

Water-Data Report 2007

06295000 YELLOWSTONE RIVER AT FORSYTH, MT

Lower Yellowstone Basin
Lower Yellowstone-Sunday Subbasin

LOCATION.--Lat 46°15'58", long 106°41'24" referenced to North American Datum of 1927, in NE ¼ NW ¼ NW ¼ sec.23, T.6 N., R.40 E., Rosebud County, MT, Hydrologic Unit 10100001, on right bank 0.3 mi downstream from U.S. Highway 12 bridge, at Forsyth, and at river mile 238.2.

DRAINAGE AREA.--40,146 mi² of which 691 mi² probably is noncontributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 16, 1921 to September 30, 1923 (no winter records), October 1977 to current year. Miscellaneous discharge measurements were made in 1974 to 1976 and are available in files at the USGS Water Science Center located in Helena, Montana.

REVISED RECORDS.-- Wate Data Report MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,504.62 ft, referenced to the National Geodetic Vertical Datum of 1929, from nearby elevation determined by City of Forsyth. July 1921 to March 1922, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at different elevation. March 1922 to September 1923, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at elevation 2 ft higher.

REMARKS.--Records are good except those for estimated daily discharges, which are poor. Diversions for irrigation include about 838,000 acres upstream from station. Flow is regulated to some extent by Bighorn Lake, usable capacity, 1,312,000 acre-ft, on Bighorn River. Small diversion dam is located about 4,200 ft 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 Several unpublished observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1918 reached a stage of about 20 ft, elevation used in 1921, information from local residents.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

