45	46	47	53	53	54	55	54	57	51
1963	Wet	54	51	48	45	47	48	49	57	56	55	57	58	52
1964	Dry	53	50	46	44	46	48	50	53	54	55	56	56	51
1965	Wet	54	49	47	44	46	48	51	53	54	55	57	55	51
1966	Below Normal	53	50	45	44	45	47	52	54	53	54	55	56	51
1967	Wet	54	51	46	45	46	47	48	53	55	57	56	54	51
1968	Below Normal	52	52	45	44	46	50	52	54	53	55	57	58	51
1969	Wet	54	50	44	44	44	48	49	53	54	56	56	54	51
1970	Wet	52	51	48	47	46	50	49	53	54	55	56	57	51
1971	Wet	53	50	45	44	45	46	51	53	55	56	58	65	51
1972	Below Normal	53	50	45	44	45	48	50	54	53	55	55	56	51
1973	Above Normal	52	48	44	44	45	47	53	56	54	55	56	57	51
1974	Wet	51	50	46	44	45	45	52	55	56	57	55	55	51
1975	Wet	52	49	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	52	50	46	45	46	49	51	54	53	56	58	58	52
1977	Critical	54	52	49	45	47	49	52	54	57	60	64	64	54
1978	Above Normal	58	49	45	45	46	48	51	53	54	56	56	56	51
1979	Below Normal	53	50	47	46	46	50	53	56	54	55	57	58	52
1980	Above Normal	54	49	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	57	58	52
1982	Wet	53	50	46	43	45	47	48	58	56	56	56	54	51
1983	Wet	52	49	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	54	51	47	45	46	49	50	54	55	56	57	58	52
1985	Dry	53	49	46	45	46	49	54	54	54	56	56	57	52
1986	Wet	55	49	46	46	48	49	53	55	56	57	57	58	52
1987	Dry	55	52	48	44	46	49	52	54	54	55	58	57	52
1988	Critical	57	52	45	44	47	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	54	52	55	56	56	56	52
1990	Critical	54	52	48	45	44	51	52	55	55	56	58	59	52
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	59	53
1992	Critical	58	52	47	44	47	50	53	54	55	58	61	63	54
1993	Above Normal	59	51	45	43	45	50	52	55	55	55	57	55	52
1994	Critical	53	50	47	46	46	51	52	55	54	56	57	58	52
1995	Wet	56	49	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	54	52	47	45	47	49	53	54	56	57	58	56	52
1997	Wet	54	50	48	46	47	50	50	53	54	55	57	57	52
1998	Wet	53	50	45	45	45	47	52	51	55	56	57	57	51
1999	Wet	55	51	47	46	45	47	53	53	55	54	57	56	52
2000	Above Normal	53	51	47	48	49	51	56	56	56	56	58	60	53
2001	Dry	56	52	50	46	46	53	52	55	54	57	59	61	53
2002	Dry	57	53	46	45	47	49	54	55	56	57	59	60	53
2003	Above Normal	56	54	47	46	47	51	51	55	58	56	59	59	53
Average		54	51	46	45	46	49	52	55	55	56	57	58	52
Wet		54	50	46	45	46	48	51	54	55	56	56	56	52
Above Normal		54	50	46	45	46	49	53	55	55	55	56	57	52
Below Normal		54	51	46	45	46	49	53	55	55	55	56	57	52
Dry		55	51	47	45	46	50	53	55	55	56	57	58	52
Critical		56	52	47	45	47	50	52	55	56	58	60	61	53

Change in Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP2 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-1	-2	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	1	0	0	0
1924	Critical	-1	-1	0	0	0	0	-1	1	1	-1	-4	0	-1
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	-2	0	0	0
1928	Above Normal	0	0	0	0	0	1	-1	-1	0	0	-1	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	1	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1939	Dry	-1	0	0	0	0	0	0	0	-1	1	-1	0	0
1940	Above Normal	0	1	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	-1	-1	0	0	0	0	0	0	-1	-1	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1948	Below Normal	0	0	0	0	0	0	0	1	2	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1955	Dry	-1	0	0	0	0	1	0	0	0	-1	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	-1	1	0	0	0	0	0	0	0	-1	0	0	0
1961	Dry	-1	0	0	0	0	1	0	0	0	0	0	-2	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	0	0	0	0	0	0	0	-1	-1	-1	0	0
1965	Wet	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	-1	0	0	0	0	0	0	0	0	-1	0	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	0	0	-1	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	0	0	1	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	1	0	0	0	0	0	1	2	0	0	0
1978	Above Normal	1	0	0	0	1	1	0	0	0	0	0	-1	0
1979	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	-1	-1	1	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	-1	0	0	-1	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	-1	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	0	0	0	-1	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1995	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	-1	0	0	0	0	0	0	-1	-1	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	-2	0	0
2003	Above Normal	-1	0	0	0	0	0	0	1	0	0	0	0	0
Average		-1	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	0	0
Critical		0	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Bend Bridge (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-2%	-3%	0%	0%	1%	0%
1923	Below Normal	1%	1%	0%	0%	0%	0%	0%	2%	0%	1%	0%	0%	0%
1924	Critical	-3%	-2%	-1%	0%	0%	-1%	-1%	2%	1%	-1%	-7%	0%	-1%
1925	Dry	1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	0%	0%	0%
1928	Above Normal	0%	-1%	0%	0%	0%	2%	-1%	-1%	-1%	-1%	-1%	0%	0%
1929	Critical	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-1%	0%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1939	Dry	-2%	-1%	0%	0%	0%	0%	1%	0%	-2%	1%	-2%	-1%	0%
1940	Above Normal	0%	1%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%	1%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	-1%	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	1%	-1%	-1%	-1%	0%
1948	Below Normal	-1%	0%	0%	0%	0%	0%	0%	2%	3%	0%	-1%	-2%	0%
1949	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	-1%	0%
1951	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-2%	-2%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-2%	-1%
1953	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-2%	-1%	0%	0%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1959	Below Normal	-2%	-1%	0%	0%	0%	0%	1%	1%	0%	-1%	-2%	-1%	0%
1960	Dry	-2%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	1%	-1%	0%
1961	Dry	-1%	0%	0%	0%	0%	1%	0%	-1%	0%	0%	0%	-3%	0%
1962	Below Normal	-3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	0%
1963	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%	0%
1965	Wet	0%	0%	-2%	0%	0%	-1%	1%	0%	0%	0%	-1%	-1%	0%
1966	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1967	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1969	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	1%	-2%	-2%	-1%
1971	Wet	-3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1973	Above Normal	-1%	0%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	2%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1977	Critical	-1%	0%	1%	0%	-1%	0%	0%	1%	1%	3%	-1%	0%	0%
1978	Above Normal	2%	0%	0%	0%	1%	2%	-1%	-1%	-1%	0%	0%	0%	0%
1979	Below Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	2%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1984	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1985	Dry	-1%	-1%	0%	1%	0%	-1%	0%	0%	-1%	0%	0%	-1%	0%
1986	Wet	-1%	-1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	-1%	-1%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1988	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1989	Dry	0%	0%	1%	0%	0%	0%	-1%	0%	0%	0%	0%	-1%	0%
1990	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	6%	-1%	0%	0%	-3%	0%
1994	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1995	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1996	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	-1%	0%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2001	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	-1%	-1%	-1%	0%	0%
2002	Dry	-1%	0%	0%	-2%	0%	0%	0%	0%	0%	-1%	-3%	0%	0%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-1%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
Critical		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	56	49	48	45	45	50	54	60	58	57	57	58	53
1923	Below Normal	54	48	46	44	47	51	55	57	55	57	57	57	52
1924	Critical	54	52	48	44	48	52	55	58	57	60	64	64	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	61	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	55	50	45	45	47	49	56	55	56	57	58	59	53
1929	Critical	56	51	46	42	46	50	52	55	57	57	59	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	50	45	44	45	52	54	59	60	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	61	63	54
1934	Critical	61	53	46	46	48	53	55	58	59	61	66	64	56
1935	Below Normal	58	51	46	44	46	49	55	58	58	59	59	61	54
1936	Below Normal	57	51	46	45	46	50	54	55	56	56	57	60	53
1937	Below Normal	56	53	47	43	46	50	55	59	57	57	58	59	53
1938	Wet	56	51	47	44	46	48	51	57	58	57	58	57	53
1939	Dry	55	51	47	45	46	49	53	55	56	56	58	59	52
1940	Above Normal	55	52	47	45	47	49	56	58	57	56	58	58	53
1941	Wet	55	51	47	46	47	50	52	55	58	58	58	57	53
1942	Wet	55	52	48	46	47	50	54	55	58	58	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	56	58	59	53
1944	Dry	56	52	48	46	47	50	52	57	56	57	57	58	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	50	47	45	44	49	52	55	54	55	56	57	52
1947	Dry	54	51	46	44	47	50	54	55	56	56	58	59	52
1948	Below Normal	56	50	46	45	46	49	52	57	57	57	59	57	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	59	52
1950	Below Normal	54	52	47	43	45	48	54	56	56	58	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	55	57	58	52
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	57	51
1953	Wet	55	51	45	46	47	49	53	53	56	58	58	57	52
1954	Above Normal	54	51	46	45	46	48	52	53	55	56	58	59	52
1955	Dry	54	51	44	43	46	49	50	57	55	57	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	53	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	58	59	57	52
1959	Below Normal	56	51	48	46	46	49	53	54	55	58	59	61	53
1960	Dry	56	52	49	44	46	49	51	56	56	58	58	59	53
1961	Dry	55	50	45	44	46	47	52	54	56	56	56	59	52
1962	Below Normal	55	50	45	45	46	47	54	54	56	56	57	57	52
1963	Wet	55	51	48	45	47	48	49	57	58	56	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	56	58	58	57	52
1965	Wet	55	49	47	44	46	49	50	54	56	57	59	58	52
1966	Below Normal	54	50	45	44	45	47	53	55	54	55	58	58	51
1967	Wet	55	51	46	44	46	47	48	54	57	58	57	56	52
1968	Below Normal	54	52	45	44	46	50	52	55	54	57	58	59	52
1969	Wet	55	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	49	54	56	56	59	59	52
1971	Wet	55	50	45	44	45	46	52	54	57	57	60	57	52
1972	Below Normal	54	50	45	44	45	48	51	55	55	57	57	58	52
1973	Above Normal	53	48	44	44	45	47	54	57	56	56	57	58	52
1974	Wet	52	50	46	44	44	46	52	57	58	59	57	56	52
1975	Wet	54	50	45	45	45	47	51	55	57	58	57	57	52
1976	Critical	53	50	46	44	46	49	51	56	55	58	59	60	52
1977	Critical	55	52	48	45	48	49	53	55	57	59	66	64	54
1978	Above Normal	57	49	44	45	45	48	52	54	56	57	58	57	52
1979	Below Normal	55	51	47	45	46	50	53	57	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	59	52
1981	Dry	54	50	47	46	47	49	53	55	55	58	59	58	53
1982	Wet	54	50	46	43	44	47	49	59	58	58	58	56	52
1983	Wet	53	49	46	45	45	47	51	55	56	57	57	57	52
1984	Wet	56	51	47	45	46	49	51	55	56	57	59	60	53
1985	Dry	53	49	45	44	46	50	55	55	56	58	58	58	52
1986	Wet	56	49	46	46	48	50	54	56	58	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	61	59	53
1988	Critical	57	52	45	43	47	50	53	55	55	58	61	60	53
1989	Dry	58	50	45	43	44	49	56	53	56	57	58	58	52
1990	Critical	54	52	47	45	44	51	53	56	57	58	60	60	53
1991	Critical	57	51	46	45	48	48	53	55	58	60	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	63	64	54
1993	Above Normal	59	51	44	43	45	51	52	53	57	57	59	57	52
1994	Critical	55	51	47	46	46	51	52	56	55	58	59	60	53
1995	Wet	58	49	45	45	47	47	52	54	57	59	59	58	52
1996	Wet	55	53	47	45	47	49	53	55	58	58	60	57	53
1997	Wet	55	50	48	46	47	51	51	54	56	57	59	59	53
1998	Wet	54	50	45	45	45	47	52	51	55	58	58	58	52
1999	Wet	56	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	54	51	47	48	49	52	57	58	58	58	60	61	54
2001	Dry	57	53	50	46	46	53	53	57	56	59	62	63	54
2002	Dry	57	53	46	46	48	50	54	56	58	59	62	60	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	60	54
Average		55	51	46	45	46	49	53	56	57	57	59	59	53
Wet		55	50	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	50	46	45	46	49	53	56	57	57	58	59	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	58	52
Dry		56	51	46	44	46	50	53	56	56	57	59	59	53
Critical		56	52	46	44	47	50	53	56	57	59	62	62	54

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP2 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	56	49	48	45	45	49	54	59	57	57	56	58	53
1923	Below Normal	54	49	46	44	47	51	55	58	56	57	57	57	53
1924	Critical	53	51	47	44	48	51	54	59	58	60	60	64	54
1925	Dry	55	49	42	43	47	49	55	57	57	58	58	59	53
1926	Dry	56	52	47	44	47	52	55	56	57	57	59	60	54
1927	Wet	56	52	45	45	46	50	52	55	56	54	57	58	52
1928	Above Normal	55	50	45	45	47	50	55	55	55	56	57	59	52
1929	Critical	55	51	46	43	46	50	52	56	56	57	58	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	50	45	44	45	52	54	59	61	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	57	60	61	61	63	54
1934	Critical	61	53	46	46	48	53	56	58	59	61	66	64	56
1935	Below Normal	58	51	46	44	46	49	55	58	58	59	58	61	54
1936	Below Normal	57	51	46	45	46	50	54	55	56	56	57	59	53
1937	Below Normal	56	53	47	43	46	50	55	59	58	57	58	59	53
1938	Wet	56	51	46	44	46	48	51	57	58	57	58	57	52
1939	Dry	54	51	47	45	46	50	53	55	55	56	57	58	52
1940	Above Normal	55	52	48	45	47	49	56	58	57	56	57	58	53
1941	Wet	54	51	47	46	47	50	52	55	58	58	57	57	53
1942	Wet	54	52	48	46	47	50	55	55	58	57	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	56	57	58	53
1944	Dry	55	51	48	46	47	51	52	57	55	56	57	59	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	54	50	47	45	45	49	52	55	54	55	56	56	51
1947	Dry	53	50	46	44	47	50	54	55	56	56	57	59	52
1948	Below Normal	56	50	47	45	46	49	52	58	59	57	58	56	53
1949	Dry	54	50	46	44	45	48	55	56	56	56	57	58	52
1950	Below Normal	53	51	47	43	45	48	54	56	56	58	58	58	52
1951	Above Normal	52	49	46	44	44	48	52	55	56	55	57	57	51
1952	Wet	52	49	46	43	45	47	49	55	57	59	57	56	51
1953	Wet	55	51	45	46	47	49	53	54	56	58	58	56	52
1954	Above Normal	53	51	46	45	46	48	52	53	55	56	57	58	52
1955	Dry	54	50	44	43	46	50	50	56	55	56	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	52	50	47	44	46	48	51	57	58	56	57	59	52
1958	Wet	52	50	46	45	46	47	52	57	57	57	58	56	52
1959	Below Normal	55	51	48	46	46	49	53	55	55	57	58	60	53
1960	Dry	55	53	49	45	46	49	51	56	56	57	58	58	53
1961	Dry	54	50	45	44	46	48	52	54	56	56	56	58	52
1962	Below Normal	54	50	45	45	46	47	54	54	56	56	56	58	52
1963	Wet	54	51	48	45	47	48	49	57	58	56	59	59	53
1964	Dry	53	50	46	44	46	48	51	54	55	57	57	57	52
1965	Wet	55	49	46	44	46	49	51	54	56	57	59	57	52
1966	Below Normal	53	50	45	44	45	47	53	55	54	55	57	57	51
1967	Wet	54	51	46	45	46	47	48	54	56	58	57	56	51
1968	Below Normal	53	52	45	44	46	50	52	55	54	56	58	59	52
1969	Wet	54	50	44	44	44	48	50	54	56	58	58	56	51
1970	Wet	52	50	47	47	46	50	50	54	56	56	57	58	52
1971	Wet	54	50	45	44	45	46	52	53	57	57	60	56	52
1972	Below Normal	53	50	45	44	45	48	51	55	55	56	57	57	51
1973	Above Normal	52	48	43	44	45	47	54	57	56	57	57	58	52
1974	Wet	52	49	46	44	45	46	52	56	58	59	57	56	52
1975	Wet	53	49	45	45	45	47	52	55	57	58	57	57	52
1976	Critical	52	50	46	45	46	49	51	56	54	57	59	59	52
1977	Critical	55	52	49	45	48	49	53	55	58	61	65	64	54
1978	Above Normal	58	49	44	45	46	49	51	54	55	57	58	57	52
1979	Below Normal	54	50	47	45	46	50	53	57	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	58	52
1981	Dry	54	50	47	46	47	49	53	55	55	57	58	59	53
1982	Wet	53	50	46	43	45	47	49	59	57	58	58	55	52
1983	Wet	53	49	46	45	45	47	51	55	56	56	57	56	51
1984	Wet	54	51	47	45	46	49	51	55	56	57	59	60	52
1985	Dry	53	49	45	45	46	50	55	55	55	58	57	57	52
1986	Wet	55	49	46	46	48	50	54	55	57	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	60	58	53
1988	Critical	57	52	45	44	47	50	53	55	55	58	60	60	53
1989	Dry	58	50	45	44	44	49	55	53	57	57	58	57	52
1990	Critical	54	52	47	45	44	51	53	56	57	57	60	60	53
1991	Critical	57	51	46	45	49	48	53	55	58	60	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	57	59	62	64	54
1993	Above Normal	59	51	44	43	45	51	52	56	56	57	59	56	52
1994	Critical	53	50	46	46	46	51	52	56	55	58	58	59	53
1995	Wet	56	48	45	45	47	47	52	54	57	58	58	58	52
1996	Wet	55	52	47	45	47	50	53	55	58	58	60	57	53
1997	Wet	54	50	48	46	47	51	51	54	56	56	58	58	52
1998	Wet	54	50	45	45	45	47	52	52	55	58	58	57	51
1999	Wet	55	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	54	51	47	48	49	52	57	58	58	58	59	61	54
2001	Dry	56	52	50	46	46	53	53	57	55	58	61	63	54
2002	Dry	57	53	46	45	47	50	54	56	58	59	60	61	54
2003	Above Normal	56	54	47	46	47	51	51	55	60	58	60	60	54
Average		55	51	46	45	46	49	53	56	56	57	58	59	53
Wet		54	50	46	45	46	48	52	55	57	57	58	57	52
Above Normal		55	50	46	45	46	49	53	56	56	57	58	58	52
Below Normal		55	50	46	44	46	49	53	56	56	57	57	58	52
Dry		55	51	46	44	46	50	53	56	56	57	58	59	53
Critical		56	52	46	45	47	50	53	56	57	59	61	62	54

Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP2 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-1	-1	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	-1	0	0	0
1924	Critical	-1	-1	0	0	0	0	-1	1	1	-1	-4	0	-1
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	-2	0	0	0
1928	Above Normal	0	0	0	0	0	1	-1	-1	0	0	-1	0	0
1929	Critical	0	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	1	0	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	0	0	0	0
1939	Dry	-1	0	0	0	0	0	0	0	-1	1	-1	0	0
1940	Above Normal	0	1	0	0	0	0	0	0	0	0	0	0	0
1941	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1944	Dry	-1	-1	0	0	0	0	0	0	-1	-1	0	1	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1948	Below Normal	0	0	0	0	0	0	0	1	2	0	0	-1	0
1949	Dry	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1955	Dry	-1	0	0	0	0	1	0	0	0	-1	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1960	Dry	-1	1	0	0	0	0	0	0	0	-1	0	0	0
1961	Dry	0	0	0	0	0	0	0	0	0	0	0	-2	0
1962	Below Normal	-1	0	0	0	0	0	0	0	0	0	-2	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	0	0	0	0	0	0	0	0	-1	-1	-1	0	0
1965	Wet	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	0	-1	0	0	0	0	0	0	0	0	-1	0	0
1967	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1969	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1971	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	0	0	-1	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	0	0	1	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	1	0	0	0	0	0	1	2	0	0	0
1978	Above Normal	1	0	0	0	1	1	0	0	0	0	0	0	0
1979	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	0	0	0	0	0	0	0	0	-1	-1	1	0
1982	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1984	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	-1	0	0	-1	0	0	0	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	3	0	0	0	0	-1	0
1994	Critical	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1995	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
1996	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	-1	0	0	0	0	0	0	-1	-1	-1	0	0
2002	Dry	0	0	0	-1	0	0	0	0	0	0	-2	0	0
2003	Above Normal	-1	0	0	0	0	0	0	1	0	0	0	0	0
Average		-1	0	0	0	0	0	0	0	0	0	0	0	0
Wet		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		0	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Dry		0	0	0	0	0	0	0	0	0	0	-1	0	0
Critical		0	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%	0%	0%	0%
1923	Below Normal	1%	1%	0%	0%	0%	0%	0%	2%	0%	1%	0%	0%	0%
1924	Critical	-2%	-2%	-1%	0%	0%	0%	-1%	2%	1%	-1%	-6%	0%	-1%
1925	Dry	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1926	Dry	-1%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	0%	0%	0%	0%	0%	-4%	0%	0%	0%
1928	Above Normal	0%	-1%	0%	0%	0%	2%	-1%	-1%	-1%	-1%	-1%	0%	0%
1929	Critical	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	0%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	0%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	0%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1939	Dry	-1%	-1%	0%	0%	0%	0%	1%	0%	-2%	1%	-2%	-1%	0%
1940	Above Normal	0%	1%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1941	Wet	-2%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1942	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1943	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%	1%	0%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1946	Below Normal	0%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1947	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	1%	-1%	-1%	-1%	0%
1948	Below Normal	-1%	0%	0%	0%	0%	0%	0%	2%	3%	0%	-1%	-2%	0%
1949	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1950	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	-1%	-1%	0%
1951	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1952	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1953	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	-2%	-1%	0%	0%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1957	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1958	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1959	Below Normal	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-2%	-1%	0%
1960	Dry	-2%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	1%	-1%	0%
1961	Dry	-1%	0%	0%	0%	0%	1%	0%	-1%	0%	0%	0%	-3%	0%
1962	Below Normal	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	0%
1963	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%	-1%
1965	Wet	0%	0%	-2%	0%	0%	-1%	1%	0%	0%	0%	-1%	-1%	0%
1966	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1967	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1969	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1970	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	1%	-2%	-2%	0%
1971	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1973	Above Normal	-1%	0%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	0%
1977	Critical	-1%	0%	1%	0%	-1%	0%	0%	0%	1%	3%	0%	0%	0%
1978	Above Normal	1%	0%	0%	0%	1%	2%	-1%	-1%	-1%	0%	0%	-1%	0%
1979	Below Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%
1980	Above Normal	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	2%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1984	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	0%	-1%	0%	1%	0%	-1%	0%	0%	-1%	0%	0%	-1%	0%
1986	Wet	-1%	-1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	-1%	0%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1988	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1989	Dry	0%	0%	1%	0%	0%	0%	-1%	0%	0%	0%	0%	-1%	0%
1990	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	1%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	6%	-1%	0%	0%	-2%	0%
1994	Critical	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1995	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1996	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-1%	-1%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	-1%	0%
1998	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1999	Wet	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Normal	-1%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
2001	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	0%
2002	Dry	-1%	0%	0%	-2%	0%	0%	0%	0%	0%	-1%	-3%	1%	0%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-1%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Above Normal		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%
Critical		-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%

Sacramento River Water Temperatures Below Shasta Dam (°F)

No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	54	51	48	48	48	50
1923	Below Normal	49	50	51	48	46	47	51	52	49	48	48	50	49
1924	Critical	53	54	52	48	47	50	52	51	51	54	62	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	52	55	48
1926	Dry	57	54	51	47	45	46	46	47	48	49	53	56	50
1927	Wet	57	54	48	46	45	45	46	47	48	48	50	51	49
1928	Above Normal	53	53	50	47	46	46	47	48	48	50	52	53	49
1929	Critical	55	54	52	47	45	45	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	51	53	49
1931	Critical	54	54	52	47	46	46	47	49	51	53	59	65	52
1932	Dry	60	53	48	44	44	45	47	49	52	53	54	61	51
1933	Critical	60	56	52	46	44	45	47	48	51	53	55	62	52
1934	Critical	61	55	51	46	45	46	47	49	52	56	65	65	53
1935	Below Normal	59	52	49	45	44	45	46	47	50	52	52	57	50
1936	Below Normal	58	54	52	46	44	45	45	46	47	48	49	52	49
1937	Below Normal	54	55	53	48	45	46	46	47	48	48	50	52	49
1938	Wet	54	53	49	46	45	46	46	48	48	49	51	53	49
1939	Dry	55	54	51	48	48	46	47	47	48	49	52	55	50
1940	Above Normal	57	55	52	47	46	47	47	48	48	49	51	53	50
1941	Wet	55	54	50	47	46	46	47	48	48	50	52	53	50
1942	Wet	55	54	50	46	46	46	46	47	48	49	50	52	49
1943	Wet	54	54	51	47	46	46	47	48	48	49	51	52	49
1944	Dry	53	54	52	49	47	47	47	48	48	49	51	53	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	49	49	50	48
1946	Below Normal	52	53	49	45	44	44	45	46	47	48	48	50	48
1947	Dry	52	53	51	47	46	46	46	47	48	49	52	55	49
1948	Below Normal	56	53	51	47	45	46	46	47	48	48	49	51	49
1949	Dry	53	53	51	48	46	45	45	46	47	48	49	50	48
1950	Below Normal	53	53	52	47	44	44	45	45	47	48	48	50	48
1951	Above Normal	52	51	48	45	44	44	44	45	46	47	48	48	47
1952	Wet	50	51	48	44	44	44	45	46	47	48	49	52	47
1953	Wet	54	54	50	47	45	45	46	46	47	48	49	51	48
1954	Above Normal	53	53	50	46	45	45	46	47	48	48	50	52	49
1955	Dry	53	53	49	46	45	45	46	46	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	43	44	46	47	48	48	47
1957	Above Normal	52	52	51	48	46	46	47	47	48	48	50	51	49
1958	Wet	53	52	49	46	46	45	46	47	47	48	49	52	48
1959	Below Normal	55	54	52	47	46	46	46	47	48	50	53	56	50
1960	Dry	57	55	53	48	45	45	45	46	47	48	49	52	49
1961	Dry	54	53	48	46	45	45	46	46	47	48	50	54	48
1962	Below Normal	55	53	49	46	45	44	45	45	46	47	48	50	48
1963	Wet	53	53	50	47	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	53	52	49	44	43	43	44	45	46	47	48	48	47
1966	Below Normal	49	51	50	45	44	45	45	46	47	48	49	52	48
1967	Wet	55	54	49	46	44	45	46	47	48	48	49	50	48
1968	Below Normal	52	54	51	47	45	46	47	47	48	48	51	53	49
1969	Wet	54	53	49	45	43	43	44	45	46	48	48	50	47
1970	Wet	54	53	50	47	44	44	45	45	46	48	50	52	48
1971	Wet	54	52	48	44	43	44	45	46	47	48	49	51	48
1972	Below Normal	53	53	50	46	44	45	46	47	48	48	49	52	48
1973	Above Normal	53	51	48	45	44	44	45	45	46	47	48	48	47
1974	Wet	49	52	47	45	43	44	44	45	46	48	48	50	47
1975	Wet	53	53	50	47	45	46	46	47	48	48	49	51	49
1976	Critical	53	53	50	47	46	46	46	47	48	48	50	51	49
1977	Critical	52	53	52	48	47	47	48	49	51	54	65	65	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	49	47
1979	Below Normal	51	53	52	48	46	45	46	47	48	48	49	51	49
1980	Above Normal	52	52	50	46	46	45	46	46	47	48	48	49	48
1981	Dry	51	52	50	47	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	45	46	47	48	48	50	47
1983	Wet	53	52	49	46	45	46	45	47	48	48	50	53	48
1984	Wet	55	54	49	45	44	45	46	47	48	48	49	51	48
1985	Dry	52	52	49	46	45	45	46	46	47	48	50	54	48
1986	Wet	56	53	49	47	47	47	48	48	48	49	51	52	50
1987	Dry	53	54	52	47	45	45	46	47	48	49	51	53	49
1988	Critical	56	55	50	45	45	45	46	47	48	49	52	55	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	49	51	48
1990	Critical	53	53	52	47	45	45	46	46	47	50	49	53	49
1991	Critical	56	54	52	48	46	46	47	48	49	51	49	54	50
1992	Critical	57	55	52	47	45	45	46	47	50	53	58	64	52
1993	Above Normal	61	54	48	43	42	42	43	45	47	48	48	51	48
1994	Critical	53	53	51	48	46	46	47	48	48	50	53	56	50
1995	Wet	58	54	50	45	43	46	46	47	48	49	51	53	49
1996	Wet	55	55	51	47	47	46	46	47	48	49	50	52	49
1997	Wet	54	53	50	46	44	44	45	46	47	48	49	52	48
1998	Wet	54	53	49	46	45	44	44	46	48	49	52	54	49
1999	Wet	56	54	49	46	45	45	45	46	47	48	48	49	48
2000	Above Normal	52	53	51	48	48	47	48	48	49	50	52	53	50
2001	Dry	55	55	53	49	46	46	47	47	48	49	51	53	50
2002	Dry	55	55	49	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	52	49
Average		54	53	50	46	45	45	46	47	48	49	51	53	49
Wet		54	53	49	46	45	45	46	47	48	48	49	51	48
Above Normal		54	53	50	46	45	45	46	47	48	48	50	51	48
Below Normal		54	53	51	47	45	45	46	47	48	48	50	52	49
Dry		55	53	50	47	45	45	46	47	48	49	51	53	49
Critical		55	54	52	47	46	46	47	48	50	52	56	59	51

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP2 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	48	49
1923	Below Normal	50	51	51	49	47	47	52	53	49	48	48	48	49
1924	Critical	51	53	52	48	47	49	51	54	51	53	54	63	52
1925	Dry	57	50	46	42	43	44	45	46	47	48	50	54	48
1926	Dry	56	54	52	48	46	46	46	47	49	49	52	55	50
1927	Wet	57	54	49	46	45	45	46	46	48	49	50	51	49
1928	Above Normal	53	53	50	47	46	46	47	48	48	49	51	53	49
1929	Critical	54	54	52	47	45	46	46	47	48	48	50	53	49
1930	Dry	55	55	51	47	46	46	46	47	48	48	50	52	49
1931	Critical	54	54	52	48	46	47	48	49	52	53	58	65	52
1932	Dry	60	53	48	44	44	45	48	50	53	53	53	60	51
1933	Critical	60	56	52	46	44	46	47	49	52	53	54	62	52
1934	Critical	61	55	51	46	45	46	48	50	53	56	65	65	53
1935	Below Normal	59	52	49	45	44	45	46	48	50	52	51	56	50
1936	Below Normal	58	54	52	47	45	45	45	46	47	48	49	52	49
1937	Below Normal	54	55	53	48	46	46	46	47	48	48	50	52	49
1938	Wet	54	53	49	46	45	46	46	47	48	49	51	52	49
1939	Dry	54	53	51	48	46	46	47	48	48	49	52	54	50
1940	Above Normal	56	55	53	47	46	47	47	48	48	49	51	52	50
1941	Wet	53	53	50	47	46	46	47	48	48	49	51	52	49
1942	Wet	54	54	50	46	46	46	46	47	48	48	50	51	49
1943	Wet	52	53	51	47	46	46	47	48	48	49	50	51	49
1944	Dry	52	53	52	49	47	47	48	48	48	49	51	52	50
1945	Below Normal	54	53	50	46	46	46	46	47	48	48	49	50	48
1946	Below Normal	52	52	49	46	45	45	45	46	47	48	48	48	48
1947	Dry	51	52	51	48	46	46	46	47	48	48	51	54	49
1948	Below Normal	56	53	52	47	46	46	46	47	48	48	49	50	49
1949	Dry	52	52	51	48	46	45	46	46	47	48	48	49	48
1950	Below Normal	51	52	52	47	44	44	45	46	46	48	48	48	48
1951	Above Normal	50	51	48	45	44	44	45	45	46	47	48	47	47
1952	Above Normal	48	50	48	44	44	44	45	46	47	48	49	50	47
1953	Wet	52	53	50	47	45	45	46	46	47	48	49	50	48
1954	Above Normal	51	52	50	47	45	45	46	47	48	48	49	51	48
1955	Dry	52	52	49	46	45	45	46	47	48	48	48	50	48
1956	Wet	51	51	49	44	43	43	44	44	45	47	48	48	46
1957	Above Normal	49	51	51	48	46	46	47	47	48	48	49	50	48
1958	Wet	51	51	49	46	46	45	46	46	47	48	49	51	48
1959	Below Normal	53	53	52	48	46	46	47	48	48	49	51	53	49
1960	Dry	55	55	53	48	45	45	45	46	47	48	49	51	49
1961	Dry	53	53	49	46	45	45	46	46	47	48	48	51	48
1962	Below Normal	53	53	49	46	45	44	45	45	46	47	48	48	48
1963	Wet	50	52	50	48	46	46	47	48	48	49	50	50	49
1964	Dry	51	51	50	47	45	45	46	47	47	48	49	51	48
1965	Wet	53	52	49	44	43	44	44	45	46	48	48	47	47
1966	Below Normal	48	50	49	46	45	45	45	46	47	48	48	50	47
1967	Wet	52	53	49	46	45	45	46	47	47	48	49	50	48
1968	Below Normal	51	52	50	47	46	46	46	47	48	48	49	51	48
1969	Wet	52	52	49	45	43	43	44	45	46	47	48	48	47
1970	Wet	51	52	50	47	44	44	45	46	47	48	48	49	48
1971	Wet	51	52	48	44	44	44	45	46	47	48	48	49	47
1972	Below Normal	51	52	50	46	45	45	46	46	48	48	49	50	48
1973	Above Normal	52	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	47	51	47	45	43	44	44	45	46	47	48	48	46
1975	Wet	50	52	50	47	45	46	46	47	48	48	49	50	48
1976	Critical	51	52	50	47	46	46	47	47	48	48	49	51	49
1977	Critical	52	53	53	49	47	47	48	49	52	57	66	64	53
1978	Above Normal	59	51	46	42	42	43	43	44	46	47	48	47	47
1979	Below Normal	49	51	51	48	46	46	46	47	48	48	49	50	48
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	48	48
1981	Dry	50	51	50	48	46	46	47	47	48	48	50	51	48
1982	Wet	52	51	48	44	44	44	45	46	47	48	48	49	47
1983	Wet	51	51	49	46	45	46	45	46	47	48	49	51	48
1984	Wet	53	53	49	45	45	45	46	47	48	48	49	50	48
1985	Dry	51	51	49	46	45	45	46	47	48	48	50	53	48
1986	Wet	55	53	50	47	47	47	47	48	48	49	51	52	49
1987	Dry	53	53	52	48	46	46	47	47	48	48	50	53	49
1988	Critical	55	55	50	45	45	45	46	47	48	49	52	54	49
1989	Dry	57	54	50	46	44	44	45	46	47	48	48	50	48
1990	Critical	52	53	52	48	45	45	46	46	47	48	50	54	49
1991	Critical	56	54	52	48	47	47	47	48	49	51	49	53	50
1992	Critical	56	55	52	47	45	45	46	47	50	53	57	64	51
1993	Above Normal	61	54	49	43	42	43	43	44	46	47	48	49	47
1994	Critical	51	52	51	48	46	47	47	48	48	49	52	54	49
1995	Wet	56	53	50	45	44	46	46	47	48	48	51	52	49
1996	Wet	53	54	51	47	47	46	46	47	48	49	50	51	49
1997	Wet	52	52	50	46	44	45	45	46	47	48	48	50	48
1998	Wet	52	52	49	46	45	44	45	46	47	48	51	53	48
1999	Wet	55	53	49	47	45	45	45	46	47	48	48	48	48
2000	Above Normal	50	52	51	48	48	48	48	48	49	50	51	52	50
2001	Dry	53	54	53	49	47	46	47	48	48	49	51	52	50
2002	Dry	54	55	50	47	46	47	47	48	48	49	51	52	50
2003	Above Normal	54	55	51	46	45	46	46	47	48	49	50	50	49
Average		53	53	50	47	45	45	46	47	48	49	50	52	49
Wet		52	52	49	46	45	45	46	46	47	48	49	50	48
Above Normal		53	52	50	46	45	45	46	47	47	48	49	50	48
Below Normal		53	52	51	47	45	45	46	47	48	48	49	51	48
Dry		54	53	50	47	45	46	46	47	48	49	50	53	49
Critical		55	54	52	47	46	46	47	48	50	52	55	58	51

Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP2 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-4	-3	0	0	0	-1
1923	Below Normal	1	1	0	0	0	0	1	1	0	0	0	-2	0
1924	Critical	-3	-1	0	0	0	-1	-1	2	0	-1	-8	-1	-1
1925	Dry	1	1	1	0	0	0	0	0	0	0	-2	-1	0
1926	Dry	-1	0	1	1	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	Above Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	Critical	-1	0	1	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	Critical	0	0	0	1	0	0	0	0	1	0	-1	0	0
1932	Dry	0	0	0	0	0	0	1	1	1	0	-1	0	0
1933	Critical	0	0	0	0	0	0	1	1	1	0	-1	0	0
1934	Critical	0	0	0	0	1	0	1	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	0	-1	0	-1	0
1939	Dry	-2	-1	0	0	0	0	1	0	0	0	-1	-1	0
1940	Above Normal	-1	0	1	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1950	Below Normal	-2	-1	0	0	0	0	0	1	0	0	0	-1	0
1951	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-2	-2	0	0	0	0	0	0	-1	0	-1	-2	-1
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	-1	0	0	0	-1	-1	0
1955	Dry	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1959	Below Normal	-2	-1	0	0	0	0	1	0	0	-1	-2	-3	-1
1960	Dry	-2	0	1	1	0	0	0	0	0	0	0	-1	0
1961	Dry	-1	0	0	0	0	0	0	0	0	0	-2	-3	0
1962	Below Normal	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1963	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-2	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-2	0
1969	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-2	0
1970	Wet	-3	-1	0	0	0	0	1	1	0	0	-1	-3	-1
1971	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1974	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-2	-1	0	1	0	0	0	0	0	0	0	0	0
1977	Critical	0	0	0	0	1	0	0	1	1	3	1	-1	1
1978	Above Normal	0	0	0	0	0	0	0	-1	-1	0	0	-2	0
1979	Below Normal	-3	-2	0	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	-1	-1	0	0	0	0	1	0	0	0	0	-1	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	-1	0
1990	Critical	-1	0	0	0	0	0	0	0	0	-2	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	0	0	-1	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	0	0	-1	-2	-1
1995	Wet	-2	0	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-2	-1	0	0	0	0	1	1	0	0	-1	-2	0
1998	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-2	-1	0	0	0	0	1	1	0	0	0	0	0
2002	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	0	0	0	0	0	0	-1	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-1	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

Percent Change in Sacramento River Water Temperatures Below Shasta Dam (°F)

From No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-8%	-5%	0%	0%	1%	-1%
1923	Below Normal	2%	1%	1%	0%	0%	0%	2%	3%	-1%	0%	0%	-3%	0%
1924	Critical	-5%	-2%	0%	0%	0%	-2%	-2%	5%	1%	-2%	-13%	-1%	-2%
1925	Dry	1%	1%	2%	1%	1%	0%	0%	0%	0%	-1%	-3%	-2%	0%
1926	Dry	-1%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1927	Wet	0%	0%	1%	1%	-1%	0%	0%	-1%	0%	1%	1%	0%	0%
1928	Above Normal	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1929	Critical	-1%	0%	1%	2%	1%	1%	0%	0%	0%	0%	-1%	-1%	0%
1930	Dry	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1931	Critical	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	-2%	0%	0%
1932	Dry	0%	0%	0%	0%	0%	1%	1%	0%	2%	1%	0%	-2%	0%
1933	Critical	0%	0%	0%	0%	0%	1%	1%	1%	2%	0%	-2%	0%	0%
1934	Critical	0%	0%	0%	1%	0%	1%	2%	2%	0%	-1%	0%	0%	0%
1935	Below Normal	0%	0%	0%	0%	1%	0%	1%	1%	1%	0%	-1%	-1%	0%
1936	Below Normal	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1937	Below Normal	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%	0%
1938	Wet	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-2%	-1%
1939	Dry	-3%	-1%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-2%	0%
1940	Above Normal	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1941	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	-1%	-2%	-1%	-2%	-1%
1942	Wet	-3%	-1%	0%	1%	0%	0%	1%	0%	0%	-1%	0%	-2%	0%
1943	Wet	-3%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1944	Dry	-3%	-2%	0%	1%	0%	0%	1%	1%	0%	0%	0%	0%	0%
1945	Below Normal	-1%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-1%	-1%	-1%	0%	1%	1%	0%	0%	1%	1%	0%	-2%	0%
1947	Dry	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1948	Below Normal	-2%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	0%
1949	Dry	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-4%	-1%
1950	Below Normal	-4%	-2%	0%	1%	1%	0%	0%	1%	0%	0%	-1%	-3%	-1%
1951	Above Normal	-3%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	0%
1952	Wet	-4%	-3%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-2%	-3%	-1%
1953	Wet	-3%	-2%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	0%
1954	Above Normal	-3%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-2%	-3%	-1%
1955	Dry	-3%	-1%	0%	1%	1%	0%	0%	1%	1%	0%	0%	-1%	0%
1956	Wet	-1%	-1%	0%	1%	0%	1%	0%	0%	-1%	-1%	0%	-2%	0%
1957	Above Normal	-5%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1958	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	-1%	-3%	-1%
1959	Below Normal	-4%	-2%	0%	1%	1%	1%	1%	0%	0%	-2%	-4%	-5%	-1%
1960	Dry	-4%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1961	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	-6%	-1%
1962	Below Normal	-5%	-1%	0%	1%	0%	1%	0%	0%	1%	0%	0%	-3%	-1%
1963	Wet	-4%	-2%	0%	0%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1964	Dry	-2%	-1%	0%	1%	1%	1%	1%	0%	0%	0%	0%	1%	0%
1965	Wet	1%	0%	0%	0%	1%	1%	1%	0%	-1%	0%	0%	-1%	0%
1966	Below Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-4%	-1%
1967	Wet	-4%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1968	Below Normal	-3%	-3%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	-3%	-1%
1969	Wet	-3%	-1%	0%	1%	0%	1%	0%	-1%	-1%	0%	0%	-4%	-1%
1970	Wet	-5%	-2%	0%	0%	1%	1%	1%	0%	0%	-1%	-3%	-6%	-1%
1971	Wet	-5%	-1%	0%	1%	1%	0%	0%	0%	-1%	0%	0%	-3%	-1%
1972	Below Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1973	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-2%	0%
1974	Wet	-3%	-2%	0%	1%	1%	0%	0%	0%	-1%	-1%	0%	-2%	-1%
1975	Wet	-4%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%
1976	Critical	-3%	-2%	0%	1%	1%	0%	1%	0%	0%	0%	-1%	-1%	0%
1977	Critical	-1%	0%	1%	1%	1%	1%	1%	2%	5%	1%	1%	-1%	1%
1978	Above Normal	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%	-1%	-3%	-1%
1979	Below Normal	-5%	-3%	-1%	0%	1%	1%	0%	0%	0%	0%	-1%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-2%	0%
1981	Dry	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1982	Wet	-3%	-1%	0%	1%	0%	1%	0%	0%	-1%	0%	0%	-3%	-1%
1983	Wet	-4%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-3%	-1%
1984	Wet	-4%	-1%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	0%
1985	Dry	-2%	-1%	0%	1%	1%	1%	1%	1%	0%	0%	-1%	-1%	0%
1986	Wet	-2%	-1%	1%	1%	0%	0%	1%	1%	0%	0%	-1%	-1%	0%
1987	Dry	-1%	0%	0%	1%	0%	0%	0%	1%	0%	-1%	-2%	-1%	0%
1988	Critical	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1989	Dry	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1990	Critical	-1%	0%	1%	1%	1%	0%	0%	0%	0%	-3%	2%	1%	0%
1991	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	-2%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-3%	-1%	0%
1993	Above Normal	0%	0%	1%	1%	0%	0%	0%	-1%	-2%	0%	0%	-5%	0%
1994	Critical	-4%	-2%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-4%	-1%
1995	Wet	-4%	-1%	0%	1%	1%	0%	0%	-1%	0%	-2%	-1%	-2%	-1%
1996	Wet	-3%	-1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	-2%	0%
1997	Wet	-3%	-1%	0%	0%	1%	1%	1%	0%	0%	0%	-2%	-4%	0%
1998	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	-3%	-1%
1999	Wet	-3%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	0%
2000	Above Normal	-3%	-3%	0%	0%	0%	0%	0%	-1%	0%	0%	-2%	-2%	-1%
2001	Dry	-3%	-2%	0%	1%	1%	1%	1%	1%	0%	0%	0%	-1%	0%
2002	Dry	-1%	-1%	1%	0%	0%	1%	1%	1%	0%	-1%	-1%	-1%	0%
2003	Above Normal	-2%	-1%	1%	0%	0%	0%	0%	-1%	0%	0%	-2%	-2%	-1%
Average		-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Wet		-3%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Above Normal		-2%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	-2%	-1%
Below Normal		-2%	-1%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-2%	0%
Dry		-2%	-1%	0%	1%	0%	0%	1%	1%	0%	0%	-1%	-2%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	1%	1%	0%	-2%	-1%	0%

Sacramento River Water Temperatures at Keswick Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	48	52	55	53	51	51	52	51
1923	Below Normal	51	50	50	48	47	48	52	53	51	51	51	53	50
1924	Critical	54	54	51	47	47	51	53	53	52	55	62	62	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	54	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	55	57	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	52	54	50
1928	Above Normal	54	52	49	47	46	47	50	50	50	52	53	55	50
1929	Critical	55	54	51	45	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	50
1931	Critical	55	54	51	47	47	48	49	51	53	55	60	65	53
1932	Dry	60	53	48	45	44	47	49	52	54	55	56	62	52
1933	Critical	61	56	51	46	45	47	49	51	53	55	57	62	53
1934	Critical	62	56	51	47	46	48	49	52	54	57	64	63	54
1935	Below Normal	59	53	49	46	45	46	48	50	52	54	54	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	52	55	50
1937	Below Normal	55	55	52	47	46	47	49	50	50	51	52	55	51
1938	Wet	55	53	49	46	45	46	48	50	51	51	53	55	50
1939	Dry	55	54	50	48	46	47	48	49	51	51	54	56	51
1940	Above Normal	54	53	51	47	47	47	50	51	50	51	53	55	51
1941	Wet	55	53	50	47	46	47	48	50	51	53	53	55	51
1942	Wet	55	54	50	46	46	47	49	49	50	51	52	54	50
1943	Wet	54	54	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	54	54	52	48	47	48	48	50	51	52	53	54	51
1945	Below Normal	55	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	53	49	45	44	46	47	48	49	50	51	52	49
1947	Dry	53	53	50	47	46	47	48	49	50	51	54	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	53	50
1949	Dry	54	53	50	47	46	46	48	49	49	50	52	53	50
1950	Below Normal	53	53	51	46	44	45	47	48	48	49	51	52	49
1951	Above Normal	52	51	48	45	44	45	47	48	48	49	51	52	48
1952	Wet	51	51	48	44	44	44	46	48	50	51	51	53	48
1953	Wet	54	54	49	47	45	46	48	48	49	51	52	53	50
1954	Above Normal	53	52	49	46	45	46	47	48	50	50	53	54	49
1955	Dry	54	53	48	45	45	47	47	49	49	51	52	53	49
1956	Wet	53	51	49	44	43	45	47	46	48	50	50	51	48
1957	Above Normal	52	52	51	47	46	46	48	50	50	50	53	54	50
1958	Wet	53	52	49	46	46	46	47	49	50	51	51	54	49
1959	Below Normal	55	54	51	47	46	46	48	49	50	52	55	56	51
1960	Dry	56	54	52	47	45	46	47	48	49	51	52	54	50
1961	Dry	55	53	48	46	45	46	47	48	49	50	52	55	49
1962	Below Normal	55	53	48	46	45	45	47	48	48	50	51	52	49
1963	Wet	53	53	50	47	46	47	48	50	50	51	53	54	50
1964	Dry	53	52	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	54	52	49	44	44	45	45	47	49	50	52	51	48
1966	Below Normal	51	51	49	45	45	45	48	49	49	50	52	54	49
1967	Wet	54	53	48	45	45	45	46	48	50	51	51	52	49
1968	Below Normal	53	54	49	46	46	47	48	49	49	51	53	55	50
1969	Wet	54	52	48	45	43	44	45	47	49	51	51	52	48
1970	Wet	53	53	49	47	45	46	46	48	49	50	53	54	49
1971	Wet	54	52	47	44	44	45	47	48	49	50	52	53	49
1972	Below Normal	53	52	49	45	45	46	47	49	49	50	52	54	49
1973	Above Normal	53	50	47	45	44	45	47	48	49	50	51	52	48
1974	Wet	50	51	47	45	43	45	47	48	49	51	50	52	48
1975	Wet	53	53	49	47	45	46	48	49	50	51	51	53	50
1976	Critical	53	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	50	53	55	63	63	53
1978	Above Normal	57	52	47	46	44	44	46	47	49	50	51	51	48
1979	Below Normal	53	53	51	48	46	47	48	50	50	50	53	54	50
1980	Below Normal	53	51	49	46	46	47	48	49	49	50	51	53	49
1981	Dry	52	52	50	47	46	47	49	49	50	51	53	54	50
1982	Wet	54	52	48	44	44	45	46	49	50	50	51	52	49
1983	Wet	53	52	48	46	45	46	47	49	50	51	52	54	49
1984	Wet	55	53	49	45	45	46	47	49	50	50	53	54	50
1985	Dry	52	51	48	46	45	47	48	48	50	51	52	55	50
1986	Wet	56	53	49	47	47	48	50	50	51	52	53	55	51
1987	Dry	54	53	51	47	46	47	48	49	50	51	54	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	52	55	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	53	50
1990	Critical	54	53	51	47	45	47	48	49	50	52	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	56	51
1992	Critical	58	55	51	47	46	47	48	49	51	54	59	62	52
1993	Above Normal	61	54	48	43	43	45	45	47	49	50	52	53	49
1994	Critical	54	53	50	47	46	48	49	50	51	52	55	57	51
1995	Wet	58	53	49	45	44	46	48	49	50	52	53	54	50
1996	Wet	55	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	53	50	46	45	46	47	48	49	50	52	54	49
1998	Wet	54	53	48	46	45	45	48	47	49	51	54	55	49
1999	Wet	56	53	49	46	45	45	47	48	49	50	51	52	49
2000	Above Normal	53	53	50	48	49	49	51	51	51	52	55	56	52
2001	Dry	55	55	53	49	46	48	48	50	51	53	55	56	52
2002	Dry	56	55	49	47	47	47	49	50	51	52	55	55	51
2003	Above Normal	56	55	50	46	46	48	48	49	51	51	53	55	51
Average		55	53	49	46	45	46	48	49	50	51	53	55	50
Wet		54	53	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	46	45	46	48	49	50	51	52	54	50
Dry		55	53	50	46	46	47	48	49	50	51	53	55	50
Critical		56	54	51	47	46	48	49	50	51	54	57	59	52

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP3 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	47	52	52	50	51	51	52	50
1923	Below Normal	51	51	50	48	47	48	53	54	51	51	51	52	51
1924	Critical	51	52	51	48	48	50	52	55	53	54	55	63	53
1925	Dry	58	51	45	44	45	45	49	49	50	51	52	56	50
1926	Dry	56	54	51	47	46	48	49	49	51	51	54	57	51
1927	Wet	57	55	48	46	45	46	47	48	49	50	51	52	50
1928	Above Normal	52	51	49	47	47	47	49	50	50	51	52	54	50
1929	Critical	54	53	51	47	46	47	48	49	50	51	52	54	50
1930	Dry	55	55	51	46	46	47	48	49	50	51	52	54	50
1931	Critical	54	54	51	48	47	48	49	51	53	55	58	64	53
1932	Dry	60	54	48	46	44	47	49	53	54	55	55	61	52
1933	Critical	60	56	51	46	45	47	49	51	54	55	55	62	53
1934	Critical	61	56	51	47	46	49	50	52	54	56	64	63	54
1935	Below Normal	59	53	49	46	45	46	49	50	52	54	53	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	51	54	50
1937	Below Normal	55	54	52	48	46	47	49	50	50	51	52	54	51
1938	Wet	54	53	49	46	45	46	48	49	50	50	53	54	50
1939	Dry	53	53	50	48	47	48	49	50	50	51	53	55	50
1940	Above Normal	54	54	52	47	46	47	50	50	50	51	52	54	51
1941	Wet	53	53	49	47	46	47	48	50	50	52	53	54	50
1942	Wet	54	53	50	46	47	47	49	49	50	51	52	53	50
1943	Wet	53	52	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	53	52	51	49	47	48	49	51	50	51	53	54	51
1945	Below Normal	54	53	49	46	46	47	48	49	50	50	51	52	50
1946	Below Normal	53	52	49	46	45	46	47	48	49	50	51	51	49
1947	Dry	51	51	50	47	46	47	49	49	50	51	52	54	50
1948	Below Normal	55	53	51	47	46	47	48	50	51	51	52	52	50
1949	Dry	52	52	50	47	46	46	48	49	49	50	51	52	49
1950	Below Normal	51	52	51	47	44	45	48	49	49	51	51	52	49
1951	Above Normal	50	50	48	45	44	45	46	48	48	49	51	51	48
1952	Wet	49	49	48	44	44	45	46	48	49	51	50	52	48
1953	Wet	52	52	49	47	46	47	48	48	49	51	51	52	49
1954	Above Normal	52	51	49	46	45	46	47	48	50	50	52	53	49
1955	Dry	52	52	48	46	46	47	47	49	50	50	52	53	49
1956	Wet	52	51	48	44	44	45	47	46	48	50	50	50	48
1957	Above Normal	50	51	50	47	46	47	48	50	50	50	52	54	49
1958	Wet	51	51	49	46	46	46	47	49	49	51	51	52	49
1959	Below Normal	53	52	51	48	46	47	48	49	50	51	53	55	50
1960	Dry	54	54	53	48	46	46	47	48	49	51	52	52	50
1961	Dry	53	52	48	46	46	46	47	48	49	50	50	53	49
1962	Below Normal	53	52	49	46	45	45	47	48	49	50	50	52	49
1963	Wet	51	51	50	47	46	47	48	50	50	51	53	53	50
1964	Dry	52	51	49	46	46	46	47	49	49	51	52	53	49
1965	Wet	54	52	48	44	44	45	46	47	49	50	52	50	48
1966	Below Normal	50	50	48	45	45	45	48	48	49	50	51	52	48
1967	Wet	52	52	48	46	45	46	46	48	49	51	51	52	49
1968	Below Normal	51	52	49	46	46	47	48	49	50	51	52	53	49
1969	Wet	52	51	48	45	43	44	45	47	48	50	51	51	48
1970	Wet	51	51	49	47	45	46	46	48	49	50	51	53	49
1971	Wet	52	51	47	44	44	45	47	47	49	50	52	52	48
1972	Below Normal	51	51	49	46	45	46	47	49	49	50	51	53	49
1973	Above Normal	52	50	47	45	44	45	47	48	48	50	51	52	48
1974	Wet	49	50	47	45	44	45	47	48	48	51	50	51	48
1975	Wet	51	51	49	47	46	46	48	49	50	51	51	52	49
1976	Critical	51	51	49	47	47	47	48	50	50	51	53	53	50
1977	Critical	53	53	51	48	47	48	50	51	53	57	62	63	53
1978	Above Normal	59	52	46	45	44	45	45	46	48	50	51	50	48
1979	Below Normal	50	50	50	48	46	47	48	50	50	50	52	53	50
1980	Above Normal	52	51	49	47	46	47	48	49	49	50	51	51	49
1981	Dry	51	51	49	47	46	47	49	49	50	51	52	54	50
1982	Wet	52	51	48	44	44	45	46	49	49	50	50	51	48
1983	Wet	51	51	48	46	45	46	47	49	50	50	51	53	49
1984	Wet	53	52	49	45	45	46	47	49	50	51	52	52	49
1985	Dry	51	51	48	46	46	47	49	49	49	51	52	54	49
1986	Wet	54	52	49	47	47	48	49	50	51	52	53	54	50
1987	Dry	53	53	51	47	46	47	48	49	50	51	53	54	50
1988	Critical	56	55	49	45	46	47	48	49	50	51	54	56	50
1989	Dry	57	54	49	46	45	46	48	48	49	51	51	53	50
1990	Critical	53	52	51	48	45	47	48	49	50	51	53	56	50
1991	Critical	56	54	51	48	48	47	49	50	51	53	53	55	51
1992	Critical	57	55	51	47	46	47	48	49	52	54	58	62	52
1993	Above Normal	61	54	48	43	43	45	46	48	49	49	52	50	49
1994	Critical	51	51	50	48	47	48	49	50	50	52	54	55	50
1995	Wet	56	52	49	45	45	46	48	48	50	51	52	54	50
1996	Wet	53	53	50	47	48	47	48	49	50	51	53	53	50
1997	Wet	52	52	50	46	45	47	47	48	49	50	52	52	49
1998	Wet	52	52	48	46	45	45	48	47	49	51	52	54	49
1999	Wet	54	53	49	47	46	45	48	48	49	50	51	51	49
2000	Above Normal	51	51	50	48	49	49	52	51	51	52	54	56	51
2001	Dry	54	53	52	49	47	49	49	50	50	52	54	55	51
2002	Dry	55	55	49	47	47	48	49	50	51	52	54	55	51
2003	Above Normal	55	55	50	46	46	47	48	49	51	51	53	54	50
Average		53	52	49	46	46	47	48	49	50	51	52	54	50
Wet		53	52	49	46	45	46	47	48	49	51	52	52	49
Above Normal		53	52	49	46	46	47	48	49	50	51	52	53	50
Below Normal		53	52	50	47	46	46	48	49	50	51	52	53	50
Dry		54	53	50	47	46	47	48	49	50	51	52	54	50
Critical		55	53	51	47	46	48	49	51	52	53	56	59	52

Change in Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP3 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-3	-2	0	0	0	0
1923	Below Normal	1	1	0	0	0	0	1	1	0	0	0	-1	0
1924	Critical	-2	-1	0	1	1	-1	-1	2	1	-1	-6	1	-1
1925	Dry	1	1	1	0	0	0	0	0	0	0	-1	-1	0
1926	Dry	-1	0	0	1	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1929	Critical	-1	-1	0	2	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1931	Critical	-1	0	0	0	0	0	0	0	0	0	-2	-1	0
1932	Dry	1	0	0	0	0	0	0	1	0	0	-2	-1	0
1933	Critical	0	0	0	0	0	0	1	0	1	0	-2	-1	0
1934	Critical	0	0	0	0	1	0	1	0	0	-1	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	0	0	0	0	0	0	-1	-1	-1	-1	0
1939	Dry	-2	-1	0	0	0	1	0	0	-1	1	-1	-1	0
1940	Above Normal	0	1	1	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1943	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	0	-1	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	-1	0	-1	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	0	1	1	0	0	-1	0
1949	Dry	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-2	0	0	0	0	0	1	0	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-2	-2	0	0	0	0	0	0	-1	0	-1	-1	-1
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
1956	Wet	0	0	0	0	0	0	0	0	0	-1	0	-1	0
1957	Above Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-1	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1959	Below Normal	-2	-2	0	0	0	0	0	0	0	-1	-2	-1	0
1960	Dry	-2	0	1	0	0	0	0	0	0	0	0	-2	0
1961	Dry	-2	-1	0	0	0	0	0	0	0	0	-1	-2	-1
1962	Below Normal	-3	-1	0	0	0	0	0	0	0	0	-1	-1	0
1963	Wet	-3	-2	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	0	0	0	0	0	0	-1	0	0	0
1965	Wet	0	0	0	0	0	0	0	0	0	0	0	-2	0
1966	Below Normal	-1	-1	-1	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-2	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-2	-1	0	0	0	0	0	-1	0	0	0	-1	0
1970	Wet	-3	-1	0	0	0	0	0	0	0	0	-2	-2	0
1971	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1974	Wet	-2	-1	0	0	0	0	0	0	-1	0	0	-1	0
1975	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	2	0	0	0	0	0	0	0	-1	0
1977	Critical	-1	0	0	0	0	0	0	0	1	1	-1	0	0
1978	Above Normal	1	0	0	0	1	1	0	-1	-1	-1	0	-1	0
1979	Below Normal	-3	-2	-1	0	0	0	0	0	0	0	0	-1	-1
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-2	0
1985	Dry	-1	-1	0	1	0	0	0	1	-1	0	-1	-1	0
1986	Wet	-1	-1	0	0	0	0	-1	0	0	0	-1	-1	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	-1	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1990	Critical	-1	0	0	0	0	0	0	0	0	-1	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	0	1	0	0	0	-3	0
1994	Critical	-3	-2	0	0	0	0	0	0	-1	0	-1	-2	-1
1995	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-2	-1	0	0	0	0	0	1	0	0	-1	-2	0
1998	Wet	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	-1
1999	Wet	-2	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-1	0
2001	Dry	-2	-1	0	0	0	0	0	0	-1	0	0	0	0
2002	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-1	-1	0	1	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Keswick Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-6%	-4%	0%	0%	1%	-1%
1923	Below Normal	1%	1%	0%	0%	0%	0%	2%	4%	1%	0%	0%	-2%	0%
1924	Critical	-5%	-3%	-1%	2%	1%	-1%	-2%	4%	1%	-2%	-10%	1%	-1%
1925	Dry	1%	1%	1%	0%	0%	1%	0%	0%	1%	-1%	-3%	-2%	0%
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1927	Wet	0%	0%	0%	1%	0%	0%	0%	-1%	-1%	0%	-2%	-2%	-1%
1928	Above Normal	-3%	-2%	0%	0%	1%	1%	-1%	0%	0%	0%	-2%	-1%	-1%
1929	Critical	-2%	-1%	1%	4%	1%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1930	Dry	0%	0%	1%	1%	1%	0%	0%	0%	1%	0%	-1%	-1%	0%
1931	Critical	-1%	-1%	0%	1%	1%	1%	0%	1%	1%	0%	-3%	-1%	0%
1932	Dry	1%	0%	0%	1%	0%	0%	1%	1%	1%	0%	-3%	-2%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-3%	-1%	0%
1934	Critical	0%	0%	0%	1%	0%	1%	1%	2%	0%	-1%	-1%	0%	0%
1935	Below Normal	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	-1%	-1%	0%
1936	Below Normal	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1937	Below Normal	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1938	Wet	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-1%	-2%	-1%
1939	Dry	-3%	-2%	0%	1%	1%	1%	1%	0%	-2%	1%	-2%	-2%	0%
1940	Above Normal	0%	1%	1%	1%	-1%	0%	0%	-1%	0%	-1%	-2%	-2%	0%
1941	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	-1%	-2%	-1%	-2%	-1%
1942	Wet	-3%	-1%	0%	1%	0%	1%	0%	0%	0%	0%	-1%	-1%	0%
1943	Wet	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-1%
1944	Dry	-2%	-3%	-1%	0%	0%	1%	1%	0%	-1%	-1%	0%	0%	0%
1945	Below Normal	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-1%	-1%	-1%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	0%
1947	Dry	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	-1%	-3%	-2%	-1%
1948	Below Normal	-2%	0%	1%	1%	1%	0%	0%	2%	1%	1%	-1%	-2%	0%
1949	Dry	-3%	-2%	0%	0%	1%	0%	0%	0%	0%	1%	-1%	-3%	-1%
1950	Below Normal	-4%	-3%	-1%	1%	1%	0%	1%	0%	0%	0%	0%	-2%	-1%
1951	Above Normal	-4%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%
1952	Wet	-3%	-4%	0%	1%	1%	0%	0%	-1%	-1%	-1%	-2%	-3%	-1%
1953	Wet	-3%	-3%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%
1954	Above Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1955	Dry	-3%	-2%	0%	1%	1%	1%	1%	1%	1%	-1%	-1%	-1%	0%
1956	Wet	-1%	0%	-1%	1%	1%	1%	0%	1%	-1%	-1%	0%	-1%	0%
1957	Above Normal	-4%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-3%	-1%	0%	1%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1959	Below Normal	-4%	-3%	0%	1%	1%	1%	1%	1%	0%	-1%	-3%	-2%	-1%
1960	Dry	-4%	0%	2%	1%	0%	0%	0%	0%	0%	0%	1%	-3%	0%
1961	Dry	-4%	-2%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-3%	-1%
1962	Below Normal	-5%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-2%	-1%	-1%
1963	Wet	-5%	-3%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1964	Dry	-2%	-2%	0%	0%	1%	1%	1%	1%	-1%	-2%	-1%	0%	0%
1965	Wet	0%	0%	-1%	1%	1%	0%	1%	0%	0%	0%	-1%	-3%	0%
1966	Below Normal	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1967	Wet	-4%	-2%	0%	1%	1%	1%	0%	0%	-1%	0%	0%	-1%	-1%
1968	Below Normal	-3%	-3%	-1%	0%	1%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1969	Wet	-3%	-2%	0%	1%	1%	1%	0%	0%	-1%	-1%	0%	-3%	-1%
1970	Wet	-5%	-3%	0%	0%	1%	1%	1%	1%	1%	1%	-3%	-3%	-1%
1971	Wet	-5%	-1%	0%	1%	1%	1%	0%	0%	-1%	0%	0%	-2%	-1%
1972	Below Normal	-3%	-3%	0%	0%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1973	Above Normal	-2%	0%	-1%	0%	1%	0%	0%	0%	-1%	1%	0%	-1%	0%
1974	Wet	-3%	-2%	0%	1%	1%	0%	0%	0%	-1%	-1%	0%	-2%	-1%
1975	Wet	-4%	-3%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%
1976	Critical	-3%	-2%	0%	3%	1%	1%	0%	1%	0%	-1%	-1%	-1%	0%
1977	Critical	-1%	-1%	-1%	0%	0%	1%	1%	1%	2%	3%	-2%	0%	0%
1978	Above Normal	2%	0%	0%	0%	1%	2%	0%	-1%	-2%	-1%	0%	-3%	0%
1979	Below Normal	-6%	-4%	-2%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	0%
1981	Dry	-3%	-2%	0%	0%	0%	1%	0%	0%	1%	-1%	-2%	0%	0%
1982	Wet	-2%	-2%	0%	1%	1%	1%	0%	0%	-1%	0%	0%	-2%	-1%
1983	Wet	-3%	-2%	0%	1%	0%	0%	0%	0%	-1%	-1%	-2%	-2%	-1%
1984	Wet	-4%	-1%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-4%	-1%
1985	Dry	-2%	-1%	0%	1%	1%	0%	1%	1%	-1%	0%	-1%	-2%	0%
1986	Wet	-3%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-2%	-1%
1987	Dry	-1%	-1%	0%	1%	0%	0%	0%	1%	0%	0%	-2%	-1%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1989	Dry	-1%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1990	Critical	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	-3%	1%	0%	0%
1991	Critical	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1992	Critical	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	3%	0%	0%	0%	-5%	0%
1994	Critical	-5%	-3%	-1%	1%	0%	1%	0%	0%	-1%	0%	-1%	-3%	-1%
1995	Wet	-4%	-1%	0%	1%	1%	0%	0%	-1%	0%	-2%	-2%	-1%	-1%
1996	Wet	-3%	-2%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%
1997	Wet	-3%	-1%	0%	1%	1%	1%	0%	1%	0%	-1%	-1%	-3%	-1%
1998	Wet	-3%	-2%	1%	0%	0%	0%	0%	0%	-1%	-2%	-3%	-2%	-1%
1999	Wet	-3%	-1%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-3%	-4%	-1%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%
2001	Dry	-3%	-3%	-1%	1%	1%	1%	1%	1%	-1%	-1%	-1%	-1%	-1%
2002	Dry	-2%	-1%	1%	-1%	0%	0%	1%	1%	0%	-1%	-2%	-1%	0%
2003	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-2%	-1%
Average		-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Wet		-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Above Normal		-2%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	-2%	0%
Below Normal		-2%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Dry		-2%	-1%	0%	1%	0%	1%	0%	0%	0%	0%	-1%	-1%	0%
Critical		-2%	-1%	0%	1%	1%	0%	0%	1%	0%	0%	-2%	-1%	0%

Sacramento River Water Temperatures at Balls Ferry (°F)

No Action

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	59	55	53	53	55	52
1923	Below Normal	52	49	47	45	47	49	54	55	53	53	54	55	51
1924	Critical	54	53	49	45	48	51	53	55	54	57	63	63	54
1925	Dry	55	49	43	43	47	48	54	54	54	54	57	58	51
1926	Dry	57	53	48	45	47	50	53	54	54	54	57	59	53
1927	Wet	57	53	45	45	46	50	50	52	52	53	54	56	51
1928	Above Normal	54	51	47	45	47	49	54	52	52	54	55	57	51
1929	Critical	55	52	47	43	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
1931	Critical	55	53	48	46	47	50	51	54	55	57	61	64	53
1932	Dry	59	51	46	44	45	50	51	56	57	57	58	63	53
1933	Critical	60	55	48	44	45	50	52	54	56	57	59	62	53
1934	Critical	61	54	48	46	48	51	53	55	56	59	65	63	55
1935	Below Normal	58	51	47	45	46	49	54	55	55	56	56	59	52
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	57	52
1938	Wet	55	52	47	45	45	47	49	54	54	54	55	56	51
1939	Dry	55	52	48	46	46	48	50	52	53	53	56	57	51
1940	Above Normal	54	52	49	46	47	48	54	55	53	53	55	56	52
1941	Wet	55	52	48	46	46	49	50	52	54	55	55	56	52
1942	Wet	55	53	48	46	47	49	53	52	55	54	54	55	52
1943	Wet	55	52	48	46	47	48	53	54	53	53	55	56	52
1944	Dry	55	53	49	47	47	49	50	53	53	54	55	56	52
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	54	51
1946	Below Normal	54	51	48	45	44	47	49	51	51	52	53	54	50
1947	Dry	53	51	47	45	46	49	52	51	53	53	55	57	51
1948	Below Normal	56	51	48	46	46	48	52	55	54	53	55	55	52
1949	Dry	54	52	48	45	45	48	52	52	52	52	54	56	51
1950	Below Normal	53	52	49	44	45	47	51	52	52	54	55	55	51
1951	Above Normal	53	50	47	44	44	47	49	52	52	52	54	54	50
1952	Wet	52	50	46	43	44	46	47	53	54	55	54	55	50
1953	Wet	55	52	47	46	46	48	51	51	53	54	54	55	51
1954	Above Normal	53	51	47	46	45	47	50	51	52	53	55	57	50
1955	Dry	54	51	45	44	45	48	49	53	52	53	56	56	50
1956	Wet	53	49	48	44	44	48	50	50	52	54	53	53	50
1957	Above Normal	52	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	53	51	47	45	46	46	50	53	54	54	55	55	51
1959	Below Normal	55	52	49	46	46	47	50	51	52	54	57	58	52
1960	Dry	56	53	50	45	46	48	49	53	52	54	54	56	51
1961	Dry	54	51	46	45	46	47	50	51	52	53	53	57	50
1962	Below Normal	55	51	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	54	52	48	46	47	47	49	55	54	53	56	57	51
1964	Dry	53	51	47	45	46	47	49	51	52	54	54	55	50
1965	Wet	54	50	48	44	45	48	49	51	52	53	55	55	50
1966	Below Normal	52	51	46	44	45	46	50	51	51	52	54	55	50
1967	Wet	55	51	47	45	45	46	48	51	53	54	53	54	50
1968	Below Normal	53	53	47	44	46	49	50	52	51	54	55	57	51
1969	Wet	54	51	45	44	43	47	47	50	52	54	54	54	50
1970	Wet	53	52	48	47	45	49	47	51	52	52	55	57	51
1971	Wet	54	51	46	44	44	45	50	51	53	54	56	55	50
1972	Below Normal	53	51	46	44	45	47	49	52	52	53	54	56	50
1973	Above Normal	53	49	45	44	44	46	51	54	52	53	54	55	50
1974	Wet	51	51	46	44	44	45	51	53	54	55	53	54	50
1975	Wet	53	51	47	46	45	47	50	52	54	54	54	55	51
1976	Critical	53	51	47	45	46	48	50	52	52	54	56	57	51
1977	Critical	54	52	50	46	47	48	50	52	54	57	64	63	53
1978	Above Normal	57	50	45	45	44	46	50	51	52	54	54	54	50
1979	Below Normal	54	51	49	46	46	49	51	54	52	53	55	57	51
1980	Above Normal	54	50	47	46	46	49	51	52	52	53	54	56	51
1981	Dry	53	51	48	46	47	48	51	52	52	55	56	56	51
1982	Wet	54	50	47	43	44	46	47	55	54	54	54	54	50
1983	Wet	53	50	47	45	45	46	49	52	53	54	55	55	50
1984	Wet	55	52	47	45	46	47	49	52	53	54	55	57	51
1985	Dry	53	50	46	45	46	49	52	51	53	54	55	56	51
1986	Wet	56	50	47	46	47	49	52	53	54	55	56	57	52
1987	Dry	55	52	49	45	46	48	50	51	52	54	57	57	51
1988	Critical	56	53	46	44	46	48	50	52	52	55	57	58	51
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	55	51
1990	Critical	54	52	49	46	44	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	56	56	58	52
1992	Critical	58	53	48	45	47	49	51	52	53	56	60	62	53
1993	Above Normal	60	52	45	43	45	49	50	50	53	53	55	55	51
1994	Critical	54	52	48	46	46	50	50	53	53	55	56	58	52
1995	Wet	58	50	46	45	46	47	51	52	54	55	56	56	51
1996	Wet	55	53	48	46	47	48	52	52	54	54	56	55	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	56	51
1998	Wet	54	51	46	45	45	46	51	49	52	55	56	57	51
1999	Wet	55	52	47	46	45	46	51	51	52	53	54	54	51
2000	Above Normal	54	52	48	48	49	51	54	54	54	54	57	59	53
2001	Dry	56	54	51	47	46	51	50	53	53	55	58	60	53
2002	Dry	56	53	46	46	47	49	52	53	54	55	58	58	52
2003	Above Normal	56	54	47	46	46	50	50	52	56	54	57	58	52
Average		55	52	47	45	46	48	51	53	53	54	56	57	51
Wet		54	51	47	45	45	47	50	52	53	54	55	55	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Below Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Dry		55	52	47	45	46	49	51	53	53	54	56	57	51
Critical		56	53	48	45	47	49	51	53	54	56	59	60	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP3 (2030)

