

SOUTHEAST ALASKA

15088000 SAWMILL CREEK NEAR SITKA

LOCATION.--Lat 57°03'05", long 135°13'40", in NE¹/₄ SW¹/₄ sec. 34, T. 55 S., R. 64 E. (Sitka A-4 quad.), Hydrologic Unit 19010401, on Baranof Island, in Tongass National Forest, on left bank 500 ft upstream from mouth, 1.6 mi downstream from Blue Lake, and 4.0 mi east of Sitka.

DRAINAGE AREA.--39.0 mi².

PERIOD OF RECORD.-- September 1920 to December 1923, February 1928 to September 1942, October 1945 to September 1957, 1994 (peak discharge only, published in WRD AK 95-1), and May 2001 to current year. Records prior to 1945 furnished by U.S. Forest Service.

REVISED RECORDS.-- WSP 1372: 1921-22 and 1928-36.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is sea level, from topographic map. Prior to April 1947, staff gages or water-stage recorders at several sites within 1,700 ft of present site at various datums. April 1947 to September 1957 at site about 200 ft upstream at different datum.

REMARKS.--Records good, except estimated daily discharges, which are poor. Minor regulation above station by Sitka Public Utilities hydroelectric plant during periods 1920-23 and 1937-42. In 1959, Blue Lake Dam, 1.6 mi upstream, was completed. The area of the lake is 1225 acres. The dam is concrete with a spillway elevation of 342.0 ft above sea level. In 1960, the Blue Lake Hydro plant, located 400 ft downstream from gage, was put into operation. Water is taken from Blue Lake and piped via a penstock to Blue Lake hydro, through 2-3,000 kw turbines and discharged back into Sawmill Creek just below high tide level. This penstock also provides water for the City of Sitka and for the filter plant for the Sitka Sawmill. In the years following, Campground Hydro, a smaller generation plant was constructed about 1,000 ft below Blue Lake Dam. It also has a penstock from Blue Lake and discharges directly into Sawmill Creek. A fish bypass valve has been installed at Campground Hydro that automatically releases 50 ft³/s to the tailrace anytime the hydro plant is shut down. Another small generator was installed just above the Sawmill Filter Plant diversion from Blue Lake Hydro penstock with the capability of bypassing the filter plant and discharging back into Sawmill Creek above the gage site. Water that went to the filter plant was piped to the sawmill and eventually discharged directly into Silver Bay. The sawmill has since closed and water is now supplied to Sawmill Cove Industrial Park. Flow is constantly regulated except when Blue Lake is spilling.

EXTREMES OUTSIDE PERIOD OF RECORD.-- It was reported that in October 1972, a storm produced a peak elevation at Blue Lake of 353.0 ft or 11.0 ft of spill at the spillway. Extending the spillway rating, this flood was estimated to be 17,000 ft³/s. It was reported to have been the largest since 1921.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e400	110	135	109	105	108	88	115	117	124	129	107
2	e200	108	147	82	105	72	129	112	117	122	126	124
3	e108	106	121	63	105	53	145	112	117	123	123	135
4	109	106	114	63	105	71	141	112	117	123	121	144
5	118	105	113	63	102	79	122	112	118	124	120	120
6	109	104	111	63	110	62	118	111	118	132	119	117
7	112	104	110	93	112	80	120	111	118	128	119	114
8	115	104	109	105	133	93	118	111	77	126	116	110
9	109	113	108	106	115	110	115	111	100	124	116	109
10	108	120	107	109	73	137	114	112	120	124	115	108
11	103	138	106	109	62	137	118	112	120	124	114	108
12	64	1550	106	109	66	125	108	112	120	124	114	109
13	69	1500	107	118	74	120	89	112	120	124	113	112
14	71	654	105	141	72	116	113	112	121	124	113	117
15	85	335	106	124	70	119	111	111	122	124	113	115
16	107	188	117	116	68	130	109	111	121	124	112	111
17	109	125	122	131	67	120	109	111	121	125	112	108
18	113	114	135	139	68	115	109	111	121	124	110	107
19	121	109	138	122	98	113	91	111	121	124	110	107
20	212	108	124	121	122	111	59	112	121	125	110	221
21	216	108	134	125	141	111	76	112	121	125	110	1190
22	337	140	189	146	129	110	94	113	122	124	110	1760
23	352	120	151	136	118	110	70	113	122	124	109	2490
24	304	139	131	119	114	111	71	115	122	124	109	2200
25	1710	128	125	112	112	113	74	125	123	124	108	1330
26	2500	117	116	104	110	115	78	139	123	123	108	665
27	1430	112	113	106	109	115	73	124	124	125	116	1210
28	1120	111	111	107	109	126	97	91	124	135	122	1070
29	539	110	110	106	109	84	110	119	124	151	112	1540
30	215	116	110	106	---	102	117	118	124	146	109	1320
31	122	---	111	105	---	97	---	118	---	134	107	---
TOTAL	11387	7102	3742	3358	2883	3265	3086	3521	3556	3927	3545	17178
MEAN	367	237	121	108	99.4	105	103	114	119	127	114	573
MAX	2500	1550	189	146	141	137	145	139	124	151	129	2490
MIN	64	104	105	63	62	53	59	91	77	122	107	107
AC-FT	22590	14090	7420	6660	5720	6480	6120	6980	7050	7790	7030	34070
CFSM	9.42	6.07	3.10	2.78	2.55	2.70	2.64	2.91	3.04	3.25	2.93	14.7
IN.	10.86	6.77	3.57	3.20	2.75	3.11	2.94	3.36	3.39	3.75	3.38	16.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2004, BY WATER YEAR (WY)#

	732	465	255	171	164	127	199	520	686	640	646	739
MEAN	732	465	255	171	164	127	199	520	686	640	646	739
MAX	1204	998	818	500	644	365	663	861	1179	976	1235	1287
(WY)	1938	1936	1931	1942	1935	1947	1936	1936	1936	1935	1939	1947
MIN	354	78.5	50.1	29.9	33.1	24.8	61.5	60.3	53.9	87.0	114	359
(WY)	1923	2002	1951	1956	1951	1922	1948	2002	2002	2003	2004	1941

See Period of Record; partial years used in monthly statistics
e Estimated

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1920 - 2004#	
ANNUAL TOTAL	55549		66550			
ANNUAL MEAN	152		182		451	
HIGHEST ANNUAL MEAN					715	
LOWEST ANNUAL MEAN					182	
HIGHEST DAILY MEAN	2540		2500		5500	
LOWEST DAILY MEAN	51	Sep 25	53	Oct 26	11	1936
ANNUAL SEVEN-DAY MINIMUM	63	Jan 2	68	Mar 3	12	2004
MAXIMUM PEAK FLOW			3420	Feb 11	a10700	
MAXIMUM PEAK STAGE			16.22	Sep 23	Nov 19 1993	
INSTANTANEOUS LOW FLOW			41	Sep 23	18.26	
ANNUAL RUNOFF (AC-FT)	110200		132000		b	
ANNUAL RUNOFF (CFSM)	3.90		4.66		326800	
ANNUAL RUNOFF (INCHES)	52.99		63.48		11.6	
10 PERCENT EXCEEDS	143		144		157.17	
50 PERCENT EXCEEDS	80		114		930	
90 PERCENT EXCEEDS	65		91		325	
					66	

- # See Period of Record; partial years used in monthly statistics
- a On the basis of a slope-area computation of peak flow below Campground Hydro and adding diversion values at the time of peak between Campground Hydro and gage; peak flow below Blue Lake Tailrace was computed to be 11,100 ft³/s.
- b Undetermined