Water-Data Report 2006

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA

Pend Oreille Basin

LOCATION.--Lat 49°00′06″, long 114°28′27″ referenced to North American Datum of 1927, Hydrologic Unit is unknown, on left bank 200 ft north of international boundary at Flathead, British Columbia, 1.6 mi upstream from Sage Creek, 6.5 mi northwest of Trail Creek, MT, and at river mile 216.6.

DRAINAGE AREA.--427 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1929 to June 1995 (no winter records prior to 1952). Prior to 1934, published as Flathead River near Trail Creek, MT. October 1970 to September 1972, published as North Fork Flathead River at Flathead British Columbia. October 1999 to current year gage re-established and operated by USGS at site on left bank in British Columbia.

GAGE.--Water-stage recorder. Elevation of gage is 3,964.95 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1949, nonrecording gage and Sept. 1, 1949 to Oct. 4, 1964, water-stage recorder was located at a site 1,200 ft upstream at an elevation 11.01 ft higher. Oct. 5, 1964, to Aug. 1, 1973, water-stage recorder at site on left bank 155 ft upstream at elevation 1.79 ft higher. Aug. 2, 1973 to June 28, 1995 operated by Water Survey Canada at site on right bank at elevation 3.21 ft. higher. October 1999 to current year, located at site 200 ft upstream from International Border in British Columbia on left bank.

REMARKS.--Records are good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter is located at the station.

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	3,050	650	292	300	254	e240	220	3,950	2,940	993	353	220
2	2,430	715	e260	291	249	e220	237	2,970	3,340	944	346	214
3	1,590	633	e255	287	243	e230	239	2,460	3,980	892	339	208
4	1,220	603	e250	282	244	e230	243	2,190	3,680	846	332	202
5	989	577	e240	275	240	e220	265	2,180	3,240	817	322	197
6	861	553	e220	288	236	e230	305	2,480	2,970	789	315	193
7	944	517	e200	316	232	231	402	2,810	2,750	792	305	191
8	1,050	504	e190	307	230	218	502	2,760	3,920	748	297	189
9	889	481	e200	295	222	216	593	2,420	3,750	707	311	187
10	796	467	e220	304	193	e195	664	2,220	3,280	684	302	184
11	735	496	e210	305	196	e180	718	2,210	2,980	684	320	181
12	684	499	e200	290	214	e170	729	2,440	2,520	650	334	179
13	664	477	e210	293	e200	e160	743	2,630	2,310	632	328	177
14	661	470	e220	309	e180	e180	786	2,770	2,460	605	305	187
15	624	434	e210	328	e170	e200	906	3,430	2,760	572	292	197
16	590	428	e200	309	e150	202	853	4,790	4,720	547	296	194
17	596	415	e180	304	e120	199	788	6,330	3,930	524	306	191
18	1,250	407	e150	294	e130	198	750	7,390	3,050	504	283	186
19	1,210	397	e130	287	e150	194	750	7,880	2,550	492	272	185
20	1,320	384	e140	287	e170	191	819	7,630	2,270	478	263	199
21	1,580	376	e200	279	e180	192	995	7,560	2,020	459	256	208
22	1,320	367	e230	272	e190	191	1,370	7,290	1,800	445	250	222
23	1,110	340	e300	270	e200	190	1,380	6,730	1,650	435	244	210
24	989	315	e330	265	e170	193	1,350	6,100	1,520	428	238	199
25	901	315	e360	260	e150	199	1,380	5,430	1,410	416	236	192
26	832	330	e400	259	e160	202	1,460	4,820	1,330	400	233	185
27	789	336	e500	257	e180	198	1,650	4,040	1,260	389	227	180
28	748	330	e450	258	e230	196	2,000	3,290	1,190	381	221	178
29	704	314	e380	257	---	197	2,560	2,940	1,120	371	216	175
30	653	296	e320	264	---	201	3,620	2,860	1,040	364	215	172
31	628	---	305	259	---	206	---	2,890	---	362	220	---
Total	32,407	13,426	7,952	8,851	5,483	6,269	29,277	127,890	77,740	18,350	8,777	5,782
Mean	1,045	448	257	286	196	202	976	4,125	2,591	592	283	193
Max	3,050	715	500	328	254	240	3,620	7,880	4,720	993	353	222
Min	590	296	130	257	120	160	220	2,180	1,040	362	215	172
Ac-ft	64,280	26,630	15,770	17,560	10,880	12,430	58,070	253,700	154,200	36,400	17,410	11,470
Cfsm	2.45	1.05	0.60	0.67	0.46	0.47	2.29	9.66	6.07	1.39	0.66	0.45
In.	2.82	1.17	0.69	0.77	0.48	0.55	2.55	11.14	6.77	1.60	0.76	0.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2006, BY WATER YEAR (WY)*

