

**12372000 FLATHEAD RIVER NEAR POLSON, MT**

Pend Oreille Basin  
Lower Flathead Subbasin

LOCATION.--Lat 47°40'49", long 114°14'45" referenced to North American Datum of 1927, in SW ¼ NE ¼ SE ¼ sec.11, T.22 N., R.21 W., Lake County, MT, Hydrologic Unit 17010212, on left bank 0.5 mi downstream from Kerr Dam, 4.0 mi west of Polson, 5.0 mi downstream from Flathead Lake, and at river mile 71.5.

DRAINAGE AREA.--7,096 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--July 1907 to current year.

REVISED RECORDS.-- Water Supply Paper (WSP) 652: 1926. WSP 752: 1932. WSP 1182: 1948. WSP 1216: Drainage area. WSP 1246: 1928, maximum discharge. WSP 1636: 1958, adjusted runoff.

GAGE.--Water-stage recorder. Elevation of gage is 2,692.70 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by The Montana Power Co.). Prior to Oct. 1, 1941, nonrecording gages or water-stage recorder at several sites near highway bridge at old site of Mitchell's ferry 6 mi downstream from present site, all at elevation 2,629.20 ft (from river-profile survey).

REMARKS.--Records are good. Flow is regulated by Flathead Lake (Kerr Dam) since April 1938 (station number 12371500) and Hungry Horse Reservoir (station number 12362000) since September 1951. Diversions occur upstream from station for irrigation of about 10,000 acres. Flathead project pumps can divert up to 12,000 acre-ft per month when required for irrigation of lands downstream from station. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--102 years, 11,470 ft<sup>3</sup>/s, 21.94 in/yr, 8,310,000 acre-ft/yr, adjusted for change in contents in Hungry Horse Reservoir and Flathead Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,800 ft<sup>3</sup>/s, May 29, 1928, gage height, 17.2 ft, site and elevation then in use; minimum probably less than 5.0 ft<sup>3</sup>/s, Apr. 13, 1938; minimum daily, 32 ft<sup>3</sup>/s, Apr. 12, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of about 21 ft, present elevation; discharge, about 110,000 ft<sup>3</sup>/s, from lake elevation-discharge study.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,300 ft<sup>3</sup>/s, June 23, gage height, 10.77 ft; minimum daily, 4,840 ft<sup>3</sup>/s, Nov. 10.