[e, estimated; &, affected value]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4,770	5,700	e4,600	e4,600	e4,500	e4,900	6,070	10,900	17,700	9,050	4,610	3,470
2	4,750	5,550	e4,600	e4,700	e4,400	e4,800	6,190	15,800	18,700	8,620	4,330	3,450
3	4,700	5,330	e4,500	e5,100	e4,500	e4,600	7,140	17,800	18,300	8,210	4,120	3,450
4	4,780	5,260	e4,600	e5,100	e4,700	e5,000	7,410	19,400	17,900	7,720	4,090	3,430
5	4,940	5,400	e4,700	e5,000	e5,000	e5,200	6,840	20,900	19,000	7,170	4,150	3,440
6	4,950	5,650	e4,800	e5,000	e4,900	e5,400	6,430	19,700	19,900	6,770	4,130	3,460
7	5,100	5,710	e4,900	e5,000	e4,800	e5,600	6,210	17,100	22,100	6,430	4,070	3,460
8	5,240	5,640	e5,100	e5,000	e4,800	e5,600	6,050	14,600	30,700	6,300	3,970	3,600
9	5,480	5,600	e5,400	e5,000	e4,800	e5,600	5,910	13,100	34,200	7,080	3,940	3,750
10	5,920	5,810	e5,500	e5,000	e4,900	e6,000	5,870	12,800	27,600	6,550	3,810	4,010
11	6,780	6,970	e5,500	e4,600	e4,900	e6,400	6,090	15,300	25,100	6,050	3,670	4,100
12	6,670	7,220	e5,400	e4,200	e4,800	6,820	6,550	18,800	23,300	5,600	3,650	4,160
13	6,560	6,690	e5,300	e4,200	e4,700	6,280	6,900	21,100	22,800	5,360	3,640	4,100
14	6,470	6,370	e5,200	e4,200	e4,700	6,270	6,480	23,200	22,200	5,140	3,570	4,100
15	6,190	6,180	e5,200	e4,300	e4,500	6,150	6,130	26,100	21,100	4,970	3,520	3,980
16	6,030	6,020	e5,200	e4,500	e4,500	6,520	5,950	27,300	20,800	4,820	3,450	4,000
17	6,090	5,900	e5,200	e4,400	e4,800	6,160	6,060	24,100	21,500	4,820	3,470	4,030
18	6,710	5,750	e5,000	e4,400	e5,000	5,730	6,280	22,100	21,300	4,540	3,510	4,000
19	6,960	5,740	e4,800	e4,500	e5,200	5,370	6,560	21,600	21,300	4,390	3,540	3,980
20	6,400	5,770	e4,600	e4,600	e5,200	5,250	7,460	21,300	19,200	4,390	3,610	4,070
21	6,550	5,660	e4,600	e4,500	e5,200	5,250	8,730	21,500	16,400	4,150	3,620	4,130
22	6,710	5,600	e4,700	e4,700	e5,100	5,300	8,910	22,600	15,300	4,000	3,640	4,190
23	6,850	5,580	e4,700	e4,900	e5,100	5,350	7,770	24,900	15,100	3,910	3,500	4,140
24	6,530	5,530	e4,700	e5,000	e5,100	5,440	7,380	23,500	14,800	3,910	3,410	4,110
25	6,290	5,500	e4,600	e5,000	e5,100	5,330	7,120	20,400	14,500	3,810	3,470	4,430
26	6,080	5,570	e4,600	e4,900	e5,100	5,230	7,230	18,400	13,600	3,890	3,490	4,290
27	6,040	e5,000	e4,700	e4,800	e5,000	5,150	7,340	16,500	12,600	3,990	3,500	4,270
28	6,020	e5,100	e4,900	e4,900	e5,000	5,170	7,670	14,600	11,500	4,570	3,490	4,390
29	5,920	e5,100	e4,900	e4,800	---	5,660	8,470	13,800	10,500	4,970	3,370	4,430
30	5,780	e5,000	e4,800	e4,700	---	6,220	8,640	15,900	9,650	5,030	3,340	4,280
31	5,720	---	e4,800	e4,700	---	6,310	---	17,800	---	5,000	3,400	---
Total	183,980	171,900	152,100	146,300	136,300	174,060	207,840	592,900	578,650	171,210	115,080	118,700
Mean	5,935	5,730	4,906	4,719	4,868	5,615	6,928	19,130	19,290	5,523	3,712	3,957
Max	6,960	7,220	5,500	5,100	5,200	6,820	8,910	27,300	34,200	9,050	4,610	4,430
Min	4,700	5,000	4,500	4,200	4,400	4,600	5,870	10,900	9,650	3,810	3,340	3,430
Ac-ft	364,900	341,000	301,700	290,200	270,400	345,200	412,300	1,176,000	1,148,000	339,600	228,300	235,400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7,142	6,725	5,883	5,511	5,841	6,746	7,431	16,920	28,370	16,810	7,495	6,505
Max	10,720	10,490	8,927	7,796	10,210	15,120	13,270	27,850	63,710	34,430	17,570	11,320
(WY)	(1983)	(1983)	(1983)	(1983)	(1997)	(1979)	(1997)	(1997)	(1997)	(1982)	(1997)	(1978)
Min	3,519	4,186	3,624	3,242	3,511	3,223	4,220	7,570	14,690	5,523	2,742	2,723
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1981)	(2004)	(1987)	(2007)	(2001)	(2001)

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SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1978 - 2007	
Annual total	2,911,170		2,749,020			
Annual mean	7,976		7,532		10,120	
Highest annual mean					17,590	1997
Lowest annual mean					6,026	2001
Highest daily mean	34,200	Jun 11	34,200	Jun 9	97,000	May 21, 1978
Lowest daily mean	2,860	Sep 12	3,340	Aug 30	1,400	Nov 23, 1977
Annual seven-day minimum	2,910	Sep 7	3,420	Aug 29	2,030	Aug 26, 2001
Maximum peak flow			37,300	Jun 9	106,000	May 21, 1978
Maximum peak stage			7.22	Jun 9	14.53	May 21, 1978
Annual runoff (ac-ft)	5,774,000		5,453,000		7,335,000	
10 percent exceeds	16,400		18,100		21,200	
50 percent exceeds	5,500		5,230		6,960	
90 percent exceeds	3,810		3,960		4,200	

