Water-Data Report 2011

01081500 MERRIMACK RIVER AT FRANKLIN JUNCTION, NH

Merrimack Basin
Merrimack Subbasin

LOCATION.--Lat 43°25′22″, long 71°39′12″ referenced to North American Datum of 1927, Merrimack County, NH, Hydrologic Unit 01070002, on right bank at Franklin Junction, 1 mi downstream from confluence of Pemigewasset and Winnipesaukee Rivers, 1.5 mi south of Post Office in Franklin, and 3.5 mi southwest of southwest of Town Hall in Tilton.

DRAINAGE AREA.--1,507 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge: August 1903 to December 1903, April 1904 to September 1904, November 1904, April 1905 to September 1978, October 2001 to current year. Partial-record station: October 1978 to September 2001. Peak streamflow: Water years 1904 to 1978, 1983 to current year. Miscellaneous discharge measurements: Water years 1979 to 1984, 1990 to 2001. Water-quality records: Water years 1954-55.

REVISED RECORDS.--WSP 401: 1914. WSP 641: 1923(M). WSP 756: Drainage area. WSP 781: 1928(M). WSP 1231: 1911-13, 1916-17(M),1919(M), 1922(M).

GAGE.--Water-stage recorder. Datum of gage is 251.08 ft above National Geodetic Vertical Datum of 1929. Prior to September 13, 1923, nonrecording gage at bridge 350 ft downstream at same datum.

COOPERATION.--National Streamflow Information Program and the U.S. Army Corps of Engineers, New England District.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by power plants, by Franklin Falls Reservoir (4 mi upstream) since 1942, and by Squam, Little Squam, Newfound, Winnipesaukee, Winnisquam, Wentworth, Merrymeeting, and other lakes and reservoirs in the Merrimack River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 83,000 ft^3/s, March 19, 1936, gage height 36.4 ft, from floodmarks, from rating curve extended above 30,000 ft^3/s on basis of slope-area measurement and computation of flow over dam at gage height 29.5 ft and velocity-area study; minimum daily, 150 ft^3/s, October 4, 1903. Maximum discharge since construction of Franklin Falls Reservoir in 1942, 22,400 ft^3/s, April 4, 1951, gage height 16.34 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,300 ft^3/s, Apr. 14, gage height, 14.06 ft; minimum daily discharge, 628 ft^3/s, July 23.

Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2011: U.S. Geological Survey Water-Data Report WDR-US-2011, site 01081500, accessed at http://wdr.water.usgs.gov/wy2011/pdfs/01081500.2011.pdf

