12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT

Kootenai Basin
Upper Kootenai Subbasin

LOCATION.--Lat 48°24′03″, long 115°19′11″ referenced to North American Datum of 1927, in SW ¼ SW ¼ SW ¼ sec.33, T.31 N., R.29 W., Lincoln County, MT, Hydrologic Unit 17010101, Kootenai National Forest, on right bank 0.7 mi downstream from Libby Dam, 2.8 mi upstream from Fisher River, 11 mi east of Libby, and at river mile 221.4.

DRAINAGE AREA.--8,985 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,100 ft, referenced to the National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Feb. 13, 1974, nonrecording gage at site 0.4 mi upstream at same elevation.

REMARKS.--Records are good. Flow has been completely regulated by Lake Koocanusa since Mar. 21, 1972. Diversions for irrigation include about 13,000 acres from tributaries in Canada and the United States that are upstream from the station. U.S. Army Corps of Engineers 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 Several unpublished observations of water temperature and specific conductance were made during the year.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.--39 years, 10,900 ft^3/s, 16.47 in/yr, 7,897,000 acre-ft/yr, adjusted for change in contents in Lake Koocanusa beginning Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 54,000 ft^3/s, June 18, 2006, gage height, 28.30 ft; minimum daily, 1,900 ft^3/s, Jan. 29, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35,500 ft^3/s, June 15, gage height, 25.60 ft; minimum daily, 3,910 ft^3/s, Feb. 17.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4,900	4,460	21,600	4,080	4,060	4,000	4,040	3,970	17,200	13,700	7,020	7,830
2	4,490	4,470	21,400	4,040	4,100	4,000	4,050	4,010	17,800	11,900	6,980	8,070
3	4,470	4,460	21,500	4,050	4,110	4,010	4,090	4,000	17,800	10,800	6,970	8,080
4	4,480	4,450	21,500	4,050	4,050	4,030	4,070	3,990	17,700	9,880	6,990	8,090
5	4,480	4,500	18,400	4,030	4,000	4,040	4,060	3,980	17,700	9,880	6,990	8,090
6	4,540	4,450	18,400	4,030	4,000	4,030	4,070	3,980	17,600	9,890	6,970	8,110
7	4,520	4,440	21,800	4,030	4,010	4,040	4,070	3,950	17,600	9,750	6,990	8,070
8	4,520	4,440	23,200	4,030	4,010	4,040	4,070	3,940	21,200	8,920	7,000	8,010
9	4,510	6,590	22,900	4,040	3,980	4,030	4,020	4,010	26,100	8,910	7,000	7,060
10	4,500	8,810	23,100	4,030	4,000	4,020	3,980	4,010	31,500	8,910	7,000	7,080
11	4,490	5,100	21,800	4,030	3,990	4,030	3,980	4,060	33,600	8,900	7,000	7,050
12	4,500	4,520	17,600	4,020	4,040	4,030	3,980	4,070	33,700	9,060	7,010	7,050
13	4,500	4,460	17,500	4,040	4,030	4,030	3,980	4,060	33,500	8,290	7,000	7,060
14	4,550	4,460	20,700	4,040	4,030	4,010	3,980	4,100	33,500	7,960	7,010	7,020
15	4,500	4,470	22,000	4,040	4,040	3,990	3,970	6,020	33,400	7,000	7,010	7,040
16	4,500	7,750	22,000	4,030	4,000	4,000	3,980	6,020	32,900	7,000	7,020	7,030
17	4,500	12,100	22,000	4,020	3,910	4,000	3,980	6,020	28,000	6,980	7,020	7,040
18	4,510	14,400	21,700	4,030	4,020	3,990	3,970	6,000	24,800	6,990	7,030	7,050
19	4,500	16,800	17,800	4,030	4,020	4,010	4,010	6,000	22,400	6,960	7,040	7,040
20	4,480	16,900	17,900	4,030	4,020	4,030	4,040	5,990	21,800	6,970	7,050	7,840
21	4,500	13,000	20,700	4,030	4,030	4,060	4,060	9,200	20,500	6,940	7,040	9,070
22	4,500	9,210	20,700	4,040	4,020	4,060	4,060	12,500	20,100	6,950	7,060	9,050
23	4,460	8,750	20,800	4,050	4,000	4,030	4,040	14,200	19,900	6,950	7,050	8,980
24	4,460	4,980	13,500	4,030	4,020	4,050	4,030	14,400	19,900	6,960	7,050	8,980
25	4,450	4,570	13,400	4,020	4,020	4,040	4,010	14,400	18,300	6,940	7,050	8,980
26	4,470	4,550	13,400	4,050	4,020	4,020	3,990	14,400	18,000	6,940	7,040	9,020
27	4,480	4,540	13,400	4,050	4,000	4,030	4,000	14,400	17,100	6,930	7,070	9,040
28	4,480	4,550	13,300	4,060	4,000	4,050	4,000	14,400	16,300	6,930	7,070	9,060
29	4,460	8,170	13,100	4,050	---	4,020	3,990	14,400	15,900	7,050	7,010	8,880
30	4,440	16,400	8,650	4,060	---	4,010	4,010	14,400	14,700	7,020	6,980	8,870
31	4,460	---	5,050	4,060	---	4,040	---	14,400	---	7,020	6,990	---
Total	139,600	220,750	570,800	125,220	112,530	124,770	120,580	243,280	680,500	255,280	217,510	239,640
Mean	4,503	7,358	18,410	4,039	4,019	4,025	4,019	7,848	22,680	8,235	7,016	7,988
Max	4,900	16,900	23,200	4,080	4,110	4,060	4,090	14,400	33,700	13,700	7,070	9,070
Min	4,440	4,440	5,050	4,020	3,910	3,990	3,970	3,940	14,700	6,930	6,970	7,020
Ac-ft	276,900	437,900	1,132,000	248,400	223,200	247,500	239,200	482,500	1,350,000	506,300	431,400	475,300
Cfsm	0.50	0.82	2.05	0.45	0.45	0.45	0.45	0.87	2.52	0.92	0.78	0.89
In.	0.58	0.91	2.36	0.52	0.47	0.52	0.50	1.01	2.82	1.06	0.90	0.99