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	57	54	53	53	55	52
1923	Below Normal	53	50	47	45	47	50	54	56	53	54	54	55	51
1924	Critical	52	52	49	46	48	50	52	57	55	57	58	63	53
1925	Dry	56	49	43	43	47	48	54	54	54	54	55	58	51
1926	Dry	56	53	48	45	47	50	53	53	54	54	56	59	52
1927	Wet	57	53	46	45	46	49	50	52	52	53	53	55	51
1928	Above Normal	53	50	47	45	47	49	54	52	52	54	54	57	51
1929	Critical	54	51	48	44	46	48	50	52	53	53	55	57	51
1930	Dry	56	53	48	45	48	50	51	53	53	54	55	57	52
1931	Critical	54	52	48	46	48	50	51	54	55	57	59	64	53
1932	Dry	59	52	46	44	45	50	52	57	57	57	57	62	53
1933	Critical	60	55	48	44	45	50	52	54	57	57	57	62	53
1934	Critical	61	54	48	46	48	51	53	55	56	58	64	63	55
1935	Below Normal	58	51	47	45	46	49	54	55	55	56	55	59	52
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	56	52
1938	Wet	55	51	47	45	46	47	49	54	54	53	55	55	51
1939	Dry	53	51	48	46	46	49	50	52	52	53	54	56	51
1940	Above Normal	54	53	49	46	47	48	54	54	53	53	54	56	52
1941	Wet	53	52	48	47	46	49	50	52	54	54	55	55	51
1942	Wet	53	52	49	46	47	49	53	52	54	54	54	54	51
1943	Wet	53	51	48	46	47	48	53	54	53	53	55	56	51
1944	Dry	54	52	49	47	47	50	50	53	52	53	54	56	51
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	54	51
1946	Below Normal	53	51	47	45	45	48	50	51	51	52	53	53	50
1947	Dry	51	50	47	45	46	49	52	51	53	52	54	56	51
1948	Below Normal	55	51	48	46	46	48	52	57	56	54	55	54	52
1949	Dry	53	51	48	45	45	48	52	52	52	52	54	55	51
1950	Below Normal	52	51	48	44	45	47	52	52	53	54	54	55	51
1951	Above Normal	51	49	46	44	44	48	49	52	51	52	54	54	50
1952	Wet	50	48	46	43	44	46	47	52	53	55	54	54	49
1953	Wet	53	51	46	46	46	48	51	51	53	54	54	54	51
1954	Above Normal	52	51	47	46	46	47	50	50	52	53	54	56	50
1955	Dry	53	51	45	44	46	48	49	53	52	52	55	56	50
1956	Wet	53	49	47	44	44	48	51	50	52	53	54	52	50
1957	Above Normal	50	50	48	45	46	48	49	54	54	53	54	56	51
1958	Wet	52	50	47	45	46	46	50	53	54	54	54	54	51
1959	Below Normal	53	51	49	47	46	48	51	52	52	54	55	57	51
1960	Dry	54	53	51	46	46	48	49	53	52	54	55	55	51
1961	Dry	53	50	46	45	46	48	50	51	52	53	53	55	50
1962	Below Normal	53	51	46	45	46	47	51	51	52	53	52	55	50
1963	Wet	53	51	48	46	47	47	49	55	54	53	56	56	51
1964	Dry	52	50	47	45	46	47	49	52	52	53	54	55	50
1965	Wet	54	50	47	44	45	47	50	50	52	53	55	53	50
1966	Below Normal	51	50	46	44	45	46	50	51	51	52	53	55	50
1967	Wet	53	51	47	45	46	46	48	51	53	54	53	53	50
1968	Below Normal	52	51	46	45	46	49	50	52	51	53	55	56	51
1969	Wet	53	50	45	44	43	47	47	50	52	54	54	53	49
1970	Wet	51	51	48	47	46	49	48	51	52	53	54	55	50
1971	Wet	52	50	45	44	45	46	50	51	53	54	56	54	50
1972	Below Normal	52	50	46	44	45	47	49	52	52	53	53	55	50
1973	Above Normal	52	49	45	44	45	46	51	53	52	53	54	55	50
1974	Wet	50	50	46	45	44	45	51	53	53	55	53	53	50
1975	Wet	51	50	47	46	45	47	50	52	53	54	54	54	50
1976	Critical	51	50	47	46	46	49	50	53	51	54	56	56	51
1977	Critical	53	52	50	48	47	49	51	53	55	58	63	63	53
1978	Above Normal	58	50	45	45	45	48	50	50	51	53	54	54	50
1979	Below Normal	51	50	48	46	46	49	51	54	52	53	55	56	51
1980	Above Normal	53	49	47	46	46	49	51	52	52	53	54	55	51
1981	Dry	52	50	47	46	47	49	51	52	52	54	55	56	51
1982	Wet	53	50	47	43	44	46	47	55	54	54	54	53	50
1983	Wet	52	49	47	45	45	46	50	52	53	53	54	54	50
1984	Wet	53	51	47	45	46	48	49	52	53	54	55	56	51
1985	Dry	52	49	46	45	46	49	52	52	52	54	54	55	51
1986	Wet	54	50	47	47	47	49	51	53	54	55	55	56	51
1987	Dry	54	52	49	45	46	49	50	52	52	53	56	56	51
1988	Critical	56	53	46	44	46	48	50	52	52	55	57	57	51
1989	Dry	57	51	46	44	44	48	52	50	53	54	54	55	51
1990	Critical	53	52	49	46	45	50	50	53	53	54	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	57	56	57	52
1992	Critical	57	53	48	45	47	49	51	52	54	56	59	62	53
1993	Above Normal	60	52	45	43	45	49	51	53	55	53	55	53	51
1994	Critical	52	50	48	46	46	50	51	53	52	55	55	57	51
1995	Wet	56	50	46	45	46	47	51	52	54	55	55	56	51
1996	Wet	54	52	48	46	47	49	52	52	54	54	56	55	51
1997	Wet	53	51	49	46	46	49	49	51	52	53	55	55	51
1998	Wet	52	50	46	45	45	46	51	49	52	54	54	56	50
1999	Wet	54	51	48	46	45	46	51	51	52	53	55	54	51
2000	Above Normal	52	50	48	48	49	51	54	54	54	54	56	58	52
2001	Dry	55	52	50	47	46	52	51	53	52	55	57	59	52
2002	Dry	56	53	47	46	47	49	52	53	54	55	57	58	52
2003	Above Normal	55	54	48	46	46	50	50	53	55	54	57	57	52
Average		54	51	47	45	46	48	51	53	53	54	55	56	51
Wet		53	51	47	45	46	47	50	52	53	54	54	54	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	55	51
Below Normal		54	51	47	45	46	48	51	53	53	53	54	55	51
Dry		54	51	47	45	46	49	51	53	53	54	55	57	51
Critical		55	52	48	45	47	49	51	53	54	56	58	60	52

Change in Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP3 (2030) - No Action

SVI														
Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-2	-2	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	1	0	0	0
1924	Critical	-2	-1	0	0	0	0	-1	1	1	-1	-5	0	-1
1925	Dry	1	0	0	0	0	0	0	0	0	0	-1	-1	0
1926	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-1	-1	0	0	0	0	-1	0	0	0	-1	0	0
1929	Critical	-1	0	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-2	-1	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	0	1	0	-1	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-1	-1	0	0	0	0	0	0	-1	1	-1	-1	0
1940	Above Normal	0	1	1	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	-1	-1	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	-1	0	-1	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	-1	2	2	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	-1	0	0	0	1	0	0	0	-1	-1	-1	0
1956	Wet	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1960	Dry	-2	0	2	0	0	0	0	0	0	0	1	-1	0
1961	Dry	-1	-1	0	0	0	1	0	0	0	0	-1	-2	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	0	0	0	0	0	-1	-1	-1	0	0
1965	Wet	0	0	-1	0	0	0	1	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-2	-1	0
1971	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	-1	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1977	Critical	-1	0	0	0	0	0	0	0	1	1	-1	0	0
1978	Above Normal	1	0	0	0	1	2	0	-1	-1	-1	0	-1	0
1979	Below Normal	-2	-2	-1	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	1	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	-1	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1986	Wet	-1	-1	0	0	0	0	-1	0	0	0	-1	-1	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	-1	0	0	0	0	0	0
1990	Critical	-1	0	0	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	2	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	-1	0	-1	-1	-1
1995	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-1	-1	0	0	0	0	0	0	-1	-1	-1	0	0
2002	Dry	-1	0	0	-1	0	0	0	0	0	-1	-1	0	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-1	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Balls Ferry (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-3%	-3%	0%	0%	1%	0%
1923	Below Normal	1%	1%	0%	0%	0%	0%	1%	2%	1%	1%	0%	0%	1%
1924	Critical	-4%	-2%	-1%	1%	1%	-1%	-2%	3%	1%	-1%	-8%	1%	-1%
1925	Dry	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	1%	0%	0%	-1%	-1%	0%	-1%	-2%	0%
1928	Above Normal	-2%	-2%	0%	0%	0%	0%	-1%	-1%	0%	0%	-2%	-1%	-1%
1929	Critical	-2%	-1%	0%	3%	0%	0%	0%	0%	-1%	-1%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	0%
1931	Critical	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-3%	-1%	0%
1932	Dry	1%	0%	0%	1%	0%	0%	1%	1%	0%	0%	-2%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	-2%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	-1%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1937	Below Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	-1%	0%	-2%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%	-1%
1939	Dry	-2%	-1%	0%	0%	0%	1%	1%	0%	-2%	1%	-2%	-2%	-1%
1940	Above Normal	0%	1%	1%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%	0%
1941	Wet	-3%	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1942	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1943	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1944	Dry	-2%	-2%	-1%	0%	0%	0%	1%	0%	-1%	-2%	0%	0%	-1%
1945	Below Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-1%	-1%	-1%	0%	1%	1%	0%	0%	0%	0%	-1%	-2%	0%
1947	Dry	-3%	-2%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	-2%	-1%
1948	Below Normal	-1%	0%	0%	0%	1%	0%	0%	3%	3%	0%	-2%	-2%	0%
1949	Dry	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	-1%
1950	Below Normal	-3%	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%
1951	Above Normal	-3%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-3%	-3%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1953	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1955	Dry	-2%	-1%	0%	0%	0%	1%	1%	0%	0%	-2%	-2%	-1%	0%
1956	Wet	-1%	0%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1957	Above Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1958	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1959	Below Normal	-3%	-2%	0%	0%	1%	1%	1%	0%	-1%	-2%	-2%	-2%	-1%
1960	Dry	-3%	0%	3%	1%	0%	0%	0%	0%	1%	0%	1%	-2%	0%
1961	Dry	-3%	-1%	0%	0%	1%	1%	0%	-1%	0%	0%	-2%	-4%	-1%
1962	Below Normal	-4%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	-1%
1963	Wet	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1964	Dry	-2%	-1%	0%	0%	1%	1%	1%	-1%	-1%	-2%	-1%	0%	-1%
1965	Wet	0%	0%	-2%	0%	0%	-1%	0%	-1%	0%	0%	-1%	-2%	0%
1966	Below Normal	-1%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1967	Wet	-4%	-1%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%
1968	Below Normal	-2%	-3%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-2%	-1%
1970	Wet	-4%	-2%	0%	0%	0%	0%	1%	0%	0%	1%	-3%	-2%	-1%
1971	Wet	-4%	-1%	-1%	0%	0%	1%	0%	0%	-1%	0%	0%	-2%	-1%
1972	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1973	Above Normal	-1%	0%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	-1%
1975	Wet	-3%	-3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1976	Critical	-2%	-2%	0%	2%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	0%
1977	Critical	-1%	0%	1%	0%	-1%	1%	1%	1%	2%	-1%	-1%	0%	0%
1978	Above Normal	2%	0%	0%	0%	2%	4%	-1%	-1%	-1%	0%	0%	-2%	0%
1979	Below Normal	-4%	-4%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1981	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-2%	1%	0%
1982	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	-2%	0%
1983	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1984	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1985	Dry	-1%	-1%	0%	1%	1%	-1%	0%	1%	-1%	0%	-1%	-1%	0%
1986	Wet	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-2%	-1%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-2%	-1%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1989	Dry	-1%	0%	1%	1%	0%	0%	-1%	0%	0%	0%	0%	-1%	0%
1990	Critical	-1%	-1%	0%	0%	1%	0%	0%	0%	0%	-2%	1%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	7%	3%	0%	0%	-4%	1%
1994	Critical	-4%	-2%	0%	1%	0%	0%	0%	0%	-2%	0%	-1%	-2%	-1%
1995	Wet	-3%	-1%	0%	0%	1%	0%	0%	-1%	0%	-1%	-2%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-3%	-1%	0%	1%	0%	0%	0%	1%	0%	-1%	-1%	-2%	0%
1998	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1999	Wet	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-2%	-3%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
2001	Dry	-2%	-2%	-1%	0%	0%	0%	1%	0%	-1%	-1%	-1%	-1%	-1%
2002	Dry	-1%	-1%	0%	-2%	0%	0%	0%	0%	0%	-1%	-3%	0%	-1%
2003	Above Normal	-2%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-2%	0%
Average		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Below Normal		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	1%	0%	0%	-2%	-1%	0%

Sacramento River Water Temperatures at Bend Bridge (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	60	57	55	55	57	53
1923	Below Normal	53	49	47	45	47	51	54	56	54	55	56	56	52
1924	Critical	54	53	48	45	48	51	54	57	56	59	64	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	57	52	47	44	47	52	54	56	56	56	59	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	55	56	57	52
1928	Above Normal	55	50	46	45	47	49	55	54	54	55	57	58	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	58	52
1930	Dry	57	53	47	44	48	51	53	55	55	55	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	65	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	60	63	54
1933	Critical	60	54	46	43	45	50	53	56	58	59	60	63	54
1934	Critical	61	53	47	46	48	53	54	56	57	60	66	64	55
1935	Below Normal	58	51	46	44	46	49	54	57	57	58	57	60	53
1936	Below Normal	57	52	47	45	46	50	53	54	55	55	56	59	52
1937	Below Normal	56	53	47	44	46	50	54	58	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	57	52
1939	Dry	55	52	47	45	46	49	52	54	54	54	57	58	52
1940	Above Normal	55	52	48	45	47	49	55	57	55	55	57	57	53
1941	Wet	55	52	48	46	47	50	52	54	57	57	57	57	52
1942	Wet	55	52	48	46	47	50	54	54	57	56	56	56	52
1943	Wet	55	52	47	46	47	49	54	56	55	55	56	58	52
1944	Dry	55	52	48	46	47	50	51	55	55	55	56	57	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	51	48	45	44	48	51	53	53	54	55	56	51
1947	Dry	53	51	46	44	47	50	53	53	54	55	57	58	52
1948	Below Normal	56	50	47	45	46	49	52	57	56	56	57	56	52
1949	Dry	54	51	47	44	45	48	54	55	54	54	56	58	52
1950	Below Normal	54	52	48	44	45	48	53	54	55	57	57	57	52
1951	Above Normal	53	50	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	52	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	56	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	52	54	55	56	58	51
1955	Dry	54	51	45	43	46	49	50	56	54	55	58	58	51
1956	Wet	54	49	47	44	44	49	53	53	55	56	56	54	51
1957	Above Normal	52	51	48	44	46	48	50	56	56	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	56	51	48	46	46	49	52	53	54	56	58	60	52
1960	Dry	56	53	49	45	46	49	51	55	54	56	56	58	52
1961	Dry	55	50	45	44	46	47	52	53	54	54	55	59	51
1962	Below Normal	55	51	45	45	46	47	53	53	54	55	56	56	51
1963	Wet	55	52	48	45	47	48	49	57	56	55	58	58	52
1964	Dry	54	50	46	44	46	48	50	53	54	56	56	56	51
1965	Wet	54	49	47	44	46	49	50	53	54	55	57	56	51
1966	Below Normal	53	50	46	44	45	47	52	54	53	54	56	57	51
1967	Wet	55	51	46	45	46	46	48	53	56	57	56	55	51
1968	Below Normal	53	52	45	44	46	50	52	54	53	56	57	58	52
1969	Wet	54	50	44	44	43	48	49	53	55	56	56	55	51
1970	Wet	53	51	48	46	46	49	49	53	54	54	57	58	52
1971	Wet	55	50	45	44	45	46	51	53	56	56	58	56	51
1972	Below Normal	54	50	45	44	45	48	50	54	54	55	56	57	51
1973	Above Normal	53	48	44	44	45	47	53	56	55	55	56	57	51
1974	Wet	52	50	46	44	44	45	52	55	56	57	55	55	51
1975	Wet	54	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	53	50	47	44	46	49	51	55	53	56	58	59	52
1977	Critical	55	52	49	45	48	49	52	54	56	58	65	64	54
1978	Above Normal	57	49	45	45	45	48	51	53	54	56	56	56	51
1979	Below Normal	55	51	48	46	46	50	53	56	54	55	57	58	52
1980	Above Normal	54	49	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	54	50	47	46	47	49	53	54	54	56	58	57	52
1982	Wet	54	50	46	43	44	47	48	58	56	56	56	55	51
1983	Wet	53	50	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	59	52
1985	Dry	53	49	45	44	46	50	54	54	55	56	56	57	52
1986	Wet	56	50	46	46	48	49	53	55	56	57	57	58	53
1987	Dry	56	52	48	44	46	49	52	53	54	55	59	58	52
1988	Critical	57	53	45	44	47	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	55	52	55	56	56	57	52
1990	Critical	54	52	48	45	44	51	52	55	55	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	60	60	53
1992	Critical	58	53	47	44	47	50	53	54	55	58	62	63	54
1993	Above Normal	60	51	44	43	45	50	51	52	56	55	57	56	52
1994	Critical	54	51	47	46	46	50	52	55	54	57	58	59	52
1995	Wet	58	49	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	53	47	45	47	49	53	54	56	57	58	56	53
1997	Wet	55	51	48	46	47	50	50	53	55	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	57	57	57	51
1999	Wet	56	51	47	46	45	47	53	53	55	55	57	56	52
2000	Above Normal	54	51	47	48	49	51	56	56	56	56	58	60	54
2001	Dry	56	53	50	46	46	53	52	55	55	57	60	62	54
2002	Dry	57	53	46	46	46	49	54	55	56	57	60	59	53
2003	Above Normal	57	54	47	46	47	51	51	54	58	57	59	59	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		55	51	46	45	46	48	51	54	56	56	57	57	52
Above Normal		55	51	46	45	46	49	53	55	55	55	57	58	52
Below Normal		55	51	47	45	46	49	53	55	55	55	56	57	52
Dry		55	51	46	45	46	49	53	55	55	56	57	58	52
Critical		56	52	47	45	47	50	52	55	56	58	61	61	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP3 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	59	56	55	55	57	52
1923	Below Normal	53	49	47	45	47	51	55	57	55	56	56	56	52
1924	Critical	52	51	48	45	48	51	53	58	57	58	59	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	57	59	52
1926	Dry	56	52	47	44	47	52	55	55	56	56	58	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	55	55	56	52
1928	Above Normal	53	49	46	45	47	49	55	54	54	55	56	58	52
1929	Critical	54	51	46	44	46	49	51	54	55	55	57	58	52
1930	Dry	56	52	47	44	48	51	53	55	55	56	56	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	61	64	54
1932	Dry	59	51	45	44	45	52	53	58	59	59	59	63	54
1933	Critical	59	54	46	44	45	50	53	56	58	59	59	62	54
1934	Critical	61	53	47	46	48	53	55	57	57	60	65	64	55
1935	Below Normal	58	51	46	44	46	49	54	57	57	58	57	60	53
1936	Below Normal	57	52	47	45	46	50	53	54	55	55	56	58	52
1937	Below Normal	55	53	47	44	46	50	54	58	56	56	56	58	53
1938	Wet	55	51	46	44	46	48	51	57	57	55	56	56	52
1939	Dry	54	51	47	46	46	49	52	53	53	55	56	57	52
1940	Above Normal	55	53	48	45	47	49	55	56	55	55	56	57	53
1941	Wet	54	51	47	46	47	50	52	54	57	56	56	56	52
1942	Wet	54	52	48	46	47	50	54	54	57	56	55	55	52
1943	Wet	54	51	47	46	47	49	54	56	55	55	56	57	52
1944	Dry	54	51	48	46	47	50	51	55	54	54	56	57	52
1945	Below Normal	55	50	46	44	47	49	53	55	55	54	55	55	52
1946	Below Normal	54	50	47	45	45	48	51	53	53	53	54	55	51
1947	Dry	52	50	46	45	47	50	54	53	55	54	56	57	51
1948	Below Normal	55	50	47	46	46	49	52	58	58	56	57	55	52
1949	Dry	53	50	47	45	45	48	54	54	54	54	56	57	51
1950	Below Normal	52	51	47	44	45	48	53	55	55	56	56	57	52
1951	Above Normal	51	49	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	51	48	46	43	45	47	49	55	56	57	56	55	51
1953	Wet	54	51	46	46	47	49	52	53	55	56	56	55	52
1954	Above Normal	52	50	46	46	46	48	51	52	54	55	56	57	51
1955	Dry	53	50	45	43	46	49	50	55	54	54	57	57	51
1956	Wet	53	49	46	44	44	49	53	53	55	56	56	53	51
1957	Above Normal	51	50	48	44	46	48	50	56	56	55	56	58	52
1958	Wet	52	50	47	45	46	47	52	56	56	56	57	55	52
1959	Below Normal	54	50	48	46	46	49	53	54	53	56	57	59	52
1960	Dry	54	53	51	45	46	49	51	55	55	56	57	57	52
1961	Dry	53	50	45	44	46	48	52	53	54	55	54	57	51
1962	Below Normal	53	50	45	45	46	47	53	53	54	55	54	56	51
1963	Wet	53	50	48	45	47	48	49	57	56	55	58	58	52
1964	Dry	53	50	46	44	46	48	50	53	54	55	55	56	51
1965	Wet	55	49	46	44	46	48	51	52	54	55	57	55	51
1966	Below Normal	52	49	45	44	45	47	52	54	53	54	55	56	51
1967	Wet	53	51	46	45	46	47	48	53	55	57	55	55	51
1968	Below Normal	52	51	45	44	46	50	52	54	53	55	57	58	51
1969	Wet	53	50	44	44	44	48	49	53	54	56	56	54	50
1970	Wet	51	50	47	47	46	50	49	53	54	55	56	57	51
1971	Wet	53	50	45	44	45	46	51	53	55	56	58	65	51
1972	Below Normal	52	50	45	44	45	48	50	54	53	55	55	56	51
1973	Above Normal	52	48	44	44	45	47	53	56	54	55	56	57	51
1974	Wet	51	49	46	44	45	45	52	55	56	57	55	55	51
1975	Wet	52	49	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	52	50	46	45	46	49	51	55	53	56	58	58	51
1977	Critical	54	52	49	45	47	49	52	54	56	60	64	64	54
1978	Above Normal	58	49	45	45	46	49	51	53	54	55	56	56	51
1979	Below Normal	53	49	47	46	46	50	53	56	54	55	57	58	52
1980	Above Normal	54	49	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	53	50	47	46	47	49	53	54	54	56	57	58	52
1982	Wet	53	50	46	43	45	47	48	58	56	56	56	54	51
1983	Wet	52	49	46	45	46	47	51	55	55	55	55	56	51
1984	Wet	54	51	47	45	46	49	50	54	54	56	57	58	52
1985	Dry	52	49	46	45	46	49	54	54	54	56	56	57	51
1986	Wet	55	49	46	46	48	49	53	54	56	57	56	58	52
1987	Dry	55	52	48	44	46	49	52	54	54	55	58	57	52
1988	Critical	56	52	45	44	47	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	54	52	55	56	56	57	52
1990	Critical	54	52	48	45	44	51	52	55	55	56	58	59	52
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	59	53
1992	Critical	57	52	47	44	47	50	53	54	55	58	61	63	54
1993	Above Normal	60	52	45	43	45	50	52	56	57	55	57	54	52
1994	Critical	52	50	47	46	46	51	52	55	53	56	57	58	52
1995	Wet	56	49	45	45	47	47	52	53	56	57	57	57	52
1996	Wet	54	52	47	45	47	49	53	54	56	57	58	56	52
1997	Wet	53	50	48	46	47	51	50	53	54	55	57	56	52
1998	Wet	53	50	45	45	45	47	52	51	54	56	56	57	51
1999	Wet	54	51	47	46	45	47	53	53	54	54	57	56	51
2000	Above Normal	53	50	47	48	49	51	56	56	56	56	58	60	53
2001	Dry	55	52	50	46	46	53	52	55	54	57	59	61	53
2002	Dry	56	53	46	45	47	49	54	55	56	57	59	60	53
2003	Above Normal	56	54	47	46	47	51	51	55	58	56	59	58	53
Average		54	51	46	45	46	49	52	55	55	56	57	57	52
Wet		53	50	46	45	46	48	51	54	55	56	56	56	51
Above Normal		54	50	46	45	46	49	53	55	55	55	56	57	52
Below Normal		54	50	46	45	46	49	53	55	55	55	56	57	52
Dry		55	51	47	45	46	50	53	55	55	55	57	58	52
Critical		55	52	47	45	47	50	52	55	56	58	60	61	53

Change in Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP3 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-1	-1	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	1	0	0	0
1924	Critical	-2	-1	0	0	0	0	-1	1	1	-1	-5	0	-1
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1926	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-1	-1	0	0	0	0	-1	-1	0	0	-1	0	0
1929	Critical	-1	0	0	1	0	0	0	0	0	-1	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-2	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	0	1	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	-1	-1	0	0
1939	Dry	-1	-1	0	0	0	0	0	0	-1	1	-1	-1	0
1940	Above Normal	0	1	1	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	0	-1	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	-1	-1	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	0	1	2	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	0	0	0	1	0	0	0	-1	-1	-1	0
1956	Wet	0	0	-1	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1960	Dry	-1	0	2	0	0	0	0	0	1	0	1	-1	0
1961	Dry	-1	-1	0	0	0	1	0	0	0	0	-1	-2	0
1962	Below Normal	-2	0	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	0	0	0	0	0	0	0	-1	-1	-1	0	0
1965	Wet	0	0	-1	0	0	-1	1	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-2	-1	0
1971	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	-1	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1977	Critical	-1	0	1	0	0	0	0	0	1	1	-1	0	0
1978	Above Normal	1	0	0	0	1	2	0	0	-1	0	0	-1	0
1979	Below Normal	-2	-2	-1	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	1	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	0	0	0	-1	0	0	-1	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	2	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1995	Wet	-2	0	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	0	0	0	0	0	0	0	0	-1	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	-1	0	0	0	0	0	0	-1	-1	-1	0	0
2002	Dry	-1	0	0	-1	0	0	0	0	0	-1	-2	0	0
2003	Above Normal	-1	0	0	0	0	0	0	1	0	0	0	-1	0
Average		-1	0	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	0	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	0	0	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	0	0
Critical		-1	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Bend Bridge (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-2%	-3%	0%	0%	0%	0%
1923	Below Normal	1%	1%	0%	0%	0%	0%	0%	2%	1%	1%	0%	0%	1%
1924	Critical	-3%	-2%	-1%	0%	0%	-1%	-1%	2%	1%	-1%	-7%	0%	-1%
1925	Dry	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	1%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1928	Above Normal	-2%	-2%	0%	0%	0%	0%	-1%	0%	0%	0%	-2%	0%	-1%
1929	Critical	-2%	-1%	0%	2%	0%	0%	0%	0%	-1%	-1%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1932	Dry	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-2%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	-2%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	-1%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1937	Below Normal	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	-1%	-2%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-1%
1939	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-2%	1%	-2%	-1%	-1%
1940	Above Normal	0%	1%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1941	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1942	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1943	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-2%	-2%	-1%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%	-1%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-1%	-1%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1947	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	-1%	-1%
1948	Below Normal	-1%	0%	0%	0%	0%	0%	0%	2%	3%	0%	-1%	-2%	0%
1949	Dry	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	0%
1950	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%
1951	Above Normal	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1953	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-2%	-2%	-1%	-1%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1957	Above Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-3%	-2%	0%	0%	0%	0%	1%	1%	0%	-1%	-2%	-1%	-1%
1960	Dry	-3%	1%	3%	1%	0%	0%	0%	0%	1%	0%	2%	-2%	0%
1961	Dry	-2%	-1%	0%	0%	1%	1%	0%	-1%	0%	0%	-1%	-3%	-1%
1962	Below Normal	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	0%	-1%
1963	Wet	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	1%	0%	0%	0%	-1%	-3%	-2%	-1%	-1%
1965	Wet	0%	0%	-3%	0%	0%	-1%	1%	-1%	0%	0%	-1%	-2%	0%
1966	Below Normal	-1%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1967	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	-2%	-1%
1970	Wet	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	1%	-3%	-2%	-1%
1971	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%
1972	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1973	Above Normal	-1%	0%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1975	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%
1976	Critical	-2%	-1%	0%	2%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	0%
1977	Critical	-1%	0%	1%	0%	-1%	0%	0%	1%	1%	2%	-1%	0%	0%
1978	Above Normal	2%	0%	0%	0%	1%	4%	-1%	-1%	-1%	0%	0%	0%	0%
1979	Below Normal	-4%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-2%	2%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1984	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1985	Dry	-1%	-1%	0%	1%	0%	-1%	0%	1%	-2%	0%	-1%	-1%	0%
1986	Wet	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	-1%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1989	Dry	-1%	0%	1%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%
1990	Critical	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-2%	1%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	7%	3%	0%	0%	-3%	1%
1994	Critical	-3%	-2%	0%	0%	0%	0%	0%	0%	-2%	0%	-1%	-2%	-1%
1995	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	0%	1%	0%	-1%	-1%	-2%	0%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1999	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2001	Dry	-2%	-2%	-1%	0%	0%	0%	1%	0%	-1%	-1%	-1%	-1%	-1%
2002	Dry	-1%	-1%	0%	-2%	0%	0%	0%	0%	0%	-1%	-3%	0%	-1%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-1%	0%
Average		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
Critical		-1%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	56	49	48	45	45	50	54	60	58	57	57	58	53
1923	Below Normal	54	48	46	44	47	51	55	57	55	57	57	57	52
1924	Critical	54	52	48	44	48	52	55	58	57	60	64	64	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	61	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	55	50	45	45	47	49	56	55	56	57	58	59	53
1929	Critical	56	51	46	42	46	50	52	55	57	57	59	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	50	45	44	45	52	54	59	60	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	61	63	54
1934	Critical	61	53	46	46	48	53	55	58	59	61	66	64	56
1935	Below Normal	58	51	46	44	46	49	55	58	58	59	59	61	54
1936	Below Normal	57	51	46	45	46	50	54	55	55	56	57	60	53
1937	Below Normal	56	53	47	43	46	50	55	59	57	57	58	59	53
1938	Wet	56	51	47	44	46	48	51	57	58	57	58	57	53
1939	Dry	55	51	47	45	46	49	53	55	56	56	58	59	52
1940	Above Normal	55	52	47	45	47	49	56	58	57	56	58	58	53
1941	Wet	55	51	47	46	47	50	52	55	58	58	58	57	53
1942	Wet	55	52	48	46	47	50	54	55	58	58	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	56	58	59	53
1944	Dry	56	52	48	46	47	50	52	57	56	57	57	58	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	50	47	45	44	49	52	55	54	55	56	57	52
1947	Dry	54	51	46	44	47	50	54	55	56	56	58	59	52
1948	Below Normal	56	50	46	45	46	49	52	57	57	57	59	57	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	59	52
1950	Below Normal	54	52	47	43	45	48	54	56	56	58	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	55	57	58	52
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	57	51
1953	Wet	55	51	45	46	47	49	53	53	56	58	58	57	52
1954	Above Normal	54	51	46	45	46	48	52	53	55	56	58	59	52
1955	Dry	54	51	44	43	46	49	50	57	55	57	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	53	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	58	59	57	52
1959	Below Normal	56	51	48	46	46	49	53	54	55	58	59	61	53
1960	Dry	56	52	49	44	46	49	51	56	56	58	58	59	53
1961	Dry	55	50	45	44	46	47	52	54	56	56	56	59	52
1962	Below Normal	55	50	45	45	46	47	54	54	56	56	57	57	52
1963	Wet	55	51	48	45	47	48	49	57	58	56	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	56	58	58	57	52
1965	Wet	55	49	47	44	46	49	50	54	56	57	59	58	52
1966	Below Normal	54	50	45	44	45	47	53	55	54	55	58	58	51
1967	Wet	55	51	46	44	46	47	48	54	57	58	57	56	52
1968	Below Normal	54	52	45	44	46	50	52	55	54	57	58	59	52
1969	Wet	55	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	49	54	56	56	59	59	52
1971	Wet	55	50	45	44	45	46	52	54	57	57	60	67	52
1972	Below Normal	54	50	45	44	45	48	51	55	55	57	57	58	52
1973	Above Normal	53	48	44	44	45	47	54	57	56	56	57	58	52
1974	Wet	52	50	46	44	44	46	52	57	58	59	57	56	52
1975	Wet	54	50	45	45	45	47	51	55	57	58	57	57	52
1976	Critical	53	50	46	44	46	49	51	56	55	58	59	60	52
1977	Critical	55	52	48	45	48	49	53	55	57	59	66	64	54
1978	Above Normal	57	49	44	45	45	48	52	54	56	57	58	57	52
1979	Below Normal	55	51	47	45	46	50	53	57	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	59	52
1981	Dry	54	50	47	46	47	49	53	55	55	58	59	58	53
1982	Wet	54	50	46	43	44	47	49	59	58	58	58	56	52
1983	Wet	53	49	46	45	45	47	51	55	56	57	57	57	52
1984	Wet	56	51	47	45	46	49	51	55	56	57	59	60	53
1985	Dry	53	49	45	44	46	50	55	55	56	58	58	58	52
1986	Wet	56	49	46	46	48	50	54	56	58	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	61	59	53
1988	Critical	57	52	45	43	47	50	53	55	55	58	61	60	53
1989	Dry	58	50	45	43	44	49	56	53	56	57	58	58	52
1990	Critical	54	52	47	45	44	51	53	56	57	58	60	60	53
1991	Critical	57	51	46	45	48	48	53	55	58	60	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	63	64	54
1993	Above Normal	59	51	44	43	45	51	52	53	57	57	59	57	52
1994	Critical	55	51	47	46	46	51	52	56	55	58	59	60	53
1995	Wet	58	49	45	45	47	47	52	54	57	59	59	58	52
1996	Wet	55	53	47	45	47	49	53	55	58	58	60	57	53
1997	Wet	55	50	48	46	47	51	51	54	56	57	59	59	53
1998	Wet	54	50	45	45	45	47	52	51	55	58	58	58	52
1999	Wet	56	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	54	51	47	48	49	52	57	58	58	58	60	61	54
2001	Dry	57	53	50	46	46	53	53	57	56	59	62	63	54
2002	Dry	57	53	46	46	48	50	54	56	58	59	62	60	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	60	54
Average		55	51	46	45	46	49	53	56	57	57	59	59	53
Wet		55	50	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	50	46	45	46	49	53	56	57	57	58	59	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	58	52
Dry		56	51	46	44	46	50	53	56	56	57	59	59	53
Critical		56	52	46	44	47	50	53	56	57	59	62	62	54

