Water-Data Report 2009

# 12369000 FLATHEAD RIVER NEAR BIGFORK, MT

Pend Oreille Basin
Flathead Lake Subbasin

LOCATION.--Lat 48°05′33″, long 114°06′50″ referenced to North American Datum of 1927, in SW ¼ NW ¼ SW ¼ sec.23, T.27 N., R.20 W., Flathead County, MT, Hydrologic Unit 17010208, at bridge on State Highway 208, 3 mi northwest of Bigfork, and at river mile 106.5.

DRAINAGE AREA.--6,300 $mi^2$.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1969 to June 1971, March 2007 to current year; began publishing record water year 2009.

GAGE.--Accoustic-doppler velocity meter. Elevation at site is 2,895 ft referenced to the National Geodetic Vertical Datum of 1929. Formerly published as Flathead River near Holt.

REMARKS.--Records are fair except those for estimated daily discharges, which are poor. Daily discharge is heavily influenced by wind speed and direction.

**12369000 FLATHEAD RIVER NEAR BIGFORK, MT—Continued**

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

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5,100 | e4,450 | e4,000 | e4,350 | e4,380 | 4,430 | 4,210 | 9,370 | 36,700 | 12,800 | 7,340 | 5,620 |
| 2 | 4,690 | e4,270 | e4,050 | e4,420 | 4,270 | 4,280 | 4,300 | 11,400 | 33,900 | 12,300 | 6,860 | 5,450 |
| 3 | 4,650 | e4,370 | e4,230 | e4,330 | 4,290 | 4,310 | 4,350 | 12,300 | 28,900 | 11,700 | 6,810 | 5,420 |
| 4 | 4,460 | e4,330 | e4,150 | e4,330 | 4,300 | 4,350 | 4,260 | 12,500 | 26,000 | 11,200 | 6,770 | 5,070 |
| 5 | 4,460 | e4,390 | e4,150 | e4,280 | 4,310 | 4,390 | 4,290 | 13,300 | 25,200 | 10,700 | 6,520 | 4,920 |
| 6 | 4,600 | e4,370 | 4,080 | e4,410 | 4,370 | 4,200 | 4,350 | 14,600 | 25,900 | 10,500 | 6,430 | 4,850 |
| 7 | 4,380 | e4,360 | e4,460 | e4,490 | 4,310 | 4,220 | 4,460 | 15,300 | 24,800 | 10,500 | 6,180 | 4,690 |
| 8 | 4,520 | e4,300 | 4,190 | e4,180 | 4,250 | 4,570 | 4,540 | 15,900 | 21,500 | 10,100 | 6,220 | 4,820 |
| 9 | 4,360 | e4,270 | e4,420 | e4,400 | 4,210 | 4,330 | 4,700 | 15,900 | 19,300 | 9,560 | 6,390 | 4,760 |
| 10 | 4,370 | e4,380 | e4,400 | 4,140 | 4,260 | 4,280 | 5,320 | 15,800 | 17,700 | 9,370 | 6,520 | 4,870 |
| 11 | 4,280 | e4,450 | e4,240 | 4,200 | 4,240 | 4,220 | 5,890 | 16,000 | 16,100 | 8,970 | 6,240 | 4,770 |
| 12 | 4,230 | e4,500 | 4,150 | 4,200 | 4,230 | 4,200 | 6,610 | 16,300 | 15,600 | 8,640 | 5,850 | 4,640 |
| 13 | 4,250 | e5,000 | e4,390 | 4,260 | 4,290 | 4,240 | 7,420 | 16,600 | 16,300 | 8,210 | 5,670 | 4,690 |
