Water-Data Report 2011

01177000 CHICOPEE RIVER AT INDIAN ORCHARD, MA

CONNECTICUT RIVER BASIN
CHICOPEE RIVER SUBBASIN

LOCATION.--Lat 42°09′38″, long 72°30′52″ referenced to North American Datum of 1927, Hampden County, MA, Hydrologic Unit 01080204, on left bank 1,000 ft downstream from West Street Bridge at Indian Orchard, 1.1 mi upstream from Fuller Brook, and 7.2 mi upstream from mouth.

DRAINAGE AREA.--689 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge: August 1928 to current year. Published as "at Bircham Bend" prior to November 1938. Water-quality records: Water years 1953, 1957, 1994.

REVISED RECORDS.--WSP 1231: 1934. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is 125 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 1, 1938, water-stage recorder at site 1.8 mi downstream at different datum.

COOPERATION.--Massachusetts Department of Conservation and Recreation, Office of Water Resources; and Massachusetts Department of Environmental Protection, Office of Watershed Management.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversion since 1941 from 186 mi^2 in Swift River basin and at times since 1931 from 97 mi^2 in Ware River basin for Boston metropolitan district; since 1950, for Chicopee; since 1952, for South Hadley; at times since 1966 for Worcester; at times since 1955 from 6.5 mi^2 in Ware River basin for Fitchburg. Diversion from Ludlow Reservoir for Springfield and, prior to 1952, for Chicopee. Flow regulated by powerplants upstream, by Quabbin Reservoir 21 mi upstream on Swift River since 1939, by Barre Falls Reservoir on Ware River since 1958, by Conant Brook Reservoir since 1966, and by smaller reservoirs.