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP3 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	56	49	48	45	45	49	54	59	57	57	56	58	53
1923	Below Normal	54	49	46	44	47	51	55	58	56	57	57	58	53
1924	Critical	52	51	47	44	48	51	54	59	58	59	60	64	54
1925	Dry	55	49	42	43	47	49	55	57	57	58	58	59	53
1926	Dry	56	52	47	44	47	52	55	56	57	57	59	60	54
1927	Wet	56	52	45	45	46	50	52	55	55	56	56	57	52
1928	Above Normal	54	49	45	45	47	50	55	55	55	56	57	59	52
1929	Critical	55	50	46	43	46	50	52	55	56	56	58	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	62	64	54
1932	Dry	58	51	45	44	45	52	54	59	60	60	60	63	54
1933	Critical	59	54	46	43	45	50	54	57	60	61	60	63	54
1934	Critical	61	53	46	46	48	53	56	58	59	61	66	64	56
1935	Below Normal	58	51	46	44	46	49	55	58	58	59	58	61	54
1936	Below Normal	57	51	46	45	46	50	54	55	56	56	57	59	53
1937	Below Normal	55	53	47	43	46	50	55	59	58	58	58	59	53
1938	Wet	56	51	46	44	46	48	51	57	58	57	58	57	52
1939	Dry	54	51	47	45	46	50	53	55	54	56	57	58	52
1940	Above Normal	55	52	48	45	47	49	56	58	57	56	57	58	53
1941	Wet	54	51	47	46	47	50	52	55	58	58	57	57	53
1942	Wet	54	52	48	46	47	50	55	55	58	57	56	56	53
1943	Wet	54	50	47	46	47	49	55	57	56	56	57	58	53
1944	Dry	55	51	48	46	47	51	52	57	55	55	57	58	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	56	52
1946	Below Normal	54	50	47	45	45	49	52	55	54	55	56	56	51
1947	Dry	52	50	46	44	47	50	54	55	56	55	57	58	52
1948	Below Normal	55	50	47	45	46	49	52	58	59	57	58	56	53
1949	Dry	54	50	46	44	45	48	55	56	56	56	57	58	52
1950	Below Normal	53	51	47	43	45	48	54	56	57	58	58	58	52
1951	Above Normal	52	49	46	44	44	48	52	55	56	55	57	57	51
1952	Wet	51	48	46	43	45	47	49	55	57	59	57	56	51
1953	Wet	54	50	45	46	47	49	53	54	56	58	57	56	52
1954	Above Normal	53	50	46	45	46	48	52	53	55	56	57	58	52
1955	Dry	53	50	44	43	46	50	50	56	55	56	58	58	52
1956	Wet	54	49	46	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	51	49	47	44	46	48	51	57	58	56	57	59	52
1958	Wet	52	50	46	45	46	47	52	56	57	57	58	56	52
1959	Below Normal	54	50	47	46	46	49	53	55	55	57	58	60	53
1960	Dry	55	53	50	45	46	49	52	56	57	58	59	58	53
1961	Dry	54	50	45	44	46	48	52	54	55	56	55	58	51
1962	Below Normal	54	50	45	45	46	47	54	54	56	56	55	58	52
1963	Wet	54	50	47	45	47	48	49	57	58	56	59	59	53
1964	Dry	53	50	46	44	46	48	51	54	55	56	57	57	51
1965	Wet	55	49	46	44	46	49	51	53	56	57	59	57	52
1966	Below Normal	53	49	45	44	45	47	53	55	54	55	57	57	51
1967	Wet	54	51	46	45	46	47	48	54	56	58	57	56	51
1968	Below Normal	53	51	45	44	46	50	52	55	54	56	58	59	52
1969	Wet	54	50	44	44	44	48	50	54	56	58	58	55	51
1970	Wet	52	50	47	47	46	50	50	54	56	56	57	58	52
1971	Wet	53	50	44	44	45	46	52	53	57	57	60	66	51
1972	Below Normal	53	49	45	44	45	49	50	55	55	56	57	57	51
1973	Above Normal	52	48	43	44	45	47	54	57	56	57	57	58	52
1974	Wet	52	49	46	44	45	46	52	56	57	58	57	56	52
1975	Wet	52	49	45	45	45	47	52	55	57	58	57	57	52
1976	Critical	52	49	46	45	47	49	51	56	54	57	59	59	52
1977	Critical	55	52	49	45	48	49	53	55	58	61	65	64	54
1978	Above Normal	58	49	44	45	46	50	51	54	55	57	58	57	52
1979	Below Normal	53	49	46	45	46	50	53	57	55	57	58	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	58	52
1981	Dry	53	50	47	46	47	49	53	55	55	57	58	59	52
1982	Wet	53	50	46	43	45	47	49	59	57	58	58	55	52
1983	Wet	52	49	46	45	46	47	51	55	56	56	57	56	51
1984	Wet	54	51	47	45	46	49	51	55	56	57	59	59	52
1985	Dry	53	49	45	45	46	50	55	55	55	58	57	57	52
1986	Wet	55	49	46	46	48	50	53	55	57	58	58	58	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	59	58	53
1988	Critical	57	52	45	44	47	50	53	55	55	58	60	60	53
1989	Dry	58	50	45	44	44	49	55	54	56	57	58	58	52
1990	Critical	54	52	47	45	44	51	53	56	57	57	60	60	53
1991	Critical	57	51	46	45	49	48	53	55	58	60	60	60	54
1992	Critical	58	52	46	44	47	51	54	56	57	59	62	64	54
1993	Above Normal	59	51	44	43	45	51	52	56	58	57	59	56	53
1994	Critical	53	50	46	46	46	51	52	56	55	58	58	59	53
1995	Wet	56	48	45	45	47	47	52	54	57	58	58	58	52
1996	Wet	54	52	47	45	47	50	53	55	58	58	60	57	53
1997	Wet	54	50	48	46	47	51	51	54	56	56	58	58	52
1998	Wet	53	50	45	45	45	47	52	51	55	58	57	57	51
1999	Wet	55	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	53	50	46	48	49	52	57	58	58	58	59	61	54
2001	Dry	56	52	49	46	46	53	53	57	55	58	61	62	54
2002	Dry	57	53	46	45	48	50	54	56	58	58	60	61	54
2003	Above Normal	56	54	47	46	47	51	51	56	60	58	60	60	54
Average		55	50	46	45	46	49	53	56	56	57	58	58	52
Wet		54	50	46	45	46	48	52	55	57	57	58	57	52
Above Normal		54	50	46	45	46	49	53	56	57	57	58	58	52
Below Normal		54	50	46	44	46	49	53	56	56	57	57	58	52
Dry		55	51	46	44	46	50	53	56	56	57	58	59	53
Critical		56	52	46	45	47	51	53	56	57	59	61	62	54

Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP3 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-1	-1	0	0	0	0
1923	Below Normal	0	0	0	0	0	0	0	1	0	0	0	0	0
1924	Critical	-1	-1	0	0	0	0	-1	1	1	-1	-4	0	-1
1925	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1926	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1928	Above Normal	-1	-1	0	0	0	0	-1	-1	0	0	-1	0	0
1929	Critical	-1	0	0	1	0	0	0	0	0	-1	0	0	0
1930	Dry	0	0	0	0	0	0	0	0	0	0	-1	0	0
1931	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1932	Dry	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1933	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1934	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	Wet	0	0	-1	0	0	0	0	0	0	-1	0	0	0
1939	Dry	-1	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1940	Above Normal	0	1	1	0	0	0	0	0	0	0	-1	0	0
1941	Wet	-1	0	-1	0	0	0	0	0	0	-1	0	-1	0
1942	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1943	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	-1	-1	0	0	0
1945	Below Normal	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	0	0	-1	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1948	Below Normal	-1	0	0	0	0	0	0	1	2	0	0	-1	0
1949	Dry	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1951	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1953	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1954	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	0	0	0	0	1	0	0	0	-1	-1	-1	0
1956	Wet	0	0	-1	0	0	0	0	0	0	0	0	0	0
1957	Above Normal	-1	-1	0	0	0	0	0	0	0	0	-1	0	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1959	Below Normal	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1960	Dry	-1	0	2	0	0	0	0	0	1	0	1	-1	0
1961	Dry	-1	-1	0	0	0	1	0	0	0	0	0	-2	0
1962	Below Normal	-2	0	0	0	0	0	0	0	0	0	-2	0	0
1963	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1964	Dry	-1	0	0	0	0	0	0	0	-1	-2	-1	0	0
1965	Wet	0	0	-1	0	0	-1	1	0	0	0	0	-1	0
1966	Below Normal	0	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	0	0	0	0	0	0	0	0	0	0	0	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	-1	0	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	0	-2	-1	0
1971	Wet	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	0	0	-1	0	0	0	0	0	0	0	0	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1976	Critical	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1977	Critical	-1	0	1	0	0	0	0	0	1	1	0	0	0
1978	Above Normal	1	0	0	0	1	2	0	0	-1	0	0	-1	0
1979	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1980	Above Normal	0	0	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	1	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	0	0	0	0	0	0	0	0	-1	0	0	-1	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Critical	0	0	0	0	0	0	0	0	0	-1	0	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	0	-1	0
1992	Critical	0	0	0	0	0	0	0	0	0	0	-1	0	0
1993	Above Normal	0	0	0	0	0	0	0	3	2	0	0	-2	0
1994	Critical	-2	-1	0	0	0	0	0	0	-1	0	-1	-1	0
1995	Wet	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	0	0	0
1997	Wet	-1	0	0	0	0	0	0	0	0	-1	0	-1	0
1998	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	-1	0	0	0	0	0	0	-1	-1	-1	0	0
2002	Dry	-1	0	0	-1	0	0	0	0	0	-1	-2	0	0
2003	Above Normal	-1	0	0	0	0	0	0	1	0	0	0	-1	0
Average		-1	0	0	0	0	0	0	0	0	0	-1	0	0
Wet		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Above Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal		-1	0	0	0	0	0	0	0	0	0	0	0	0
Dry		-1	0	0	0	0	0	0	0	0	0	-1	0	0
Critical		-1	0	0	0	0	0	0	0	0	0	-1	0	0

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%	0%	0%	0%
1923	Below Normal	1%	1%	0%	0%	0%	0%	0%	2%	1%	1%	0%	0%	1%
1924	Critical	-3%	-2%	-1%	0%	0%	0%	-1%	2%	1%	-1%	-6%	0%	-1%
1925	Dry	1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1926	Dry	-1%	0%	0%	1%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1927	Wet	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%	-1%	-1%	0%
1928	Above Normal	-2%	-1%	0%	0%	0%	0%	-1%	-1%	0%	0%	-2%	0%	-1%
1929	Critical	-1%	-1%	0%	2%	0%	0%	0%	0%	-1%	-1%	-1%	0%	0%
1930	Dry	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1931	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1932	Dry	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	-2%	-1%	0%
1933	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1934	Critical	0%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	-1%	0%	0%
1935	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1936	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1937	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1938	Wet	0%	-1%	-2%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-1%
1939	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	-2%	1%	-2%	-1%	-1%
1940	Above Normal	0%	1%	1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1942	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1943	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1944	Dry	-1%	-2%	-1%	0%	0%	0%	0%	0%	-1%	-2%	-1%	1%	-1%
1945	Below Normal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-1%	-1%	-2%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1947	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	1%	-1%	-2%	-1%	-1%
1948	Below Normal	-1%	0%	0%	0%	0%	0%	0%	2%	3%	0%	-1%	-1%	0%
1949	Dry	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1950	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	1%	0%	0%	0%	-1%	0%
1951	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1952	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1953	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1954	Above Normal	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1955	Dry	-2%	-1%	0%	0%	0%	1%	0%	0%	0%	-2%	-2%	-1%	-1%
1956	Wet	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%
1957	Above Normal	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1958	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1959	Below Normal	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	-1%	-2%	-1%	-1%
1960	Dry	-2%	1%	4%	1%	0%	0%	0%	0%	1%	0%	2%	-1%	0%
1961	Dry	-2%	-1%	0%	0%	0%	1%	0%	-1%	0%	0%	-1%	-3%	0%
1962	Below Normal	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-3%	1%	0%
1963	Wet	-2%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1964	Dry	-1%	-1%	0%	0%	0%	0%	0%	0%	-1%	-3%	-2%	-1%	-1%
1965	Wet	0%	0%	-3%	0%	0%	-1%	1%	-1%	0%	0%	0%	-1%	0%
1966	Below Normal	-1%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	0%
1967	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1968	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%
1969	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%
1970	Wet	-3%	-2%	0%	0%	0%	0%	1%	0%	0%	1%	-3%	-2%	-1%
1971	Wet	-3%	-1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	0%
1972	Below Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	-1%	0%	-1%	-1%	-1%
1973	Above Normal	-1%	0%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1974	Wet	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1975	Wet	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1976	Critical	-2%	-1%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	0%
1977	Critical	-1%	0%	1%	0%	-1%	0%	0%	1%	1%	2%	0%	0%	0%
1978	Above Normal	1%	0%	0%	0%	1%	4%	-1%	-1%	-1%	0%	0%	0%	0%
1979	Below Normal	-3%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1981	Dry	-1%	-1%	0%	0%	0%	1%	0%	0%	0%	-1%	-2%	2%	0%
1982	Wet	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1983	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1984	Wet	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1985	Dry	-1%	-1%	0%	1%	0%	-1%	0%	1%	-2%	0%	-1%	-1%	0%
1986	Wet	-2%	-1%	0%	0%	0%	0%	-1%	0%	0%	-1%	-1%	-1%	-1%
1987	Dry	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
1988	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
1989	Dry	-1%	0%	1%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%
1990	Critical	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	0%	0%	0%
1991	Critical	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1992	Critical	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	0%	0%
1993	Above Normal	0%	0%	0%	0%	0%	0%	1%	7%	3%	0%	0%	-3%	1%
1994	Critical	-3%	-2%	0%	0%	0%	0%	0%	0%	-2%	0%	-1%	-2%	-1%
1995	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%
1997	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	-1%	-1%	-2%	0%
1998	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1999	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
2000	Above Normal	-2%	-2%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
2001	Dry	-2%	-2%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-1%
2002	Dry	-1%	-1%	0%	-2%	0%	0%	0%	0%	0%	-1%	-3%	0%	-1%
2003	Above Normal	-1%	0%	0%	0%	0%	-1%	0%	1%	0%	0%	0%	-1%	0%
Average		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Wet		-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Above Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Below Normal		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
Dry		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
Critical		-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%

Sacramento River Water Temperatures Below Shasta Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	54	51	48	48	48	50
1923	Below Normal	49	50	51	48	46	47	51	52	49	48	48	50	49
1924	Critical	53	54	52	48	47	50	52	51	51	54	62	64	53
1925	Dry	57	49	45	42	43	44	45	46	47	48	52	55	48
1926	Dry	57	54	51	47	45	46	46	47	48	49	53	56	50
1927	Wet	57	54	48	46	45	45	46	47	48	48	50	51	49
1928	Above Normal	53	53	50	47	46	46	47	48	48	50	52	53	49
1929	Critical	55	54	52	47	45	45	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	51	53	49
1931	Critical	54	54	52	47	46	46	47	49	51	53	59	65	52
1932	Dry	60	53	48	44	44	45	47	49	52	53	54	61	51
1933	Critical	60	56	52	46	44	45	47	48	51	53	55	62	52
1934	Critical	61	55	51	46	45	46	47	49	52	56	65	65	53
1935	Below Normal	59	52	49	45	44	45	46	47	50	52	52	57	50
1936	Below Normal	58	54	52	46	44	45	45	46	47	48	49	52	49
1937	Below Normal	54	55	53	48	45	46	46	47	48	48	50	52	49
1938	Wet	54	53	49	46	45	46	46	48	48	49	51	53	49
1939	Dry	55	54	51	48	48	46	47	47	48	49	52	55	50
1940	Above Normal	57	55	52	47	46	47	47	48	48	49	51	53	50
1941	Wet	55	54	50	47	46	46	47	48	48	50	52	53	50
1942	Wet	55	54	50	46	46	46	46	47	48	49	50	52	49
1943	Wet	54	54	51	47	46	46	47	48	48	49	51	52	49
1944	Dry	53	54	52	49	47	47	47	48	48	49	51	53	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	49	49	50	48
1946	Below Normal	52	53	49	45	44	44	45	46	47	48	48	50	48
1947	Dry	52	53	51	47	46	46	46	47	48	49	52	55	49
1948	Below Normal	56	53	51	47	45	46	46	47	48	48	49	51	49
1949	Dry	53	53	51	48	46	45	45	46	47	48	49	50	48
1950	Below Normal	53	53	52	47	44	44	45	45	47	48	48	50	48
1951	Above Normal	52	51	48	45	44	44	44	45	46	47	48	48	47
1952	Wet	50	51	48	44	44	44	45	46	47	48	49	52	47
1953	Wet	54	54	50	47	45	45	46	46	47	48	49	51	48
1954	Above Normal	53	53	50	46	45	45	46	47	48	48	50	52	49
1955	Dry	53	53	49	46	45	45	46	46	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	43	44	46	47	48	48	47
1957	Above Normal	52	52	51	48	46	46	47	47	48	48	50	51	49
1958	Wet	53	52	49	46	46	45	46	47	47	48	49	52	48
1959	Below Normal	55	54	52	47	46	46	46	47	48	50	53	56	50
1960	Dry	57	55	53	48	45	45	45	46	47	48	49	52	49
1961	Dry	54	53	48	46	45	45	46	46	47	48	50	54	48
1962	Below Normal	55	53	49	46	45	44	45	45	46	47	48	50	48
1963	Wet	53	53	50	47	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	53	52	49	44	43	43	44	45	46	47	48	48	47
1966	Below Normal	49	51	50	45	44	45	45	46	47	48	49	52	48
1967	Wet	55	54	49	46	44	45	46	47	48	48	49	50	48
1968	Below Normal	52	54	51	47	45	46	47	47	48	48	51	53	49
1969	Wet	54	53	49	45	43	43	44	45	46	48	48	50	47
1970	Wet	54	53	50	47	44	44	45	45	46	48	50	52	48
1971	Wet	54	52	48	44	43	44	45	46	47	48	49	51	48
1972	Below Normal	53	53	50	46	44	45	46	47	48	48	49	52	48
1973	Above Normal	53	51	48	45	44	44	45	45	46	47	48	48	47
1974	Wet	49	52	47	45	43	44	44	45	46	48	48	50	47
1975	Wet	53	53	50	47	45	46	46	47	48	48	49	51	49
1976	Critical	53	53	50	47	46	46	46	47	48	48	50	51	49
1977	Critical	52	53	52	48	47	47	48	49	51	54	65	65	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	49	47
1979	Below Normal	51	53	52	48	46	45	46	47	48	48	49	51	49
1980	Above Normal	52	52	50	46	46	45	46	46	47	48	48	49	48
1981	Dry	51	52	50	47	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	45	46	47	48	48	50	47
1983	Wet	53	52	49	46	45	46	45	47	48	48	50	53	48
1984	Wet	55	54	49	45	44	45	46	47	48	48	49	51	48
1985	Dry	52	52	49	46	45	45	46	46	47	48	50	54	48
1986	Wet	56	53	49	47	47	47	48	48	48	49	51	52	50
1987	Dry	53	54	52	47	45	45	46	47	48	49	51	53	49
1988	Critical	56	55	50	45	45	45	46	47	48	49	52	55	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	49	51	48
1990	Critical	53	53	52	47	45	45	46	46	47	50	49	53	49
1991	Critical	56	54	52	48	46	46	47	48	49	51	49	54	50
1992	Critical	57	55	52	47	45	45	46	47	50	53	58	64	52
1993	Above Normal	61	54	48	43	42	42	43	45	47	48	48	51	48
1994	Critical	53	53	51	48	46	46	47	48	48	50	53	56	50
1995	Wet	58	54	50	45	43	46	46	47	48	49	51	53	49
1996	Wet	55	55	51	47	47	46	46	47	48	49	50	52	49
1997	Wet	54	53	50	46	44	44	45	46	47	48	49	52	48
1998	Wet	54	53	49	46	45	44	44	46	48	49	52	54	49
1999	Wet	56	54	49	46	45	45	45	46	47	48	48	49	48
2000	Above Normal	52	53	51	48	48	47	48	48	49	50	52	53	50
2001	Dry	55	55	53	49	46	46	47	47	48	49	51	53	50
2002	Dry	55	55	49	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	52	49
Average		54	53	50	46	45	45	46	47	48	49	51	53	49
Wet		54	53	49	46	45	45	46	47	48	48	49	51	48
Above Normal		54	53	50	46	45	45	46	47	48	48	50	51	48
Below Normal		54	53	51	47	45	45	46	47	48	48	50	52	49
Dry		55	53	50	47	45	45	46	47	48	49	51	53	49
Critical		55	54	52	47	46	46	47	48	50	52	56	59	51

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP3 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	50	48	48	48	48	49
1923	Below Normal	50	51	51	48	47	47	52	53	49	48	48	48	49
1924	Critical	50	52	52	48	47	49	51	54	51	53	54	63	52
1925	Dry	57	50	46	42	43	44	45	46	47	48	50	54	48
1926	Dry	56	54	52	48	46	46	46	47	49	49	52	55	50
1927	Wet	57	54	49	46	45	45	46	46	47	48	48	49	48
1928	Above Normal	51	51	50	47	46	47	47	48	48	49	51	52	49
1929	Critical	53	53	52	48	45	46	46	47	48	48	50	53	49
1930	Dry	55	55	51	47	46	46	46	47	48	48	50	52	49
1931	Critical	54	54	52	48	46	47	48	49	52	53	57	64	52
1932	Dry	60	53	48	44	44	45	48	50	52	53	52	60	51
1933	Critical	60	56	52	46	44	45	47	49	52	53	53	61	52
1934	Critical	61	55	52	46	45	46	48	50	52	55	64	65	53
1935	Below Normal	59	52	49	45	44	45	46	48	50	52	51	56	50
1936	Below Normal	58	54	52	47	45	45	45	46	47	48	49	51	49
1937	Below Normal	54	54	53	48	46	46	46	47	48	48	49	52	49
1938	Wet	54	53	49	46	45	46	46	47	48	48	50	52	49
1939	Dry	53	53	51	48	46	47	47	48	48	49	51	54	50
1940	Above Normal	56	55	53	47	46	47	47	48	48	49	50	51	50
1941	Wet	53	53	50	47	46	46	47	48	48	49	51	52	49
1942	Wet	53	53	50	46	46	46	46	47	48	48	49	51	49
1943	Wet	52	53	51	47	46	46	47	47	48	49	50	51	49
1944	Dry	51	52	52	49	47	47	48	48	48	49	51	52	50
1945	Below Normal	54	53	50	47	46	46	46	47	48	48	48	50	48
1946	Below Normal	52	52	49	46	45	45	45	46	47	48	48	48	48
1947	Dry	50	52	51	48	46	46	47	47	48	48	50	53	49
1948	Below Normal	55	53	52	47	46	46	46	47	48	48	49	50	49
1949	Dry	51	52	51	48	46	45	46	46	47	48	48	48	48
1950	Below Normal	50	52	52	47	44	44	45	46	47	48	48	48	48
1951	Above Normal	49	50	48	45	44	44	45	45	46	47	48	47	47
1952	Wet	47	49	48	44	44	44	44	45	46	47	48	48	47
1953	Wet	52	52	50	47	45	45	46	46	47	48	49	50	48
1954	Above Normal	51	52	50	47	45	45	46	47	48	48	49	50	48
1955	Dry	51	52	49	46	45	45	46	47	48	48	48	50	48
1956	Wet	51	51	48	44	43	43	44	44	45	47	48	48	46
1957	Above Normal	49	51	51	48	46	46	47	47	48	48	49	50	48
1958	Wet	51	51	49	46	46	45	46	46	47	48	49	50	48
1959	Below Normal	52	53	52	48	46	46	47	48	48	49	51	53	49
1960	Dry	54	54	54	48	45	45	45	46	47	48	48	49	49
1961	Dry	52	52	48	46	45	45	46	46	47	48	48	50	48
1962	Below Normal	52	52	49	46	45	44	45	45	46	47	48	48	47
1963	Wet	49	51	50	48	46	46	47	48	48	49	50	50	48
1964	Dry	51	51	50	47	45	45	46	47	47	48	49	51	48
1965	Wet	53	52	49	44	43	44	44	45	46	48	48	47	47
1966	Below Normal	48	50	49	46	45	45	45	46	47	48	48	50	47
1967	Wet	51	52	49	46	45	45	46	47	47	48	48	50	48
1968	Below Normal	50	51	50	47	46	46	46	47	48	48	49	50	48
1969	Wet	51	52	49	45	43	43	44	45	46	47	48	48	47
1970	Wet	50	52	50	47	44	45	45	46	47	48	48	49	47
1971	Wet	50	51	48	45	44	44	45	46	46	48	48	49	47
1972	Below Normal	50	51	50	46	45	45	46	46	47	48	49	50	48
1973	Above Normal	51	51	48	45	44	44	45	45	46	47	48	47	47
1974	Wet	47	50	47	45	43	44	44	45	46	47	48	48	46
1975	Wet	50	51	50	47	46	46	46	47	47	48	49	50	48
1976	Critical	51	51	50	47	46	46	47	48	48	48	49	50	48
1977	Critical	51	53	53	49	47	47	48	49	52	56	65	64	53
1978	Above Normal	59	51	46	42	42	43	43	44	45	47	48	47	47
1979	Below Normal	48	50	51	48	46	46	46	47	48	48	49	50	48
1980	Above Normal	51	51	50	46	46	45	46	46	47	48	48	48	48
1981	Dry	49	50	50	48	46	46	47	47	48	48	50	51	48
1982	Wet	52	51	48	44	44	44	45	46	46	48	48	49	47
1983	Wet	50	51	49	46	45	46	46	46	47	48	49	51	48
1984	Wet	52	53	49	45	45	45	46	46	47	48	49	50	48
1985	Dry	51	51	49	47	45	46	46	47	48	48	49	52	48
1986	Wet	55	53	50	47	47	47	47	48	48	49	50	51	49
1987	Dry	52	53	52	48	46	46	47	47	48	48	50	53	49
1988	Critical	56	55	50	45	45	45	46	47	48	49	51	54	49
1989	Dry	57	54	50	46	44	44	45	46	47	48	48	50	48
1990	Critical	52	52	52	48	45	45	46	46	47	48	50	53	49
1991	Critical	55	54	52	48	47	47	47	48	49	51	49	52	50
1992	Critical	56	55	52	48	45	45	46	47	50	53	57	64	51
1993	Above Normal	61	54	49	43	42	43	43	44	45	47	48	48	47
1994	Critical	50	51	51	48	46	47	47	48	48	49	52	54	49
1995	Wet	55	53	50	45	44	46	46	47	48	48	50	52	49
1996	Wet	53	53	51	48	47	46	46	47	48	48	50	51	49
1997	Wet	52	52	50	46	44	45	45	46	47	48	48	49	48
1998	Wet	51	52	49	46	45	44	45	46	47	48	50	53	48
1999	Wet	54	53	49	47	46	45	45	46	47	48	48	49	48
2000	Above Normal	50	51	51	48	48	48	48	48	49	50	51	52	49
2001	Dry	53	53	53	49	47	47	47	48	48	49	51	52	50
2002	Dry	54	55	50	47	46	47	47	48	48	49	51	52	50
2003	Above Normal	54	55	51	46	46	46	46	47	48	48	50	50	49
Average		53	52	50	47	45	45	46	47	48	49	50	52	49
Wet		52	52	49	46	45	45	46	46	47	48	49	50	48
Above Normal		52	52	50	46	45	45	46	47	47	48	49	49	48
Below Normal		52	52	51	47	45	45	46	47	48	48	49	50	48
Dry		53	53	50	47	45	46	46	47	48	49	50	52	49
Critical		54	54	52	47	46	46	47	48	50	51	54	58	51

Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP3 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	0	0	-4	-3	0	0	0	-1
1923	Below Normal	1	1	0	0	0	0	1	1	0	0	0	-2	0
1924	Critical	-3	-1	0	0	0	-1	-1	2	1	-1	-8	-1	-1
1925	Dry	1	1	1	0	0	0	0	0	0	-1	-2	-1	0
1926	Dry	-1	0	1	1	0	0	0	0	0	0	-1	0	0
1927	Wet	0	0	0	0	0	0	0	-1	0	0	-1	-2	0
1928	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1929	Critical	-1	-1	0	1	0	0	0	0	0	0	0	0	0
1930	Dry	0	0	1	0	0	0	0	0	0	0	-1	-1	0
1931	Critical	-1	0	0	1	0	0	0	0	1	0	-3	-1	0
1932	Dry	0	0	0	0	0	0	1	1	0	0	-2	-1	0
1933	Critical	0	0	0	0	0	0	1	1	1	0	-2	-1	0
1934	Critical	0	0	0	0	0	0	1	1	0	-1	-1	0	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	0	0
1936	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1937	Below Normal	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1938	Wet	-1	0	0	0	0	0	0	-1	-1	-1	-1	-1	0
1939	Dry	-2	-1	0	0	0	0	1	0	0	0	-1	-1	0
1940	Above Normal	-1	0	1	0	0	0	0	0	0	0	-1	-2	0
1941	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	-1
1942	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1943	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1944	Dry	-2	-2	0	0	0	0	0	0	0	0	0	0	0
1945	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	0	0
1946	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	0	0	0	0	0	0	-1	-2	-2	-1
1948	Below Normal	-2	0	0	0	0	0	0	0	0	0	0	-1	0
1949	Dry	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1950	Below Normal	-3	-2	0	0	0	0	0	1	0	0	0	-2	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-3	-2	0	0	0	0	0	0	-1	0	-1	-2	-1
1953	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1955	Dry	-2	-1	0	0	0	0	0	0	1	0	0	0	0
1956	Wet	0	0	0	0	0	0	0	0	0	-1	0	-1	0
1957	Above Normal	-3	-2	0	0	0	0	0	0	0	0	-1	-1	-1
1958	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1959	Below Normal	-3	-2	0	0	0	0	1	0	0	-1	-2	-3	-1
1960	Dry	-3	0	1	1	0	0	0	0	0	0	-1	-3	0
1961	Dry	-2	-1	0	0	0	0	0	0	0	0	-2	-3	-1
1962	Below Normal	-3	-1	0	0	0	0	0	0	0	0	0	-2	0
1963	Wet	-3	-2	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	0	0	0	1	1	0	0	0	0	0
1965	Wet	0	0	0	0	0	1	0	0	0	0	0	-1	0
1966	Below Normal	-1	-2	0	0	0	0	0	0	0	0	-1	-3	-1
1967	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-2	-2	0	0	0	0	0	0	0	0	-2	-2	-1
1969	Wet	-3	-1	0	0	0	0	0	0	-1	0	0	-2	-1
1970	Wet	-4	-2	0	0	0	0	1	1	0	0	-2	-4	-1
1971	Wet	-4	-1	0	0	0	0	0	0	-1	0	0	-2	-1
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1973	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1974	Wet	-2	-1	0	0	0	0	0	0	-1	-1	0	-1	0
1975	Wet	-3	-2	0	0	0	0	0	0	0	0	0	-1	-1
1976	Critical	-2	-1	0	1	0	0	0	1	0	0	-1	-1	0
1977	Critical	-1	0	0	0	1	0	1	1	1	2	0	-1	0
1978	Above Normal	0	0	0	0	0	0	0	-1	-1	-1	0	-2	0
1979	Below Normal	-3	-3	-1	0	0	0	0	0	0	0	-1	-1	-1
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1982	Wet	-2	-1	0	0	0	0	0	0	-1	0	0	-2	0
1983	Wet	-3	-1	0	0	0	0	0	0	0	0	-1	-2	-1
1984	Wet	-3	-1	0	0	0	0	0	0	0	0	-1	-1	0
1985	Dry	-1	-1	0	0	0	1	1	1	0	0	-1	-1	0
1986	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1987	Dry	-1	0	0	0	0	0	0	0	0	0	-1	0	0
1988	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1989	Dry	-1	0	1	1	0	0	0	0	0	0	0	-1	0
1990	Critical	-1	0	0	0	0	0	0	0	0	-2	1	0	0
1991	Critical	0	0	0	0	0	0	0	0	0	0	-1	-1	0
1992	Critical	-1	0	0	0	0	0	0	0	0	0	-2	0	0
1993	Above Normal	0	0	0	0	0	0	0	0	-1	0	0	-3	0
1994	Critical	-3	-2	0	0	0	0	0	0	0	-1	-1	-2	-1
1995	Wet	-3	-1	0	1	0	0	0	0	0	-1	-1	-1	-1
1996	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1997	Wet	-2	-1	0	0	0	1	1	1	0	0	-1	-3	0
1998	Wet	-3	-1	0	0	0	0	0	0	0	-1	-2	-2	-1
1999	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-2	0
2001	Dry	-2	-1	0	0	0	0	1	1	0	0	0	-1	0
2002	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
2003	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-2	0
Average		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Above Normal		-1	-1	0	0	0	0	0	-1	0	0	-1	-1	0
Below Normal		-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	0%	0%	-8%	-5%	0%	0%	1%	-1%
1923	Below Normal	2%	1%	1%	0%	0%	0%	2%	0%	0%	0%	-1%	-4%	0%
1924	Critical	-6%	-3%	-1%	0%	0%	-2%	-2%	5%	1%	-2%	-13%	-1%	-2%
1925	Dry	1%	1%	2%	1%	0%	0%	0%	0%	0%	-1%	-3%	-2%	0%
1926	Dry	-1%	0%	1%	2%	1%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1927	Wet	0%	0%	1%	1%	-1%	0%	-1%	-1%	-1%	0%	-2%	-4%	-1%
1928	Above Normal	-4%	-3%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1929	Critical	-3%	-1%	1%	2%	1%	1%	0%	0%	0%	0%	-1%	-1%	0%
1930	Dry	-1%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%	0%
1931	Critical	-1%	-1%	0%	1%	1%	1%	0%	1%	1%	0%	-5%	-1%	0%
1932	Dry	0%	0%	0%	0%	0%	1%	1%	2%	1%	0%	-4%	-2%	0%
1933	Critical	0%	0%	0%	1%	0%	1%	1%	1%	1%	0%	-4%	-1%	0%
1934	Critical	0%	0%	0%	1%	0%	1%	2%	2%	0%	-2%	-1%	0%	0%
1935	Below Normal	0%	0%	0%	0%	1%	0%	1%	1%	1%	1%	-2%	-1%	0%
1936	Below Normal	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1937	Below Normal	-1%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	0%
1938	Wet	-1%	-1%	0%	0%	0%	0%	0%	-1%	-1%	-2%	-2%	-3%	-1%
1939	Dry	-4%	-2%	0%	1%	1%	1%	1%	1%	0%	-1%	-2%	-2%	-1%
1940	Above Normal	-2%	0%	1%	1%	-1%	0%	0%	0%	0%	-1%	-2%	-3%	-1%
1941	Wet	-4%	-2%	0%	0%	0%	1%	0%	0%	-1%	-3%	-1%	-2%	-1%
1942	Wet	-4%	-2%	0%	1%	0%	1%	1%	0%	0%	-1%	-1%	-2%	-1%
1943	Wet	-4%	-3%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-3%	-1%
1944	Dry	-3%	-3%	-1%	1%	0%	1%	1%	1%	0%	0%	0%	0%	0%
1945	Below Normal	-1%	0%	1%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
1946	Below Normal	-1%	-1%	-1%	1%	1%	1%	0%	0%	1%	1%	-1%	-3%	0%
1947	Dry	-4%	-2%	0%	1%	0%	0%	1%	0%	0%	-1%	-3%	-3%	-1%
1948	Below Normal	-3%	0%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-3%	0%
1949	Dry	-3%	-2%	0%	1%	1%	1%	0%	0%	0%	1%	-1%	-4%	-1%
1950	Below Normal	-5%	-3%	-1%	1%	1%	1%	1%	0%	0%	0%	-1%	-4%	-1%
1951	Above Normal	-4%	-1%	0%	1%	1%	1%	0%	0%	0%	1%	0%	-2%	-1%
1952	Wet	-6%	-4%	0%	1%	1%	1%	0%	-1%	-2%	-1%	-2%	-4%	-2%
1953	Wet	-5%	-3%	0%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1954	Above Normal	-4%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-3%	-3%	-1%
1955	Dry	-4%	-2%	0%	1%	1%	1%	1%	1%	1%	0%	0%	-1%	0%
1956	Wet	-1%	-1%	-1%	1%	1%	1%	1%	0%	-1%	0%	0%	-2%	0%
1957	Above Normal	-6%	-4%	-1%	0%	1%	0%	0%	0%	0%	0%	-2%	-3%	-1%
1958	Wet	-3%	-2%	0%	1%	0%	0%	0%	-1%	-1%	-2%	-2%	-3%	-1%
1959	Below Normal	-6%	-3%	0%	1%	1%	1%	1%	0%	0%	-2%	-4%	-6%	-2%
1960	Dry	-5%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-5%	-1%
1961	Dry	-5%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-4%	-6%	-1%
1962	Below Normal	-6%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-4%	-1%
1963	Wet	-6%	-3%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1964	Dry	-3%	-2%	0%	1%	1%	1%	1%	1%	0%	0%	0%	1%	0%
1965	Wet	1%	1%	0%	1%	1%	1%	1%	0%	-1%	0%	0%	-1%	0%
1966	Below Normal	-3%	-3%	0%	1%	1%	0%	0%	-1%	0%	0%	-2%	-5%	-1%
1967	Wet	-6%	-3%	0%	1%	1%	1%	0%	0%	-1%	0%	0%	-2%	-1%
1968	Below Normal	-4%	-4%	0%	1%	1%	0%	0%	0%	0%	-1%	-3%	-4%	-1%
1969	Wet	-5%	-2%	0%	1%	1%	1%	0%	-1%	-1%	0%	0%	-4%	-1%
1970	Wet	-7%	-3%	0%	0%	1%	1%	1%	1%	1%	0%	-3%	-7%	-1%
1971	Wet	-7%	-2%	0%	1%	1%	1%	0%	-1%	-1%	0%	-1%	-3%	-1%
1972	Below Normal	-5%	-3%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-3%	-1%
1973	Above Normal	-3%	-1%	0%	1%	1%	1%	0%	0%	-1%	1%	0%	-2%	0%
1974	Wet	-4%	-2%	0%	1%	1%	0%	0%	-1%	-1%	-1%	0%	-3%	-1%
1975	Wet	-6%	-4%	0%	0%	1%	0%	0%	0%	-1%	0%	-1%	-2%	-1%
1976	Critical	-4%	-2%	0%	1%	1%	1%	0%	1%	0%	-1%	-2%	-2%	-1%
1977	Critical	-2%	-1%	1%	1%	1%	1%	1%	1%	2%	4%	0%	-1%	1%
1978	Above Normal	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%	0%	0%	-4%	-1%
1979	Below Normal	-7%	-5%	-2%	0%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1980	Above Normal	-2%	-2%	0%	0%	0%	1%	0%	0%	0%	1%	0%	-2%	0%
1981	Dry	-3%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1982	Wet	-3%	-2%	0%	1%	1%	1%	0%	-1%	-1%	0%	0%	-3%	-1%
1983	Wet	-5%	-2%	0%	1%	0%	0%	0%	-1%	-1%	-1%	-2%	-3%	-1%
1984	Wet	-5%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1985	Dry	-2%	-2%	0%	1%	1%	1%	1%	2%	0%	0%	-2%	-2%	0%
1986	Wet	-3%	-1%	1%	1%	0%	0%	1%	1%	0%	0%	-1%	-2%	0%
1987	Dry	-1%	-1%	0%	1%	0%	0%	0%	1%	0%	-1%	-2%	-1%	0%
1988	Critical	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1989	Dry	-1%	0%	1%	1%	1%	0%	1%	1%	0%	0%	-1%	-3%	0%
1990	Critical	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	-3%	2%	0%	0%
1991	Critical	0%	0%	0%	1%	1%	0%	0%	0%	0%	1%	-1%	-2%	0%
1992	Critical	-2%	0%	0%	1%	1%	0%	0%	0%	1%	0%	-3%	-1%	0%
1993	Above Normal	0%	0%	1%	1%	1%	0%	0%	-1%	-2%	-1%	-1%	-6%	-1%
1994	Critical	-6%	-4%	-1%	1%	0%	1%	0%	0%	0%	-1%	-2%	-4%	-1%
1995	Wet	-5%	-1%	1%	1%	1%	0%	0%	-1%	0%	-2%	-2%	-2%	-1%
1996	Wet	-4%	-2%	0%	1%	1%	1%	0%	0%	0%	-1%	0%	-2%	-1%
1997	Wet	-4%	-2%	0%	1%	1%	1%	1%	1%	1%	-1%	-2%	-5%	-1%
1998	Wet	-5%	-2%	0%	0%	0%	0%	1%	-1%	-1%	-2%	-4%	-3%	-1%
1999	Wet	-4%	-1%	1%	1%	1%	1%	0%	0%	-1%	0%	0%	-1%	0%
2000	Above Normal	-4%	-4%	-1%	0%	0%	1%	0%	0%	0%	1%	-2%	-3%	-1%
2001	Dry	-4%	-3%	-1%	1%	1%	1%	1%	1%	0%	0%	-1%	-1%	0%
2002	Dry	-2%	-1%	1%	0%	1%	1%	1%	1%	0%	-1%	-1%	-2%	0%
2003	Above Normal	-3%	-1%	1%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-3%	-1%
Average		-3%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
Wet		-4%	-2%	0%	1%	1%	1%	0%	0%	-1%	-1%	-1%	-3%	-1%
Above Normal		-3%	-1%	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	-3%	-1%
Below Normal		-3%	-2%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-3%	-1%
Dry		-3%	-1%	0%	1%	1%	1%	1%	1%	0%	0%	-2%	-2%	0%
Critical		-2%	-1%	0%	1%	1%	0%	0%	1%	1%	0%	-2%	-1%	0%