| 14 | 4,380 | e5,720 | e4,340 | 4,160 | 4,210 | 4,330 | 8,500 | 16,600 | 17,900 | 9,510 | 5,900 | 4,900 |
| 15 | 4,360 | e4,990 | e4,520 | 4,160 | 4,260 | 4,040 | 8,420 | 16,900 | 19,200 | e10,300 | 6,300 | 4,620 |
| 16 | 4,250 | e4,400 | e4,410 | e4,320 | 4,310 | 4,280 | e7,870 | 16,800 | 19,800 | e10,300 | 6,580 | 4,780 |
| 17 | e4,390 | e4,360 | e4,350 | e4,240 | 4,340 | 4,210 | e7,510 | 16,900 | 20,000 | 10,100 | 6,570 | 4,880 |
| 18 | e4,360 | e4,160 | e4,510 | e4,230 | 4,260 | 4,240 | 7,350 | 19,100 | 19,900 | 9,660 | 6,600 | 4,350 |
| 19 | e4,390 | e4,140 | e4,340 | e4,270 | 4,290 | 4,160 | 7,890 | 25,500 | 18,800 | 9,180 | 6,480 | 4,590 |
| 20 | e4,350 | e3,980 | e4,340 | e4,240 | 4,330 | 4,210 | 8,640 | 31,300 | 17,800 | 9,040 | 6,410 | 4,270 |
| 21 | e4,390 | e4,220 | e4,320 | e4,220 | 4,300 | 4,430 | 9,910 | 29,500 | 16,700 | 8,640 | 6,350 | 4,180 |
| 22 | 4,430 | e4,060 | e4,380 | e4,330 | 4,270 | 4,520 | 12,900 | 26,000 | 16,900 | 8,330 | 6,150 | 4,430 |
| 23 | e4,340 | e4,150 | e4,290 | e4,410 | 4,300 | 4,600 | 18,300 | 24,500 | 19,500 | 8,040 | 5,920 | 4,480 |
| 24 | e4,320 | e4,080 | e4,330 | e4,520 | 4,070 | 4,360 | e16,900 | 25,700 | 17,900 | 7,840 | 5,950 | 4,610 |
| 25 | e4,480 | e4,060 | e4,390 | e4,360 | 4,410 | 4,450 | e15,300 | 28,500 | 16,400 | 7,780 | 5,830 | 4,590 |
| 26 | 4,400 | e4,140 | e4,370 | 4,300 | 4,270 | 4,260 | 14,200 | 30,400 | 16,000 | 7,690 | 5,730 | 4,570 |
| 27 | 4,410 | e4,100 | e4,450 | 4,290 | 4,350 | 4,180 | 12,700 | 30,800 | 15,600 | 7,650 | 5,620 | 4,250 |
| 28 | e4,350 | e4,030 | e4,490 | 4,380 | 4,510 | 4,380 | 11,400 | 32,500 | 14,400 | 7,620 | 5,400 | 4,170 |
| 29 | e4,350 | e4,030 | e4,460 | e4,450 | --- | 4,360 | 10,300 | 33,200 | 13,900 | 7,360 | 5,510 | 4,160 |
| 30 | e4,370 | e4,070 | e4,530 | e4,400 | --- | 4,160 | 9,330 | 33,800 | 13,300 | 7,090 | 5,110 | 3,950 |
| 31 | e4,300 | --- | e4,510 | e4,630 | --- | 4,190 | --- | 35,500 | --- | 7,110 | 5,490 | --- |
| Total | 136,970 | 130,130 | 134,240 | 133,900 | 120,190 | 133,380 | 252,120 | 658,770 | 601,900 | 287,790 | 191,700 | 140,350 |
| Mean | 4,418 | 4,338 | 4,330 | 4,319 | 4,292 | 4,303 | 8,404 | 21,250 | 20,060 | 9,284 | 6,184 | 4,678 |
| Max | 5,100 | 5,720 | 4,530 | 4,630 | 4,510 | 4,600 | 18,300 | 35,500 | 36,700 | 12,800 | 7,340 | 5,620 |
| Min | 4,230 | 3,980 | 4,000 | 4,140 | 4,070 | 4,040 | 4,210 | 9,370 | 13,300 | 7,090 | 5,110 | 3,950 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2009 - 2009, BY WATER YEAR (WY)***