01081500 MERRIMACK RIVER AT FRANKLIN JUNCTION, NH—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES
[e, estimated]

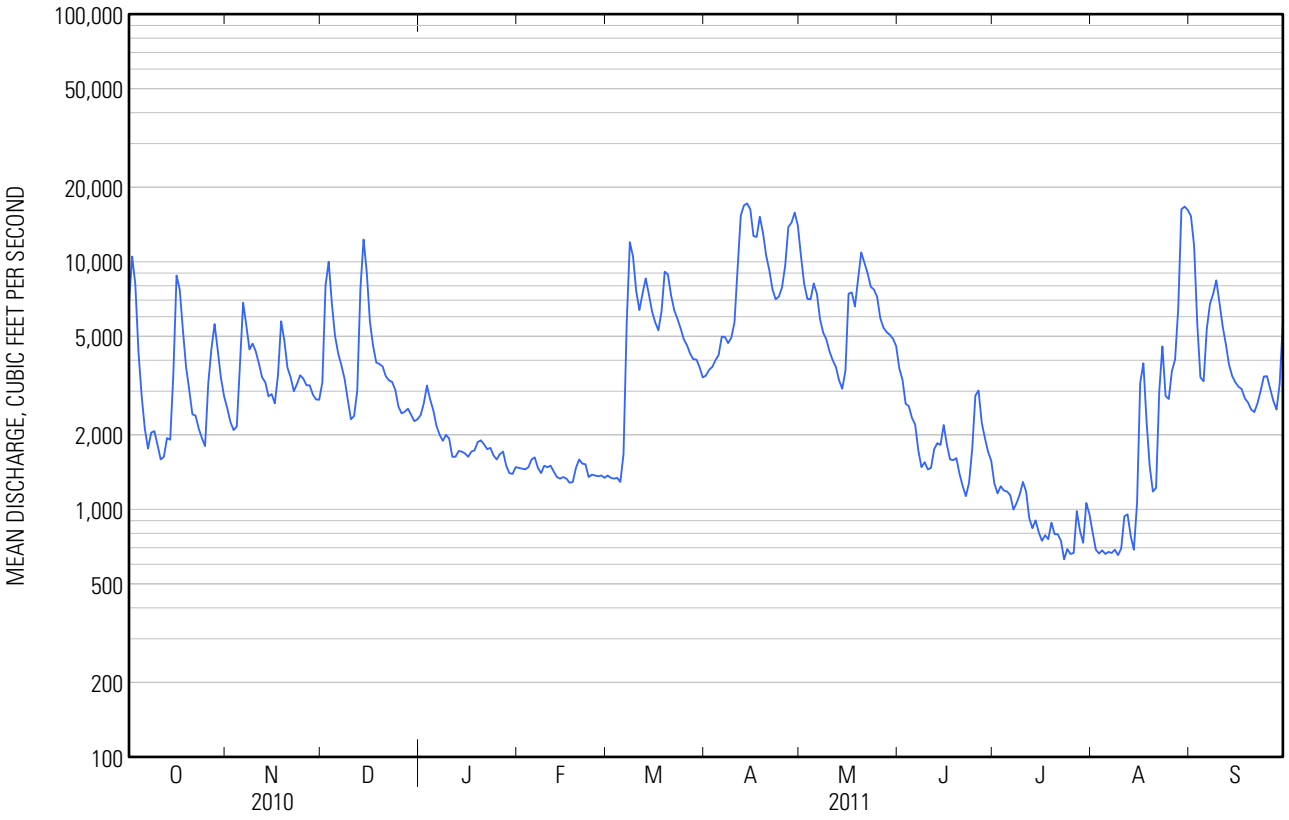
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6,800	2,560	3,260	2,400	e1,470	1,370	3,470	10,500	3,710	1,270	806	15,300
2	10,500	2,250	8,030	2,680	e1,460	1,340	3,660	8,130	3,340	1,160	687	11,600
3	8,080	2,090	10,000	3,160	e1,450	1,330	3,760	7,080	2,670	1,240	663	5,600
4	4,290	2,160	6,770	2,780	e1,480	1,340	4,000	7,050	2,610	1,190	683	3,410
5	2,870	3,840	5,010	2,510	1,590	1,290	4,200	8,170	2,340	1,180	660	3,290
6	2,110	6,830	4,260	2,170	1,620	1,670	4,980	7,440	2,200	e1,140	673	5,350
7	1,760	5,550	3,820	2,000	1,470	5,600	4,970	5,860	1,730	998	666	6,750
8	2,040	4,430	3,370	1,890	1,400	12,000	4,690	5,170	1,480	1,060	687	7,410
9	2,070	4,670	2,780	2,000	1,500	10,500	4,940	4,850	1,550	1,150	653	8,410
10	1,820	4,340	2,310	1,930	e1,480	7,620	5,680	4,340	1,450	1,290	694	6,830
11	1,590	3,870	2,380	1,630	1,500	6,380	9,450	4,000	1,470	1,180	937	5,500
12	1,630	3,410	3,010	1,630	e1,420	7,440	15,400	3,760	1,750	921	954	4,660
13	1,940	3,260	7,770	1,720	1,350	8,560	16,900	3,320	1,850	839	781	3,850
14	1,910	2,860	12,300	1,710	1,330	7,390	17,200	3,070	1,820	902	686	3,460
15	3,550	2,920	9,090	1,680	1,350	6,300	16,300	3,620	2,190	807	1,060	3,260
16	8,800	2,680	5,730	1,630	e1,330	5,690	12,700	7,430	1,830	746	3,240	3,130
17	7,730	3,480	4,580	1,710	1,280	5,290	12,600	7,520	1,590	786	3,890	3,060
18	5,310	5,750	3,920	e1,730	1,290	6,300	15,200	6,600	1,580	757	2,270	2,810
19	3,760	4,810	3,860	1,870	1,470	9,120	13,100	8,510	1,610	883	1,490	2,700
20	3,040	3,730	3,780	1,900	e1,590	8,880	10,600	10,900	1,390	794	1,180	2,530
21	2,420	3,410	3,450	1,830	1,530	7,330	9,240	9,910	1,240	793	1,220	2,470
22	2,390	3,000	3,320	1,750	e1,520	6,370	7,730	8,980	1,130	746	2,990	2,680
23	2,120	3,210	3,270	1,770	1,350	5,890	7,050	7,930	1,280	628	4,550	3,010
24	1,940	3,480	3,040	e1,650	1,380	5,390	7,230	7,720	1,750	691	2,870	3,440
25	1,800	3,370	2,600	e1,590	1,370	4,870	7,880	7,220	2,880	660	2,790	3,450
26	3,220	3,170	2,440	e1,670	e1,360	4,610	9,640	5,920	3,020	666	3,620	3,070