Sacramento River Water Temperatures at Keswick Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	48	52	55	53	51	51	52	51
1923	Below Normal	51	50	50	48	47	48	52	53	51	51	51	53	50
1924	Critical	54	54	51	47	47	51	53	53	52	55	62	62	53
1925	Dry	57	50	45	43	45	45	49	49	50	51	54	57	50
1926	Dry	57	54	51	47	46	48	49	49	51	51	55	57	51
1927	Wet	57	55	48	46	45	47	47	49	50	50	52	54	50
1928	Above Normal	54	52	49	47	46	47	50	50	50	52	53	55	50
1929	Critical	55	54	51	45	46	47	48	49	50	51	53	55	50
1930	Dry	56	55	50	46	46	47	48	49	50	51	53	55	50
1931	Critical	55	54	51	47	47	48	49	51	53	55	60	65	53
1932	Dry	60	53	48	45	44	47	49	52	54	55	56	62	52
1933	Critical	61	56	51	46	45	47	49	51	53	55	57	62	53
1934	Critical	62	56	51	47	46	48	49	52	54	57	64	63	54
1935	Below Normal	59	53	49	46	45	46	48	50	52	54	54	58	51
1936	Below Normal	58	54	51	47	45	46	48	48	49	50	52	55	50
1937	Below Normal	55	55	52	47	46	47	49	50	50	51	52	55	51
1938	Wet	55	53	49	46	45	46	48	50	51	51	53	55	50
1939	Dry	55	54	50	48	46	47	48	49	51	51	54	56	51
1940	Above Normal	54	53	51	47	47	47	50	51	50	51	53	55	51
1941	Wet	55	53	50	47	46	47	48	50	51	53	53	55	51
1942	Wet	55	54	50	46	46	47	49	49	50	51	52	54	50
1943	Wet	54	54	50	47	46	47	49	50	50	51	53	54	50
1944	Dry	54	54	52	48	47	48	48	50	51	52	53	54	51
1945	Below Normal	55	53	49	46	46	46	48	49	50	50	51	53	50
1946	Below Normal	53	53	49	45	44	46	47	48	49	50	51	52	49
1947	Dry	53	53	50	47	46	47	48	49	50	51	54	56	50
1948	Below Normal	56	53	51	47	46	47	48	50	50	50	52	53	50
1949	Dry	54	53	50	47	46	46	48	49	49	50	52	53	50
1950	Below Normal	53	53	51	46	44	45	47	48	48	49	51	52	49
1951	Above Normal	52	51	48	45	44	45	47	48	48	49	51	52	48
1952	Wet	51	48	44	44	44	44	46	48	50	51	51	53	48
1953	Wet	54	54	49	47	45	46	48	48	49	51	52	53	50
1954	Above Normal	53	52	49	46	45	46	47	48	50	50	53	54	49
1955	Dry	54	53	48	45	45	47	47	49	49	51	52	53	49
1956	Wet	53	51	49	44	43	45	47	46	48	50	50	51	48
1957	Above Normal	52	52	51	47	46	46	48	50	50	50	53	54	50
1958	Wet	53	52	49	46	46	46	47	49	50	51	51	54	49
1959	Below Normal	55	54	51	47	46	46	48	49	50	52	55	56	51
1960	Dry	56	54	52	47	45	46	47	48	49	51	52	54	50
1961	Dry	55	53	48	46	45	46	47	48	49	50	52	55	49
1962	Below Normal	55	53	48	46	45	45	47	48	48	50	51	52	49
1963	Wet	53	53	50	47	46	47	48	50	50	51	53	54	50
1964	Dry	53	52	49	46	45	46	47	48	50	51	52	53	49
1965	Wet	54	52	49	44	44	45	45	47	49	50	52	51	48
1966	Below Normal	51	51	49	45	45	45	48	49	49	50	52	54	49
1967	Wet	54	53	48	45	45	45	46	48	50	51	51	52	49
1968	Below Normal	53	54	49	46	46	47	48	49	49	51	53	55	50
1969	Wet	54	52	48	45	43	44	45	47	49	51	51	52	48
1970	Wet	53	53	49	47	45	46	46	48	49	50	53	54	49
1971	Wet	54	52	47	44	44	45	47	48	49	50	52	53	49
1972	Below Normal	53	52	49	45	45	46	47	49	49	50	52	54	49
1973	Above Normal	53	50	47	45	44	45	47	48	49	50	51	52	48
1974	Wet	50	51	47	45	43	45	47	48	49	51	50	52	48
1975	Wet	53	53	49	47	45	46	48	49	50	51	51	53	50
1976	Critical	53	52	49	46	46	47	48	49	50	52	53	54	50
1977	Critical	53	53	51	48	47	48	49	50	53	55	63	63	53
1978	Above Normal	57	52	47	46	44	44	46	47	49	50	51	51	48
1979	Below Normal	53	53	51	48	46	47	48	50	50	50	53	54	50
1980	Above Normal	53	51	49	46	46	47	48	49	49	50	51	53	49
1981	Dry	52	52	50	47	46	47	49	49	50	51	53	54	50
1982	Wet	54	52	48	44	44	45	46	49	50	50	51	52	49
1983	Wet	53	52	48	46	45	46	47	49	50	51	52	54	49
1984	Wet	55	53	49	45	45	46	47	49	50	50	53	54	50
1985	Dry	52	51	48	46	45	47	48	48	50	51	52	55	50
1986	Wet	56	53	49	47	47	48	50	50	51	52	53	55	51
1987	Dry	54	53	51	47	46	47	48	49	50	51	54	55	50
1988	Critical	56	55	49	45	45	47	48	49	50	52	55	56	51
1989	Dry	58	54	49	46	44	46	48	47	49	50	51	53	50
1990	Critical	54	53	51	47	45	47	48	49	50	52	53	55	50
1991	Critical	56	54	51	48	47	47	49	50	51	53	53	56	51
1992	Critical	58	55	51	47	46	47	48	49	51	54	59	62	52
1993	Above Normal	61	54	48	43	43	45	45	47	49	50	52	53	49
1994	Critical	54	53	50	47	46	48	49	50	51	52	55	57	51
1995	Wet	58	53	49	45	44	46	48	49	50	52	53	54	50
1996	Wet	55	54	50	47	47	47	48	49	50	51	53	53	50
1997	Wet	54	53	50	46	45	46	47	48	49	50	52	54	49
1998	Wet	54	53	48	46	45	45	48	47	49	51	54	55	49
1999	Wet	56	53	49	46	45	45	47	48	49	50	51	52	49
2000	Above Normal	53	53	50	48	49	49	51	51	51	52	55	56	52
2001	Dry	55	55	53	49	46	48	48	50	51	53	55	56	52
2002	Dry	56	55	49	47	47	47	49	50	51	52	55	55	51
2003	Above Normal	56	55	50	46	46	48	48	49	51	51	53	55	51
Average		55	53	49	46	45	46	48	49	50	51	53	55	50
Wet		54	53	49	46	45	46	47	48	50	51	52	53	49
Above Normal		54	52	49	46	45	46	48	49	50	51	52	53	50
Below Normal		54	53	50	46	45	46	48	49	50	51	52	54	50
Dry		55	53	50	46	46	47	48	49	50	51	53	55	50
Critical		56	54	51	47	46	48	49	50	51	54	57	59	52

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP4 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	51	50	52	49	47	49	52	52	50	51	51	52	51
1923	Below Normal	51	50	50	48	47	51	54	54	52	51	51	51	51
1924	Critical	50	51	51	47	47	49	51	55	55	53	52	57	52
1925	Dry	57	51	46	44	45	46	49	49	50	51	51	53	49
1926	Dry	54	53	51	48	47	48	49	50	51	51	53	55	51
1927	Wet	55	54	49	47	46	47	47	49	50	50	52	53	50
1928	Above Normal	53	52	50	48	47	48	49	50	50	51	52	54	50
1929	Critical	53	53	51	47	47	48	48	50	50	51	51	53	50
1930	Dry	53	53	51	47	47	48	49	50	50	51	51	53	50
1931	Critical	53	53	51	48	48	49	50	52	54	55	53	59	52
1932	Dry	59	54	49	46	45	48	51	53	55	55	53	54	52
1933	Critical	57	56	52	47	45	47	50	52	54	55	52	56	52
1934	Critical	60	55	51	47	47	50	51	54	55	55	57	61	53
1935	Below Normal	59	54	50	46	45	47	49	51	52	51	52	56	51
1936	Below Normal	56	54	51	48	46	47	48	49	50	50	51	52	50
1937	Below Normal	52	53	52	48	47	48	49	50	50	51	51	53	50
1938	Wet	53	53	49	46	46	47	48	50	50	50	52	53	50
1939	Dry	53	53	51	49	47	48	49	50	50	51	52	53	51
1940	Above Normal	53	53	52	47	47	48	50	51	50	51	52	54	51
1941	Wet	53	52	50	47	46	47	48	50	50	51	52	54	50
1942	Wet	54	53	51	47	47	47	49	49	50	51	51	52	50
1943	Wet	53	52	51	48	46	47	49	50	50	50	52	53	50
1944	Dry	53	52	52	49	48	48	49	51	50	51	52	53	51
1945	Below Normal	53	52	50	47	47	47	49	50	50	50	51	52	50
1946	Below Normal	52	51	49	46	45	46	47	48	49	50	51	51	49
1947	Dry	50	51	50	48	47	47	49	49	50	50	52	53	50
1948	Below Normal	54	52	51	48	47	47	48	51	50	50	51	51	50
1949	Dry	52	52	51	48	46	46	49	49	49	50	51	51	50
1950	Below Normal	50	51	51	47	45	46	48	49	50	51	51	51	49
1951	Above Normal	49	49	48	46	44	45	47	48	48	50	51	51	48
1952	Above Normal	49	48	48	44	44	45	46	48	49	51	50	51	48
1953	Wet	52	52	50	47	46	47	48	48	49	51	51	52	49
1954	Above Normal	51	51	49	47	46	46	47	48	50	50	51	53	49
1955	Dry	52	52	49	46	46	47	48	49	50	51	52	52	49
1956	Wet	50	50	49	45	44	45	47	46	48	50	51	50	48
1957	Above Normal	49	50	51	48	46	47	48	50	50	50	51	53	49
1958	Wet	51	51	49	46	46	46	47	49	50	51	50	52	49
1959	Below Normal	52	52	51	48	46	47	49	50	50	51	52	55	50
1960	Dry	54	54	53	48	46	47	48	49	50	51	51	52	50
1961	Dry	51	51	49	46	46	46	48	48	49	50	51	52	49
1962	Below Normal	51	51	49	47	46	45	47	48	49	50	51	51	49
1963	Wet	49	50	50	48	47	47	48	50	50	50	52	53	50
1964	Dry	52	51	49	47	46	47	48	49	50	51	51	51	49
1965	Wet	51	50	49	45	44	46	46	47	49	50	52	50	48
1966	Below Normal	48	49	49	46	45	46	48	49	49	50	51	52	48
1967	Wet	51	52	49	46	45	46	46	48	49	51	50	51	49
1968	Below Normal	51	52	50	47	46	47	48	49	50	51	51	53	50
1969	Wet	52	51	49	45	43	44	45	47	48	50	51	50	48
1970	Wet	50	51	50	47	45	46	47	48	50	51	51	52	49
1971	Wet	50	51	48	45	44	45	47	48	49	50	52	51	48
1972	Below Normal	50	51	50	46	45	46	47	49	50	50	51	52	49
1973	Above Normal	51	50	48	45	44	45	47	48	48	50	52	51	48
1974	Wet	48	50	47	45	44	45	47	48	49	51	50	50	48
1975	Wet	50	50	50	48	46	47	48	49	50	51	51	52	49
1976	Critical	51	51	50	47	47	48	48	50	51	51	53	53	50
1977	Critical	52	52	51	48	48	48	50	51	54	55	57	61	52
1978	Above Normal	59	53	48	45	44	45	46	47	48	50	51	50	49
1979	Below Normal	49	49	50	48	47	47	49	50	50	50	52	52	50
1980	Above Normal	52	48	50	47	46	47	49	49	49	51	51	51	49
1981	Dry	50	50	50	48	47	47	49	50	50	51	52	53	50
1982	Wet	52	51	48	44	44	45	46	49	49	50	50	50	48
1983	Wet	50	50	49	46	45	46	47	49	50	51	51	52	49
1984	Wet	53	52	49	45	46	46	47	49	50	50	52	51	49
1985	Dry	51	50	49	47	46	47	49	49	50	51	51	52	49
1986	Wet	53	52	50	48	47	48	50	50	51	51	52	54	50
1987	Dry	53	53	51	48	47	47	49	50	50	51	51	53	50
1988	Critical	54	53	50	46	46	47	48	49	50	51	53	54	50
1989	Dry	56	53	50	47	45	46	48	48	50	51	51	51	50
1990	Critical	50	51	51	48	46	47	48	49	50	51	52	53	50
1991	Critical	54	53	51	48	48	48	49	50	52	54	52	53	51
1992	Critical	53	53	51	47	46	47	49	50	52	55	53	57	51
1993	Above Normal	59	54	49	44	44	46	46	48	48	50	52	49	49
1994	Critical	50	51	51	49	47	48	49	50	51	51	53	55	50
1995	Wet	56	53	50	45	45	46	48	48	50	51	51	53	50
1996	Wet	53	53	50	47	48	47	48	49	50	51	52	52	50
1997	Wet	52	52	50	46	45	47	47	48	50	51	52	52	49
1998	Wet	50	51	49	46	45	45	48	47	49	51	51	54	49
1999	Wet	54	53	49	47	46	46	48	48	49	50	51	51	49
2000	Above Normal	51	51	50	49	49	49	52	51	52	53	54	55	51
2001	Dry	54	53	53	50	47	49	49	50	50	52	54	55	51
2002	Dry	54	54	50	47	47	48	49	50	50	51	53	54	51
2003	Above Normal	54	54	50	46	46	48	48	49	51	51	53	54	50
Average		52	52	50	47	46	47	48	49	50	51	52	53	50
Wet		52	51	49	46	45	46	47	49	50	51	51	52	49
Above Normal		53	51	50	47	46	47	48	49	50	51	52	52	50
Below Normal		52	52	50	47	46	47	49	50	50	51	51	52	50
Dry		53	52	50	47	46	47	49	50	50	51	52	53	50
Critical		53	53	51	47	47	48	49	51	52	53	53	56	51

Change in Sacramento River Water Temperatures at Keswick Dam (°F)
Alternative CP4 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	2	1	-3	-2	0	0	0	0
1923	Below Normal	0	0	0	0	0	3	2	1	1	0	0	-1	1
1924	Critical	-4	-3	-1	0	0	-2	-2	1	3	-2	-9	-5	-2
1925	Dry	0	1	2	0	0	1	0	0	0	-1	-3	-4	0
1926	Dry	-3	-1	1	1	1	1	1	0	0	-1	-2	-2	0
1927	Wet	-2	0	1	1	0	0	0	0	0	0	0	0	0
1928	Above Normal	-1	-1	1	1	0	1	0	0	0	-1	-1	-1	0
1929	Critical	-2	-1	0	2	1	1	1	0	0	0	-1	-2	0
1930	Dry	-2	-1	0	1	1	1	1	0	0	0	-2	-2	0
1931	Critical	-2	-1	0	1	1	1	1	1	1	0	-7	-6	-1
1932	Dry	-1	1	1	0	0	1	2	1	1	0	-4	-8	0
1933	Critical	-3	0	0	1	1	1	1	1	1	0	-5	-7	-1
1934	Critical	-2	0	1	1	1	1	2	2	1	-2	-7	-2	0
1935	Below Normal	0	1	1	1	0	1	1	1	0	-3	-1	-2	0
1936	Below Normal	-2	0	0	1	1	0	0	1	1	0	-1	-3	0
1937	Below Normal	-3	-1	0	0	1	1	0	0	0	0	-1	-2	0
1938	Wet	-2	-1	0	1	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-2	-1	1	1	1	1	1	1	0	0	-2	-2	0
1940	Above Normal	-1	0	1	1	0	0	0	0	0	-1	-1	-1	0
1941	Wet	-2	-1	1	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	-1	1	1	0	0	0	0	0	0	-1	-1	0
1943	Wet	-2	-1	1	1	0	0	0	0	0	-1	-1	-1	0
1944	Dry	-1	-1	0	1	1	1	1	0	0	0	-1	-1	0
1945	Below Normal	-1	-1	1	1	0	0	0	0	0	0	0	-1	0
1946	Below Normal	-1	-1	0	1	1	1	0	0	0	0	0	-1	0
1947	Dry	-3	-2	0	1	1	0	1	0	0	-1	-2	-2	-1
1948	Below Normal	-2	-1	0	1	1	1	0	1	1	0	-1	-1	0
1949	Dry	-1	-1	0	1	1	0	0	0	1	0	0	-2	0
1950	Below Normal	-3	-2	0	1	1	1	1	1	1	0	0	-1	0
1951	Above Normal	-3	-2	0	1	1	0	0	0	0	0	0	-1	0
1952	Wet	-2	-3	0	1	0	0	0	0	0	0	-1	-2	-1
1953	Wet	-2	-2	1	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-2	-1	0	1	1	0	0	0	0	0	-1	-2	0
1955	Dry	-2	-1	1	1	1	1	1	0	1	0	0	-1	0
1956	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-3	-2	0	1	1	0	0	0	0	0	-1	-1	-1
1958	Wet	-2	-1	1	1	0	0	0	0	0	0	-1	-2	0
1959	Below Normal	-3	-2	0	1	1	1	1	1	0	-1	-2	-2	0
1960	Dry	-2	-1	0	1	1	0	1	1	1	0	-1	-2	0
1961	Dry	-3	-2	1	1	1	0	0	0	0	0	-1	-3	-1
1962	Below Normal	-4	-2	1	1	1	0	0	0	1	1	0	-1	0
1963	Wet	-4	-3	0	1	1	0	0	0	0	0	0	-1	-1
1964	Dry	-1	-1	0	1	1	1	1	1	0	0	-1	-2	0
1965	Wet	-2	-1	0	1	0	0	0	0	0	0	0	-2	0
1966	Below Normal	-2	-2	0	1	0	0	0	0	0	0	-1	-2	0
1967	Wet	-3	-2	0	1	1	1	0	0	0	0	-1	-1	0
1968	Below Normal	-2	-2	0	1	1	0	0	0	0	0	-2	-2	0
1969	Wet	-2	-1	1	1	0	0	0	0	0	0	0	-2	0
1970	Wet	-4	-2	0	0	0	0	1	1	1	1	-1	-2	0
1971	Wet	-4	-2	1	1	1	0	0	0	0	0	0	-2	0
1972	Below Normal	-3	-2	1	1	1	0	0	0	0	0	-1	-2	0
1973	Above Normal	-2	-1	1	1	0	0	0	0	0	0	0	-1	0
1974	Wet	-2	-1	1	0	0	0	0	0	0	0	0	-2	0
1975	Wet	-3	-2	0	1	0	0	0	0	0	0	-1	-1	0
1976	Critical	-2	-1	0	1	1	1	1	0	1	0	-1	-1	0
1977	Critical	-1	-1	0	1	1	1	1	1	1	-1	-6	-3	-1
1978	Above Normal	2	1	1	0	1	1	0	0	0	0	0	-2	0
1979	Below Normal	-4	-3	0	1	1	0	0	0	0	0	0	-1	-1
1980	Above Normal	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1981	Dry	-2	-1	0	1	1	1	0	0	0	-1	-1	-1	0
1982	Wet	-2	-1	0	1	1	0	0	0	0	0	0	-2	0
1983	Wet	-2	-1	1	1	0	0	0	0	0	0	-1	-2	0
1984	Wet	-2	-1	1	0	1	0	0	0	0	0	-1	-3	0
1985	Dry	-2	-1	0	1	1	0	1	1	0	0	-1	-2	0
1986	Wet	-3	-1	1	1	0	0	0	0	0	-1	-1	-1	0
1987	Dry	-1	-1	0	1	1	0	0	1	0	0	-3	-2	0
1988	Critical	-2	-1	1	1	1	1	1	0	-1	-2	-2	-2	0
1989	Dry	-2	-1	1	1	1	0	-2	0	1	0	0	-2	0
1990	Critical	-3	-2	0	1	1	0	0	0	0	-2	-1	-2	-1
1991	Critical	-3	-1	0	1	1	1	-3	0	0	1	-1	-3	0
1992	Critical	-4	-2	0	1	0	0	1	1	1	1	-6	-5	-1
1993	Above Normal	-1	0	1	1	1	0	1	1	0	0	0	-3	0
1994	Critical	-4	-2	0	1	1	1	1	0	0	-1	-2	-1	-1
1995	Wet	-2	0	0	0	0	0	0	0	0	-1	-2	-1	0
1996	Wet	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1997	Wet	-2	-1	0	0	0	1	0	1	0	0	-1	-2	0
1998	Wet	-4	-2	1	0	0	0	0	0	0	-1	-2	-2	-1
1999	Wet	-2	0	1	1	1	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-2	0	1	0	0	0	0	0	0	0	-1	0
2001	Dry	-2	-2	0	1	1	0	1	1	-1	0	-1	-1	0
2002	Dry	-2	-1	1	0	1	0	1	0	0	-1	-1	-1	0
2003	Above Normal	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
Average		-2	-1	0	1	1	0	0	0	0	0	-1	-2	0
Wet		-2	-1	0	1	0	0	0	0	0	0	-1	-1	0
Above Normal		-1	-1	0	1	0	0	0	0	0	0	0	-1	0
Below Normal		-2	-1	0	1	1	1	1	0	0	0	-1	-2	0
Dry		-2	-1	1	1	1	0	1	1	0	0	-1	-2	0
Critical		-3	-1	0	1	1	0	1	1	1	-1	-4	-3	-1

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Keswick Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	1%	1%	3%	1%	-5%	-4%	0%	0%	0%	0%
1923	Below Normal	0%	0%	0%	0%	1%	6%	4%	2%	3%	0%	0%	-2%	1%
1924	Critical	-7%	-6%	-1%	0%	1%	-3%	-3%	3%	5%	-3%	-15%	-8%	-4%
1925	Dry	1%	2%	3%	1%	0%	2%	0%	1%	1%	-1%	-5%	-7%	0%
1926	Dry	-5%	-1%	1%	2%	2%	1%	1%	1%	0%	-2%	-3%	-4%	-1%
1927	Wet	-3%	-1%	1%	2%	1%	1%	0%	0%	0%	-1%	-1%	-1%	0%
1928	Above Normal	-1%	-1%	2%	2%	1%	1%	-1%	0%	-1%	-1%	-2%	-2%	0%
1929	Critical	-3%	-2%	1%	4%	2%	1%	1%	1%	0%	-1%	-3%	-4%	0%
1930	Dry	-4%	-3%	1%	3%	2%	1%	1%	1%	1%	0%	-3%	-3%	0%
1931	Critical	-4%	-2%	0%	2%	2%	1%	1%	2%	2%	0%	-12%	-9%	-2%
1932	Dry	-1%	1%	3%	1%	1%	2%	4%	3%	1%	1%	-7%	-13%	-1%
1933	Critical	-6%	-1%	1%	2%	1%	1%	3%	3%	2%	1%	-8%	-11%	-1%
1934	Critical	-3%	0%	1%	1%	2%	3%	4%	4%	1%	-4%	-12%	-3%	-1%
1935	Below Normal	1%	2%	2%	1%	1%	2%	2%	1%	1%	-5%	-2%	-3%	0%
1936	Below Normal	-3%	-1%	0%	2%	1%	1%	1%	1%	1%	1%	-2%	-5%	0%
1937	Below Normal	-5%	-3%	0%	1%	2%	1%	1%	1%	1%	0%	-2%	-3%	-1%
1938	Wet	-3%	-2%	1%	2%	1%	0%	1%	0%	-1%	-3%	-3%	-2%	-1%
1939	Dry	-3%	-2%	1%	3%	2%	1%	2%	1%	0%	0%	-4%	-4%	0%
1940	Above Normal	-2%	0%	1%	1%	1%	1%	1%	0%	0%	-1%	-2%	-2%	0%
1941	Wet	-4%	-2%	1%	1%	1%	1%	0%	0%	0%	-2%	-2%	-2%	-1%
1942	Wet	-3%	-1%	2%	2%	0%	1%	0%	0%	0%	0%	-2%	-2%	0%
1943	Wet	-3%	-3%	1%	2%	1%	1%	0%	0%	0%	-1%	-1%	-2%	-1%
1944	Dry	-3%	-3%	0%	2%	2%	1%	1%	1%	-1%	-1%	-2%	-2%	0%
1945	Below Normal	-2%	-1%	2%	2%	1%	1%	1%	1%	1%	0%	-1%	-2%	0%
1946	Below Normal	-3%	-2%	1%	1%	1%	1%	1%	0%	1%	1%	0%	-2%	0%
1947	Dry	-5%	-4%	1%	2%	1%	1%	1%	1%	1%	-1%	-4%	-4%	-1%
1948	Below Normal	-4%	-1%	1%	2%	2%	1%	1%	2%	1%	0%	-2%	-3%	0%
1949	Dry	-3%	-2%	1%	2%	2%	1%	1%	0%	1%	1%	-1%	-4%	0%
1950	Below Normal	-6%	-4%	-1%	2%	2%	1%	1%	2%	1%	0%	0%	-3%	-1%
1951	Above Normal	-6%	-3%	1%	1%	1%	1%	0%	0%	0%	1%	0%	-1%	-1%
1952	Wet	-5%	-6%	0%	1%	1%	1%	0%	0%	-1%	0%	-2%	-5%	-1%
1953	Wet	-4%	-3%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1954	Above Normal	-3%	-2%	1%	2%	1%	1%	0%	0%	0%	0%	-3%	-3%	-1%
1955	Dry	-4%	-2%	2%	2%	1%	2%	1%	1%	1%	0%	-1%	-3%	0%
1956	Wet	-4%	-3%	0%	1%	1%	1%	1%	0%	0%	0%	1%	-2%	-1%
1957	Above Normal	-6%	-5%	0%	2%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1958	Wet	-3%	-2%	1%	1%	0%	1%	0%	0%	0%	0%	-2%	-4%	-1%
1959	Below Normal	-5%	-3%	1%	2%	1%	1%	1%	1%	0%	-2%	-5%	-3%	-1%
1960	Dry	-4%	-1%	1%	2%	1%	1%	2%	2%	2%	0%	-1%	-4%	0%
1961	Dry	-6%	-3%	2%	2%	1%	1%	0%	0%	1%	1%	-3%	-6%	-1%
1962	Below Normal	-8%	-4%	2%	2%	1%	1%	1%	1%	1%	1%	-1%	-2%	-1%
1963	Wet	-7%	-5%	1%	2%	1%	1%	0%	0%	0%	-1%	-1%	-2%	-1%
1964	Dry	-3%	-2%	1%	2%	2%	1%	1%	1%	0%	0%	-1%	-3%	0%
1965	Wet	-4%	-2%	0%	1%	1%	1%	1%	0%	1%	1%	0%	-4%	0%
1966	Below Normal	-4%	-4%	0%	2%	1%	1%	0%	0%	0%	1%	-2%	-4%	-1%
1967	Wet	-6%	-3%	1%	2%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1968	Below Normal	-3%	-4%	1%	2%	1%	1%	0%	0%	1%	0%	-3%	-3%	-1%
1969	Wet	-4%	-2%	1%	2%	1%	1%	1%	0%	0%	0%	0%	-4%	-1%
1970	Wet	-7%	-4%	1%	0%	1%	1%	1%	1%	1%	2%	-3%	-4%	-1%
1971	Wet	-8%	-3%	1%	2%	1%	1%	0%	0%	0%	0%	-1%	-4%	-1%
1972	Below Normal	-5%	-3%	1%	2%	1%	1%	0%	0%	1%	0%	-3%	-3%	-1%
1973	Above Normal	-3%	-1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	-2%	0%
1974	Wet	-4%	-3%	1%	1%	1%	0%	1%	0%	0%	0%	1%	-3%	-1%
1975	Wet	-6%	-4%	1%	2%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1976	Critical	-3%	-2%	1%	3%	2%	1%	1%	1%	2%	-1%	-1%	-2%	0%
1977	Critical	-3%	-3%	0%	2%	1%	1%	1%	2%	2%	-1%	-10%	-4%	-1%
1978	Above Normal	3%	2%	3%	0%	2%	0%	2%	0%	-1%	0%	0%	-3%	1%
1979	Below Normal	-8%	-6%	-1%	2%	1%	1%	1%	0%	0%	0%	-1%	-3%	-1%
1980	Above Normal	-2%	-2%	1%	1%	0%	0%	0%	0%	0%	1%	0%	-3%	0%
1981	Dry	-5%	-3%	0%	1%	1%	1%	0%	0%	1%	-2%	-2%	-1%	-1%
1982	Wet	-3%	-2%	1%	2%	1%	1%	0%	0%	0%	0%	0%	-4%	0%
1983	Wet	-5%	-3%	1%	1%	0%	0%	1%	0%	0%	0%	-3%	-3%	-1%
1984	Wet	-4%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-5%	-1%
1985	Dry	-3%	-2%	1%	3%	2%	0%	1%	2%	0%	0%	-2%	-5%	0%
1986	Wet	-5%	-2%	2%	2%	1%	1%	0%	1%	0%	-1%	-2%	-2%	-1%
1987	Dry	-2%	-2%	0%	2%	1%	1%	1%	2%	1%	-1%	-5%	-3%	-1%
1988	Critical	-4%	-3%	2%	2%	1%	1%	1%	1%	0%	-1%	-3%	-3%	-1%
1989	Dry	-4%	-1%	3%	3%	2%	1%	1%	2%	1%	1%	0%	-4%	0%
1990	Critical	-6%	-4%	0%	2%	2%	1%	1%	1%	1%	-3%	-1%	-4%	-1%
1991	Critical	-5%	-2%	0%	1%	2%	1%	1%	1%	1%	1%	-1%	-6%	-1%
1992	Critical	-7%	-3%	0%	1%	1%	1%	1%	1%	2%	1%	-11%	-9%	-2%
1993	Above Normal	-2%	0%	2%	2%	1%	1%	2%	2%	0%	1%	0%	-6%	0%
1994	Critical	-7%	-4%	1%	3%	1%	1%	1%	0%	0%	-2%	-3%	-3%	-1%
1995	Wet	-3%	-1%	1%	1%	1%	0%	0%	0%	0%	-2%	-4%	-2%	-1%
1996	Wet	-3%	-2%	1%	1%	1%	1%	0%	0%	0%	-1%	-1%	-2%	0%
1997	Wet	-4%	-2%	1%	1%	1%	1%	1%	2%	1%	0%	-2%	-4%	0%
1998	Wet	-7%	-4%	1%	1%	0%	1%	0%	0%	0%	-1%	-5%	-3%	-1%
1999	Wet	-3%	-1%	2%	2%	1%	1%	0%	0%	0%	0%	0%	-2%	0%
2000	Above Normal	-4%	-4%	1%	1%	0%	1%	1%	1%	0%	1%	-1%	-2%	-1%
2001	Dry	-3%	-3%	1%	2%	1%	1%	1%	1%	-1%	-1%	-2%	-1%	0%
2002	Dry	-3%	-2%	1%	1%	2%	1%	1%	1%	0%	-1%	-3%	-2%	0%
2003	Above Normal	-3%	-3%	0%	1%	1%	0%	1%	0%	0%	-1%	-1%	-2%	-1%
Average		-4%	-2%	1%	2%	1%	1%	1%	1%	0%	0%	-2%	-3%	-1%
Wet		-4%	-2%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-3%	-1%
Above Normal		-3%	-2%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	0%
Below Normal		-4%	-2%	1%	2%	1%	1%	1%	1%	1%	0%	-2%	-3%	0%
Dry		-3%	-2%	1%	2%	1%	1%	1%	1%	0%	0%	-3%	-4%	0%
Critical		-5%	-3%	0%	2%	2%	1%	1%	2%	2%	-1%	-7%	-5%	-1%

Sacramento River Water Temperatures at Balls Ferry (°F)