01177000 CHICOPEE RIVER AT INDIAN ORCHARD, MA—Continued

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

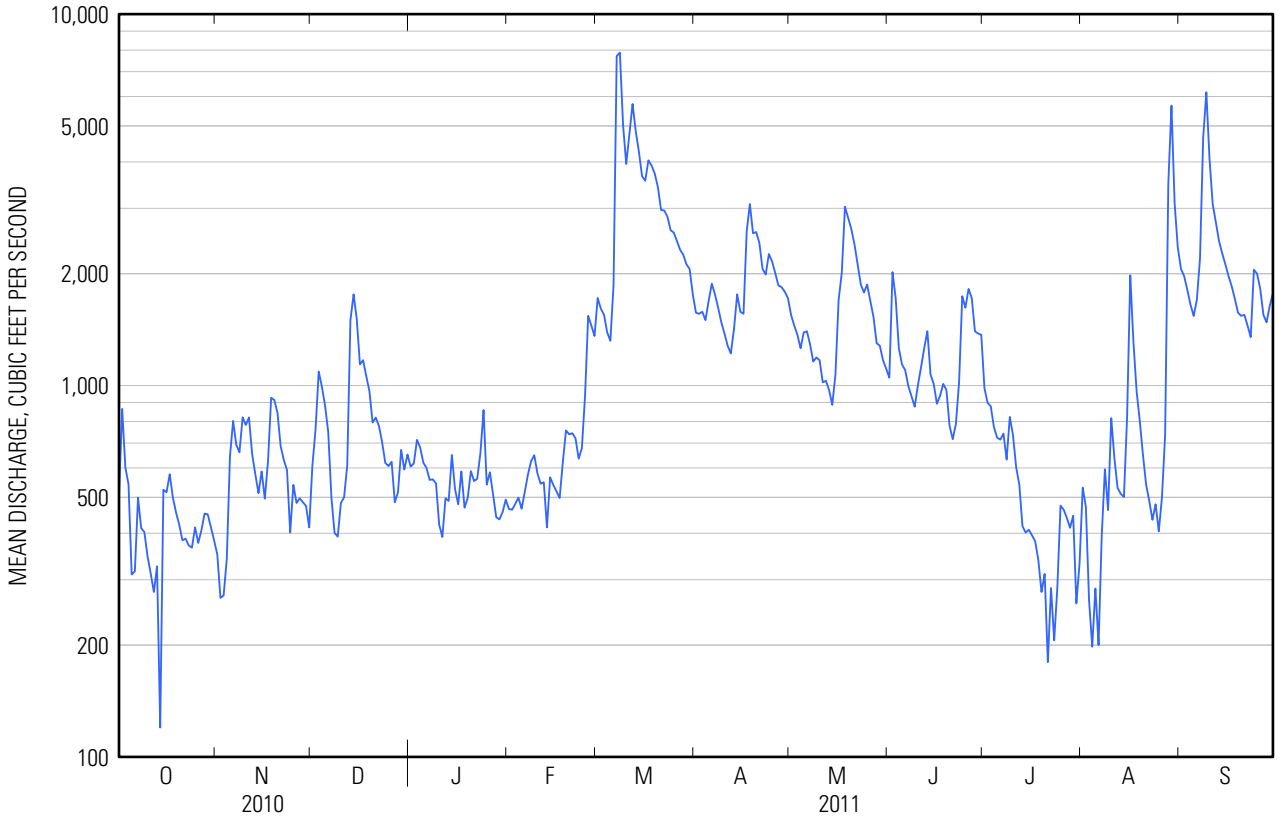
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	502	351	608	605	465	1,720	1,570	1,550	1,050	984	531	2,060
2	865	268	762	617	463	1,610	1,560	1,450	2,020	898	471	1,970
3	602	272	1,090	714	480	1,550	1,580	1,370	1,720	879	264	1,810
4	542	341	993	681	499	1,390	1,500	1,260	1,260	772	198	1,650
5	310	645	883	620	466	1,320	1,690	1,390	1,140	724	284	1,540
6	316	803	e750	600	517	1,860	1,880	1,400	1,100	715	200	1,700
7	499	692	e500	557	576	7,710	1,760	1,290	996	742	394	2,200
8	413	661	e401	559	626	7,880	1,620	1,160	935	632	595	4,650
9	403	821	e392	545	649	5,040	1,480	1,190	877	823	462	6,160
10	347	783	483	422	580	3,950	1,380	1,170	1,000	736	817	4,070
11	312	820	500	391	544	4,750	1,280	1,020	1,120	603	637	3,080
12	278	654	610	497	549	5,730	1,220	1,030	1,260	541	530	2,750
13	326	577	1,500	489	415	4,840	1,420	972	1,400	418	511	2,450
14	120	513	1,760	650	566	4,260	1,760	887	1,070	402	501	2,270
15	524	587	1,510	526	540	3,660	1,580	1,070	1,010	409	823	2,120
16	516	496	1,140	479	519	3,560	1,560	1,700	893	395	1,980	1,970
17	577	625	1,170	587	498	4,040	2,600	2,010	938	381	1,310	1,850
18	499	927	1,060	469	621	3,910	3,080	3,030	1,010	339	966	1,710
19	455	914	965	498	757	3,720	2,570	2,830	973	278	803	1,570
20	422	843	795	588	739	3,420	2,590	2,640	779	311	651	1,540
21	383	686	820	553	744	2,970	2,420	2,400	717	180	541	1,550
22	387	630	778	561	721	2,960	2,060	2,120	788	285	489	1,450
23	371	592	704	657	636	2,850	1,990	1,870	1,020	206	435	1,350
24	366	402	619	859	677	2,620	2,260	1,780	1,740	286	479	2,050
25	415	540	607	541	932	2,580	2,160	1,870	1,620	475	405	2,000
26	377	483	623	584	1,540	2,450	2,010	1,690	1,820	463	500	1,820
27	408	497	485	509	1,450	2,320	1,860	1,530	1,720	440	737	1,550
28	452	485	515	442	1,360	2,250	1,840	1,300	1,400	414	3,490	1,480
29	450	474	671	436	---	2,120	1,790	1,280	1,380	446	5,670	1,640
30	415	415	594	456	---	2,060	1,720	1,170	1,370	259	3,090	1,770
31	383	---	652	493	---	1,760	---	1,110	---	332	2,350	---
Total	13,235	17,797	24,940	17,185	19,129	102,860	55,790	48,539	36,126	15,768	31,114	65,780
Mean	427	593	805	554	683	3,318	1,860	1,566	1,204	509	1,004	2,193
Max	865	927	1,760	859	1,540	7,880	3,080	3,030	2,020	984	5,670	6,160
Min	120	268	392	391	415	1,320	1,220	887	717	180	198	1,350
Cfsm	0.62	0.86	1.17	0.80	0.99	4.82	2.70	2.27	1.75	0.74	1.46	3.18
In.	0.71	0.96	1.35	0.93	1.03	5.55	3.01	2.62	1.95	0.85	1.68	3.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	549	740	926	1,002	1,030	1,622	1,840	1,201	834	505	466	500
Max	2,543	3,022	3,207	2,447	2,845	5,993	4,117	2,680	3,519	2,458	3,719	5,474
(WY)	(2006)	(1956)	(1997)	(1937)	(2008)	(1936)	(1933)	(1953)	(1984)	(1938)	(1955)	(1938)
Min	131	154	241	191	332	619	636	471	229	159	176	160
(WY)	(1942)	(1966)	(1966)	(1981)	(1931)	(2002)	(1966)	(1965)	(1964)	(1966)	(1949)	(1953)

01177000 CHICOPEE RIVER AT INDIAN ORCHARD, MA—Continued

SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1928 - 2011	
Annual total	345,177		448,263			
Annual mean	946		1,228		933	
Highest annual mean					1,952	1938
Lowest annual mean					376	1966
Highest daily mean	6,790	Mar 31	7,880	Mar 8	37,000	Sep 21, 1938
Lowest daily mean	99	Aug 15	120	Oct 14	16	Sep 1, 1929
Annual seven-day minimum	141	Sep 3	269	Jul 18	96	Oct 31, 1965
Maximum peak flow			9,940	Mar 7	[a]45,200	Sep 21, 1938
Maximum peak stage			11.88	Mar 7		
Instantaneous low flow			37	Oct 14		
Annual runoff (cfsm)	1.37		1.78		1.35	
Annual runoff (inches)	18.64		24.20		18.39	
10 percent exceeds	2,510		2,430		1,910	
50 percent exceeds	637		820		674	
90 percent exceeds	209		402		225	

[a] By computation of flow over dam; gage-height unknown.