27	4,450	3,170	2,480	1,710	1,370	4,260	13,800	5,420	2,240	984	4,030	2,740
28	5,600	2,910	2,550	1,500	1,340	4,040	14,400	5,200	1,940	819	6,490	2,530
29	4,390	2,780	2,410	1,400	---	4,030	15,800	5,070	1,710	733	16,300	3,220
30	3,400	2,770	2,270	1,390	---	3,750	14,000	4,890	1,570	1,060	16,700	5,750
31	2,860	---	2,310	1,480	---	3,410	---	4,570	---	954	16,200	---
Total	116,190	106,760	136,170	58,470	40,050	169,360	290,570	200,150	58,920	29,027	101,120	141,270
Mean	3,748	3,559	4,393	1,886	1,430	5,463	9,686	6,456	1,964	936	3,262	4,709
Max	10,500	6,830	12,300	3,160	1,620	12,000	17,200	10,900	3,710	1,290	16,700	15,300
Min	1,590	2,090	2,270	1,390	1,280	1,290	3,470	3,070	1,130	628	653	2,470
Cfsm	2.49	2.36	2.91	1.25	0.95	3.63	6.43	4.28	1.30	0.62	2.16	3.12
In.	2.87	2.64	3.36	1.44	0.99	4.18	7.17	4.94	1.45	0.72	2.50	3.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,962	2,551	2,582	2,217	2,071	3,487	7,123	4,999	2,573	1,638	1,410	1,490
Max	9,302	7,416	7,193	5,975	4,834	15,650	12,960	9,898	7,709	7,938	5,717	6,810
(WY)	(2006)	(1928)	(2004)	(2006)	(1970)	(1936)	(1969)	(1937)	(1922)	(1973)	(2008)	(1938)
Min	545	806	759	637	754	921	3,100	1,665	947	713	517	523
(WY)	(1962)	(1953)	(1948)	(2002)	(1940)	(1940)	(2006)	(1941)	(1964)	(1953)	(1965)	(2002)

01081500 MERRIMACK RIVER AT FRANKLIN JUNCTION, NH—Continued

SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1903 - 2011	
Annual total	1,106,455		1,448,057			
Annual mean	3,031		3,967		2,844	
Highest annual mean					4,872	2006
Lowest annual mean					1,381	1965
Highest daily mean	15,400	Mar 31	17,200	Apr 14	73,700	Mar 19, 1936
Lowest daily mean	612	Sep 26	628	Jul 23	150	Oct 4, 1903
Annual seven-day minimum	655	Sep 6	669	Aug 3	406	Oct 8, 1964
Maximum peak flow			18,300	Apr 14	[a]83,000	Mar 19, 1936
Maximum peak stage			14.06	Apr 14	[b]36.40	Mar 19, 1936
Annual runoff (cfsm)	2.01		2.63		1.89	
Annual runoff (inches)	27.31		35.75		25.64	
10 percent exceeds	6,750		8,450		6,030	
50 percent exceeds	2,160		2,870		1,820	
90 percent exceeds	776		1,060		870	

[a] From rating extended above 30,000 ft³/s as explained above.
[b] From floodmarks.