No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	49	54	59	55	53	53	55	52
1923	Below Normal	52	49	47	45	47	49	54	55	53	53	54	55	51
1924	Critical	54	53	49	45	48	51	53	55	54	57	63	63	54
1925	Dry	55	49	43	43	47	48	54	54	54	54	57	58	51
1926	Dry	57	53	48	45	47	50	53	54	54	54	57	59	53
1927	Wet	57	53	45	45	46	50	50	52	52	53	54	56	51
1928	Above Normal	54	51	47	45	47	49	54	52	52	54	55	57	51
1929	Critical	55	52	47	43	46	48	50	52	53	54	55	57	51
1930	Dry	56	53	48	45	47	50	51	53	53	54	55	57	52
1931	Critical	55	53	48	46	47	50	51	54	55	57	61	64	53
1932	Dry	59	51	46	44	45	50	51	56	57	57	58	63	53
1933	Critical	60	55	48	44	45	50	52	54	56	57	59	62	53
1934	Critical	61	54	48	46	48	51	53	55	56	59	65	63	55
1935	Below Normal	58	51	47	45	46	49	54	55	55	56	56	59	52
1936	Below Normal	57	52	48	46	46	49	52	52	53	53	54	57	52
1937	Below Normal	55	53	49	45	46	49	53	55	54	54	55	57	52
1938	Wet	55	52	47	45	45	47	49	54	54	54	55	56	51
1939	Dry	55	52	48	46	46	48	50	52	53	53	56	57	51
1940	Above Normal	54	52	49	46	47	48	54	55	53	53	55	56	52
1941	Wet	55	52	48	46	46	49	50	52	54	55	55	56	52
1942	Wet	55	53	48	46	47	49	53	52	55	54	54	55	52
1943	Wet	55	52	48	46	47	48	53	54	53	53	55	56	52
1944	Dry	55	53	49	47	47	49	50	53	53	54	55	56	52
1945	Below Normal	55	51	47	45	47	48	51	53	53	52	54	54	51
1946	Below Normal	54	51	48	45	44	47	49	51	51	52	53	54	50
1947	Dry	53	51	47	45	46	49	52	51	53	53	55	57	51
1948	Below Normal	56	51	48	46	46	48	52	55	54	53	55	55	52
1949	Dry	54	52	48	45	45	48	52	52	52	52	54	56	51
1950	Below Normal	53	52	49	44	45	47	51	52	52	54	55	55	51
1951	Above Normal	53	50	47	44	44	47	49	52	52	52	54	54	50
1952	Wet	52	50	46	43	44	46	47	53	54	55	54	55	50
1953	Wet	55	52	47	46	46	48	51	51	53	54	54	55	51
1954	Above Normal	53	51	47	46	45	47	50	51	52	53	55	57	50
1955	Dry	54	51	45	44	45	48	49	53	52	53	56	56	50
1956	Wet	53	49	48	44	44	48	50	50	52	54	53	53	50
1957	Above Normal	52	51	49	45	46	47	49	54	54	53	55	57	51
1958	Wet	53	51	47	45	46	46	50	53	54	54	55	55	51
1959	Below Normal	55	52	49	46	46	47	50	51	52	54	57	58	52
1960	Dry	56	53	50	45	46	48	49	53	52	54	54	56	51
1961	Dry	54	51	46	45	46	47	50	51	52	53	53	57	50
1962	Below Normal	55	51	46	45	45	47	51	51	52	53	54	55	50
1963	Wet	54	52	48	46	47	47	49	55	54	53	56	57	51
1964	Dry	53	51	47	45	46	47	49	51	52	54	54	55	50
1965	Wet	54	50	48	44	45	48	49	51	52	53	55	55	50
1966	Below Normal	52	51	46	44	45	46	50	51	51	52	54	55	50
1967	Wet	55	51	47	45	45	46	48	51	53	54	53	54	50
1968	Below Normal	53	53	47	44	46	49	50	52	51	54	55	57	51
1969	Wet	54	51	45	44	43	47	47	50	52	54	54	54	50
1970	Wet	53	52	48	47	45	49	47	51	52	52	55	57	51
1971	Wet	54	51	46	44	44	45	50	51	53	54	56	55	50
1972	Below Normal	53	51	46	44	45	47	49	52	52	53	54	56	50
1973	Above Normal	53	49	45	44	44	46	51	54	52	53	54	55	50
1974	Wet	51	51	46	44	44	45	51	53	54	55	53	54	50
1975	Wet	53	51	47	46	45	47	50	52	54	54	54	55	51
1976	Critical	53	51	47	45	46	48	50	52	52	54	56	57	51
1977	Critical	54	52	50	46	47	48	50	52	54	57	64	63	53
1978	Above Normal	57	50	45	45	44	46	50	51	52	54	54	54	50
1979	Below Normal	54	51	49	46	46	49	51	54	52	53	55	57	51
1980	Above Normal	54	50	47	46	46	49	51	52	52	53	54	56	51
1981	Dry	53	51	48	46	47	48	51	52	52	55	56	56	51
1982	Wet	54	50	47	43	44	46	47	55	54	54	54	54	50
1983	Wet	53	50	47	45	45	46	49	52	53	54	55	55	50
1984	Wet	55	52	47	45	46	47	49	52	53	54	55	57	51
1985	Dry	53	50	46	45	46	49	52	51	53	54	55	56	51
1986	Wet	56	50	47	46	47	49	52	53	54	55	56	57	52
1987	Dry	55	52	49	45	46	48	50	51	52	54	57	57	51
1988	Critical	56	53	46	44	46	48	50	52	52	55	57	58	51
1989	Dry	58	51	46	44	44	48	53	50	52	53	54	55	51
1990	Critical	54	52	49	46	44	50	50	53	53	55	56	58	52
1991	Critical	56	52	48	46	48	48	51	52	54	56	56	58	52
1992	Critical	58	53	48	45	47	49	51	52	53	56	60	62	53
1993	Above Normal	60	52	45	43	45	49	50	50	53	53	55	55	51
1994	Critical	54	52	48	46	46	50	50	53	53	55	56	58	52
1995	Wet	58	50	46	45	46	47	51	52	54	55	56	56	51
1996	Wet	55	53	48	46	47	48	52	52	54	54	56	55	52
1997	Wet	54	51	49	46	46	49	49	51	52	53	55	56	51
1998	Wet	54	51	46	45	45	46	51	49	52	55	56	57	51
1999	Wet	55	52	47	46	45	46	51	51	52	53	54	54	51
2000	Above Normal	54	52	48	48	49	51	54	54	54	54	57	59	53
2001	Dry	56	54	51	47	46	51	50	53	53	55	58	60	53
2002	Dry	56	53	46	46	47	49	52	53	54	55	58	58	52
2003	Above Normal	56	54	47	46	46	50	50	52	56	54	57	58	52
Average		55	52	47	45	46	48	51	53	53	54	56	57	51
Wet		54	51	47	45	45	47	50	52	53	54	55	55	51
Above Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Below Normal		54	51	47	45	46	48	51	53	53	53	55	56	51
Dry		55	52	47	45	46	49	51	53	53	54	56	57	51
Critical		56	53	48	45	47	49	51	53	54	56	59	60	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP4 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	49	46	46	50	54	57	54	53	53	55	52
1923	Below Normal	52	49	47	45	47	51	55	56	54	54	54	54	52
1924	Critical	51	50	48	45	48	49	52	56	57	56	55	59	52
1925	Dry	56	50	44	44	47	48	54	55	54	54	54	55	51
1926	Dry	54	52	48	45	47	51	53	54	54	53	56	57	52
1927	Wet	55	53	46	45	46	50	50	52	52	51	54	55	51
1928	Above Normal	54	50	47	46	47	49	54	52	52	53	54	56	51
1929	Critical	54	51	48	45	46	49	50	53	54	54	54	55	51
1930	Dry	54	52	48	45	48	50	52	53	53	54	54	56	52
1931	Critical	53	52	48	46	48	50	52	54	56	57	55	60	53
1932	Dry	58	52	46	44	45	50	53	57	58	57	55	56	53
1933	Critical	57	54	48	45	45	50	53	55	57	58	55	57	53
1934	Critical	59	54	48	46	48	52	54	56	57	57	59	62	54
1935	Below Normal	58	52	47	45	46	49	54	55	55	54	55	58	52
1936	Below Normal	56	52	48	46	46	49	52	53	53	53	54	55	51
1937	Below Normal	53	52	48	45	46	50	53	55	54	54	54	55	52
1938	Wet	54	51	47	45	46	47	50	54	54	53	54	55	51
1939	Dry	53	51	49	47	47	49	51	52	52	53	54	55	51
1940	Above Normal	54	52	49	46	47	49	55	55	53	53	54	55	52
1941	Wet	53	51	48	47	47	49	51	52	54	54	54	55	51
1942	Wet	53	52	49	46	47	49	53	52	55	54	53	54	51
1943	Wet	53	51	49	47	47	48	53	54	53	53	54	55	51
1944	Dry	54	51	49	47	47	50	50	54	52	53	54	55	51
1945	Below Normal	54	51	47	45	47	48	51	53	53	52	53	53	51
1946	Below Normal	53	50	48	45	45	48	50	51	51	52	53	53	50
1947	Dry	50	50	48	46	47	49	52	52	53	52	54	55	51
1948	Below Normal	54	51	48	46	46	49	52	57	56	53	54	53	52
1949	Dry	53	51	48	46	46	48	52	52	52	53	54	54	51
1950	Below Normal	51	50	48	45	45	47	52	53	53	54	54	54	51
1951	Above Normal	50	49	47	44	44	48	49	52	52	52	54	54	50
1952	Wet	50	48	46	43	44	46	48	53	53	55	53	53	49
1953	Wet	53	51	47	47	46	48	51	51	53	54	54	54	51
1954	Above Normal	52	51	47	46	46	47	50	50	52	53	54	55	50
1955	Dry	52	50	46	44	46	49	49	53	52	53	55	55	50
1956	Wet	51	48	47	44	44	48	51	50	52	54	54	52	50
1957	Above Normal	50	49	49	46	46	48	49	54	54	53	54	56	51
1958	Wet	52	50	48	46	46	47	50	53	54	54	54	54	51
1959	Below Normal	53	51	49	47	46	48	51	52	52	54	54	57	51
1960	Dry	54	53	50	46	46	48	50	53	53	54	54	54	51
1961	Dry	52	50	46	45	46	47	50	51	52	53	53	54	50
1962	Below Normal	52	50	46	46	46	47	51	51	52	53	53	54	50
1963	Wet	52	50	49	46	47	48	49	55	54	53	55	56	51
1964	Dry	52	50	47	45	46	47	49	52	52	54	54	54	50
1965	Wet	52	49	48	44	45	48	49	50	52	53	55	53	50
1966	Below Normal	50	49	46	45	45	46	50	51	51	52	53	54	50
1967	Wet	52	50	47	45	46	46	48	51	53	54	53	53	50
1968	Below Normal	51	51	47	45	46	49	50	52	52	54	54	56	51
1969	Wet	53	50	45	44	43	47	47	50	52	54	54	52	49
1970	Wet	50	50	48	47	46	49	48	51	53	53	54	55	50
1971	Wet	51	50	46	44	45	46	50	51	53	54	56	53	50
1972	Below Normal	51	50	46	45	45	47	49	52	52	53	53	54	50
1973	Above Normal	51	48	46	45	45	46	51	53	52	53	55	55	50
1974	Wet	50	49	46	45	44	45	51	53	54	55	53	53	50
1975	Wet	51	49	47	46	46	47	50	52	53	54	53	54	50
1976	Critical	51	50	48	46	47	49	50	53	53	54	56	56	51
1977	Critical	53	51	50	46	48	49	51	53	55	56	59	61	53
1978	Above Normal	58	51	46	45	45	47	50	51	52	54	54	53	50
1979	Below Normal	50	49	48	47	46	49	51	54	52	53	55	56	51
1980	Above Normal	53	49	47	46	46	49	51	52	52	53	54	55	51
1981	Dry	51	50	48	46	47	49	51	53	52	54	55	56	51
1982	Wet	52	50	47	43	45	46	47	55	54	54	54	52	50
1983	Wet	51	49	47	46	45	46	50	52	53	53	53	54	50
1984	Wet	53	51	48	45	46	48	49	52	53	54	55	55	51
1985	Dry	52	49	47	46	46	49	52	52	52	54	54	54	51
1986	Wet	53	50	47	47	48	49	52	53	54	54	54	56	51
1987	Dry	54	52	49	45	47	49	51	52	52	53	55	55	51
1988	Critical	54	52	46	44	47	48	51	52	52	54	56	56	51
1989	Dry	56	51	47	45	45	48	53	51	53	54	54	53	51
1990	Critical	51	50	49	46	45	50	50	53	53	53	55	56	51
1991	Critical	54	52	48	47	48	48	52	53	54	57	56	56	52
1992	Critical	55	52	48	45	47	50	52	52	54	57	55	58	52
1993	Above Normal	59	52	46	43	45	50	51	52	53	53	55	52	51
1994	Critical	51	50	48	47	47	50	51	53	53	54	54	57	51
1995	Wet	56	50	46	45	46	47	51	52	54	54	54	55	51
1996	Wet	54	52	48	46	48	49	52	52	54	54	56	54	51
1997	Wet	53	51	49	46	47	50	49	51	53	53	55	54	51
1998	Wet	51	50	46	46	45	46	52	49	52	54	54	55	50
1999	Wet	54	51	48	46	46	46	51	51	52	53	55	54	51
2000	Above Normal	52	50	48	48	49	51	54	54	54	55	56	58	52
2001	Dry	54	52	51	47	47	52	51	53	52	55	57	59	53
2002	Dry	55	53	47	46	48	49	52	53	54	55	57	57	52
2003	Above Normal	55	53	47	46	47	50	50	52	56	54	57	57	52
Average		53	51	48	46	46	48	51	53	53	54	54	55	51
Wet		52	50	47	45	46	47	50	52	53	54	54	54	50
Above Normal		53	50	47	46	46	49	51	53	53	53	55	55	51
Below Normal		53	51	48	45	46	48	52	53	53	53	54	55	51
Dry		54	51	48	46	46	49	51	53	53	54	55	55	51
Critical		54	51	48	46	47	49	51	54	55	56	56	58	52

Change in Sacramento River Water Temperatures at Balls Ferry (°F)
Alternative CP4 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	1	0	-2	-2	0	0	0	0
1923	Below Normal	0	0	0	0	0	2	1	1	1	0	0	-1	0
1924	Critical	-3	-2	-1	0	0	-1	-2	1	2	-2	-8	-4	-2
1925	Dry	0	1	1	0	0	1	0	0	0	0	-2	-3	0
1926	Dry	-3	-1	0	1	0	0	-3	0	0	-1	-2	-2	0
1927	Wet	-1	0	0	0	0	0	0	0	0	-1	0	0	0
1928	Above Normal	0	-1	0	0	0	1	-1	0	0	-1	-1	0	0
1929	Critical	-1	-1	0	1	0	0	0	0	0	0	-1	-2	0
1930	Dry	-2	-1	0	1	0	0	0	0	0	0	-1	-1	0
1931	Critical	-2	-1	0	0	1	0	0	1	1	0	-6	-5	-1
1932	Dry	-1	0	1	0	0	0	1	1	1	0	-3	-6	0
1933	Critical	-3	0	0	1	0	0	1	1	1	0	-4	-5	-1
1934	Critical	-2	0	0	0	0	1	-1	1	1	-2	-6	-1	-1
1935	Below Normal	0	1	1	0	0	0	0	0	0	-2	-1	-1	0
1936	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	-2	0
1937	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1938	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-1	-1	1	1	1	0	1	0	0	0	-2	-2	0
1940	Above Normal	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1941	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	-1	1	1	0	0	0	0	0	0	-1	-1	0
1943	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1944	Dry	-1	-1	0	1	0	0	0	0	-1	0	-1	-1	0
1945	Below Normal	-1	0	0	1	0	0	0	0	0	0	0	-1	0
1946	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	1	0	0	0	0	0	-1	-2	-2	0
1948	Below Normal	-2	0	0	0	1	0	0	2	1	0	-1	-1	0
1949	Dry	-1	-1	0	1	1	0	0	0	0	0	0	-1	0
1950	Below Normal	-3	-2	0	0	0	0	-3	1	1	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1952	Wet	-2	-2	0	0	0	0	0	0	0	0	-1	-2	-1
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1955	Dry	-2	-1	0	0	0	1	0	0	0	0	0	-1	0
1956	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-3	-2	0	1	1	0	0	0	0	0	-1	-1	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-2	0
1959	Below Normal	-2	-1	0	1	0	0	1	0	0	-1	-2	-1	0
1960	Dry	-2	0	0	0	0	0	0	1	1	0	0	-2	0
1961	Dry	-2	-1	0	0	0	1	0	0	0	0	-1	-3	0
1962	Below Normal	-3	-1	0	1	0	0	0	0	0	1	-1	-1	0
1963	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	-1	0	1	1	0	1	0	0	0	-1	-1	0
1965	Wet	-2	-1	0	0	0	0	1	0	0	0	0	-1	0
1966	Below Normal	-2	-2	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-3	-1	0	1	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-2	-1	0	1	0	0	0	0	0	0	0	-2	0
1970	Wet	-3	-1	0	0	0	0	1	0	0	1	-1	-2	0
1971	Wet	-3	-1	0	1	0	0	0	0	0	0	0	-2	0
1972	Below Normal	-2	-1	0	1	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	0	0	0	0	0	0	0	0	1	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-2	0	1	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	1	1	1	0	0	1	0	0	-1	0
1977	Critical	-1	-1	0	0	0	0	0	1	1	-1	-4	-2	0
1978	Above Normal	1	1	1	0	1	1	0	0	0	0	0	-1	0
1979	Below Normal	-3	-2	0	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-2	-1	0	0	0	1	0	0	0	-1	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1983	Wet	-2	-1	0	1	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-2	0
1985	Dry	-1	-1	0	1	1	0	0	1	0	0	-1	-2	0
1986	Wet	-2	-1	1	0	0	0	0	0	0	-1	-1	-1	0
1987	Dry	-1	-1	0	1	0	0	0	1	0	0	-2	-2	0
1988	Critical	-2	-1	0	0	0	0	0	0	0	-1	-1	-2	0
1989	Dry	-2	0	1	1	1	0	0	1	1	0	0	-2	0
1990	Critical	-2	-2	0	0	1	0	0	0	0	-1	0	-2	0
1991	Critical	-2	-1	0	0	1	0	-2	0	0	0	0	-2	0
1992	Critical	-3	-1	0	0	0	0	0	0	1	1	-5	-4	-1
1993	Above Normal	-1	0	0	0	0	0	1	2	0	0	0	-3	0
1994	Critical	-3	-2	0	1	0	0	0	0	0	-1	-2	-1	-1
1995	Wet	-1	0	0	0	0	0	0	0	0	-1	-2	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1997	Wet	-2	-1	0	0	0	0	0	1	0	0	-1	-2	0
1998	Wet	-3	-1	0	0	0	0	0	0	0	-1	-2	-1	-1
1999	Wet	-1	0	1	1	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-1	-1	0	1	0	0	0	0	-1	-1	-1	0	0
2002	Dry	-1	-1	0	0	0	0	0	0	0	-1	-2	-1	0
2003	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Average		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	1	0	0	0	0	0	0	-1	-2	0
Critical		-2	-1	0	0	0	0	0	1	1	0	-3	-3	-1

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Balls Ferry (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	2%	1%	-3%	-3%	0%	0%	0%	0%
1923	Below Normal	0%	0%	0%	0%	1%	4%	2%	2%	3%	1%	1%	-1%	1%
1924	Critical	-6%	-5%	-2%	0%	0%	-2%	-3%	2%	4%	-3%	-12%	-7%	-3%
1925	Dry	0%	1%	2%	0%	0%	1%	0%	0%	0%	-1%	-4%	-5%	0%
1926	Dry	-4%	-1%	1%	1%	0%	1%	0%	0%	0%	-1%	-3%	-3%	-1%
1927	Wet	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	-3%	-1%	0%	0%
1928	Above Normal	-1%	-1%	1%	1%	1%	2%	1%	0%	-1%	-2%	-2%	-1%	0%
1929	Critical	-2%	-1%	0%	3%	1%	1%	1%	1%	0%	0%	-2%	-3%	0%
1930	Dry	-3%	-2%	0%	2%	1%	0%	1%	1%	1%	0%	-3%	-2%	-1%
1931	Critical	-3%	-2%	0%	1%	1%	1%	1%	1%	2%	0%	-10%	-7%	-1%
1932	Dry	-1%	1%	1%	1%	0%	1%	3%	2%	1%	1%	-5%	-10%	-1%
1933	Critical	-5%	-1%	1%	1%	1%	1%	2%	2%	2%	1%	-6%	-8%	-1%
1934	Critical	-3%	0%	1%	1%	1%	1%	2%	3%	1%	-3%	-10%	-2%	-1%
1935	Below Normal	0%	1%	1%	1%	0%	1%	0%	1%	1%	-4%	-2%	-2%	0%
1936	Below Normal	-2%	-1%	0%	1%	1%	1%	1%	1%	1%	1%	-1%	-3%	0%
1937	Below Normal	-4%	-2%	0%	0%	1%	0%	0%	1%	1%	0%	-2%	-2%	-1%
1938	Wet	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	-2%	-2%	-2%	-1%
1939	Dry	-3%	-1%	1%	2%	1%	1%	0%	1%	-1%	0%	-3%	-3%	0%
1940	Above Normal	-1%	0%	1%	0%	1%	0%	0%	0%	0%	-2%	-2%	-2%	0%
1941	Wet	-3%	-1%	0%	1%	1%	1%	0%	0%	0%	-2%	-2%	-1%	-1%
1942	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
1943	Wet	-3%	-2%	1%	1%	1%	1%	0%	0%	0%	-1%	-1%	-2%	0%
1944	Dry	-2%	-2%	0%	1%	1%	1%	1%	0%	-1%	-1%	-1%	-1%	0%
1945	Below Normal	-2%	-1%	1%	1%	0%	1%	0%	0%	0%	0%	-1%	-2%	0%
1946	Below Normal	-2%	-2%	0%	1%	1%	1%	0%	0%	1%	0%	0%	-2%	0%
1947	Dry	-5%	-3%	1%	1%	1%	0%	1%	1%	1%	-1%	-3%	-3%	-1%
1948	Below Normal	-3%	-1%	1%	1%	1%	1%	0%	3%	2%	0%	-1%	-2%	0%
1949	Dry	-2%	-2%	0%	2%	1%	0%	0%	0%	0%	1%	0%	-3%	0%
1950	Below Normal	-5%	-3%	-1%	1%	1%	1%	1%	0%	1%	0%	0%	-2%	-1%
1951	Above Normal	-4%	-3%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-1%	0%
1952	Wet	-4%	0%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	-4%	-1%
1953	Wet	-3%	-2%	1%	1%	1%	0%	0%	1%	0%	0%	-1%	-2%	0%
1954	Above Normal	-3%	-2%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	0%
1955	Dry	-3%	-1%	1%	1%	1%	2%	1%	0%	1%	-1%	-1%	-2%	0%
1956	Wet	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	1%	-2%	0%
1957	Above Normal	-5%	-4%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1958	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-3%	-1%
1959	Below Normal	-4%	-2%	0%	1%	1%	1%	1%	1%	0%	-1%	-4%	-2%	-1%
1960	Dry	-3%	-1%	1%	1%	0%	0%	1%	1%	1%	0%	-1%	-3%	0%
1961	Dry	-4%	-2%	1%	1%	1%	1%	0%	0%	1%	1%	-1%	-5%	-1%
1962	Below Normal	-6%	-2%	1%	1%	1%	1%	0%	0%	1%	1%	-2%	-1%	0%
1963	Wet	-4%	-4%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-1%	-1%
1964	Dry	-2%	-1%	0%	1%	1%	1%	1%	1%	0%	-1%	-1%	-2%	0%
1965	Wet	-3%	-1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Normal	-3%	-3%	0%	1%	1%	0%	0%	0%	0%	1%	-2%	-3%	-1%
1967	Wet	-5%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1968	Below Normal	-3%	-3%	0%	1%	1%	0%	0%	0%	1%	0%	-3%	-2%	-1%
1969	Wet	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-3%	-1%
1970	Wet	-5%	-3%	0%	0%	1%	0%	1%	1%	1%	1%	-2%	-3%	-1%
1971	Wet	-6%	-2%	1%	1%	1%	1%	0%	0%	0%	0%	0%	-3%	-1%
1972	Below Normal	-4%	-2%	1%	1%	1%	0%	0%	0%	1%	0%	-2%	-2%	-1%
1973	Above Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	1%	-1%	0%
1974	Wet	-3%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-3%	-1%
1975	Wet	-5%	-3%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1976	Critical	-3%	-2%	0%	2%	1%	1%	1%	2%	0%	0%	-1%	-2%	0%
1977	Critical	-2%	-2%	0%	1%	1%	1%	1%	1%	2%	-1%	-7%	-3%	-1%
1978	Above Normal	2%	1%	1%	0%	2%	1%	0%	0%	0%	0%	0%	-2%	0%
1979	Below Normal	-6%	-5%	-1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1980	Above Normal	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	1%	0%	-2%	0%
1981	Dry	-4%	-2%	0%	1%	1%	1%	0%	0%	0%	-2%	-1%	0%	0%
1982	Wet	-2%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	-3%	0%
1983	Wet	-4%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-3%	-1%
1984	Wet	-3%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-4%	-1%
1985	Dry	-2%	-1%	1%	2%	1%	-1%	1%	1%	-1%	0%	-2%	-3%	0%
1986	Wet	-4%	-1%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-2%	-1%
1987	Dry	-2%	-1%	0%	1%	1%	0%	1%	1%	1%	0%	-4%	-3%	-1%
1988	Critical	-3%	-2%	1%	1%	1%	1%	1%	1%	0%	-1%	-2%	-3%	-1%
1989	Dry	-3%	-1%	2%	1%	1%	0%	0%	1%	1%	0%	0%	-3%	0%
1990	Critical	-4%	-3%	0%	1%	1%	1%	1%	0%	0%	-2%	-1%	-3%	-1%
1991	Critical	-4%	-1%	0%	1%	1%	1%	1%	1%	1%	1%	-1%	-4%	0%
1992	Critical	-5%	-3%	0%	1%	0%	0%	1%	1%	1%	1%	-9%	-7%	-2%
1993	Above Normal	-2%	0%	1%	1%	0%	0%	1%	4%	0%	0%	0%	-5%	0%
1994	Critical	-5%	-3%	0%	2%	1%	1%	1%	0%	0%	-2%	-4%	-2%	-1%
1995	Wet	-2%	-1%	1%	0%	1%	0%	1%	0%	0%	-1%	-3%	-2%	-1%
1996	Wet	-2%	-1%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-2%	0%
1997	Wet	-3%	-1%	1%	1%	0%	1%	1%	1%	1%	0%	-1%	-3%	0%
1998	Wet	-5%	-3%	1%	1%	0%	1%	0%	0%	0%	-1%	-4%	-2%	-1%
1999	Wet	-2%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-4%	-3%	0%	1%	0%	0%	0%	1%	0%	1%	-1%	-1%	0%
2001	Dry	-3%	-3%	0%	2%	1%	0%	1%	1%	-1%	-1%	-2%	-1%	0%
2002	Dry	-2%	-1%	1%	0%	1%	1%	1%	1%	0%	-1%	-3%	-1%	-1%
2003	Above Normal	-3%	-2%	0%	1%	0%	-1%	1%	0%	0%	-1%	0%	-1%	0%
Average		-3%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-2%	-3%	-1%
Wet		-3%	-2%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Above Normal		-2%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	0%
Below Normal		-3%	-2%	0%	1%	1%	1%	1%	1%	1%	0%	-1%	-2%	0%
Dry		-3%	-1%	1%	1%	1%	1%	1%	1%	0%	0%	-2%	-3%	0%
Critical		-4%	-2%	0%	1%	1%	1%	1%	1%	1%	-1%	-5%	-4%	-1%

Sacramento River Water Temperatures at Bend Bridge (°F)

No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	49	54	60	57	55	55	57	53
1923	Below Normal	53	49	47	45	47	51	54	56	54	55	56	56	52
1924	Critical	54	53	48	45	48	51	54	57	56	59	64	64	54
1925	Dry	55	49	42	43	47	49	55	56	56	56	58	59	52
1926	Dry	57	52	47	44	47	52	54	56	56	56	59	60	53
1927	Wet	56	53	45	45	46	50	52	54	54	55	56	57	52
1928	Above Normal	55	50	46	45	47	49	55	54	54	55	57	58	52
1929	Critical	55	51	46	43	46	49	51	54	55	56	57	58	52
1930	Dry	57	53	47	44	48	51	53	55	55	55	57	58	53
1931	Critical	55	52	47	45	48	51	53	56	57	59	62	65	54
1932	Dry	58	51	45	44	45	51	53	58	59	59	60	63	54
1933	Critical	60	54	46	43	45	50	53	56	58	59	60	63	54
1934	Critical	61	53	47	46	48	53	54	56	57	60	66	64	55
1935	Below Normal	58	51	46	44	46	49	54	57	57	58	57	60	53
1936	Below Normal	57	52	47	45	46	50	53	54	55	55	56	59	52
1937	Below Normal	56	53	47	44	46	50	54	58	56	56	57	58	53
1938	Wet	56	51	47	45	46	48	51	57	57	56	57	57	52
1939	Dry	55	52	47	45	46	49	52	54	54	54	57	58	52
1940	Above Normal	55	52	48	45	47	49	55	57	55	55	57	57	53
1941	Wet	55	52	48	46	47	50	52	54	57	57	57	57	52
1942	Wet	55	52	48	46	47	50	54	54	57	56	56	56	52
1943	Wet	55	52	47	46	47	49	54	56	55	55	56	58	52
1944	Dry	55	52	48	46	47	50	51	55	55	55	56	57	52
1945	Below Normal	55	50	46	44	47	48	53	55	55	54	55	56	52
1946	Below Normal	54	51	48	45	44	48	51	53	53	54	55	56	51
1947	Dry	53	51	46	44	47	50	53	53	54	55	57	58	52
1948	Below Normal	56	50	47	45	46	49	52	57	56	56	57	56	52
1949	Dry	54	51	47	44	45	48	54	55	54	54	56	58	52
1950	Below Normal	54	52	48	44	45	48	53	54	55	57	57	57	52
1951	Above Normal	53	50	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	52	49	46	43	44	47	49	55	56	58	56	56	51
1953	Wet	55	51	46	46	47	49	52	53	55	56	56	56	52
1954	Above Normal	53	51	46	45	46	48	51	52	54	55	56	58	51
1955	Dry	54	51	45	43	46	49	50	56	54	55	58	58	51
1956	Wet	54	49	47	44	44	49	53	53	55	56	56	54	51
1957	Above Normal	52	51	48	44	46	48	50	56	56	55	57	58	52
1958	Wet	53	50	47	45	46	47	51	56	56	56	57	56	52
1959	Below Normal	56	51	48	46	46	49	52	53	54	56	58	60	52
1960	Dry	56	53	49	45	46	49	51	55	54	56	56	58	52
1961	Dry	55	50	45	44	46	47	52	53	54	54	55	59	51
1962	Below Normal	55	51	45	45	46	47	53	53	54	55	56	56	51
1963	Wet	55	52	48	45	47	48	49	57	56	55	58	58	52
1964	Dry	54	50	46	44	46	48	50	53	54	56	56	56	51
1965	Wet	54	49	47	44	46	49	50	53	54	55	57	56	51
1966	Below Normal	53	50	46	44	45	47	52	54	53	54	56	57	51
1967	Wet	55	51	46	45	46	46	48	53	56	57	56	55	51
1968	Below Normal	53	52	45	44	46	50	52	54	53	56	57	58	52
1969	Wet	54	50	44	44	43	48	49	53	55	56	56	55	51
1970	Wet	53	51	48	46	46	49	49	53	54	54	57	58	52
1971	Wet	55	50	45	44	45	46	51	53	56	56	58	56	51
1972	Below Normal	54	50	45	44	45	48	50	54	54	55	56	57	51
1973	Above Normal	53	48	44	44	45	47	53	56	55	55	56	57	51
1974	Wet	52	50	46	44	44	45	52	55	56	57	55	55	51
1975	Wet	54	50	46	45	45	47	51	54	56	57	56	56	51
1976	Critical	53	50	47	44	46	49	51	55	53	56	58	59	52
1977	Critical	55	52	49	45	48	49	52	54	56	58	65	64	54
1978	Above Normal	57	49	45	45	45	48	51	53	54	56	56	56	51
1979	Below Normal	55	51	48	46	46	50	53	56	54	55	57	58	52
1980	Above Normal	54	49	46	46	46	49	53	55	53	55	56	57	52
1981	Dry	54	50	47	46	47	49	53	54	54	56	58	57	52
1982	Wet	54	50	46	43	44	47	48	58	56	56	56	55	51
1983	Wet	53	50	46	45	45	47	51	55	55	55	56	56	51
1984	Wet	55	51	47	45	46	48	50	54	55	56	58	59	52
1985	Dry	53	49	45	44	46	50	54	54	55	56	56	57	52
1986	Wet	56	50	46	46	48	49	53	55	56	57	57	58	53
1987	Dry	56	52	48	44	46	49	52	53	54	55	59	58	52
1988	Critical	57	53	45	44	47	49	52	54	54	57	59	59	52
1989	Dry	58	50	45	44	44	49	55	52	55	56	56	57	52
1990	Critical	54	52	48	45	44	51	52	55	55	57	58	59	53
1991	Critical	57	52	47	46	48	48	53	54	56	59	58	60	53
1992	Critical	58	53	47	44	47	50	53	54	55	58	62	63	54
1993	Above Normal	60	51	44	43	45	50	51	52	56	55	57	56	52
1994	Critical	54	51	47	46	46	50	52	55	54	57	58	59	52
1995	Wet	58	49	45	45	47	47	52	54	56	57	57	57	52
1996	Wet	55	53	47	45	47	49	53	54	56	57	58	56	53
1997	Wet	55	51	48	46	47	50	50	53	55	55	57	57	52
1998	Wet	54	50	45	45	45	47	52	51	55	57	57	57	51
1999	Wet	56	51	47	46	45	47	53	53	55	55	57	56	52
2000	Above Normal	54	51	47	48	49	51	56	56	56	56	58	60	54
2001	Dry	56	53	50	46	46	53	52	55	55	57	60	62	54
2002	Dry	57	53	46	46	46	49	54	55	56	57	60	59	53
2003	Above Normal	57	54	47	46	47	51	51	54	58	57	59	59	53
Average		55	51	47	45	46	49	52	55	55	56	57	58	52
Wet		55	51	46	45	46	48	51	54	56	56	57	57	52
Above Normal		55	51	46	45	46	49	53	55	55	55	57	58	52
Below Normal		55	51	47	45	46	49	53	55	55	55	56	57	52
Dry		55	51	46	45	46	49	53	55	55	56	57	58	52
Critical		56	52	47	45	47	50	52	55	56	58	61	61	53

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP4 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	50	55	59	56	55	55	57	52
1923	Below Normal	53	49	47	45	47	52	55	57	56	56	56	56	52
1924	Critical	51	50	47	44	48	50	53	58	58	58	57	60	53
1925	Dry	55	49	43	44	47	49	55	56	56	56	56	57	52
1926	Dry	54	52	47	45	47	52	55	56	56	55	57	59	53
1927	Wet	55	52	45	45	46	50	52	54	54	53	55	57	52
1928	Above Normal	54	50	46	45	47	50	55	54	54	55	56	58	52
1929	Critical	54	50	46	44	46	50	51	54	56	55	56	57	52
1930	Dry	55	52	47	44	48	51	53	55	55	55	56	57	52
1931	Critical	54	51	46	45	48	51	53	56	57	59	57	61	53
1932	Dry	58	51	45	44	45	52	54	59	59	59	57	58	54
1933	Critical	57	54	47	44	45	50	54	56	59	59	57	58	53
1934	Critical	59	53	47	46	48	53	55	58	58	59	60	63	55
1935	Below Normal	58	52	47	45	46	50	55	57	57	56	56	59	53
1936	Below Normal	56	51	47	45	46	50	54	55	55	55	55	57	52
1937	Below Normal	54	52	47	44	46	50	54	58	56	56	56	57	52
1938	Wet	55	50	47	45	46	48	51	57	57	55	56	56	52
1939	Dry	54	51	48	46	46	49	52	54	54	54	55	56	52
1940	Above Normal	54	52	48	46	48	49	55	57	55	55	56	57	53
1941	Wet	54	51	48	47	47	50	52	54	57	56	56	56	52
1942	Wet	54	52	48	46	47	50	54	54	57	56	55	55	52
1943	Wet	54	51	48	46	47	49	54	56	55	54	56	57	52
1944	Dry	54	51	48	46	47	50	51	56	54	55	55	57	52
1945	Below Normal	54	50	46	45	47	49	53	55	56	54	55	55	52
1946	Below Normal	53	50	48	45	45	49	51	53	53	54	54	55	51
1947	Dry	51	50	47	45	47	50	54	53	55	54	55	57	51
1948	Below Normal	55	50	47	46	46	49	52	58	58	56	56	55	52
1949	Dry	53	50	47	45	45	48	55	55	54	54	56	56	52
1950	Below Normal	51	50	47	44	45	48	53	55	55	57	56	56	52
1951	Above Normal	51	49	46	44	44	48	51	54	54	54	56	56	51
1952	Wet	50	48	46	43	45	47	49	55	56	58	56	54	50
1953	Wet	53	51	46	46	47	49	52	53	55	56	56	55	52
1954	Above Normal	52	50	46	46	46	48	51	52	54	55	55	57	51
1955	Dry	53	50	45	43	46	49	50	56	54	55	58	57	51
1956	Wet	52	48	47	44	44	49	53	53	55	56	56	53	51
1957	Above Normal	50	49	48	45	46	48	50	56	56	55	56	58	51
1958	Wet	52	50	47	45	46	47	52	56	56	56	56	55	52
1959	Below Normal	54	50	48	47	46	49	53	54	54	56	56	59	52
1960	Dry	54	52	49	45	46	49	51	55	55	56	56	56	52
1961	Dry	53	49	45	45	46	48	52	53	54	55	55	56	51
1962	Below Normal	52	50	46	45	46	47	53	53	55	55	55	56	51
1963	Wet	53	50	48	46	47	48	49	57	56	55	57	58	52
1964	Dry	53	50	46	45	46	48	50	53	54	56	56	55	51
1965	Wet	53	48	47	44	46	49	51	53	55	55	57	55	51
1966	Below Normal	52	49	45	44	45	47	52	54	53	54	55	56	51
1967	Wet	52	50	46	45	46	47	48	53	55	57	55	54	51
1968	Below Normal	52	51	46	44	46	50	52	54	53	56	56	57	51
1969	Wet	53	50	44	44	44	48	49	53	54	56	57	54	51
1970	Wet	51	50	48	47	46	50	49	53	55	55	56	57	51
1971	Wet	52	49	45	44	45	46	51	53	55	56	58	54	51
1972	Below Normal	52	49	45	44	45	48	50	54	54	55	55	56	51
1973	Above Normal	52	48	45	44	45	47	53	56	54	55	57	57	51
1974	Wet	51	49	46	45	45	46	52	55	56	57	55	54	51
1975	Wet	51	49	46	46	45	47	51	54	56	57	55	55	51
1976	Critical	51	50	47	45	47	50	51	55	54	56	58	58	52
1977	Critical	54	51	49	45	48	49	52	54	57	58	61	62	53
1978	Above Normal	58	50	45	45	46	48	51	53	54	56	56	55	51
1979	Below Normal	52	49	47	46	46	50	53	56	54	55	57	57	52
1980	Above Normal	53	49	46	46	46	50	53	55	53	55	56	57	52
1981	Dry	52	49	47	46	47	49	53	54	54	56	57	57	52
1982	Wet	53	50	47	43	45	47	48	58	56	56	56	54	51
1983	Wet	51	49	46	46	45	47	51	55	55	55	55	55	51
1984	Wet	54	51	47	45	46	49	50	54	55	56	57	58	52
1985	Dry	52	49	46	45	46	49	54	54	54	56	55	55	51
1986	Wet	54	49	46	47	48	50	53	55	56	56	56	58	52
1987	Dry	55	52	48	45	47	49	52	54	54	55	57	56	52
1988	Critical	55	52	45	44	47	49	52	54	54	56	58	58	52
1989	Dry	56	50	46	44	45	49	55	53	55	56	56	55	52
1990	Critical	52	50	48	46	45	51	52	55	56	56	58	58	52
1991	Critical	55	51	47	46	49	48	54	54	56	59	58	58	53
1992	Critical	55	51	47	45	47	50	53	55	56	58	57	60	53
1993	Above Normal	59	52	45	43	45	50	52	54	55	55	57	54	52
1994	Critical	52	50	47	46	47	51	52	55	54	56	55	58	52
1995	Wet	56	49	45	45	47	47	52	54	56	57	56	57	52
1996	Wet	54	52	47	46	48	49	53	54	56	56	58	56	52
1997	Wet	53	50	49	46	47	51	50	53	55	55	57	56	52
1998	Wet	52	49	45	46	45	47	52	51	55	56	55	56	51
1999	Wet	54	51	47	46	45	47	53	53	55	55	57	55	52
2000	Above Normal	52	50	47	48	49	51	56	57	56	56	58	60	53
2001	Dry	55	52	50	47	46	53	52	55	54	57	59	61	53
2002	Dry	56	52	46	46	48	50	54	55	56	57	58	59	53
2003	Above Normal	55	53	47	46	47	51	51	54	58	56	59	59	53
Average		54	50	47	45	46	49	52	55	55	56	56	57	52
Wet		53	50	47	45	46	48	51	54	56	56	56	55	51
Above Normal		54	50	46	45	46	49	53	55	55	55	56	57	52
Below Normal		53	50	47	45	46	49	53	55	55	55	56	56	52
Dry		54	51	47	45	46	50	53	55	55	56	56	57	52
Critical		54	51	47	45	47	50	53	55	56	57	58	59	53

