

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.--48 years (water years 1917-25, 1928-33, 1947-59, 1985-2004), 444 ft³/s, 165.20 in/yr, 321,680 acre-ft/yr. Mean discharge for water years 1985-2004 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, 134,920 acre-ft, October 26, elevation, 336.10 ft; minimum contents observed, 75,240 acre-ft, September 12, elevation, 294.80 ft. Maximum release from reservoir (mean daily, not adjusted for changes in storage), 3,673 ft³/s, October 26; minimum release, 158 ft³/s, October 3.

MONTH END RESERVOIR ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS, IN ACRE FEET WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DATE	ELEVATION	CONTENTS	CHANGE IN CONTENTS
Sep 30	326.3	120,810	
Oct 31	330.5	126,890	+6,080
Nov 30	324.7	118,500	-8,390
Dec 31	328.7	124,290	+5,790
Jan 31	327.1	121,970	-2,310
Feb 29	320.9	113,010	-8,970
Mar 31	318.1	108,950	-4,050
Apr 30	323.2	116,330	+7,370
May 31	327.4	122,410	+6,080
Jun 30	326.0	120,380	-2,030
Jul 31	315.6	105,330	-15,050
Aug 31	299.4	80,900	-24,440
Sep 30	302.7	86,670	+5,770
CAL YR 2003			-570
WTR YR 2004			-34,150

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

MONTH	RELEASE	SPILL	TOTAL	ADJUSTED
OCT	344	274	618	717
NOV	419	77	496	355
DEC	455	33	488	582
JAN	467	251	718	680
FEB	430	0	430	274
MAR	390	0	390	324
APR	333	0	333	457
MAY	319	0	319	418
JUN	333	0	333	299
JUL	387	0	387	142
AUG	456	0	456	59
SEP	428	0	428	525
CAL YR 2003	370	52	422	420
WTR YR 2004	397	52.9	450	403