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 4,418 | 4,338 | 4,330 | 4,319 | 4,292 | 4,303 | 8,404 | 21,250 | 20,060 | 9,284 | 6,184 | 4,678 |
| Max | 4,418 | 4,338 | 4,330 | 4,319 | 4,292 | 4,303 | 8,404 | 21,250 | 20,060 | 9,284 | 6,184 | 4,678 |
| (WY) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) |
| Min | 4,418 | 4,338 | 4,330 | 4,319 | 4,292 | 4,303 | 8,404 | 21,250 | 20,060 | 9,284 | 6,184 | 4,678 |
| (WY) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) | (2009) |

*July 1969 to June 1971, March 2007 to current year (began publishing record water year 2009).

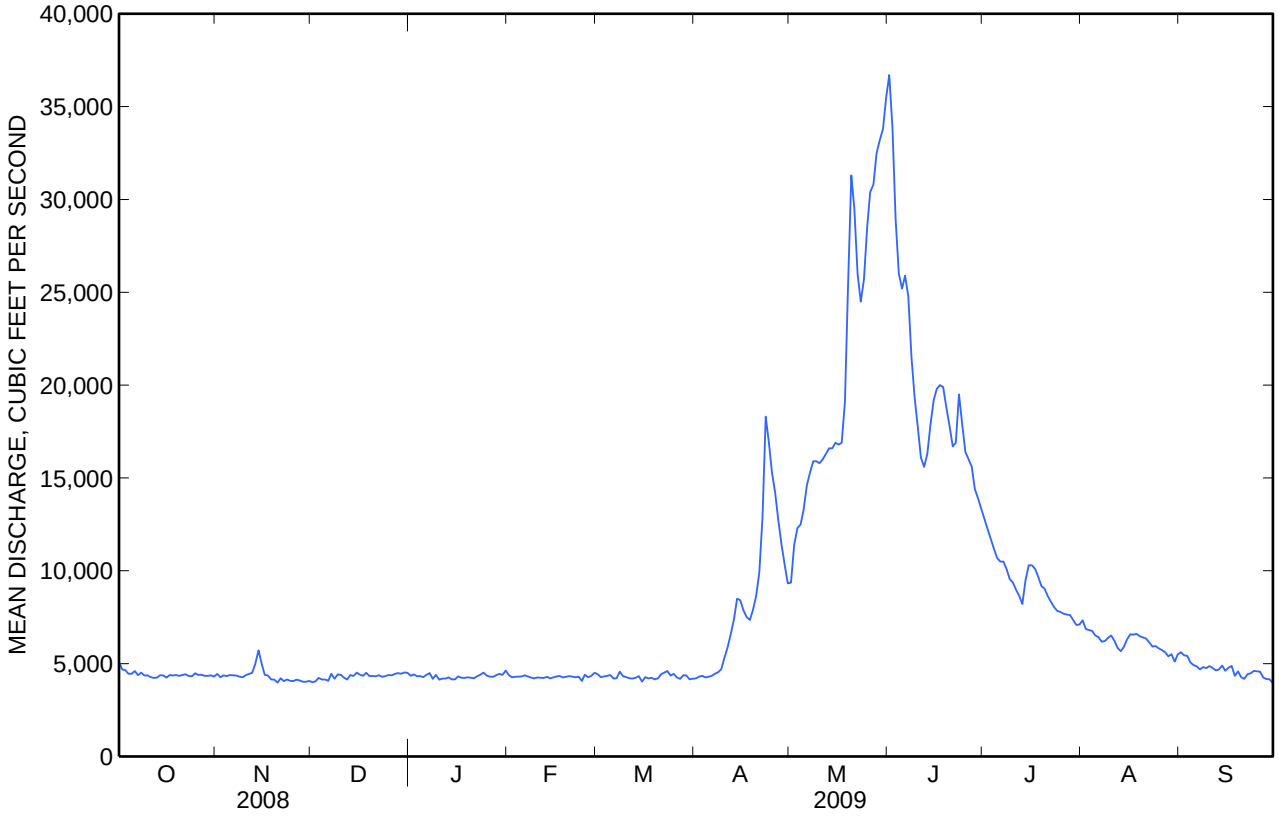
**12369000 FLATHEAD RIVER NEAR BIGFORK, MT—Continued**