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	335	345	241	197	178	203	919	3,474	3,055	969	381	293
Max	1,285	1,261	881	672	485	685	2,957	5,584	6,691	2,418	937	785
(WY)	(1948)	(2000)	(1976)	(2005)	(2005)	(1986)	(1934)	(1948)	(1974)	(1954)	(1976)	(1951)
Min	127	124	97.0	87.3	83.3	97.7	189	1,540	824	279	188	132
(WY)	(2002)	(1937)	(2001)	(2001)	(2001)	(2001)	(1970)	(1977)	(1977)	(1977)	(1931)	(2001)

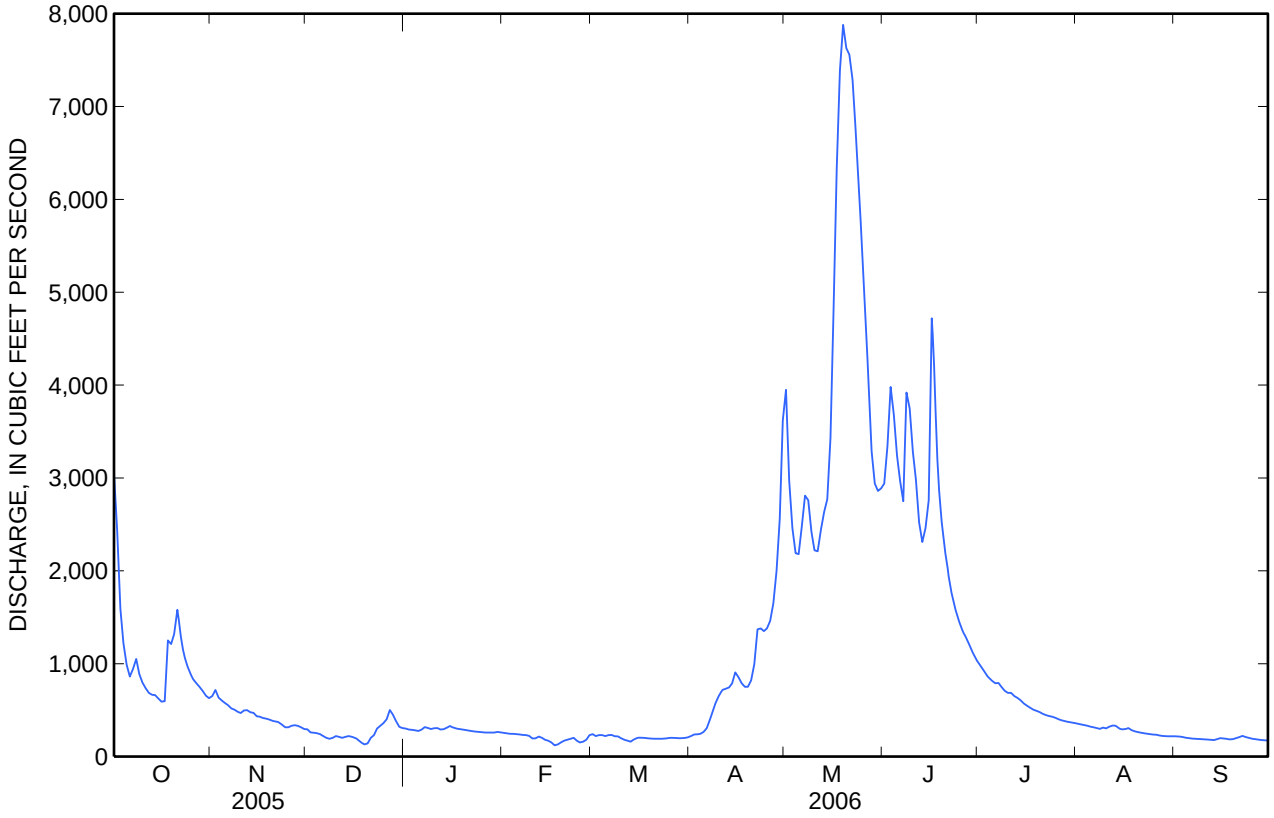
* During period of operation (no winter records prior to 1952).

