

RESERVOIR SEDIMENT
DATA SUMMARY

Black Canyon

NAME OF RESERVOIR

78-2a

DATA SHEET NO.

DAM	1. OWNER U.S. Dept. of Int. Bur. of Rec.				2. STREAM Payette River		3. STATE Idaho			
	4. SEC. 22 TWP. 7N RANGE 1W			5. NEAREST P.O. Emmett, 5 mi. W.		6. COUNTY Gem				
	7. LAT 116° 26' "		LONG 43° 56' "		8. TOP OF DAM ELEVATION 2500		9. SPILLWAY CREST ELEV. 2497.5			
RESERVOIR	10. STORAGE ALLOCATION		11. ELEVATION TOP OF POOL		12. ORIGINAL SURFACE AREA, ACRES		13. ORIGINAL CAPACITY, ACRE-FEET		14. GROSS STORAGE, ACRE-FEET	15. DATE STORAGE BEGAN
	a. FLOOD CONTROL									1924
	b. MULTIPLE USE									
	c. POWER									
	d. WATER SUPPLY									
	e. IRRIGATION									
	f. CONSERVATION		2/ 2497.5		1100		44,650		44,850	June 1924
	g. INACTIVE		2409.3				200		200	
WATERSHED	17. LENGTH OF RESERVOIR 8.8 MILES				AV. WIDTH OF RESERVOIR 0.2 MILES					
	18. TOTAL DRAINAGE AREA 2,680 SQ. MI.				22. MEAN ANNUAL PRECIPITATION 18-60 INCHES					
	19. NET SEDIMENT CONTRIBUTING AREA 3/ 1,948 SQ. MI.				23. MEAN ANNUAL RUNOFF 18 INCHES					
	20. LENGTH 194 MILES		AV. WIDTH 14 MILES		24. MEAN ANNUAL RUNOFF 2,519,410 AC.-FT.					
	21. MAX. ELEV. 10,700		MIN. ELEV. 2500		25. ANNUAL TEMP: MEAN 44° RANGE 106° -34° F					
SURVEY DATA	26. DATE OF SURVEY	27. PERIOD YEARS	28. ACCL. YEARS	29. TYPE OF SURVEY	30. NO. OF RANGES OR CONTOUR INT.	31. SURFACE AREA, ACRES	32. CAPACITY, ACRE-FEET	33. C/I. RATIO, AC.-FT. PER AC.-FT.		
	June 1924					1,100	44,850			
	May-Aug. 1936	12	12	Range (D)	68	1,100	4/ 40,813	5/ 0.016		
	Apr.-June 1971	35	47	Range (R)	49	1,100	4/ 29,822	5/ 0.012		
	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION	35. PERIOD WATER INFLOW, ACRE-FEET			36. WATER INFL. TO DATE, AC.-FT.				
			a. MEAN ANNUAL	b. MAX. ANNUAL	c. PERIOD TOTAL	a. MEAN ANNUAL	b. TOTAL TO DATE			
	June 1924	12-32	2,124,970	3,469,900	25,499,600	2,124,970	25,499,600			
	May-Aug. 1936	13-33	2,654,650	4,149,000	92,912,700	2,519,410	118,412,300			
	Apr.-June 1971									
	26. DATE OF SURVEY	37. PERIOD CAPACITY LOSS, ACRE-FEET			38. TOTAL SED. DEPOSITS TO DATE, ACRE-FEET					
	a. PERIOD TOTAL	b. AV. ANNUAL	c. PER SQ. MI.-YEAR	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YEAR				
June 1924	4/ 4,037	336	0.139	4,037	336	0.139				
May-Aug. 1936	4/ 10,991	314	0.150	15,028	320	0.147				
Apr.-June 1971	6/ (11,390)	(325)	(0.156)	(15,427)	(328)	(0.151)				
26. DATE OF SURVEY	39. AV. DRY WGT., LBS. PER CU. FT.	40. SED. DEP., TONS PER SQ. MI.-YR.		41. STORAGE LOSS, PCT.		42. SED. INFLOW, PPM				
		a. PERIOD	b. TOTAL TO DATE	a. AV. ANN.	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE			
June 1924		303	303	0.749	9.00	253	253			
May-Aug. 1936	100	327	320	0.713	33.5	189	203			
Apr.-June 1971	100	(339)	(329)	(0.731)	(34.4)	(196)	(209)			