Change in Sacramento River Water Temperatures at Bend Bridge (°F)
Alternative CP4 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	1	0	-1	-2	0	0	0	0
1923	Below Normal	0	0	0	0	0	1	1	1	1	0	0	-1	0
1924	Critical	-3	-2	-1	0	0	-1	-1	1	2	-1	-7	-4	-1
1925	Dry	0	1	1	0	0	0	0	0	0	0	-2	-3	0
1926	Dry	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1927	Wet	-1	0	0	0	0	0	0	0	0	-2	0	0	0
1928	Above Normal	0	-1	0	0	0	1	-1	0	-1	-1	-1	0	0
1929	Critical	-1	0	0	1	0	0	0	0	0	0	-1	-1	0
1930	Dry	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1931	Critical	-1	-1	0	0	0	0	0	1	1	0	-5	-4	-1
1932	Dry	-1	0	0	0	0	0	1	1	0	0	-3	-5	0
1933	Critical	-2	0	0	0	0	0	1	1	1	0	-3	-5	-1
1934	Critical	-1	0	0	0	0	0	1	1	1	-2	-6	-1	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	-2	-1	-1	0
1936	Below Normal	-1	0	0	0	0	0	0	0	0	0	-1	-2	0
1937	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1938	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-1	-1	0	1	0	0	1	0	0	0	-2	-2	0
1940	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	0	0	1	0	0	0	0	0	0	-1	-1	0
1943	Wet	-1	-1	0	1	0	0	0	0	0	-1	0	-1	0
1944	Dry	-1	-1	0	1	0	0	0	0	-1	0	-1	-1	0
1945	Below Normal	-1	0	0	1	0	0	0	0	0	0	0	-1	0
1946	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	0	0	0	0	0	1	-1	-2	-2	0
1948	Below Normal	-1	0	0	0	1	0	0	1	1	0	-1	-1	0
1949	Dry	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-2	0	0	0	0	0	0	1	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-2	-2	0	0	0	0	0	0	0	0	-1	-2	0
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	-1	0	0	0	1	0	0	0	0	0	-1	0
1956	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-1	0	0	1	0	0	0	0	0	-1	-1	0
1958	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1960	Dry	-1	0	0	0	0	0	0	0	1	0	0	-1	0
1961	Dry	-2	-1	0	0	0	0	0	0	0	0	0	-2	0
1962	Below Normal	-3	-1	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1965	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-2	0
1970	Wet	-3	-1	0	0	0	0	0	0	0	1	-1	-1	0
1971	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	0	0	0	0	0	0	0	0	1	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	1	1	0	0	0	1	0	0	-1	0
1977	Critical	-1	-1	0	0	0	0	0	1	1	-1	-3	-2	0
1978	Above Normal	1	1	0	0	1	1	0	0	0	0	0	-1	0
1979	Below Normal	-3	-2	0	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-2	-1	0	0	0	0	0	0	0	-1	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-2	0
1985	Dry	-1	-1	0	1	0	0	0	1	0	0	-1	-2	0
1986	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1987	Dry	-1	-1	0	0	0	0	0	1	0	0	-2	-2	0
1988	Critical	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1989	Dry	-2	0	1	0	0	0	0	1	1	0	0	-2	0
1990	Critical	-2	-2	0	0	0	0	0	0	0	-1	0	-1	0
1991	Critical	-2	-1	0	0	1	0	-2	0	0	0	0	-2	0
1992	Critical	-3	-1	0	0	0	0	0	0	1	1	-5	-4	-1
1993	Above Normal	-1	0	0	0	0	0	0	2	0	0	0	-2	0
1994	Critical	-3	-1	0	1	0	0	0	0	0	-1	-2	-1	-1
1995	Wet	-1	0	0	0	0	0	0	0	0	-1	-2	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-2	0
1998	Wet	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	-1
1999	Wet	-1	0	1	1	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
2001	Dry	-1	-1	0	1	0	0	0	0	-1	-1	-1	0	0
2002	Dry	-1	-1	0	0	0	0	0	0	0	0	-2	-1	0
2003	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-2	-1	0	0	0	0	0	0	1	0	-3	-2	-1

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Bend Bridge (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	1%	0%	-2%	-3%	0%	0%	0%	0%
1923	Below Normal	0%	0%	0%	0%	0%	3%	1%	2%	2%	1%	1%	-1%	1%
1924	Critical	-5%	-4%	-2%	-1%	0%	-2%	-2%	2%	4%	-2%	-11%	-6%	-3%
1925	Dry	0%	1%	1%	0%	0%	1%	0%	0%	0%	-1%	-3%	-4%	0%
1926	Dry	-4%	-1%	1%	1%	0%	1%	0%	0%	0%	-1%	-3%	-2%	-1%
1927	Wet	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	-4%	0%	0%	0%
1928	Above Normal	-1%	-1%	1%	0%	0%	2%	0%	-1%	-1%	-1%	-1%	0%	0%
1929	Critical	-2%	-1%	0%	2%	1%	1%	1%	0%	0%	0%	-2%	-2%	0%
1930	Dry	-3%	-2%	0%	1%	1%	0%	0%	1%	0%	0%	-2%	-2%	-1%
1931	Critical	-2%	-2%	0%	1%	1%	1%	1%	1%	1%	0%	-8%	-6%	-1%
1932	Dry	-1%	1%	1%	0%	0%	1%	2%	1%	1%	0%	-4%	-8%	-1%
1933	Critical	-4%	-1%	0%	1%	1%	0%	1%	1%	1%	1%	-6%	-7%	-1%
1934	Critical	-2%	0%	1%	0%	1%	1%	2%	2%	1%	-3%	-8%	-2%	-1%
1935	Below Normal	0%	1%	1%	0%	0%	1%	0%	1%	1%	-3%	-2%	-2%	0%
1936	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	-3%	0%
1937	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1938	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%	-1%
1939	Dry	-2%	-1%	1%	1%	0%	1%	0%	1%	-1%	0%	-3%	-3%	0%
1940	Above Normal	-1%	0%	1%	0%	1%	0%	0%	0%	0%	-1%	-2%	-1%	0%
1941	Wet	-3%	-1%	0%	1%	0%	0%	0%	0%	0%	-2%	-1%	-1%	-1%
1942	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
1943	Wet	-3%	-2%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1944	Dry	-2%	-2%	0%	1%	1%	0%	1%	0%	-1%	-1%	-1%	-1%	0%
1945	Below Normal	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1946	Below Normal	-2%	-1%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	0%
1947	Dry	-4%	-2%	1%	1%	1%	0%	1%	1%	1%	-1%	-3%	-3%	-1%
1948	Below Normal	-2%	-1%	0%	1%	1%	0%	0%	2%	2%	0%	-1%	-2%	0%
1949	Dry	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-2%	0%
1950	Below Normal	-4%	-3%	0%	1%	1%	0%	1%	0%	1%	0%	0%	-1%	0%
1951	Above Normal	-4%	-2%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-1%	0%
1952	Wet	-3%	-3%	0%	0%	0%	0%	0%	0%	-1%	0%	-2%	-3%	-1%
1953	Wet	-3%	-2%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-2%	0%
1954	Above Normal	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	0%
1955	Dry	-3%	-1%	1%	1%	1%	2%	1%	0%	0%	-1%	0%	-1%	0%
1956	Wet	-3%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	0%
1957	Above Normal	-5%	-3%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1958	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-3%	-2%	0%	1%	1%	1%	1%	1%	0%	-1%	-3%	-2%	-1%
1960	Dry	-2%	0%	1%	1%	0%	0%	1%	1%	1%	0%	-1%	-2%	0%
1961	Dry	-3%	-2%	1%	1%	1%	0%	0%	0%	0%	1%	0%	-4%	-1%
1962	Below Normal	-5%	-2%	1%	1%	0%	0%	0%	0%	1%	1%	-2%	0%	0%
1963	Wet	-3%	-3%	0%	1%	1%	1%	0%	0%	0%	-1%	-1%	-1%	-1%
1964	Dry	-2%	-1%	0%	1%	1%	1%	1%	1%	0%	-1%	-1%	-1%	0%
1965	Wet	-2%	-1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Normal	-2%	-3%	0%	1%	0%	0%	0%	0%	0%	1%	-2%	-2%	-1%
1967	Wet	-5%	-2%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-2%	-1%
1968	Below Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	1%	0%	-2%	-2%	-1%
1969	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-3%	0%
1970	Wet	-5%	-2%	0%	0%	0%	0%	1%	1%	1%	1%	-2%	-2%	-1%
1971	Wet	-5%	-2%	1%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%
1972	Below Normal	-4%	-2%	1%	1%	1%	0%	0%	0%	1%	0%	-2%	-2%	-1%
1973	Above Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	1%	-1%	0%
1974	Wet	-2%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1975	Wet	-4%	-3%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1976	Critical	-2%	-2%	0%	2%	2%	1%	1%	1%	1%	0%	0%	-1%	0%
1977	Critical	-2%	-2%	1%	1%	1%	1%	1%	1%	2%	-1%	-5%	-3%	-1%
1978	Above Normal	2%	1%	1%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	0%
1979	Below Normal	-5%	-4%	-1%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	1%	0%	-1%	0%
1981	Dry	-3%	-2%	0%	1%	0%	1%	0%	0%	0%	-2%	-1%	0%	0%
1982	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-3%	0%
1983	Wet	-3%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1984	Wet	-3%	-1%	1%	1%	1%	1%	0%	0%	0%	0%	-1%	-3%	0%
1985	Dry	-2%	-1%	1%	2%	1%	-1%	1%	1%	-1%	0%	-2%	-3%	0%
1986	Wet	-3%	-1%	1%	1%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1987	Dry	-2%	-1%	0%	1%	0%	0%	0%	1%	1%	0%	-3%	-3%	0%
1988	Critical	-3%	-2%	1%	1%	1%	1%	0%	0%	0%	-1%	-2%	-2%	-1%
1989	Dry	-3%	-1%	2%	1%	1%	0%	0%	1%	1%	0%	0%	-3%	0%
1990	Critical	-4%	-3%	0%	0%	1%	0%	0%	0%	0%	-2%	-1%	-2%	-1%
1991	Critical	-3%	-1%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	-3%	0%
1992	Critical	-4%	-2%	0%	1%	0%	0%	0%	1%	1%	1%	-8%	-6%	-2%
1993	Above Normal	-2%	0%	1%	0%	0%	0%	1%	4%	0%	0%	0%	-4%	0%
1994	Critical	-5%	-3%	0%	1%	1%	1%	0%	0%	0%	-1%	-4%	-2%	-1%
1995	Wet	-2%	-1%	0%	0%	0%	0%	1%	0%	0%	-1%	-3%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1997	Wet	-2%	-1%	1%	1%	0%	0%	0%	1%	1%	0%	-1%	-3%	0%
1998	Wet	-4%	-2%	0%	1%	0%	0%	0%	0%	0%	-1%	-3%	-2%	-1%
1999	Wet	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-3%	-3%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	-1%	0%
2001	Dry	-2%	-2%	0%	1%	1%	0%	1%	0%	-1%	-1%	-2%	0%	0%
2002	Dry	-2%	-1%	1%	-1%	1%	0%	1%	0%	0%	-1%	-3%	-1%	-1%
2003	Above Normal	-2%	-1%	0%	1%	0%	-1%	1%	0%	0%	-1%	0%	-1%	0%
Average		-3%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	0%
Wet		-3%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
Above Normal		-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-3%	-2%	0%	1%	1%	1%	0%	1%	1%	0%	-1%	-2%	0%
Dry		-2%	-1%	1%	1%	1%	0%	1%	1%	0%	0%	-2%	-2%	0%
Critical		-3%	-2%	0%	1%	1%	0%	0%	1%	1%	-1%	-5%	-4%	-1%

Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	56	49	48	45	45	50	54	60	58	57	57	58	53
1923	Below Normal	54	48	46	44	47	51	55	57	55	57	57	57	52
1924	Critical	54	52	48	44	48	52	55	58	57	60	64	64	55
1925	Dry	55	48	42	43	47	49	55	57	57	58	59	60	53
1926	Dry	57	52	47	44	47	52	55	57	58	57	60	61	54
1927	Wet	56	52	45	45	46	50	52	55	56	56	57	58	52
1928	Above Normal	55	50	45	45	47	49	56	55	56	57	58	59	53
1929	Critical	56	51	46	42	46	50	52	55	57	57	59	59	52
1930	Dry	57	52	47	44	48	51	54	56	56	57	58	59	53
1931	Critical	55	52	46	45	48	52	54	57	58	60	63	65	54
1932	Dry	58	50	45	44	45	52	54	59	60	60	61	64	54
1933	Critical	59	54	46	43	45	50	54	56	59	61	61	63	54
1934	Critical	61	53	46	46	48	53	55	58	59	61	66	64	56
1935	Below Normal	58	51	46	44	46	49	55	58	58	59	59	61	54
1936	Below Normal	57	51	46	45	46	50	54	55	55	56	57	60	53
1937	Below Normal	56	53	47	43	46	50	55	59	57	57	58	59	53
1938	Wet	56	51	47	44	46	48	51	57	58	57	58	57	53
1939	Dry	55	51	47	45	46	49	53	55	56	56	58	59	52
1940	Above Normal	55	52	47	45	47	49	56	58	57	56	58	58	53
1941	Wet	55	51	47	46	47	50	52	55	58	58	58	57	53
1942	Wet	55	52	48	46	47	50	54	55	58	58	57	56	53
1943	Wet	55	51	47	46	47	49	55	57	56	56	58	59	53
1944	Dry	56	52	48	46	47	50	52	57	56	57	57	58	53
1945	Below Normal	56	50	46	44	47	49	54	56	57	56	57	57	52
1946	Below Normal	55	50	47	45	44	49	52	55	54	55	56	57	52
1947	Dry	54	51	46	44	47	50	54	55	56	56	58	59	52
1948	Below Normal	56	50	46	45	46	49	52	57	57	57	59	57	53
1949	Dry	54	51	46	44	45	48	55	56	56	56	57	59	52
1950	Below Normal	54	52	47	43	45	48	54	56	56	58	58	58	52
1951	Above Normal	53	50	46	44	44	48	52	55	56	55	57	58	52
1952	Wet	52	49	46	43	44	47	49	56	57	59	58	57	51
1953	Wet	55	51	45	46	47	49	53	53	56	58	58	57	52
1954	Above Normal	54	51	46	45	46	48	52	53	55	56	58	59	52
1955	Dry	54	51	44	43	46	49	50	57	55	57	59	59	52
1956	Wet	54	49	47	44	44	50	53	53	56	58	57	55	52
1957	Above Normal	53	50	47	44	46	48	51	57	58	56	58	59	52
1958	Wet	53	50	46	45	46	47	52	57	57	58	59	57	52
1959	Below Normal	56	51	48	46	46	49	53	54	55	58	59	61	53
1960	Dry	56	52	49	44	46	49	51	56	56	58	58	59	53
1961	Dry	55	50	45	44	46	47	52	54	56	56	56	59	52
1962	Below Normal	55	50	45	45	46	47	54	54	56	56	57	57	52
1963	Wet	55	51	48	45	47	48	49	57	58	56	59	59	53
1964	Dry	54	50	46	44	46	48	51	54	56	58	58	57	52
1965	Wet	55	49	47	44	46	49	50	54	56	57	59	58	52
1966	Below Normal	54	50	45	44	45	47	53	55	54	55	58	58	51
1967	Wet	55	51	46	44	46	47	48	54	57	58	57	56	52
1968	Below Normal	54	52	45	44	46	50	52	55	54	57	58	59	52
1969	Wet	55	50	44	44	43	48	50	54	56	58	58	56	51
1970	Wet	53	51	47	46	46	50	49	54	56	56	59	59	52
1971	Wet	55	50	45	44	45	46	52	54	57	57	60	57	52
1972	Below Normal	54	50	45	44	45	48	51	55	55	57	57	58	52
1973	Above Normal	53	48	44	44	45	47	54	57	56	56	57	58	52
1974	Wet	52	50	46	44	44	46	52	57	58	59	57	56	52
1975	Wet	54	50	45	45	45	47	51	55	57	58	57	57	52
1976	Critical	53	50	46	44	46	49	51	56	55	58	59	60	52
1977	Critical	55	52	48	45	48	49	53	55	57	59	66	64	54
1978	Above Normal	57	49	44	45	45	48	52	54	56	57	58	57	52
1979	Below Normal	55	51	47	45	46	50	53	57	56	57	59	59	53
1980	Above Normal	54	49	46	46	46	50	53	56	54	57	58	59	52
1981	Dry	54	50	47	46	47	49	53	55	55	58	59	58	53
1982	Wet	54	50	46	43	44	47	49	59	58	58	58	56	52
1983	Wet	53	49	46	45	45	47	51	55	56	57	57	57	52
1984	Wet	56	51	47	45	46	49	51	55	56	57	59	60	53
1985	Dry	53	49	45	44	46	50	55	55	56	58	58	58	52
1986	Wet	56	49	46	46	48	50	54	56	58	58	58	59	53
1987	Dry	56	52	47	44	46	49	53	55	55	56	61	59	53
1988	Critical	57	52	45	43	47	50	53	55	55	58	61	60	53
1989	Dry	58	50	45	43	44	49	56	53	56	57	58	58	52
1990	Critical	54	52	47	45	44	51	53	56	57	58	60	60	53
1991	Critical	57	51	46	45	48	48	53	55	58	60	60	61	54
1992	Critical	58	52	46	44	47	51	54	56	56	59	63	64	54
1993	Above Normal	59	51	44	43	45	51	52	53	57	57	59	57	52
1994	Critical	55	51	47	46	46	51	52	56	55	58	59	60	53
1995	Wet	58	49	45	45	47	47	52	54	57	59	59	58	52
1996	Wet	55	53	47	45	47	49	53	55	58	58	60	57	53
1997	Wet	55	50	48	46	47	51	51	54	56	57	59	59	53
1998	Wet	54	50	45	45	45	47	52	51	55	58	58	58	52
1999	Wet	56	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	54	51	47	48	49	52	57	58	58	58	60	61	54
2001	Dry	57	53	50	46	46	53	53	57	56	59	62	63	54
2002	Dry	57	53	46	46	48	50	54	56	58	59	62	60	54
2003	Above Normal	57	54	46	46	47	51	51	55	60	58	60	60	54
Average		55	51	46	45	46	49	53	56	57	57	59	59	53
Wet		55	50	46	45	46	48	52	55	57	58	58	57	52
Above Normal		55	50	46	45	46	49	53	56	57	57	58	59	53
Below Normal		55	51	46	44	46	49	53	56	56	57	58	58	52
Dry		56	51	46	44	46	50	53	56	56	57	59	59	53
Critical		56	52	46	44	47	50	53	56	57	59	62	62	54

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP4 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	55	49	48	45	46	50	55	59	57	57	56	58	53
1923	Below Normal	54	48	46	44	47	53	55	58	57	57	58	57	53
1924	Critical	52	50	47	44	48	51	54	58	59	59	58	60	53
1925	Dry	55	49	42	43	47	50	55	57	57	58	57	57	52
1926	Dry	55	51	47	44	47	53	55	57	57	57	58	59	53
1927	Wet	55	52	45	45	46	50	52	55	56	54	57	58	52
1928	Above Normal	55	50	46	45	47	50	55	55	55	56	57	59	52
1929	Critical	55	50	46	43	46	50	52	56	57	57	58	58	52
1930	Dry	55	51	47	44	48	51	54	56	56	57	57	58	53
1931	Critical	54	51	46	45	48	52	54	57	59	60	59	61	54
1932	Dry	58	51	45	44	46	52	55	60	61	60	59	59	54
1933	Critical	57	54	46	44	45	51	55	57	60	61	58	59	54
1934	Critical	59	53	46	46	48	54	56	59	59	60	61	63	55
1935	Below Normal	58	51	46	44	46	50	55	58	59	57	58	60	54
1936	Below Normal	56	51	46	45	46	51	54	56	57	57	57	58	53
1937	Below Normal	54	52	47	43	46	50	55	59	58	57	57	58	53
1938	Wet	55	50	47	45	46	48	52	57	58	56	57	57	52
1939	Dry	54	51	47	46	46	50	53	55	55	56	57	57	52
1940	Above Normal	54	52	48	45	48	50	56	58	57	56	57	57	53
1941	Wet	54	51	47	47	47	50	52	55	58	57	57	57	53
1942	Wet	54	52	48	46	47	50	55	55	58	57	56	56	53
1943	Wet	54	50	47	46	47	49	55	57	56	56	57	58	53
1944	Dry	55	51	48	46	47	51	52	57	55	56	57	58	53
1945	Below Normal	55	50	46	44	47	49	54	56	57	56	56	56	52
1946	Below Normal	54	50	47	45	45	49	52	55	55	55	56	56	51
1947	Dry	52	49	46	44	47	50	55	55	56	55	57	58	52
1948	Below Normal	55	50	47	46	46	49	52	58	58	57	58	56	53
1949	Dry	54	50	46	45	45	48	55	56	56	56	57	58	52
1950	Below Normal	52	50	47	44	45	48	54	56	57	58	58	58	52
1951	Above Normal	51	49	46	44	44	48	52	55	56	56	57	57	51
1952	Wet	51	48	46	43	45	47	49	55	57	59	57	55	51
1953	Wet	54	50	46	46	47	49	53	54	56	58	57	56	52
1954	Above Normal	52	50	46	46	46	48	52	53	55	56	57	58	52
1955	Dry	53	50	45	43	46	50	50	57	55	56	59	58	52
1956	Wet	53	48	47	44	44	50	53	54	56	58	57	54	52
1957	Above Normal	51	49	47	44	46	48	51	57	58	56	57	59	52
1958	Wet	52	50	47	45	46	47	52	57	57	58	58	56	52
1959	Below Normal	54	50	48	46	46	49	54	55	55	57	57	60	53
1960	Dry	55	52	49	45	46	49	52	56	57	58	58	57	53
1961	Dry	53	49	45	45	46	48	53	54	56	56	56	57	51
1962	Below Normal	53	50	45	45	46	47	54	54	56	57	56	57	52
1963	Wet	53	50	48	45	47	48	49	57	58	56	59	59	52
1964	Dry	53	50	46	44	47	48	51	54	56	57	57	57	52
1965	Wet	54	48	47	44	46	49	51	54	56	57	59	57	52
1966	Below Normal	53	49	45	44	45	47	53	55	54	55	57	57	51
1967	Wet	53	50	46	45	46	47	48	54	56	58	57	55	51
1968	Below Normal	52	51	45	44	46	50	52	55	55	57	57	59	52
1969	Wet	53	49	44	44	44	48	50	54	56	58	58	55	51
1970	Wet	51	50	48	47	46	50	50	55	56	56	58	58	52
1971	Wet	52	49	45	44	45	46	52	54	57	57	60	65	51
1972	Below Normal	52	49	45	44	45	49	51	55	55	57	56	57	51
1973	Above Normal	52	48	44	44	45	47	54	57	56	56	58	58	52
1974	Wet	51	49	46	44	45	46	52	57	58	59	57	55	51
1975	Wet	52	49	46	46	45	47	52	55	57	58	57	56	52
1976	Critical	52	49	46	45	47	50	52	56	55	57	59	59	52
1977	Critical	54	51	48	45	48	49	53	55	58	59	63	62	54
1978	Above Normal	58	50	45	45	46	48	51	54	56	57	58	57	52
1979	Below Normal	53	49	47	46	46	50	53	58	56	57	59	59	53
1980	Above Normal	54	49	46	46	47	50	53	56	55	57	58	58	52
1981	Dry	53	49	47	46	47	49	53	55	55	57	58	58	52
1982	Wet	53	50	46	43	45	47	49	59	57	58	58	55	52
1983	Wet	52	49	46	45	45	47	51	55	56	57	56	56	51
1984	Wet	54	51	47	45	46	49	51	55	56	57	59	59	52
1985	Dry	52	49	46	45	46	50	55	55	56	58	57	56	52
1986	Wet	54	49	46	47	48	50	54	55	57	58	57	58	53
1987	Dry	55	52	47	44	47	49	53	55	56	56	59	57	53
1988	Critical	56	51	45	44	47	50	53	56	55	58	60	59	53
1989	Dry	57	50	45	44	44	49	55	54	57	57	58	56	52
1990	Critical	53	50	47	45	44	51	53	56	57	57	59	59	53
1991	Critical	56	51	46	45	49	48	54	55	58	61	59	59	53
1992	Critical	56	51	46	44	48	51	54	56	57	60	58	60	53
1993	Above Normal	59	51	44	43	45	51	52	55	56	57	59	55	52
1994	Critical	52	50	47	46	46	51	53	56	56	57	56	59	52
1995	Wet	56	48	45	45	47	47	53	54	57	58	57	57	52
1996	Wet	54	52	47	45	48	50	53	55	58	58	59	57	53
1997	Wet	54	50	49	46	47	51	51	55	56	57	58	57	53
1998	Wet	52	49	45	45	45	47	53	52	55	58	57	57	51
1999	Wet	55	51	47	46	45	47	53	54	56	56	58	57	52
2000	Above Normal	53	50	47	48	49	52	57	58	58	58	59	61	54
2001	Dry	56	52	50	46	46	53	53	57	55	59	61	62	54
2002	Dry	56	52	46	46	48	50	55	56	58	59	60	60	54
2003	Above Normal	56	53	46	46	47	51	52	55	60	58	60	60	54
Average		54	50	46	45	46	49	53	56	57	57	58	58	52
Wet		53	50	46	45	46	48	52	55	57	57	58	57	52
Above Normal		54	50	46	45	46	49	53	56	56	57	58	58	52
Below Normal		54	50	46	45	46	49	53	56	56	57	57	58	52
Dry		54	50	46	45	46	50	54	56	56	57	58	58	53
Critical		55	51	46	45	47	51	53	56	57	59	59	60	53

Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
Alternative CP4 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	1	0	-1	-1	0	0	0	0
1923	Below Normal	0	0	0	0	0	1	1	1	1	-1	0	0	0
1924	Critical	-2	-2	-1	0	0	-1	-1	1	2	-1	-6	-4	-1
1925	Dry	0	0	1	0	0	0	0	0	0	0	-2	-2	0
1926	Dry	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1927	Wet	-1	0	0	0	0	0	0	0	0	-2	0	0	0
1928	Above Normal	0	-1	0	0	0	1	-1	0	-1	-1	-1	0	0
1929	Critical	-1	0	0	1	0	0	0	0	0	0	-1	-1	0
1930	Dry	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1931	Critical	-1	-1	0	0	0	0	0	0	1	0	-5	-4	-1
1932	Dry	-1	0	0	0	0	0	1	1	0	0	-2	-5	0
1933	Critical	-2	0	0	0	0	0	1	1	1	0	-3	-4	-1
1934	Critical	-1	0	0	0	0	-1	1	1	1	-1	-5	-1	0
1935	Below Normal	0	0	0	0	0	0	0	0	0	-2	-1	-1	0
1936	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-2	0
1937	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1938	Wet	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1939	Dry	-1	-1	0	1	0	0	0	0	0	0	-2	-1	0
1940	Above Normal	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1941	Wet	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1942	Wet	-1	0	0	1	0	0	0	0	0	0	-1	-1	0
1943	Wet	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1944	Dry	-1	-1	0	0	0	0	0	0	-1	0	-1	0	0
1945	Below Normal	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1946	Below Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1947	Dry	-2	-1	0	0	0	0	0	1	0	-1	-1	-1	0
1948	Below Normal	-1	0	0	0	1	0	0	1	1	0	-1	-1	0
1949	Dry	-1	-1	0	1	0	0	0	0	0	0	0	-1	0
1950	Below Normal	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1951	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
1952	Wet	-1	-2	0	0	0	0	0	0	0	0	-1	-2	0
1953	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1954	Above Normal	-1	-1	0	1	0	0	0	0	0	0	-1	-1	0
1955	Dry	-1	-1	0	0	0	1	0	0	0	0	0	-1	0
1956	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1958	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1959	Below Normal	-2	-1	0	0	0	0	0	0	0	-1	-2	-1	0
1960	Dry	-1	0	0	0	0	0	0	0	1	0	0	-1	0
1961	Dry	-2	-1	0	0	0	0	0	0	0	0	0	-2	0
1962	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	0	0
1963	Wet	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1964	Dry	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1965	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
1966	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1967	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1968	Below Normal	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1969	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1970	Wet	-2	-1	0	0	0	0	0	0	0	1	-1	-1	0
1971	Wet	-3	-1	0	0	0	0	0	0	0	0	0	-1	0
1972	Below Normal	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1973	Above Normal	-1	0	0	0	0	0	0	0	0	0	1	0	0
1974	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1975	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1976	Critical	-1	-1	0	1	1	0	-1	0	1	0	0	-1	0
1977	Critical	-1	-1	0	0	0	0	0	0	1	-1	-3	-2	0
1978	Above Normal	1	0	0	0	1	1	0	0	0	0	0	-1	0
1979	Below Normal	-2	-2	0	0	0	0	0	0	0	0	0	-1	0
1980	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1981	Dry	-1	-1	0	0	0	0	0	0	0	-1	-1	0	0
1982	Wet	-1	-1	0	0	0	0	0	0	0	0	0	-1	0
1983	Wet	-2	-1	0	0	0	0	0	0	0	0	-1	-1	0
1984	Wet	-2	-1	0	0	0	0	0	0	0	0	0	-1	0
1985	Dry	-1	-1	0	1	0	0	0	1	-1	0	-1	-1	0
1986	Wet	-2	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1987	Dry	-1	0	0	0	0	0	0	1	1	0	-2	-1	0
1988	Critical	-1	-1	0	0	0	0	0	0	0	-1	-1	-1	0
1989	Dry	-1	0	1	0	0	0	0	1	1	0	0	-1	0
1990	Critical	-2	-1	0	0	0	0	0	0	0	-1	0	-1	0
1991	Critical	-2	-1	0	0	0	0	0	0	0	0	0	-2	0
1992	Critical	-2	-1	0	0	0	0	0	0	1	0	-4	-3	-1
1993	Above Normal	-1	0	0	0	0	0	0	2	0	0	0	-2	0
1994	Critical	-2	-1	0	1	0	0	0	0	0	-1	-3	-1	-1
1995	Wet	-1	0	0	0	0	0	0	0	0	-1	-1	-1	0
1996	Wet	-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
1997	Wet	-1	0	0	0	0	0	0	0	0	0	-1	-1	0
1998	Wet	-2	-1	0	0	0	0	0	0	0	0	-2	-1	0
1999	Wet	-1	0	0	0	0	0	0	0	0	0	0	-1	0
2000	Above Normal	-2	-1	0	0	0	0	0	0	0	0	0	0	0
2001	Dry	-1	-1	0	1	0	0	0	0	-1	-1	-1	0	0
2002	Dry	-1	-1	0	0	0	0	0	0	0	0	-2	0	0
2003	Above Normal	-1	-1	0	0	0	0	0	0	0	0	0	0	0
Average		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Wet		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Above Normal		-1	-1	0	0	0	0	0	0	0	0	0	-1	0
Below Normal		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Dry		-1	-1	0	0	0	0	0	0	0	0	-1	-1	0
Critical		-2	-1	0	0	0	0	0	0	1	0	-3	-2	0

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures at Red Bluff Diversion Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0%	0%	0%	0%	0%	1%	0%	-2%	-2%	0%	0%	0%	0%
1923	Below Normal	0%	0%	0%	0%	0%	2%	1%	2%	2%	1%	1%	-1%	1%
1924	Critical	-4%	-4%	-2%	-1%	0%	-1%	-2%	1%	3%	-2%	-9%	-6%	-2%
1925	Dry	0%	1%	1%	0%	0%	1%	0%	0%	0%	-1%	-3%	-4%	0%
1926	Dry	-4%	-1%	1%	1%	0%	1%	0%	0%	0%	-1%	-3%	-2%	-1%
1927	Wet	-2%	0%	0%	1%	1%	0%	0%	0%	0%	-4%	-1%	0%	0%
1928	Above Normal	-1%	-1%	1%	0%	0%	2%	-1%	0%	-1%	-1%	-1%	0%	0%
1929	Critical	-2%	-1%	0%	2%	1%	0%	1%	0%	0%	0%	-1%	-2%	0%
1930	Dry	-3%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
1931	Critical	-2%	-1%	0%	0%	1%	1%	1%	1%	1%	0%	-7%	-6%	-1%
1932	Dry	-1%	0%	1%	0%	0%	0%	2%	1%	1%	0%	-4%	-7%	-1%
1933	Critical	-4%	-1%	0%	1%	1%	0%	1%	1%	1%	1%	-5%	-7%	-1%
1934	Critical	-2%	0%	0%	0%	1%	1%	2%	2%	1%	-2%	-8%	-2%	-1%
1935	Below Normal	0%	1%	1%	0%	0%	1%	0%	1%	0%	-3%	-1%	-2%	0%
1936	Below Normal	-2%	-1%	0%	0%	0%	0%	0%	1%	1%	0%	-1%	-3%	0%
1937	Below Normal	-3%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%
1938	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%	-1%
1939	Dry	-2%	-1%	1%	1%	0%	1%	1%	0%	-1%	0%	-3%	-2%	0%
1940	Above Normal	-1%	0%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1941	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	-2%	-1%	-1%	-1%
1942	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	0%
1943	Wet	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1944	Dry	-1%	-2%	0%	1%	1%	0%	1%	0%	-1%	-1%	-1%	-1%	0%
1945	Below Normal	-1%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
1946	Below Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
1947	Dry	-4%	-2%	0%	1%	1%	0%	0%	0%	1%	-1%	-2%	-2%	-1%
1948	Below Normal	-2%	-1%	0%	1%	1%	0%	0%	2%	2%	0%	-1%	-2%	0%
1949	Dry	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-2%	0%
1950	Below Normal	-4%	-3%	0%	1%	1%	0%	0%	1%	1%	0%	0%	-1%	0%
1951	Above Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	0%	1%	0%	-1%	0%
1952	Wet	-3%	-3%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	-3%	-1%
1953	Wet	-3%	-2%	0%	1%	0%	0%	0%	1%	0%	0%	-1%	-2%	0%
1954	Above Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%	0%
1955	Dry	-2%	-1%	1%	1%	1%	1%	1%	0%	0%	-1%	0%	-1%	0%
1956	Wet	-2%	-2%	0%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	0%
1957	Above Normal	-4%	-3%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-1%	-1%
1958	Wet	-2%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
1959	Below Normal	-3%	-2%	0%	1%	1%	1%	1%	1%	0%	-1%	-3%	-2%	-1%
1960	Dry	-2%	0%	1%	1%	0%	0%	1%	1%	1%	0%	0%	-2%	0%
1961	Dry	-3%	-2%	1%	1%	1%	0%	0%	0%	0%	0%	0%	-4%	0%
1962	Below Normal	-4%	-2%	1%	1%	0%	0%	0%	0%	0%	1%	-2%	0%	0%
1963	Wet	-3%	-3%	0%	1%	1%	1%	0%	0%	0%	0%	0%	-1%	-1%
1964	Dry	-1%	-1%	0%	1%	1%	1%	1%	1%	0%	-1%	-1%	-1%	0%
1965	Wet	-2%	-1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	-2%	0%
1966	Below Normal	-2%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1967	Wet	-4%	-1%	0%	1%	1%	1%	0%	0%	0%	0%	-1%	-1%	0%
1968	Below Normal	-2%	-2%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1969	Wet	-2%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1970	Wet	-4%	-2%	0%	0%	0%	0%	1%	1%	0%	1%	-2%	-2%	-1%
1971	Wet	-5%	-2%	0%	1%	0%	1%	0%	0%	0%	0%	0%	-2%	-1%
1972	Below Normal	-3%	-2%	0%	1%	1%	0%	0%	0%	1%	0%	-2%	-2%	-1%
1973	Above Normal	-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	1%	0%	0%
1974	Wet	-2%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	-2%	0%
1975	Wet	-4%	-2%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%
1976	Critical	-2%	-1%	0%	1%	2%	1%	1%	1%	1%	0%	0%	-1%	0%
1977	Critical	-2%	-2%	1%	1%	0%	1%	0%	1%	2%	-1%	-4%	-3%	-1%
1978	Above Normal	2%	1%	1%	0%	1%	1%	0%	0%	0%	0%	0%	-1%	0%
1979	Below Normal	-4%	-4%	-1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%
1980	Above Normal	-1%	-1%	0%	1%	0%	0%	0%	0%	0%	1%	0%	-1%	0%
1981	Dry	-3%	-2%	0%	1%	0%	1%	0%	0%	0%	-2%	-1%	1%	0%
1982	Wet	-2%	-1%	1%	1%	0%	1%	0%	0%	0%	0%	0%	-2%	0%
1983	Wet	-3%	-2%	1%	1%	0%	0%	0%	0%	0%	0%	-2%	-2%	-1%
1984	Wet	-3%	-1%	1%	1%	0%	1%	0%	0%	0%	0%	-1%	-2%	0%
1985	Dry	-1%	-1%	1%	2%	1%	-1%	1%	1%	-1%	0%	-1%	-3%	0%
1986	Wet	-3%	-1%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%
1987	Dry	-1%	-1%	0%	1%	0%	0%	0%	1%	1%	0%	-3%	-2%	0%
1988	Critical	-2%	-2%	1%	1%	1%	1%	0%	0%	0%	-1%	-2%	-2%	-1%
1989	Dry	-2%	-1%	1%	1%	1%	0%	0%	1%	1%	0%	0%	-2%	0%
1990	Critical	-3%	-3%	0%	0%	1%	0%	0%	0%	0%	-2%	-1%	-2%	-1%
1991	Critical	-3%	-1%	0%	1%	0%	0%	0%	0%	0%	1%	-1%	-3%	0%
1992	Critical	-4%	-2%	0%	0%	0%	0%	0%	1%	1%	1%	-7%	-5%	-1%
1993	Above Normal	-1%	0%	1%	0%	0%	0%	1%	4%	0%	0%	0%	-3%	0%
1994	Critical	-4%	-2%	0%	1%	0%	1%	0%	0%	1%	-1%	-4%	-2%	-1%
1995	Wet	-2%	-1%	0%	0%	0%	0%	0%	0%	-1%	-2%	-1%	-1%	-1%
1996	Wet	-2%	-1%	0%	0%	1%	0%	0%	0%	0%	-1%	-1%	-1%	0%
1997	Wet	-2%	-1%	1%	1%	0%	0%	0%	1%	1%	0%	-1%	-2%	0%
1998	Wet	-4%	-2%	0%	1%	0%	0%	0%	0%	0%	-1%	-3%	-2%	-1%
1999	Wet	-2%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
2000	Above Normal	-3%	-3%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-1%	0%
2001	Dry	-2%	-2%	0%	1%	1%	0%	1%	0%	-1%	-1%	-2%	0%	0%
2002	Dry	-2%	-1%	0%	-1%	0%	0%	0%	0%	0%	-1%	-3%	-1%	-1%
2003	Above Normal	-2%	-1%	0%	1%	0%	0%	1%	0%	0%	-1%	0%	-1%	0%
Average		-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	0%
Wet		-3%	-1%	0%	1%	0%	0%	0%	0%	0%	0%	-1%	-2%	0%
Above Normal		-2%	-1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	-1%	0%
Below Normal		-2%	-1%	0%	1%	1%	0%	0%	1%	0%	-1%	-1%	-1%	0%
Dry		-2%	-1%	1%	1%	1%	0%	0%	0%	0%	0%	-2%	-2%	0%
Critical		-3%	-2%	0%	1%	1%	0%	0%	1%	1%	-1%	-4%	-3%	-1%

