

SOUTHEAST ALASKA

15070000 SWAN LAKE NEAR KETCHIKAN

LOCATION.--Lat 55°36'54", long 131°20'14", in SW¹/₄ NE¹/₄ sec. 20, T. 72 S., R. 92 E. (Ketchikan C-4 quad), Hydrologic Unit 19010102, Ketchikan Gateway Borough, on Revillagigedo Island, in Tongass National Forest, 0.7 mi upstream from mouth at Carroll Inlet, and 22 mi northeast of Ketchikan.

DRAINAGE AREA.--36.5 mi².

PERIOD OF RECORD.--September 1916 to January 1926, September 1927 to December 1933 and October 1946 to September 1959 (discharge). Published as "Swan Lake Outlet at Carroll Inlet" prior to 1946 and as "Falls Creek near Ketchikan" October 1946 to September 1959. Monthly discharges only for some periods, published in WSP 1372. October 1984 to current year (month end reservoir contents and monthly discharges).

REVISED RECORDS.--WSP 1372: Drainage area, 1918.

GAGE.--Non-recording lake-level staff gage. Datum of lake-level staff gage is at sea level. Totalizing MWH meters on the two turbines in Swan Lake Powerhouse. September 1916 to January 1926 and September 1927 to December 1933 at site 1,500 ft downstream at different datum. October 1946 to September 1959, recording gage at site 2,500 ft downstream, elevation of gage was 130 ft above sea level, from topographic map.

REMARKS.--Reservoir is formed by a concrete arch dam located at the outlet of Swan Lake; construction began in August 1980 and was completed in March 1983. Total and usable capacities below spillway crest of 330 ft are 126,200 and 82,800 acre-ft, respectively. Reservoir is used for power. Discharge released through turbines is computed from relation between discharge, head, and power generation; release flow enters directly into Carroll Inlet and is not returned to stream. Spill is computed from a theoretical relation between discharge and stage above crest of the spillway. Turbine and spillway ratings and reservoir capacity table furnished by the City of Ketchikan in 1985.

COOPERATION.--Reservoir elevations and release flow provided by the City of Ketchikan.

AVERAGE DISCHARGE.--49 years (water years 1917-25, 1928-33, 1947-59, 1985-2005), 444 ft³/s, 165.19 in/yr, 321,680 acre-ft/yr. Mean discharge for water years 1985-2005 adjusted for change in contents of Swan Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 134,920 acre-ft, October 26, 2003, elevation, 336.10 ft; minimum contents observed, 51,770 acre-ft, September 22, 1993, elevation, 278.4 ft. Maximum discharge, about 5,500 ft³/s, November 1, 1917; minimum daily discharge, 19 ft³/s, February 21 to 25, 1925. Maximum daily discharge since construction of dam, 3,680 ft³/s, November 30, 1988; no flow released several days most years.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 124,000 acre-ft, December 25, elevation, 328.50 ft; minimum contents observed, 83,060 acre-ft, October 4, elevation, 300.20 ft. Maximum release from reservoir (mean daily, not adjusted for changes in storage), 823 ft³/s, January 13; minimum release, 0 ft³/s, June 28-July 1.

MONTH END RESERVOIR ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS, IN ACRE FEET WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	ELEVATION	CONTENTS	CHANGE IN CONTENTS
Sep 30	302.7	86,670	
Oct 31	312.0	100,130	+13,460
Nov 30	320.7	112,720	+12,590
Dec 31	324.8	118,640	+5,920
Jan 31	323.4	116,620	-2,020
Feb 28	318.3	109,240	-7,380
Mar 31	321.3	113,580	+4,340
Apr 30	323.9	117,350	+3,770
May 31	322.0	114,600	-2,750
Jun 30	314.1	103,160	-11,440
Jul 31	317.7	108,380	+5,220
Aug 31	315.4	105,050	-3,330
Sep 30	326.0	120,380	+15,330
			CAL YR 2004
			WTR YR 2005
			-5,660
			+33,710

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005 MEAN VALUES

MONTH	RELEASE	SPILL	TOTAL	ADJUSTED
OCT	423	0	423	642
NOV	441	0	441	653
DEC	540	0	540	636
JAN	582	0	582	549
FEB	444	0	444	311
MAR	366	0	366	437
APR	358	0	358	421
MAY	305	0	305	260
JUN	295	0	295	103
JUL	347	0	347	432
AUG	383	0	383	329
SEP	333	0	333	591
CAL YR 2004		412	20.9	433
WTR YR 2005		401	0	401
				447