

SOUTH-CENTRAL ALASKA

15239000 BRADLEY RIVER NEAR HOMER

LOCATION.--Lat 59°45'30", long 150°51'02", in SW¹/₄ SE¹/₄ NW¹/₄ sec. 8, T. 5 S., R. 9 W. (Seldovia D-3 quad), Kenai Peninsula Borough, Hydrologic Unit 19020301, about 1,300 ft downstream from Bradley Lake dam, 3.3 mi upstream from confluence with Middle Fork Bradley River, and 26 mi northeast of Homer.

DRAINAGE AREA.--About 65 mi² since July and August 1990, when additional water was diverted into the basin. Prior drainage area was about 54 mi².

PERIOD OF RECORD.--July to August 1955, October 1957 to September 1990 (discharge). October 1991 to September 2004 (discontinued) (beginning month reservoir contents and monthly discharges).

REVISED RECORDS.--WSP 2136: 1960 (M), 1965. WDR AK-77-1: 1958, 1961, 1963 (M), 1966, 1967, 1970, 1972, 1974, 1976.

GAGE.--Nonrecording gage. Datum of gage is 1,054.16 ft above sea level (levels of dam-site survey for Alaska Power Authority). Totalizing flow meters on penstocks to two turbines in Bradley powerhouse. Lake-level sensor. July 13-22, 1955, non-recording lake gage at site 1 mi upstream and July 23 to August 5, 1955, at site 3 mi upstream at different datum. Prior to November 4, 1980, and April 29 to October 5, 1986, water-stage recorder at site 500 ft upstream at different datum and November 4, 1980 to April 28, 1986, water-stage recorder 1,300 ft upstream at different datum. April 29, 1986 to September 30, 1989, water-stage recorder at present site and datum.

REMARKS.--Reservoir is formed by an earthen dam with impermeable core and concrete face at the outlet of Bradley Lake. Construction began November 1986 and was completed in April 1991. Total and usable capacities below the spillway crest of 1,180 ft are 547,500 and 284,200 acre-ft, respectively. Reservoir is used for power. Discharge released through turbines is computed using totalizing flow meters; release flow enters Kachemak Bay and is not returned to stream. Spill, dam seepage, and fish-water bypass are measured at Bradley River below Dam (15239001) gage. Reservoir capacity table furnished by the Alaska Energy Authority.

COOPERATION.--Reservoir elevations and power generation discharge provided by the Homer Electric Association, for the Alaska Energy Authority.

AVERAGE DISCHARGE.--45 years (water years 1958 to 1989, and 1992 to 2004), 463 ft³/s, 335,400 acre-ft/yr. The inflow diversions from Middle Fork Bradley River and Battle Creek into the reservoir are excluded. Flow diverted from Upper Nuka River into Upper Bradley since July 29, 1990 was not measurable and is included in the following tabulations.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 557,700 acre-ft, November 6, 2002, elevation 1182.6 ft; minimum contents observed, 246,600 acre-ft, April 23, 1997, elevation 1069.3 ft. Maximum computed discharge, 8,800 ft³/s, October 10, 1986, gage height, 10.90 ft from floodmarks, site and datum then in use. Maximum discharge, September 21-22, 1995 was probably higher, as indicated by extremes for period of record on these dates for other sites in the Bradley River basin; minimum daily, about 9.0 ft³/s, December 7, 1986, result of power tunnel construction at dam site.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 550,200 acre-ft, October 8,9, elevation 1180.7 ft; minimum contents observed, 327,100 acre-ft, April 29,30, elevation 1111.0 ft.

BEGINNING OF MONTH 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
Oct 1	1,171.9	516,800	--
Nov 1	1,173.7	523,200	+6,400
Dec 1	1,163.8	488,000	-35,200
Jan 1	1,153.6	451,800	-36,200
Feb 1	1,144.3	421,500	-30,300
Mar 1	1,134.6	391,600	-29,900
Apr 1	1,121.4	353,000	-38,600
May 1	1,111.1	327,300	-25,700
Jun 1	1,119.6	348,500	+21,200
Jul 1	1,142.4	415,600	+67,100
Aug 1	1,160.7	477,000	+61,400
Sep 1	1,167.6	501,500	+24,500
Oct 1	1,163.8	488,000	-13,500
		CAL YR 2003	-60,700
		WTR YR 2004	-28,800

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

MONTH	CHANGE IN CONTENTS	POWER GENERATION	BRADLEY RIVER BELOW DAM 15239001	MIDDLE FORK BRADLEY RIVER 15239050	BATTLE CREEK DIVERSION 15238978	BRADLEY RIVER 15239000
OCT	+104	1,077	32.1	147	9.52	1,060
NOV	-592	741	23.0	19.0	0.94	153
DEC	-589	638	42.0	7.87	0.00	83
JAN	-493	522	38.5	6.03	0.00	62
FEB	-520	577	37.3	5.21	0.00	60e
MAR	-628	618	37.4	4.75	0.00	52e
APR	-432	543	21.7	4.25	0.05	128
MAY	+345	481	0.78	34.1	7.62	785
JUN	+1,128	472	6.75	208	15.8	1,380
JUL	+999	675	63.7	193	8.86	1,540
AUG	+398	724	99.0	152	1.79	1,070
SEP	-227	731	79.0	56.7	2.25	524
CAL YR 2003	-88	697	47.4	66.5	3.81	587
WTR YR 2004	-42	650	40.2	70.1	3.92	575

e Estimated