Water-Data Report 2011

10336610 Upper Truckee River At South Lake Tahoe, CA

Truckee Basin
Lake Tahoe Subbasin

LOCATION.--Lat 38°55′21″, long 119°59′26″ referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.4, T.12 N., R.18 E., El Dorado County, CA, Hydrologic Unit 16050101, on left bank, 200 ft downstream from U.S. Highway 50 Bridge, 1.0 mi northeast of South Lake Tahoe Post Office, and 1.4 mi upstream from Lake Tahoe.

DRAINAGE AREA.--54.9 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Oct. 1971 to Sep. 1974, Oct. 1976 to Jun. 1977, Oct. 1977 to Jun. 1978, Mar. 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,229.04 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 26, 1984, at datum 2.00 ft higher. Prior to Oct. 19, 1993, at site 200 ft upstream at same datum. Prior to Sep. 03, 2009, at datum 3.52 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Two small dams may cause slight regulation at times. Some small diversions for domestic use upstream from station. Echo Lake conduit (station 11434500) diverts from Echo Lake (station 10336608), to South Fork American River Basin. See schematic diagram of Truckee River Basin available from the California Water Science Center.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,480 ft^3/s, Jan. 02, 1997, gage height, 9.95 ft; minimum daily, 0.01 ft^3/s, Sep. 06, 2001.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 25	0845	988	9.22
Dec 19	1730	509	7.43
Mar 16	0715	607	7.90
Apr 2	2045	406	6.90
Apr 18	2130	464	7.24
May 8	0415	600	7.90
Jun 29	1930	*1,270	*9.74

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES
[e, estimated; &, affected value]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5.6	57	52	92	e59	e55	182	217	261	624	122	24
2	6.2	51	52	88	e56	64	289	238	247	572	117	23
3	8.4	48	70	85	e56	73	308	292	227	630	116	23
4	14	54	70	e82	e57	e68	255	332	227	663	91	22
5	16	62	64	e77	62	68	294	373	292	661	80	21
6	17	50	78	e72	63	78	292	465	436	622	75	20
7	14	55	68	e69	66	92	260	507	360	653	71	21
8	13	74	69	&67	66	82	199	532	393	618	68	20
9	12	59	174	66	&62	82	169	403	475	559	65	19
10	11	59	205	e62	&62	85	155	331	546	498	62	19
11	11	55	181	&62	&60	100	168	331	600	424	61	23
12	10	50	141	62	60	98	184	380	598	366	63	25
13	11	49	119	64	60	96	181	446	645	350	60	30
14	11	48	169	77	62	180	150	501	739	337	57	27
15	10	58	161	71	63	211	157	476	845	328	55	24
16	10	61	&117	72	49	465	203	381	897	316	53	21
17	11	56	105	82	64	228	285	330	815	293	50	20
18	13	53	268	85	97	159	410	309	752	276	47	19
19	12	49	398	81	109	139	408	282	787	265	42	18
20	12	54	243	76	89	127	389	272	771	252	39	17
21	12	57	165	74	79	120	368	312	760	214	38	18
22	11	e59	133	73	e72	110	300	369	892	203	36	17
23	13	61	114	72	e68	102	253	385	963	196	34	16
24	245	e61	102	70	e62	91	254	386	857	195	e33	16
25	755	e61	96	69	61	100	237	412	778	189	e32	16
26	309	60	91	67	e57	97	223	352	709	180	31	16
27	181	60	85	66	e58	92	215	324	679	164	29	16
28	129	64	86	67	e56	88	249	319	701	150	29	15
29	98	62	95	67	---	98	247	293	1,040	137	27	15
30	85	54	109	&69	---	117	221	258	877	132	25	14
31	68	---	103	e64	---	142	---	250	---	130	24	---
Total	2,134.2	1,701	3,983	2,250	1,835	3,707	7,505	11,058	19,169	11,197	1,732	595
Mean	68.8	56.7	128	72.6	65.5	120	250	357	639	361	55.9	19.8
Max	755	74	398	92	109	465	410	532	1,040	663	122	30
Min	5.6	48	52	62	49	55	150	217	227	130	24	14
Ac-ft	4,230	3,370	7,900	4,460	3,640	7,350	14,890	21,930	38,020	22,210	3,440	1,180