Sacramento River Water Temperatures Below Shasta Dam (°F)

No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	47	51	54	51	48	48	48	50
1923	Below Normal	49	50	51	48	46	47	51	52	49	48	48	50	49
1924	Critical	53	54	52	48	47	50	52	51	54	62	64	53	
1925	Dry	57	49	45	42	43	44	45	46	47	48	52	55	48
1926	Dry	57	54	51	47	45	46	46	47	48	49	53	56	50
1927	Wet	57	54	48	46	45	45	46	47	48	48	50	51	49
1928	Above Normal	53	53	50	47	46	46	47	48	48	50	52	53	49
1929	Critical	55	54	52	47	45	45	46	47	48	48	50	53	49
1930	Dry	55	55	51	46	45	46	46	47	48	48	51	53	49
1931	Critical	54	54	52	47	46	46	47	49	51	53	59	65	52
1932	Dry	60	53	48	44	44	45	47	49	52	53	54	61	51
1933	Critical	60	56	52	46	44	45	47	48	51	53	55	62	52
1934	Critical	61	55	51	46	45	46	47	49	52	56	65	65	53
1935	Below Normal	59	52	49	45	44	45	46	47	50	52	52	57	50
1936	Below Normal	58	54	52	46	44	45	45	46	47	48	49	52	49
1937	Below Normal	54	55	53	48	45	46	46	47	48	48	50	52	49
1938	Wet	54	53	49	46	45	46	46	48	48	49	51	53	49
1939	Dry	55	54	51	48	46	46	47	47	48	49	52	55	50
1940	Above Normal	57	55	52	47	46	47	47	48	48	49	51	53	50
1941	Wet	55	54	50	47	46	46	47	48	48	50	52	53	50
1942	Wet	55	54	50	46	46	46	46	47	48	49	50	52	49
1943	Wet	54	54	51	47	46	46	47	48	48	49	51	52	49
1944	Dry	53	54	52	49	47	47	47	48	48	49	51	53	50
1945	Below Normal	54	53	50	46	45	45	46	47	48	48	49	50	48
1946	Below Normal	52	53	49	45	44	44	45	46	47	48	48	50	48
1947	Dry	52	53	51	47	46	46	46	47	48	49	52	55	49
1948	Below Normal	56	53	51	47	45	46	46	47	48	48	49	51	49
1949	Dry	53	53	51	48	46	45	45	46	47	48	49	50	48
1950	Below Normal	53	53	52	47	44	44	45	45	47	48	48	50	48
1951	Above Normal	52	51	48	45	44	44	44	45	46	47	48	48	47
1952	Wet	50	51	48	44	44	44	45	46	47	48	49	52	47
1953	Wet	54	54	50	47	45	45	46	46	47	48	49	51	48
1954	Above Normal	53	53	50	46	45	45	46	47	48	48	50	52	49
1955	Dry	53	53	49	46	45	45	46	46	47	48	49	50	48
1956	Wet	51	51	49	44	43	43	43	44	46	47	48	48	47
1957	Above Normal	52	52	51	48	46	46	47	47	48	48	50	51	49
1958	Wet	53	52	49	46	46	45	46	47	47	48	49	52	48
1959	Below Normal	55	54	52	47	46	46	46	47	48	50	53	56	50
1960	Dry	57	55	53	48	45	45	45	46	47	48	49	52	49
1961	Dry	54	53	48	46	45	45	46	46	47	48	50	54	48
1962	Below Normal	55	53	49	46	45	44	45	45	46	47	48	50	48
1963	Wet	53	53	50	47	46	46	47	48	48	49	50	51	49
1964	Dry	52	52	50	46	45	45	46	46	47	48	49	51	48
1965	Wet	53	52	49	44	43	43	44	45	46	47	48	48	47
1966	Below Normal	49	51	50	45	44	45	45	46	47	48	49	52	48
1967	Wet	55	54	49	46	44	45	46	47	48	48	49	50	48
1968	Below Normal	52	54	51	47	45	46	47	47	48	48	51	53	49
1969	Wet	54	53	49	45	43	43	44	45	46	48	48	50	47
1970	Wet	54	53	50	47	44	44	45	45	46	48	50	52	48
1971	Wet	54	52	48	44	43	44	45	46	47	48	49	51	48
1972	Below Normal	53	53	50	46	44	45	46	47	48	48	49	52	48
1973	Above Normal	53	51	48	45	44	44	45	45	46	47	48	48	47
1974	Wet	49	52	47	45	43	44	44	45	46	48	48	50	47
1975	Wet	53	53	50	47	45	46	46	47	48	48	49	51	49
1976	Critical	53	53	50	47	46	46	46	47	48	48	50	51	49
1977	Critical	52	53	52	48	47	47	48	49	51	54	65	65	53
1978	Above Normal	59	51	46	42	42	43	44	45	46	48	48	49	47
1979	Below Normal	51	53	52	48	46	45	46	47	48	48	49	51	49
1980	Above Normal	52	52	50	46	46	45	46	46	47	48	48	49	48
1981	Dry	51	52	50	47	46	46	47	47	48	48	50	52	49
1982	Wet	53	52	48	44	44	44	45	46	47	48	48	50	47
1983	Wet	53	52	49	46	45	46	45	47	48	48	50	53	48
1984	Wet	55	54	49	45	44	45	46	47	48	48	49	51	48
1985	Dry	52	52	49	46	45	45	46	46	47	48	50	54	48
1986	Wet	56	53	49	47	47	47	47	48	48	49	51	52	50
1987	Dry	53	54	52	47	45	45	46	47	48	49	51	53	49
1988	Critical	56	55	50	45	45	45	46	47	48	49	52	55	49
1989	Dry	58	54	50	46	44	44	45	45	47	48	49	51	48
1990	Critical	53	53	52	47	45	45	46	46	47	50	49	53	49
1991	Critical	56	54	52	48	46	46	47	48	49	51	49	54	50
1992	Critical	57	55	52	47	45	45	46	47	50	53	58	64	52
1993	Above Normal	61	54	48	43	42	42	43	45	47	48	48	51	48
1994	Critical	53	53	51	48	46	46	47	48	48	50	53	56	50
1995	Wet	58	54	50	45	43	46	46	47	48	49	51	53	49
1996	Wet	55	55	51	47	47	46	46	47	48	49	50	52	49
1997	Wet	54	53	50	46	44	44	45	46	47	48	49	52	48
1998	Wet	54	53	49	46	45	44	44	46	48	49	52	54	49
1999	Wet	56	54	49	46	45	45	45	46	47	48	48	49	48
2000	Above Normal	52	53	51	48	48	47	48	49	49	50	52	53	50
2001	Dry	55	55	53	49	46	46	47	47	48	49	51	53	50
2002	Dry	55	55	49	47	46	46	47	48	48	49	51	53	50
2003	Above Normal	55	56	51	46	45	46	46	47	48	49	50	52	49
Average		54	53	50	46	45	45	46	47	48	49	51	53	49
Wet		54	53	49	46	45	45	46	47	48	48	49	51	48
Above Normal		54	53	50	46	45	45	46	47	48	48	50	51	48
Below Normal		54	53	51	47	45	45	46	47	48	48	50	52	49
Dry		55	53	50	47	45	45	46	47	48	49	51	53	49
Critical		55	54	52	47	46	46	47	48	50	52	56	59	51

Shasta Lake Water Resources Investigation Physical Resource Appendix-Water Quality Technical Report

**Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP4 (2030)**

SVI		October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	49	51	53	50	47	49	51	50	48	48	48	48	49
1923	Below Normal	49	50	51	49	47	50	53	53	51	48	48	48	50
1924	Critical	49	51	52	48	47	48	50	53	54	51	49	57	51
1925	Dry	57	51	47	43	44	45	45	46	48	48	48	50	48
1926	Dry	53	54	52	48	46	46	47	48	48	48	50	53	49
1927	Wet	55	54	50	47	45	46	46	47	48	48	49	51	49
1928	Above Normal	52	52	51	48	46	47	47	48	48	49	50	52	49
1929	Critical	53	53	52	48	46	46	47	47	48	48	48	50	49
1930	Dry	52	54	52	48	46	46	47	47	48	48	48	50	49
1931	Critical	52	53	52	48	47	47	48	50	53	53	50	59	51
1932	Dry	60	54	50	45	44	46	49	51	53	54	48	52	50
1933	Critical	57	55	53	47	45	46	48	50	52	54	49	55	51
1934	Critical	59	55	52	47	46	47	49	52	53	53	55	63	53
1935	Below Normal	60	54	50	46	44	46	47	48	50	49	50	54	50
1936	Below Normal	56	54	52	48	45	45	46	46	47	48	48	49	49
1937	Below Normal	51	53	53	49	46	46	47	47	48	48	48	50	49
1938	Wet	52	52	49	46	46	46	47	47	48	48	50	52	49
1939	Dry	53	53	52	49	47	47	48	48	48	48	49	52	50
1940	Above Normal	53	54	53	48	47	47	48	48	48	49	50	51	50
1941	Wet	52	53	51	47	46	46	47	48	48	48	50	52	49
1942	Wet	53	53	51	47	46	46	46	47	48	48	49	50	49
1943	Wet	52	53	52	48	46	47	47	48	48	48	50	50	49
1944	Dry	51	52	53	50	47	47	48	48	48	48	50	51	50
1945	Below Normal	52	52	51	47	46	46	46	47	48	48	48	49	48
1946	Below Normal	50	51	50	46	45	45	46	46	47	48	48	47	47
1947	Dry	48	51	51	48	46	46	47	47	48	48	49	51	48
1948	Below Normal	54	53	52	48	46	46	47	47	48	48	49	50	49
1949	Dry	51	52	52	49	46	45	46	46	47	48	48	48	48
1950	Below Normal	48	51	52	48	45	45	45	46	47	48	48	47	48
1951	Above Normal	47	49	48	46	44	44	45	45	46	48	48	47	46
1952	Wet	46	48	48	45	44	44	45	46	47	48	48	49	46
1953	Wet	51	52	51	47	45	46	46	47	47	48	48	49	48
1954	Above Normal	50	51	51	47	45	45	46	47	48	48	49	48	48
1955	Dry	51	52	50	47	46	46	46	47	48	48	48	48	48
1956	Wet	48	50	49	44	43	43	44	45	46	47	48	47	46
1957	Above Normal	47	50	51	49	46	46	47	47	48	48	48	49	48
1958	Wet	51	51	50	46	46	46	46	46	47	48	48	50	48
1959	Below Normal	52	53	52	48	46	46	47	48	48	48	50	52	49
1960	Dry	54	54	53	49	46	45	46	47	48	48	48	48	49
1961	Dry	50	51	49	47	45	45	46	46	47	48	48	48	48
1962	Below Normal	50	51	50	47	45	45	45	46	47	48	48	47	47
1963	Wet	48	50	51	48	46	47	47	48	48	48	49	50	48
1964	Dry	51	51	51	48	46	46	46	47	48	48	48	48	48
1965	Wet	50	50	49	45	44	44	44	45	46	48	48	47	47
1966	Below Normal	47	49	50	46	45	45	46	46	47	48	48	48	47
1967	Wet	50	52	49	47	45	45	46	47	47	48	48	49	48
1968	Below Normal	50	51	51	48	46	46	47	47	48	48	48	49	48
1969	Wet	51	51	50	46	43	43	44	45	46	48	48	47	47
1970	Wet	49	51	51	47	45	45	45	46	47	48	48	47	47
1971	Wet	48	50	48	45	44	45	45	46	47	48	48	48	47
1972	Below Normal	49	51	51	47	45	45	46	47	48	48	48	49	48
1973	Above Normal	50	50	49	46	44	44	45	45	46	48	48	47	47
1974	Wet	46	50	47	45	43	44	44	45	46	47	48	47	46
1975	Wet	48	51	51	48	46	46	46	47	48	48	48	49	48
1976	Critical	50	51	51	48	47	47	47	47	48	48	48	49	49
1977	Critical	50	51	53	49	48	48	49	50	52	53	55	61	51
1978	Above Normal	59	53	48	43	43	43	44	45	46	48	48	47	47
1979	Below Normal	47	49	51	49	47	46	47	47	48	48	48	48	48
1980	Above Normal	50	50	50	47	46	45	46	47	47	48	48	47	48
1981	Dry	48	50	51	48	46	46	47	47	48	48	49	50	48
1982	Wet	51	51	48	45	44	44	45	46	47	48	48	48	47
1983	Wet	49	51	50	46	45	46	46	46	47	48	48	50	48
1984	Wet	52	53	50	45	45	45	46	47	48	48	48	48	48
1985	Dry	50	51	49	47	46	46	46	47	48	48	48	50	48
1986	Wet	53	52	51	48	47	47	47	48	48	48	50	51	49
1987	Dry	52	52	52	49	46	46	47	48	48	48	49	51	49
1988	Critical	53	54	51	47	45	46	46	47	48	48	49	52	49
1989	Dry	55	53	51	47	45	45	46	46	47	48	48	48	48
1990	Critical	48	51	52	49	46	46	46	47	48	48	48	50	48
1991	Critical	52	53	52	49	47	47	48	49	51	48	50	50	50
1992	Critical	52	53	52	48	46	46	46	48	51	54	49	55	50
1993	Above Normal	59	55	49	44	43	43	44	45	46	48	48	47	48
1994	Critical	49	51	51	49	47	47	48	48	48	48	51	54	49
1995	Wet	56	53	51	46	44	46	46	47	48	48	49	51	49
1996	Wet	52	53	52	48	48	46	47	47	48	48	49	51	49
1997	Wet	52	52	50	46	45	45	46	46	47	48	48	48	48
1998	Wet	49	51	50	47	45	44	45	46	48	48	49	52	48
1999	Wet	54	53	50	47	46	45	45	46	47	48	48	48	48
2000	Above Normal	49	51	51	49	49	48	48	49	49	50	51	51	50
2001	Dry	52	53	54	50	47	47	47	48	48	48	50	51	50
2002	Dry	53	54	51	48	47	47	48	48	48	48	50	52	49
2003	Above Normal	53	54	52	46	46	46	47	47	48	48	50	50	49
Average		51	52	51	47	46	46	46	47	48	49	49	50	49
Wet		51	51	50	46	45	45	46	46	47	48	49	49	48
Above Normal		52	52	51	47	46	46	46	47	47	48	49	49	48
Below Normal		51	52	51	48	46	46	47	47	48	48	49	49	48
Dry		52	52	51	48	46	46	47	47	48	48	49	50	49
Critical		52	53	52	48	47	47	48	49	50	51	50	54	50

Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
Alternative CP4 (2030) - No Action

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	0	0	0	0	0	2	1	-4	-3	0	0	0	0
1923	Below Normal	0	0	0	0	1	4	2	1	2	0	0	-2	1
1924	Critical	-5	-3	-1	0	0	-2	-2	2	3	-2	-13	-7	-3
1925	Dry	1	2	2	1	1	1	1	0	0	0	-4	-6	0
1926	Dry	-4	-1	1	1	1	1	1	0	0	-1	-2	-3	0
1927	Wet	-2	0	1	1	0	1	0	0	0	0	-1	-1	0
1928	Above Normal	-1	0	1	1	1	0	0	0	0	-1	-1	-2	0
1929	Critical	-2	-1	1	2	1	1	1	0	0	0	-2	-3	0
1930	Dry	-3	-2	1	2	1	1	1	0	0	0	-2	-3	0
1931	Critical	-2	-1	0	1	1	1	1	1	2	0	-9	-6	-1
1932	Dry	-1	1	2	1	0	1	2	2	1	0	-6	-9	0
1933	Critical	-4	0	1	1	1	1	2	2	1	1	-6	-7	-1
1934	Critical	-2	0	1	1	1	2	2	2	1	-3	-9	-2	-1
1935	Below Normal	1	1	2	1	0	1	1	1	0	-3	-2	-3	0
1936	Below Normal	-2	0	0	2	1	1	1	1	1	0	-1	-4	0
1937	Below Normal	-3	-1	0	0	1	1	1	1	0	0	-2	-3	0
1938	Wet	-2	-1	1	1	0	0	0	0	0	-1	-2	-2	-1
1939	Dry	-2	-1	1	1	1	1	1	1	0	-1	-3	-4	0
1940	Above Normal	-4	-1	1	1	0	0	0	0	0	-1	-1	-2	0
1941	Wet	-3	-1	1	0	0	1	0	0	0	-2	-1	-1	0
1942	Wet	-2	-1	1	1	0	0	0	0	0	0	-1	-2	0
1943	Wet	-3	-2	1	1	1	0	0	0	0	-1	-1	-2	0
1944	Dry	-2	-2	0	1	1	1	1	0	0	-1	-1	-1	0
1945	Below Normal	-2	-1	1	1	1	1	0	0	0	0	-1	-2	0
1946	Below Normal	-2	-1	0	1	1	1	0	0	0	1	0	-2	0
1947	Dry	-3	-2	1	1	1	0	1	0	0	-1	-3	-3	-1
1948	Below Normal	-3	-1	1	1	1	1	1	0	0	0	-1	-2	0
1949	Dry	-2	-1	0	1	1	1	0	0	1	0	0	-3	0
1950	Below Normal	-4	-3	0	1	1	1	1	1	1	0	0	-3	0
1951	Above Normal	-4	-2	0	1	1	0	0	0	0	1	0	-2	0
1952	Wet	-4	-4	0	1	0	0	0	0	-1	0	-1	-3	-1
1953	Wet	-3	-2	1	1	1	1	0	0	0	0	0	-2	0
1954	Above Normal	-2	-1	1	1	1	0	0	0	0	0	-2	-3	0
1955	Dry	-3	-1	1	1	1	1	1	1	1	0	0	-2	0
1956	Wet	-3	-2	0	0	0	0	0	0	0	0	0	-1	0
1957	Above Normal	-5	-3	0	1	1	0	0	0	0	0	-1	-2	-1
1958	Wet	-2	-1	1	1	0	0	0	0	0	0	-1	-3	0
1959	Below Normal	-4	-2	1	1	1	1	1	1	0	-1	-4	-4	-1
1960	Dry	-3	-1	1	1	1	0	1	1	1	0	-1	-3	0
1961	Dry	-4	-2	1	1	0	0	0	0	0	0	-2	-5	-1
1962	Below Normal	-5	-2	1	1	1	1	0	0	1	1	0	-3	0
1963	Wet	-5	-3	0	1	1	1	0	0	0	-1	-1	-1	-1
1964	Dry	-2	-1	1	1	1	1	1	1	0	0	-1	-3	0
1965	Wet	-3	-2	0	1	1	1	0	0	0	0	0	-1	0
1966	Below Normal	-3	-2	0	1	0	0	0	0	0	0	-1	-4	-1
1967	Wet	-5	-2	1	1	1	1	0	0	0	0	-1	-2	0
1968	Below Normal	-2	-2	1	1	1	0	0	0	0	0	-2	-3	-1
1969	Wet	-3	-1	1	1	0	0	0	0	0	0	0	-3	0
1970	Wet	-5	-2	1	0	0	1	1	1	1	0	-2	-5	-1
1971	Wet	-6	-2	1	1	1	0	0	0	0	0	0	-3	-1
1972	Below Normal	-3	-2	1	1	1	0	0	0	0	0	-1	-3	-1
1973	Above Normal	-3	-1	1	1	0	0	0	0	0	1	0	-1	0
1974	Wet	-3	-2	1	0	0	0	0	0	0	0	0	-2	0
1975	Wet	-4	-2	1	1	1	0	0	0	0	0	-1	-1	-1
1976	Critical	-2	-1	1	1	1	1	0	0	0	0	-2	-2	0
1977	Critical	-2	-2	0	1	1	1	1	1	1	-1	-10	-4	-1
1978	Above Normal	0	1	1	1	0	1	0	0	0	0	0	-2	0
1979	Below Normal	-4	-3	0	1	1	1	0	0	0	0	-1	-2	-1
1980	Above Normal	-2	-1	1	1	0	0	0	0	0	0	0	-2	0
1981	Dry	-3	-2	1	1	1	0	0	0	0	0	-1	-2	0
1982	Wet	-2	-1	1	1	1	0	0	0	0	0	0	-3	0
1983	Wet	-4	-2	1	1	0	0	0	0	0	0	-2	-2	-1
1984	Wet	-3	-1	1	1	1	1	0	0	0	0	-1	-2	0
1985	Dry	-2	-1	1	1	1	1	1	1	0	0	-2	-4	0
1986	Wet	-4	-1	1	1	0	0	0	0	0	-1	-1	-1	0
1987	Dry	-1	-1	0	1	1	1	0	1	0	-1	-2	-2	0
1988	Critical	-3	-2	1	1	1	1	1	1	0	-1	-3	-2	0
1989	Dry	-3	0	2	1	1	1	1	1	1	0	0	-3	0
1990	Critical	-5	-2	0	1	1	1	0	0	0	-2	-1	-4	-1
1991	Critical	-3	-1	0	1	1	1	0	0	1	-1	-1	-4	0
1992	Critical	-5	-2	0	1	1	1	1	1	1	1	-9	-9	-2
1993	Above Normal	-2	0	1	1	1	1	1	0	0	0	0	-4	0
1994	Critical	-4	-2	1	1	1	1	1	0	0	-2	-2	-2	-1
1995	Wet	-2	0	0	1	1	0	0	0	0	-1	-2	-1	0
1996	Wet	-2	-1	1	1	0	1	0	0	0	-1	-1	-1	0
1997	Wet	-2	-1	0	0	1	1	1	1	1	0	-1	-4	0
1998	Wet	-5	-2	1	1	0	0	0	0	0	-1	-3	-2	-1
1999	Wet	-2	-1	1	1	1	0	0	0	0	0	0	-1	0
2000	Above Normal	-3	-3	1	1	0	0	1	0	0	0	-1	-2	0
2001	Dry	-2	-2	1	1	1	1	1	1	0	-1	-1	-2	0
2002	Dry	-2	-1	1	1	1	1	1	1	0	-1	-1	-2	0
2003	Above Normal	-2	-1	1	1	1	1	0	0	0	-1	-1	-2	0
Average		-3	-1	1	1	1	1	0	0	0	0	-2	-3	0
Wet		-3	-1	1	1	0	0	0	0	0	0	-1	-2	0
Above Normal		-2	-1	1	1	1	1	0	0	0	0	-1	-2	0
Below Normal		-3	-1	1	1	1	1	1	0	0	0	-1	-3	0
Dry		-2	-1	1	1	1	1	1	1	0	0	-2	-3	0
Critical		-3	-1	0	1	1	1	1	1	1	-1	-6	-4	-1

Shasta Lake Water Resources Investigation

Physical Resource Appendix-Water Quality Technical Report

**Percent Change in Sacramento River Water Temperatures Below Shasta Dam (°F)
From No Action**

Year	Year Type	October	November	December	January	February	March	April	May	June	July	August	September	Average
1922	Above Normal	-1%	-1%	0%	1%	1%	5%	1%	-7%	-5%	0%	0%	0%	-1%
1923	Below Normal	0%	0%	0%	0%	1%	8%	4%	3%	3%	0%	-1%	-5%	1%
1924	Critical	-9%	-6%	-1%	0%	-1%	-4%	-4%	4%	6%	-4%	-21%	-11%	-5%
1925	Dry	2%	3%	5%	3%	2%	2%	1%	1%	0%	-1%	-7%	-10%	0%
1926	Dry	-6%	-1%	1%	3%	2%	2%	2%	2%	0%	-2%	-5%	-5%	-1%
1927	Wet	-4%	-1%	2%	3%	1%	1%	1%	0%	0%	0%	-1%	-1%	0%
1928	Above Normal	-1%	-1%	2%	3%	1%	1%	0%	0%	-1%	-2%	-3%	-3%	0%
1929	Critical	-4%	-2%	1%	3%	2%	2%	1%	1%	0%	-1%	-4%	-6%	-1%
1930	Dry	-5%	-3%	3%	4%	2%	2%	1%	1%	1%	-1%	-4%	-5%	0%
1931	Critical	-4%	-2%	0%	2%	2%	2%	1%	2%	3%	0%	-16%	-9%	-2%
1932	Dry	-1%	2%	4%	2%	1%	3%	5%	3%	2%	1%	-11%	-15%	-1%
1933	Critical	-6%	-1%	1%	3%	1%	2%	3%	3%	3%	1%	-11%	-12%	-1%
1934	Critical	-3%	0%	2%	2%	3%	4%	4%	3%	1%	-5%	-15%	-3%	-1%
1935	Below Normal	1%	3%	3%	2%	1%	3%	3%	2%	1%	-6%	-3%	-4%	0%
1936	Below Normal	-3%	-1%	1%	3%	2%	1%	1%	1%	1%	1%	-2%	-7%	0%
1937	Below Normal	-6%	-3%	0%	1%	2%	2%	1%	1%	1%	0%	-3%	-5%	-1%
1938	Wet	-4%	-2%	1%	2%	1%	0%	1%	-1%	-1%	-3%	-3%	-3%	-1%
1939	Dry	-4%	-2%	2%	3%	2%	2%	2%	2%	1%	-3%	-5%	-6%	-1%
1940	Above Normal	-6%	-2%	2%	3%	1%	1%	1%	0%	0%	-2%	-3%	-4%	-1%
1941	Wet	-5%	-2%	2%	1%	1%	1%	0%	0%	-1%	-4%	-2%	-3%	-1%
1942	Wet	-4%	-2%	2%	2%	0%	1%	1%	0%	0%	-1%	-3%	-3%	-1%
1943	Wet	-5%	-3%	2%	2%	1%	1%	0%	0%	0%	-2%	-2%	-3%	-1%
1944	Dry	-4%	-3%	1%	3%	2%	1%	1%	1%	-1%	-1%	-2%	-2%	0%
1945	Below Normal	-3%	-2%	3%	3%	1%	1%	1%	1%	0%	0%	-1%	-3%	0%
1946	Below Normal	-4%	-3%	1%	1%	1%	1%	1%	0%	1%	1%	0%	-5%	0%
1947	Dry	-7%	-4%	1%	2%	2%	1%	1%	1%	1%	-2%	-5%	-6%	-1%
1948	Below Normal	-5%	-1%	1%	3%	2%	1%	1%	1%	0%	0%	-2%	-3%	0%
1949	Dry	-4%	-3%	1%	2%	2%	1%	1%	0%	1%	1%	-1%	-6%	0%
1950	Below Normal	-8%	-5%	0%	2%	2%	1%	2%	2%	2%	0%	0%	-6%	-1%
1951	Above Normal	-8%	-4%	1%	2%	2%	1%	0%	0%	0%	1%	0%	-3%	-1%
1952	Wet	-8%	-7%	1%	1%	1%	1%	0%	-1%	-1%	0%	-3%	-7%	-2%
1953	Wet	-6%	-3%	2%	1%	1%	1%	1%	0%	0%	0%	-1%	-4%	-1%
1954	Above Normal	-4%	-3%	2%	2%	1%	1%	0%	0%	0%	0%	-4%	-5%	-1%
1955	Dry	-5%	-2%	2%	3%	2%	1%	1%	2%	2%	0%	-1%	-5%	0%
1956	Wet	-6%	-3%	0%	1%	1%	1%	1%	1%	0%	0%	1%	-3%	-1%
1957	Above Normal	-9%	-5%	0%	2%	2%	1%	0%	0%	0%	0%	-3%	-3%	-1%
1958	Wet	-4%	-2%	2%	2%	0%	1%	0%	0%	-1%	0%	-2%	-5%	-1%
1959	Below Normal	-6%	-3%	1%	2%	1%	1%	2%	1%	1%	-3%	-7%	-7%	-2%
1960	Dry	-5%	-1%	1%	3%	2%	1%	2%	2%	2%	1%	-2%	-7%	0%
1961	Dry	-7%	-3%	2%	2%	1%	1%	0%	0%	1%	1%	-4%	-10%	-2%
1962	Below Normal	-10%	-4%	2%	2%	2%	1%	1%	1%	1%	1%	0%	-5%	-1%
1963	Wet	-9%	-6%	1%	2%	1%	1%	0%	0%	0%	-1%	-1%	-3%	-1%
1964	Dry	-3%	-2%	2%	3%	2%	2%	2%	2%	1%	0%	-1%	-5%	0%
1965	Wet	-6%	-3%	1%	1%	1%	2%	2%	1%	0%	1%	0%	-2%	0%
1966	Below Normal	-5%	-5%	1%	2%	1%	1%	0%	0%	0%	1%	-3%	-8%	-1%
1967	Wet	-9%	-4%	1%	2%	2%	1%	0%	0%	-1%	0%	-1%	-3%	-1%
1968	Below Normal	-5%	-4%	1%	3%	1%	1%	0%	1%	1%	-1%	-5%	-6%	-1%
1969	Wet	-6%	-3%	2%	2%	1%	1%	0%	1%	-1%	0%	0%	-6%	-1%
1970	Wet	-9%	-4%	1%	0%	1%	1%	2%	2%	2%	0%	-3%	-9%	-2%
1971	Wet	-11%	-4%	1%	2%	1%	1%	0%	0%	-1%	0%	-1%	-6%	-2%
1972	Below Normal	-7%	-3%	2%	3%	2%	1%	0%	0%	0%	0%	-3%	-6%	-1%
1973	Above Normal	-5%	-2%	2%	2%	1%	1%	0%	0%	0%	2%	0%	-2%	0%
1974	Wet	-6%	-3%	1%	1%	1%	0%	1%	0%	-1%	-1%	1%	-5%	-1%
1975	Wet	-8%	-4%	1%	2%	1%	1%	1%	0%	0%	0%	-1%	-3%	-1%
1976	Critical	-5%	-2%	1%	3%	2%	1%	1%	1%	1%	-1%	-3%	-4%	0%
1977	Critical	-4%	-3%	1%	2%	2%	1%	2%	2%	3%	-2%	-16%	-6%	-2%
1978	Above Normal	0%	2%	3%	2%	1%	2%	0%	-1%	0%	0%	0%	-5%	0%
1979	Below Normal	-9%	-6%	0%	2%	2%	1%	1%	0%	0%	0%	-2%	-4%	-1%
1980	Above Normal	-4%	-2%	1%	2%	0%	1%	1%	0%	1%	1%	0%	-3%	0%
1981	Dry	-5%	-4%	1%	2%	2%	1%	0%	0%	1%	-1%	-3%	-4%	-1%
1982	Wet	-4%	-2%	1%	2%	1%	1%	0%	0%	-1%	0%	0%	-5%	-1%
1983	Wet	-7%	-3%	2%	2%	0%	0%	1%	0%	0%	-1%	-4%	-4%	-1%
1984	Wet	-6%	-2%	2%	2%	2%	1%	1%	0%	0%	0%	-2%	-4%	-1%
1985	Dry	-4%	-2%	2%	2%	2%	2%	2%	2%	1%	0%	-4%	-7%	-1%
1986	Wet	-6%	-2%	3%	3%	1%	1%	1%	1%	0%	-1%	-3%	-3%	-1%
1987	Dry	-3%	-2%	1%	3%	2%	1%	1%	2%	1%	-1%	-5%	-4%	-1%
1988	Critical	-5%	-3%	3%	3%	2%	2%	1%	1%	0%	-2%	-5%	-4%	-1%
1989	Dry	-5%	-1%	3%	3%	2%	2%	2%	1%	1%	1%	-1%	-7%	0%
1990	Critical	-9%	-4%	0%	2%	2%	1%	1%	1%	1%	-4%	-2%	-7%	-2%
1991	Critical	-6%	-2%	0%	2%	3%	2%	1%	1%	1%	1%	-2%	-7%	-1%
1992	Critical	-9%	-3%	0%	2%	2%	2%	2%	1%	2%	1%	-16%	-14%	-3%
1993	Above Normal	-3%	1%	2%	3%	2%	2%	2%	0%	-1%	1%	-1%	-7%	0%
1994	Critical	-8%	-4%	1%	3%	2%	1%	1%	0%	0%	-3%	-3%	-3%	-1%
1995	Wet	-3%	-1%	1%	2%	1%	0%	1%	0%	0%	-2%	-4%	-3%	-1%
1996	Wet	-4%	-2%	2%	3%	1%	1%	1%	0%	0%	-1%	-2%	-3%	0%
1997	Wet	-4%	-2%	1%	1%	1%	1%	2%	2%	2%	0%	-2%	-8%	-1%
1998	Wet	-9%	-4%	2%	1%	0%	1%	1%	0%	0%	-2%	-6%	-4%	-2%
1999	Wet	-4%	-1%	2%	2%	1%	1%	0%	0%	0%	0%	0%	-3%	0%
2000	Above Normal	-6%	-5%	1%	2%	0%	1%	1%	1%	1%	1%	-2%	-4%	-1%
2001	Dry	-4%	-3%	1%	3%	2%	2%	2%	2%	0%	-1%	-2%	-3%	0%
2002	Dry	-4%	-3%	1%	3%	2%	1%	1%	1%	0%	-2%	-3%	-3%	-1%
2003	Above Normal	-4%	-2%	2%	1%	1%	1%	1%	0%	0%	-1%	-2%	-3%	-1%
Average		-5%	-2%	1%	2%	1%	1%	1%	1%	0%	-1%	-3%	-5%	-1%
Wet		-6%	-3%	1%	2%	1%	1%	1%	0%	0%	-1%	-2%	-4%	-1%
Above Normal		-4%	-2%	2%	2%	1%	1%	1%	0%	0%	0%	-1%	-4%	-1%
Below Normal		-5%	-3%	1%	2%	2%	1%	1%	1%	1%	0%	-2%	-5%	-1%
Dry		-4%	-2%	2%	3%	2%	1%	2%	1%	1%	0%	-4%	-6%	-1%
Critical		-6%	-3%	1%	2%	2%	1%	1%	2%	2%	-2%	-9%	-7%	-2%