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1929 – 2006*	
Annual total	329,886		342,204			
Annual mean	904		938		898	
Highest annual mean					1,376	1974
Lowest annual mean					377	2001
Highest daily mean	4,850	May 17	7,880	May 19	[a]16,800	Jun 7, 1995
Lowest daily mean	130	Dec 19	120	Feb 17	62	Jan 2, 1977
Annual seven-day minimum	173	Dec 15	153	Feb 14	71	Dec 31, 1976
Maximum peak flow			8,410	May 19	[b]16,300	Jun 8, 1964
Maximum peak stage			9.71	May 19	[c]10.00	May 31, 2002
Instantaneous low flow					[d]59	Feb 23, 2003
Annual runoff (ac-ft)	654,300		678,800		650,400	
Annual runoff (cfsm)	2.12		2.20		2.10	
Annual runoff (inches)	28.74		29.81		28.57	
10 percent exceeds	2,390		2,760		2,670	
50 percent exceeds	479		330		300	
90 percent exceeds	265		190		136	

* During period of operation (no winter records prior to 1952).
[a] Instantaneous peak flow not determined.
[b] Gage height, 8.00 ft, site and datum then in use. Peak flow was known to be higher in 1995.
[c] At present site and datum. Flood of June 7, 1995 reached a stage of 9.66 ft (site and datum then in use), which is 12.86 ft at present site and datum.
[d] Gage height, 3.95 ft.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-50, 1965, 1970, 1975-93 and August 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to September 1981.
WATER TEMPERATURE: November 1974 to September 1991.
SUSPENDED-SEDIMENT DISCHARGE: April 1975 to October 1978, August 1985 to June 1991.

REMARKS.--Several unpublished observations of specific conductance and water temperature were made during the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 309 microsiemens per centimeter (µS/cm) at 25.0°C, Jan. 12, 28, 1975, Jan. 20, 1980; minimum daily, 130 µS/cm at 25.0°C, May 20, 1976.
WATER TEMPERATURE: Maximum 19.5°C, Aug 2, 1977; minimum 0.0°C on many days during winters.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,310 mg/L, June 20,1975; minimum daily mean, 1 mg/L on many days most years.
SEDIMENT LOAD: Maximum daily, 36,100 tons, June 20, 1975; minimum daily, 0.24 ton, Feb. 1, 23, 1988.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Part 1 of 3

[Remark codes: <, less than; E, estimated.]

Date	Time	Instan-taneous dis-charge, cfs (00061)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, wat unf by anal ysis, mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)
Apr													
13...	0915	742	8.4	8.3	250	7.0	2.5	<.010	.017	E.001	.10	<.006	.029
Jun													
08...	1045	4,030	58	8.1	162	16.5	7.0	E.006	.021	<.002	.29	E.005	.26
Jul													
13...	1100	645	<2.0	8.4	247	18.0	11.0	<.010	<.016	<.002	<.06	<.006	.005
Sep													
05...	1000	197	<2.0	8.4	278	12.5	11.0	E.007	<.016	<.002	E.05	E.004	E.003

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 2 of 3

Date	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
Apr			
13...	77	24	48
Jun			
08...	57	227	2,470
Jul			
13...	84	2	3.5
Sep			
05...	87	9	4.8

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 3 of 3
[Remark codes: E, estimated.]

Date	Time	Organic carbon, water, unfltrd mg/L (00680)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, unfltrd recover-able, ug/L (01042)	Lead, water, unfltrd recover-able, ug/L (01051)	Nickel, water, unfltrd recover-able, ug/L (01067)	Zinc, water, unfltrd recover-able, ug/L (01092)
Jun									
08...	1045	6.4	1.4	.14	2.3	3.6	2.57	3.61	14
Sep									
05...	1000	.9	.35	E.03	.33	.8	.17	.74	E2