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	16.2	35.7	51.3	62.7	63.9	103	164	309	258	86.5	18.8	11.5
Max	72.1	225	240	484	307	305	300	584	795	448	102	55.3
(WY)	(1983)	(1984)	(2006)	(1997)	(1986)	(1986)	(1982)	(2006)	(1983)	(1995)	(1983)	(1983)
Min	2.60	7.36	8.07	8.00	10.5	21.2	64.0	55.3	23.5	4.65	0.51	0.55
(WY)	(1989)	(1991)	(1991)	(1991)	(1991)	(1977)	(1977)	(1977)	(1992)	(1994)	(2001)	(2001)

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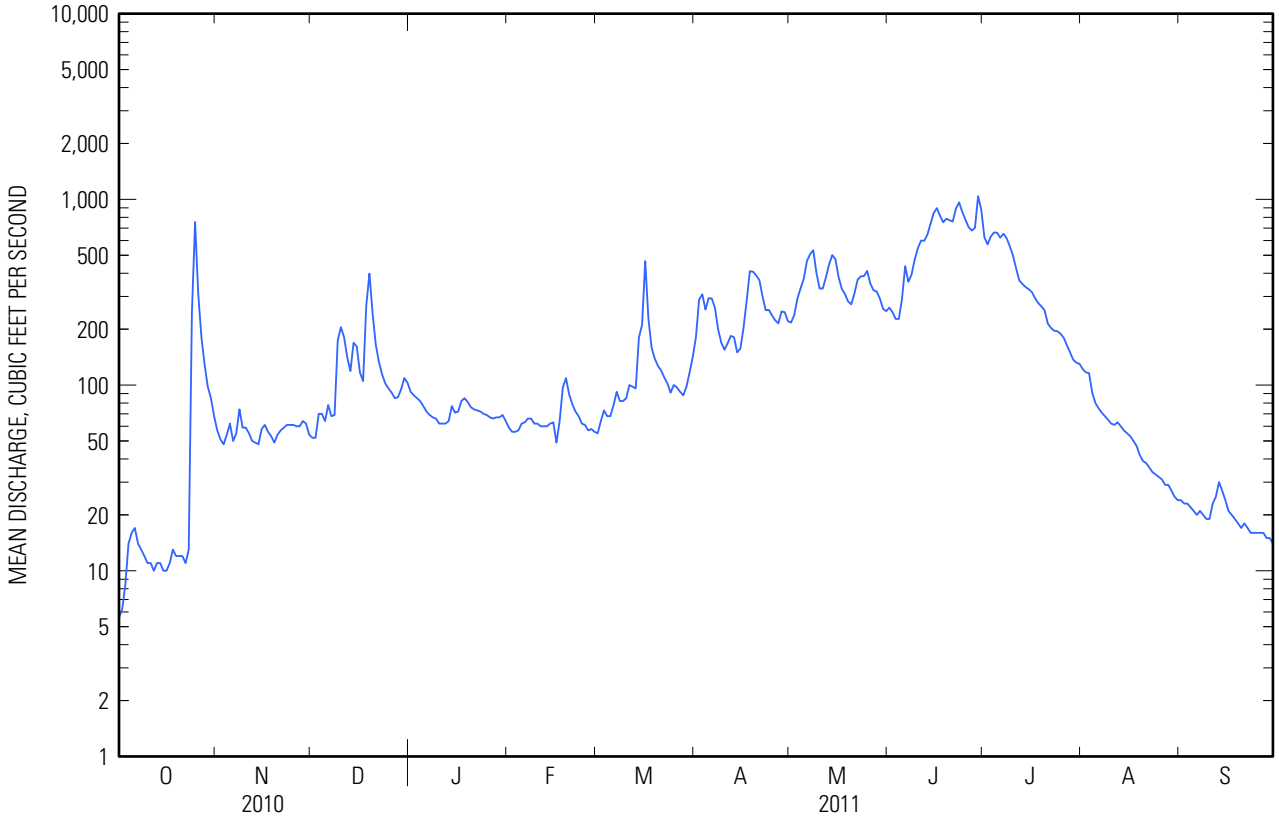
SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1972 - 2011	
Annual total	35,979.5		66,866.2			
Annual mean	98.6		183		99.9	
Highest annual mean					203	1983
Lowest annual mean					29.2	1988
Highest daily mean	792	Jun 7	1,040	Jun 29	3,150	Jan 2, 1997
Lowest daily mean	5.6	Sep 20	5.6	Oct 1	0.01	Sep 6, 2001
Annual seven-day minimum	5.8	Sep 15	11	Oct 10	0.11	Sep 5, 2001
Maximum peak flow			1,270	Jun 29	5,480	Jan 2, 1997
Maximum peak stage			9.74	Jun 29	9.95	Jan 2, 1997
Annual runoff (ac-ft)	71,370		132,600		72,360	
10 percent exceeds	248		475		267	
50 percent exceeds	53		85		37	
90 percent exceeds	8.1		19		6.5	