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION												
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION												
	Not available												

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR														
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
Apr-June 1971	1.84	7.62	11.61	19.53	16.50	14.24	13.14	12.73	11.90	0.89					

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC. FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC. FT.
1925		(Est.)	2,670,000	1936			2,330,200
1926			1,347,600	1937			1,482,900
1927			3,469,900	1938			3,224,100
1928			3,131,800	1939			1,765,200
1929			1,563,100	1940			2,433,400
1930			1,642,100	1941			2,111,900
1931			1,131,500	1942			2,511,300
1932			2,529,000	1943			3,877,200
1933			2,149,500	1944			1,589,400
1934			1,725,300	1945			2,183,400
1935			1,809,600	1946			2,935,100
				1947			2,878,900

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY

47. REMARKS AND REFERENCES

Hough, J.L., and Flaxman, E.M., "Sedimentation Survey of Black Canyon Reservoir, Emmett, Idaho, U.S. Soil Conservation Service, Department of Agriculture, SCS, SS, 19, 20 p., Washington, D. C., December 1937.

Soil Conservation Service and Bureau of Reclamation presently studying the sediment problem of the Black Canyon Reservoir, Payette Division, Boise, Idaho.

1 Elevation at the top of drum gates that were raised 0.5 feet in 1952.

2 Black Canyon Dam is used for irrigation diversions and power generation. It is kept full all the time by releases made from the upstream storages at Cascade and Deadwood Reservoirs.

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	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											

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	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC. FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC. FT.
1948			2,689,600	1961	97.54	94.49	1,948,000
1949			2,459,700	1962	97.54	58.93	2,171,800
1950			2,725,100	1963	97.54	79.33	2,741,100
1951			3,096,700	1964	97.55	79.54	2,432,900
1952	2497.53	2444.62	3,474,000	1965	97.51	84.86	3,990,600
1953	97.55	92.56	2,744,000	1966	97.54	78.91	1,986,200
1954	97.53	95.21	2,847,800	1967	97.56	79.34	2,278,500
1955	97.65	55.63	1,933,400	1968	97.52	79.43	1,958,000
1956	97.54	33.30	3,539,800	1969	97.51	80.33	3,018,600
1957	97.55	34.60	3,095,000	1970	97.50	93.71	2,957,700
1958	97.53	81.94	2,984,700	1971	97.50	63.50	4,149,000
1959	97.53	95.34	2,244,600	Note: The lower minimum elevations shown above were in connection with inspection and			
1960	97.53	94.00	2,453,100	maintenance work.			

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
Not available								

47. REMARKS AND REFERENCES

3 Weighted averages for upstream reservoirs: 1924-36, 12 years, 2416 sq. mi; 1936-71, 35 years, 2089 sq. mi.; 1924-71, 47 years, 2173 sq. mi.

4 Based on adjusted 1936 and 1971 survey values.

5 Figures have not been adjusted for the two upstream reservoirs.

6 All values in parentheses include above-crest deposits.

7 Soil Conservation Service, U.S. Department of Agriculture ran the sediment survey of May 21-August 13, 1936. The 1971 sediment survey was made by the Bureau of Reclamation, U.S. Department of Interior, with the cooperation of the Soil Conservation Service, U.S. Department of Agriculture.

48. AGENCY MAKING SURVEY BR

49. AGENCY SUPPLYING DATA 50. DATE August 24, 1973