## 12372000 FLATHEAD RIVER NEAR POLSON, MT—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

| Day          | Oct     | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     | Jun       | Jul     | Aug     | Sep     |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|
| 1            | 7,550   | 6,200   | 6,670   | 11,900  | 8,580   | 9,020   | 6,360   | 12,100  | 15,000    | 14,600  | 7,540   | 5,430   |
| 2            | 7,570   | 5,950   | 7,630   | 11,900  | 8,570   | 8,790   | 6,290   | 12,000  | 17,300    | 14,600  | 7,350   | 5,420   |
| 3            | 7,600   | 5,820   | 8,700   | 11,900  | 8,570   | 8,690   | 6,370   | 12,200  | 20,000    | 14,500  | 7,040   | 5,440   |
| 4            | 7,620   | 5,440   | 9,070   | 11,900  | 8,590   | 8,580   | 6,480   | 12,300  | 20,800    | 14,000  | 7,040   | 5,460   |
| 5            | 7,560   | 5,240   | 9,160   | 11,400  | 8,350   | 8,070   | 6,470   | 12,400  | 20,000    | 13,400  | 6,960   | 5,420   |
| 6            | 7,590   | 4,900   | 9,240   | 10,400  | 8,190   | 7,820   | 6,410   | 12,600  | 19,900    | 13,400  | 6,820   | 5,400   |
| 7            | 7,580   | 4,860   | 9,210   | 9,490   | 8,170   | 7,870   | 6,250   | 12,700  | 19,900    | 12,700  | 6,580   | 5,350   |
| 8            | 7,460   | 4,860   | 9,840   | 8,790   | 8,160   | 7,890   | 6,210   | 13,000  | 20,400    | 11,700  | 6,430   | 5,310   |
| 9            | 7,490   | 4,850   | 10,300  | 8,640   | 8,100   | 7,830   | 6,260   | 13,300  | 20,700    | 11,300  | 6,430   | 5,320   |
| 10           | 7,470   | 4,840   | 10,400  | 8,590   | 8,060   | 7,560   | 6,390   | 13,300  | 19,900    | 11,000  | 6,340   | 5,310   |
| 11           | 7,470   | 4,840   | 10,400  | 8,490   | 8,060   | 7,180   | 6,440   | 13,700  | 17,900    | 11,000  | 6,080   | 5,290   |
| 12           | 7,470   | 4,850   | 10,600  | 8,520   | 8,010   | 7,050   | 6,440   | 14,500  | 16,500    | 10,600  | 5,790   | 5,250   |
| 13           | 7,500   | 4,840   | 10,800  | 8,510   | 8,000   | 7,100   | 6,430   | 14,800  | 16,400    | 9,950   | 5,780   | 5,260   |
| 14           | 7,460   | 4,980   | 10,900  | 8,510   | 8,660   | 7,120   | 6,540   | 15,300  | 17,500    | 9,710   | 5,810   | 5,280   |
| 15           | 7,510   | 5,090   | 11,000  | 8,500   | 9,730   | 7,070   | 6,770   | 15,700  | 19,700    | 10,200  | 5,820   | 5,400   |
| 16           | 7,660   | 5,200   | 11,000  | 8,540   | 10,700  | 6,780   | 6,820   | 15,700  | 20,800    | 11,000  | 5,780   | 5,500   |
| 17           | 7,660   | 5,440   | 10,900  | 8,680   | 11,000  | 6,680   | 6,730   | 15,700  | 20,900    | 11,300  | 5,920   | 5,490   |
| 18           | 7,630   | 5,860   | 11,200  | 8,730   | 11,000  | 6,800   | 6,830   | 14,800  | 22,400    | 10,800  | 6,020   | 5,490   |
| 19           | 7,640   | 6,020   | 11,700  | 8,560   | 11,000  | 6,800   | 6,780   | 13,300  | 23,400    | 10,400  | 6,000   | 5,500   |
| 20           | 7,550   | 6,110   | 11,800  | 8,570   | 11,000  | 6,690   | 6,480   | 13,400  | 23,100    | 10,300  | 5,970   | 5,520   |
| 21           | 7,460   | 6,300   | 11,800  | 8,580   | 10,900  | 6,680   | 6,960   | 13,300  | 23,200    | 10,300  | 5,970   | 5,480   |
| 22           | 7,490   | 6,230   | 11,800  | 8,560   | 10,800  | 6,620   | 7,820   | 13,300  | 21,500    | 10,400  | 5,950   | 5,350   |
| 23           | 7,430   | 6,200   | 11,800  | 8,580   | 10,400  | 6,040   | 8,700   | 13,300  | 22,900    | 10,100  | 5,970   | 5,290   |
| 24           | 7,440   | 6,260   | 11,900  | 8,640   | 9,910   | 6,160   | 9,260   | 13,300  | 24,100    | 9,180   | 5,990   | 5,290   |
| 25           | 7,470   | 6,210   | 12,000  | 8,690   | 9,700   | 6,620   | 10,300  | 13,200  | 22,400    | 8,850   | 6,000   | 5,270   |
| 26           | 7,510   | 6,210   | 12,000  | 8,680   | 9,720   | 6,740   | 10,800  | 13,200  | 19,100    | 8,820   | 5,980   | 5,260   |
| 27           | 7,550   | 6,170   | 11,900  | 8,680   | 9,600   | 6,600   | 11,400  | 13,200  | 17,300    | 8,870   | 5,970   | 5,270   |
| 28           | 7,560   | 6,120   | 12,000  | 8,660   | 9,260   | 6,320   | 12,100  | 13,400  | 15,600    | 8,650   | 5,980   | 5,290   |
| 29           | 7,380   | 6,160   | 11,900  | 8,660   | ---     | 6,370   | 12,400  | 13,600  | 14,800    | 8,450   | 5,980   | 5,330   |
| 30           | 7,410   | 6,090   | 11,900  | 8,560   | ---     | 6,540   | 12,400  | 13,600  | 14,700    | 8,470   | 5,970   | 5,310   |
| 31           | 6,880   | ---     | 11,900  | 8,580   | ---     | 6,530   | ---     | 13,600  | ---       | 8,000   | 5,670   | ---     |
| <b>Total</b> | 232,620 | 168,140 | 331,420 | 285,390 | 260,790 | 222,610 | 231,890 | 419,800 | 588,100   | 336,550 | 192,930 | 160,980 |
| <b>Mean</b>  | 7,504   | 5,605   | 10,690  | 9,206   | 9,314   | 7,181   | 7,730   | 13,540  | 19,600    | 10,860  | 6,224   | 5,366   |
| <b>Max</b>   | 7,660   | 6,300   | 12,000  | 11,900  | 11,000  | 9,020   | 12,400  | 15,700  | 24,100    | 14,600  | 7,540   | 5,520   |
| <b>Min</b>   | 6,880   | 4,840   | 6,670   | 8,490   | 8,000   | 6,040   | 6,210   | 12,000  | 14,700    | 8,000   | 5,670   | 5,250   |
| <b>Ac-ft</b> | 461,400 | 333,500 | 657,400 | 566,100 | 517,300 | 441,500 | 460,000 | 832,700 | 1,166,000 | 667,500 | 382,700 | 319,300 |
| <b>Cfs/m</b> | 1.06    | 0.79    | 1.51    | 1.30    | 1.31    | 1.01    | 1.09    | 1.91    | 2.76      | 1.53    | 0.88    | 0.76    |
| <b>In.</b>   | 1.22    | 0.88    | 1.74    | 1.50    | 1.37    | 1.17    | 1.22    | 2.20    | 3.08      | 1.76    | 1.01    | 0.84    |