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972-74, 1978, 1980 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Mar. 1981 to Sep. 1983.
WATER TEMPERATURE: Oct. 1971 to Jun. 1974, Oct. 1977 to Jun. 1978, Mar. 1980 to Sep. 1992, Sep. 1997 to Sep. 2003, discontinued.
SUSPENDED-SEDIMENT DISCHARGE: Oct. 1971 to Jun. 1974, Oct. 1977 to Jun. 1978, Mar. 1980 to Sep. 1992.

INSTRUMENTATION.--Water temperature recorder Sep. 1997 to Sep. 2003, two times per hour.

REMARKS.--In Oct. 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. Nutrient samples were analyzed by the University of California, Davis, Tahoe Research Group. Water temperature data for Sep. 1997 were not published but are available from the U.S. Geological Survey, Carson City, NV. Quality assurance samples associated with the entire Lake Tahoe Interagency Monitoring Program are listed under station numbers 103366769999 and 103367309999. The original hydrazine method used to determine nitrate plus nitrite concentrations (parameters 00631 and 00630) was found to have interferences caused by calcium and magnesium in stream water samples. The nitrate plus nitrite concentrations under parameters 99911 and 99910 are based on a laboratory method that uses pyrophosphate to remove interferences caused by calcium and magnesium. This method has replaced the original hydrazine method as of December 2008. Parameter code 00623, filtered ammonia plus organic nitrogen (dissolved Kjeldahl nitrogen) was discontinued in April 2011.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 26.5°C, Jul. 26 and Aug. 10, 2001; minimum, freezing point on many days.
SEDIMENT CONCENTRATION: Maximum daily mean, 416 mg/L, Mar. 4, 1991; minimum daily mean, 0 mg/L, several days during most years.
SEDIMENT LOAD: Maximum daily, 781 tons, Mar. 8, 1986; minimum daily, 0 tons, several days during most years.

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 1 of 3

[%, percent; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than; E, estimated]