ADJUSTED FOR CHANGE IN CONTENTS IN LAKE KOOCANUSA

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	3,902	3,544	2,944	2,641	2,362	2,708	6,205	15,180	30,850	15,210	7,114	7,467
Cfsm	0.43	0.39	0.33	0.29	0.26	0.30	0.69	1.69	3.43	1.69	0.79	0.83
In.	0.50	0.44	0.38	0.34	0.27	0.35	0.77	1.95	3.83	1.95	0.91	0.93
Ac-ft	239,900	210,900	181,000	162,400	131,200	166,500	369,200	933,500	1,836,000	935,300	437,400	444,300

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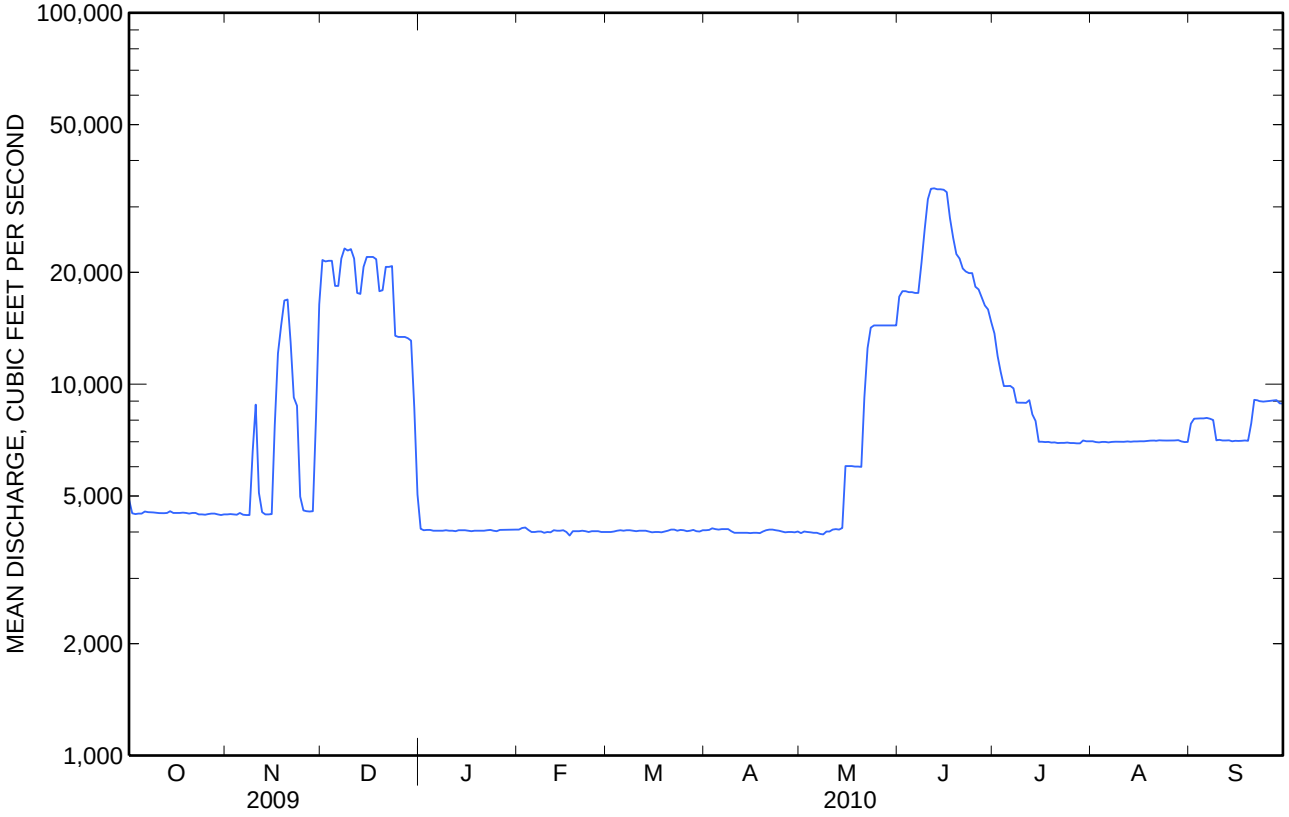
					OBSERVED					
Calendar Year 2009	**Total**	2,934,250	**Mean**	8,039	**Max**	27,200	**Min**	3,440	**Ac-ft**	5,820,000
Water Year 2010	**Total**	3,050,460	**Mean**	8,357	**Max**	33,700	**Min**	3,910	**Ac-ft**	6,051,000

					ADJUSTED					
Calendar Year 2009	**Total**	2,933,199	**Mean**	8,036	**Cfsm**	0.89	**In**	12.14	**Ac-ft**	5,818,000
Water Year 2010	**Total**	3,049,660	**Mean**	8,355	**Cfsm**	0.93	**In**	12.62	**Ac-ft**	6,049,000