

Water-Data Report 2009

11407000 Feather River at Oroville, CA

Sacramento River Basin

LOCATION.--Lat 39°31'18", long 121°32'48" referenced to North American Datum of 1927, Butte County, CA, Hydrologic Unit 18020106, in Boga Fernandez Grant, on right bank, 300 ft upstream from Fish Barrier Dam on Feather River, 0.4 mi downstream from Thermalito Diversion Dam, 0.8 mi northeast of Oroville Post Office, and 4.8 mi downstream from Oroville Dam.

DRAINAGE AREA.--3,624 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1901 to current year. Monthly discharge only for some periods, published in WSP 1315-A. October 1934 to September 1961 published as "near Oroville."

CHEMICAL DATA: Water years 1906-07, 1951-77.

SPECIFIC CONDUCTANCE: Water years 1972-78.

WATER TEMPERATURE: Water years 1954-92.

SEDIMENT DATA: Water years 1957-79.

REVISED RECORDS.--WSP 843: 1907 (instantaneous maximum discharge), 1909 (instantaneous maximum discharge), 1914-15 (instantaneous maximum discharge), 1919 (instantaneous maximum discharge), 1927-28 (instantaneous maximum discharge). WSP 881: 1913-28 (yearly summaries). WSP 1515: 1906-8. WSP 1931: Drainage area. WDR CA-74-2: 1968-70 (adjusted monthly discharge), WDR US-2007: 2006 (adjusted monthly discharge), WDR US-2008: 2007 (adjusted monthly discharge).

GAGE.--Water-stage recorder. Datum of gage is 148.97 ft above NGVD of 1929 (levels by California Department of Water Resources). See WSP 1931 for history of changes prior to Oct. 1, 1964.

COOPERATION.--Records were collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with Federal Energy Regulatory Commission project no. 2100.

REMARKS.--Flow completely regulated by Lake Oroville (station 11406800), beginning November 1967, and Thermalito Diversion Pool (station 11406825), capacity 13,500 acre-ft. Diversions upstream from station for power and irrigation. Feather River Fish Hatchery (station 11406930) diverts up to 120 ft³/s at Thermalito Diversion Dam 0.4 mi upstream from gage. Daily figures shown are combined figures of river flow and diversion to fish hatchery. Beginning with the 1968 Water Year, daily mean values of flow are the combined flows of the river and the diversion to the fish hatchery. Maximum peak flows are river-only flows. See schematic diagram showing diversions and storage from Feather River at Lake Oroville available from the California Water Science Center.

EXTREMES FOR PERIOD OF RECORD.--Prior to completion of Oroville Dam: Maximum discharge observed, 230,000 ft³/s, Mar. 19, 1907, elevation, 167.5 ft above NGVD of 1929, site and datum then in use, maximum discharge (since completion of Oroville Dam), 161,000 ft³/s, Jan. 2, 1997, gage height, 25.45 ft; minimum, 300 ft³/s, estimated, Nov. 9, 1931.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood on Feb. 12, 1879, reached a stage of 11.7 ft; discharge not determined; flood in February 1881, reached a stage of 25.0 ft; discharge not determined; flood on Mar. 9, 1884, reached a stage of 13.0 ft, discharge not determined; flood on Dec. 23, 1884, reached a stage of 13.8 ft; discharge not determined; flood on Dec. 25, 1885, reached a stage of 15.7 ft, discharge not determined; information supplied from Magnitude and Frequency of Floods in the United States, Part 11, Vol. 2 (USGS Water-Supply Paper 1686).