Date	Sample start time	Medium name	Sample type	Discharge, instantaneous, ft³/s (00061)	Temperature, air, °C (00020)	Temperature, water, °C (00010)	Specific conductance, water, unfiltered, µS/cm at 25 °C (00095)	pH, water, unfiltered, field, standard units (00400)
10-04-2010	**1035**	Surface water	Regular	13	13.0	11.5	107	--
10-06-2010	**1200**	Surface water	Regular	17	9.0	9.5	93	--
10-08-2010	**1535**	Surface water	Regular	13	12.0	11.0	86	--
10-24-2010	**1710**	Surface water	Regular	397	8.0	7.0	36	--
10-25-2010	**1020**	Surface water	Regular	970	3.5	6.0	26	--
11-03-2010	**1420**	Surface water	Regular	48	17.5	7.5	59	--
11-08-2010	**1030**	Surface water	Regular	74	1.0	3.0	57	--
12-06-2010	**1115**	Surface water	Regular	80	4.0	1.8	64	7.2
12-09-2010	**1050**	Surface water	Regular	177	4.0	1.5	51	--
12-19-2010	**1110**	Surface water	Regular	338	3.0	.5	48	--
01-03-2011	**1420**	Surface water	Regular	83	-1.0	.0	64	--
02-15-2011	**0815**	Surface water	Regular	63	3.0	1.0	77	--
03-07-2011	**1030**	Surface water	Regular	92	2.5	1.5	76	7.1
03-14-2011	**1125**	Surface water	Regular	180	8.0	1.5	69	--
03-16-2011	**1325**	Surface water	Regular	452	1.5	.5	53	--
04-06-2011	**1235**	Surface water	Regular	272	9.5	4.0	54	--
04-18-2011	**1515**	Surface water	Regular	386	6.5	5.5	48	--
05-05-2011	**1325**	Surface water	Regular	343	20.0	6.0	41	--
05-13-2011	**1335**	Surface water	Regular	424	14.5	5.0	33	--
05-26-2011	**1415**	Surface water	Regular	341	9.5	5.5	36	--
06-01-2011	**1320**	Surface water	Regular	258	5.0	6.0	42	7.4
06-05-2011	**0950**	Surface water	Regular	287	9.5	5.0	40	--
06-06-2011	**1240**	Surface water	Regular	462	7.0	4.5	39	--
06-13-2011	**0840**	Surface water	Regular	680	14.0	4.5	24	--
06-15-2011	**0815**	Surface water	Regular	917	11.5	5.0	21	--
06-17-2011	**1640**	Surface water	Regular	737	20.0	10.0	24	--
06-17-2011	***1645***	*QC sample - Surface water*	*Replicate*	--	--	--	--	--
06-21-2011	**1310**	Surface water	Regular	752	21.5	8.5	24	--
06-23-2011	**1040**	Surface water	Regular	1,080	20.0	8.0	21	--
06-24-2011	**1305**	Surface water	Regular	866	20.5	9.0	23	--
06-27-2011	**1500**	Surface water	Regular	657	--	--	22	--
06-29-2011	**1845**	Surface water	Regular	1,260	12.0	10.5	22	--
07-08-2011	**0910**	Surface water	Regular	647	11.5	9.0	22	--
07-15-2011	**0810**	Surface water	Regular	338	11.0	9.5	28	--
07-22-2011	**1135**	Surface water	Regular	207	20.0	12.5	32	--
07-27-2011	**1015**	Surface water	Regular	170	18.0	12.0	31	--
08-10-2011	**1710**	Surface water	Regular	62	22.5	16.5	48	--
09-06-2011	**1600**	Surface water	Regular	22	23.5	18.0	73	7.9