**CHANGE IN CONTENTS IN ACRE-FEET, IN HUNGRY HORSE RESERVOIR AND FLATHEAD LAKE**

|          |         |          |          |          |          |          |           |         |        |         |          |
|----------|---------|----------|----------|----------|----------|----------|-----------|---------|--------|---------|----------|
| -250,000 | -10,000 | -441,000 | -323,000 | -336,000 | -197,000 | +393,000 | 1,022,000 | 735,000 | 39,000 | -95,000 | -188,000 |
|----------|---------|----------|----------|----------|----------|----------|-----------|---------|--------|---------|----------|

**ADJUSTED FOR CHANGE IN CONTENTS IN HUNGRY HORSE RESERVOIR AND FLATHEAD LAKE**

|              |         |         |         |         |         |         |         |           |           |         |         |         |
|--------------|---------|---------|---------|---------|---------|---------|---------|-----------|-----------|---------|---------|---------|
| <b>Mean</b>  | 3,438   | 5,437   | 3,519   | 3,954   | 3,264   | 3,976   | 14,330  | 30,160    | 31,950    | 11,490  | 4,679   | 2,207   |
| <b>Ac-ft</b> | 211,400 | 323,500 | 216,400 | 243,000 | 181,300 | 244,500 | 853,000 | 1,855,000 | 1,901,000 | 706,500 | 287,000 | 131,300 |
| <b>Cfs/m</b> | 0.48    | 0.77    | 0.50    | 0.56    | 0.46    | 0.56    | 2.02    | 4.25      | 4.50      | 1.62    | 0.66    | 0.31    |
| <b>In.</b>   | 0.56    | 0.85    | 0.57    | 0.64    | 0.48    | 0.65    | 2.25    | 4.90      | 5.02      | 1.87    | 0.76    | 0.35    |

12372000 FLATHEAD RIVER NEAR POLSON, MT—Continued

| OBSERVED                  |              |           |             |        |            |        |            |       |                                     |
|---------------------------|--------------|-----------|-------------|--------|------------|--------|------------|-------|-------------------------------------|
| <b>Calendar Year 2008</b> | <b>Total</b> | 4,442,480 | <b>Mean</b> | 12,140 | <b>Max</b> | 42,000 | <b>Min</b> | 4,840 | <b>Ac-ft</b> <sup>a</sup> 8,812,000 |
| <b>Water Year 2009</b>    | <b>Total</b> | 3,431,220 | <b>Mean</b> | 9,401  | <b>Max</b> | 24,100 | <b>Min</b> | 4,840 | <b>Ac-ft</b> <sup>b</sup> 6,806,000 |

| ADJUSTED                  |              |           |             |        |             |      |           |       |                        |
|---------------------------|--------------|-----------|-------------|--------|-------------|------|-----------|-------|------------------------|
| <b>Calendar Year 2008</b> | <b>Total</b> | 4,437,610 | <b>Mean</b> | 12,120 | <b>Cfsm</b> | 1.71 | <b>In</b> | 23.26 | <b>Ac-ft</b> 8,802,000 |
| <b>Water Year 2009</b>    | <b>Total</b> | 3,607,260 | <b>Mean</b> | 9,883  | <b>Cfsm</b> | 1.39 | <b>In</b> | 18.91 | <b>Ac-ft</b> 7,155,000 |

<sup>a</sup>Change in contents in Hungry Horse Reservoir and Flathead Lake was -10,000 ac-ft.

<sup>b</sup>Adjusted for change in contents in Hungry Horse Reservoir and Flathead Lake was 349,000 ac-ft.