**SUMMARY STATISTICS**

| | Water Year 2009* | |
|---|---|---|
| **Annual total** | 2,921,440 | |
| **Annual mean** | 8,004 | |
| **Highest daily mean** | 36,700 | Jun 1 |
| **Lowest daily mean** | 3,950 | Sep 30 |
| **Annual seven-day minimum** | 4,060 | Nov 26 |
| **Maximum peak flow** | [a]unknown | |
| **Maximum peak stage** | [a]unknown | |
| **10 percent exceeds** | 16,900 | |
| **50 percent exceeds** | 4,510 | |
| **90 percent exceeds** | 4,200 | |

*July 1969 to June 1971, March 2007 to current year (began publishing record water year 2009).

[a]Maximum peak flow and maximum peak stage not determined owing to standing wave oscillation of water created by strong winds.



**12369000 FLATHEAD RIVER NEAR BIGFORK, MT—Continued**

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1969 to June 1971, March 2007 to current year.

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**
Part 1 of 2
[Remark codes: <, less than; E, estimated.]

| Date | Time | Barometric pressure, mm Hg (00025) | Temperature, air, deg C (00020) | Instantaneous discharge, ft³/s (00061) | Dissolved oxygen, mg/L (00300) | Dissolved oxygen, percent of saturation (00301) | pH, water, unfltrd field, std units (00400) | Specific conductance, wat unf µS/cm @ 25 degC (00095) | Temperature, water, deg C (00010) | Ammonia water, fltrd, mg/L as N (00608) | Phosphorus, water, unfltrd mg/L as P (00665) | Total nitrogen, wat unf by analysis, mg/L (62855) | Suspnd. sedimnt sieve diametr percent <0.0625 mm (70331) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Feb** | | | | | | | | | | | | | |
| **12...** | 1000 | 699 | 1.0 | 4,200 | 13.9 | 110 | 8.0 | 184 | 2.0 | E.018 | E.006 | .19 | 98 |
| **May** | | | | | | | | | | | | | |
| **01...** | 0830 | 704 | 4.0 | 8,940 | 12.2 | 103 | 8.3 | 180 | 5.0 | <.020 | E.007 | .16 | 97 |
| **Jun** | | | | | | | | | | | | | |
| **03...** | 0930 | 701 | 15.0 | 29,500 | 11.5 | 107 | 8.3 | 143 | 8.5 | <.020 | .033 | .17 | 98 |
| **Jul** | | | | | | | | | | | | | |
| **15...** | 0800 | 700 | 13.5 | 11,200 | 8.5 | 92 | 8.0 | 161 | 15.0 | <.020 | E.005 | .10 | 99 |
| **Aug** | | | | | | | | | | | | | |
| **26...** | 1015 | 699 | 19.0 | 5,300 | 8.7 | 99 | 8.2 | 174 | 17.5 | <.020 | <.008 | E.08 | 98 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2008**
**TO SEPTEMBER 2009**
Part 2 of 2
[Remark codes: <, less than;
E, estimated.]

| Date | Suspended sediment concentration mg/L (80154) | Suspended sediment discharge, tons/d (80155) |
|---|---|---|
| **Feb** | | |
| **12...** | 4 | 45 |
| **May** | | |
| **01...** | 8 | 193 |
| **Jun** | | |
| **03...** | 46 | 3,660 |
| **Jul** | | |
| **15...** | 2 | 60 |
| **Aug** | | |
| **26...** | 1 | 14 |