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 2 of 3

[%, percent; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than; E, estimated]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (99911)	Orthophos-phate, water, filtered, mg/L as P (00671)	Phos-phorus, water, filtered, mg/L as P (00666)
10-04-2010	**1035**	--	--	--	.14	.16	.007	.016	.008	.010
10-06-2010	**1200**	--	--	--	.17	.17	.004	.010	.007	.015
10-08-2010	**1535**	--	--	--	.11	.30	.006	.014	.009	.017
10-24-2010	**1710**	--	--	--	.16	1.3	.006	.046	.017	.027
10-25-2010	**1020**	--	--	--	.24	.42	.010	.034	.020	.027
11-03-2010	**1420**	--	--	--	--	.23	.005	.026	.005	.016
11-08-2010	**1030**	--	--	--	.18	.21	.006	.015	.007	.020
12-06-2010	**1115**	613	10.6	95	.18	.20	.005	.017	.006	.017
12-09-2010	**1050**	--	--	--	.15	.28	.005	.019	.006	.016
12-19-2010	**1110**	--	--	--	.19	.32	.004	.033	.012	.020
01-03-2011	**1420**	--	--	--	--	.15	.005	.032	.005	.010
02-15-2011	**0815**	--	--	--	--	.14	.004	.010	.005	.015
03-07-2011	**1030**	605	10.6	95	.07	.14	.005	.025	.006	.012
03-14-2011	**1125**	--	--	--	.18	.30	.005	.035	.006	.014
03-16-2011	**1325**	--	--	--	.18	.34	.007	.059	.014	.021
04-06-2011	**1235**	--	--	--	--	.17	.003	.035	.006	.013
04-18-2011	**1515**	--	--	--	--	.20	.004	.023	.006	.013
05-05-2011	**1325**	--	--	--	--	.16	.005	.018	.004	.010
05-13-2011	**1335**	--	--	--	--	.10	.005	.013	.005	.015
05-26-2011	**1415**	--	--	--	--	.12	.004	.013	.006	.013
06-01-2011	**1320**	610	10.2	102	--	.11	.006	.013	.005	.012
06-05-2011	**0950**	--	--	--	--	.10	< .003	.012	.006	.022
06-06-2011	**1240**	--	--	--	--	.16	.004	.010	.007	.019
06-13-2011	**0840**	--	--	--	--	.12	.004	.009	.006	.014
06-15-2011	**0815**	--	--	--	--	.13	.005	.017	.010	.022
06-17-2011	**1640**	--	--	--	--	.12	< .003	.009	.010	.010
06-17-2011	***1645***	--	--	--	--	*.14*	*.004*	*.009*	*.008*	*.011*
06-21-2011	**1310**	--	--	--	--	.13	< .003	.007	.008	.014
06-23-2011	**1040**	--	--	--	--	.13	.003	.006	.012	.015
06-24-2011	**1305**	--	--	--	--	.17	.003	.009	.014	.012
06-27-2011	**1500**	--	--	--	--	.13	.004	.009	.011	.011
06-29-2011	**1845**	--	--	--	--	.21	.007	.011	.013	.024
07-08-2011	**0910**	--	--	--	--	.15	.003	.004	.007	.011
07-15-2011	**0810**	--	--	--	--	.26	.004	.006	.004	.011
07-22-2011	**1135**	--	--	--	--	.10	< .003	.008	.004	.014
07-27-2011	**1015**	--	--	--	--	.06	.003	.006	.004	.014
08-10-2011	**1710**	--	--	--	--	.10	.003	.011	.006	.016
09-06-2011	**1600**	616	8.5	111	--	.08	< .003	.017	.007	.015

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 3 of 3

[%, percent; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than; E, estimated]

Date	Sample start time	Phosphorus, water, unfiltered, mg/L as P (00665)	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)	Suspended sediment concen-tration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)
10-04-2010	**1035**	.023	--	4	.14
10-06-2010	**1200**	.025	--	3	.14
10-08-2010	**1535**	.037	--	7	.25
10-24-2010	**1710**	.302	58	198	212
10-25-2010	**1020**	.100	46	58	152
11-03-2010	**1420**	.018	--	3	.39
11-08-2010	**1030**	.034	--	5	1.0
12-06-2010	**1115**	.025	--	7	1.5
12-09-2010	**1050**	.066	61	35	17
12-19-2010	**1110**	.057	--	33	30
01-03-2011	**1420**	.020	--	5	1.1
02-15-2011	**0815**	.020	--	4	.68
03-07-2011	**1030**	.028	--	8	2.0
03-14-2011	**1125**	.100	69	47	23
03-16-2011	**1325**	.109	42	74	90
04-06-2011	**1235**	.031	--	11	8.1
04-18-2011	**1515**	.041	--	31	32
05-05-2011	**1325**	.032	--	20	19
05-13-2011	**1335**	.035	--	16	18
05-26-2011	**1415**	.030	--	E 12	E 11
06-01-2011	**1320**	.022	--	4	2.8
06-05-2011	**0950**	.030	--	7	5.4
06-06-2011	**1240**	.047	43	24	30
06-13-2011	**0840**	.049	E 43	E 32	E 59
06-15-2011	**0815**	.076	41	51	126
06-17-2011	**1640**	.040	36	26	52
06-17-2011	***1645***	*.040*	--	--	--
06-21-2011	**1310**	.043	--	E 21	E 43
06-23-2011	**1040**	.056	42	36	105
06-24-2011	**1305**	.042	E 41	E 29	E 68
06-27-2011	**1500**	.029	--	18	32
06-29-2011	**1845**	.061	43	31	105
07-08-2011	**0910**	.031	--	16	28
07-15-2011	**0810**	.025	--	8	7.3
07-22-2011	**1135**	.023	--	5	2.8
07-27-2011	**1015**	.022	--	4	1.8
08-10-2011	**1710**	.024	--	3	.50
09-06-2011	**1600**	.022	--	3	.18