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	927	646	629	628	629	635	630	682	650	655	666	671
2	720	642	659	629	628	647	624	638	650	657	668	672
3	665	643	654	629	629	648	620	638	651	660	668	672
4	679	640	688	629	629	637	626	639	652	663	666	675
5	680	630	684	629	628	637	628	639	644	670	670	670
6	683	630	638	629	628	637	627	639	650	671	675	669
7	685	670	640	628	628	637	627	639	650	738	674	669
8	698	630	652	634	629	637	628	639	648	884	666	667
9	695	630	630	628	629	638	628	639	662	740	666	666
10	698	630	630	659	629	637	628	636	639	698	668	666
11	691	629	634	627	628	637	628	639	650	662	666	664
12	700	629	629	626	618	638	627	639	637	668	666	670
13	689	630	630	655	626	638	688	639	629	662	666	670
14	694	630	629	676	629	638	682	639	659	665	667	675
15	689	630	629	679	619	644	656	638	1,500	868	670	670
16	687	630	629	628	630	640	636	718	1,180	1,030	666	666
17	686	630	629	622	637	643	638	639	846	905	665	666
18	686	630	630	622	624	657	638	639	654	665	757	666
19	686	630	630	630	622	642	638	639	655	664	787	665
20	686	635	629	627	626	640	638	640	660	663	664	670
21	682	667	631	627	626	637	638	647	662	666	786	667
22	681	640	629	628	644	639	642	650	659	668	669	676
23	681	641	629	629	649	638	639	650	685	661	670	663
24	660	640	629	630	637	638	639	650	665	662	671	666
25	630	640	641	636	637	638	639	650	690	663	668	669
26	631	640	629	629	636	634	639	650	1,640	664	668	680
27	633	640	629	628	635	627	639	651	1,150	666	670	678
28	640	641	629	629	632	627	639	650	772	945	753	677
29	638	638	629	628	---	627	642	655	788	1,220	671	681
30	641	630	629	629	---	626	639	658	658	850	668	674
31	642	---	629	629	---	631	---	650	---	668	670	---
Total	21,183	19,111	19,735	19,636	17,641	19,769	19,130	20,058	22,935	22,821	21,125	20,110
Mean	683	637	637	633	630	638	638	647	764	736	681	670
Max	927	670	688	679	649	657	688	718	1,640	1,220	787	681
Min	630	629	629	622	618	626	620	636	629	655	664	663
Ac-ft	42,020	37,910	39,140	38,950	34,990	39,210	37,940	39,790	45,490	45,270	41,900	39,890
Mean, adjusted for unreviewed evaporation, change in contents, and diversions in and out of Lake Oroville, Thermalito Diversion Pool, Thermalito Forebay, and Thermalito Afterbay (station 11406870)												
	1,943	2,328	1,892	2,246	7,202	10,776	5,714	8,162	2,113	2,078	2,375	1,865
Ac-ft, adjusted for unreviewed evaporation, change in contents, and diversions in and out of Lake Oroville, Thermalito Diversion Pool, Thermalito Forebay, and Thermalito Afterbay (station 11406870)												
	119,500	138,500	116,300	138,100	400,000	662,600	340,000	501,800	125,700	127,800	146,000	111,000

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 1967, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	2,085	3,069	5,296	6,790	9,463	10,080	12,120	9,930	5,176	2,505	1,980	1,792
Max	12,370	19,710	28,410	39,860	28,030	39,760	30,100	25,150	15,650	5,999	3,265	2,883
(WY)	(1963)	(1904)	(1956)	(1909)	(1904)	(1904)	(1911)	(1938)	(1911)	(1907)	(1967)	(1967)
Min	745	853	1,102	1,350	1,714	1,564	2,146	1,246	924	852	956	992
(WY)	(1933)	(1933)	(1950)	(1947)	(1933)	(1924)	(1924)	(1924)	(1924)	(1924)	(1924)	(1924)

SUMMARY STATISTICS

Water Years 1902 - 1967	
Annual mean	5,834
Highest annual mean	12,860 1907
Lowest annual mean	1,623 1924
Highest daily mean	187,000 Mar 19, 1907
Lowest daily mean	577 Oct 3, 1932
Annual seven-day minimum	652 Sep 30, 1932
Maximum peak flow	230,000 Mar 19, 1907
Maximum peak stage	167.5 Mar 19, 1907
Annual runoff (ac-ft)	4,226,000
10 percent exceeds	13,300
50 percent exceeds	2,870
90 percent exceeds	1,470

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	581	728	1,221	2,715	1,962	1,881	1,046	741	550	557	545	535
Max	1,580	3,313	7,728	26,750	25,180	18,870	7,064	7,916	998	779	819	768
(WY)	(1996)	(1982)	(1997)	(1997)	(1986)	(1995)	(1982)	(1995)	(1989)	(2007)	(2008)	(2008)
Min	399	397	392	401	399	404	401	387	405	404	393	389
(WY)	(1969)	(1979)	(1979)	(1976)	(1978)	(1978)	(1977)	(1969)	(1974)	(1981)	(1979)	(1972)

SUMMARY STATISTICS

	Calendar Year 2008	Water Year 2009	Water Years 1969 - 2009
Annual total	252,200	243,254	
Annual mean	689	666	1,086
Annual mean^a	2,877	4,043	
Highest annual mean			3,936 1997
Lowest annual mean			404 1976
Highest daily mean	1,090 Sep 27	1,640 Jun 26	132,000 Feb 18, 1986
Lowest daily mean	629 Nov 11	618 Feb 12	222 Sep 19, 1972
Annual seven-day minimum	629 Dec 12	625 Feb 9	337 Sep 13, 1972
Maximum peak flow		1,830 Jun 26	161,000 Jan 2, 1997
Maximum peak stage		1.70 Jun 26	25.45 Jan 2, 1997
Annual runoff (ac-ft)	500,200	482,500	786,700
Annual runoff (ac-ft)^a	2,083,000	2,927,000	^b 4,351,000
10 percent exceeds	766	686	705
50 percent exceeds	666	642	617
90 percent exceeds	630	628	403

^a Adjusted for unreviewed evaporation, change in contents, and diversions in and out of Lake Oroville, Thermalito Diversion Pool, Thermalito Forebay, and Thermalito Afterbay (station 11406870).

^b Includes water year 1968.

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