

Water-Data Report 2011

**01175500 SWIFT RIVER AT WEST WARE, MA**

CONNECTICUT RIVER BASIN  
CHICOPEE RIVER SUBBASIN

LOCATION.--Lat 42°16'04", long 72°19'59" referenced to North American Datum of 1927, Hampshire County, MA, Hydrologic Unit 01080204, on left bank at West Ware, 1.4 mi downstream from Quabbin Reservoir, 3.5 mi east of Belchertown, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--189 mi<sup>2</sup>, includes 1.6 mi<sup>2</sup> drained by Beaver Brook, flow of which is diverted from Ware River Basin.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--Discharge: July 1910 to September 1912 (twice-daily gage heights and corresponding discharge), October 1912 to current year.  
Water-quality records: Water years 1952-54.

REVISED RECORDS.--WSP 451: 1916. WSP 871: 1919. WSP 1031: 1944 (changes in reservoir contents and adjusted figures only). WSP 1301: 1925(M).  
WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 365.18 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 25, 1912, nonrecording gage at site 400 ft upstream at same datum.

COOPERATION.--Massachusetts Department of Conservation and Recreation, Division of Water Supply Protection, Office of Watershed Management.

REMARKS.--Records good except those for estimated daily discharges and those for discharges greater than 500 ft<sup>3</sup>/s, which are poor. Flow regulated since August 1939 by Quabbin Reservoir, usable capacity, 53.8 billion cubic feet. Diversion from Ware River to Quabbin Reservoir since 1940, from Quabbin Reservoir to Wachusett Reservoir since 1941, from Quabbin Reservoir to Chicopee Valley aqueduct since 1950, and from Quabbin Reservoir to city of Worcester at times since 1966.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--Average discharge for period prior to construction of Quabbin Reservoir during water years 1913-39 (27 years), 314 ft<sup>3</sup>/s, 22.56 in/yr.

EXTREMES FOR PERIOD PRIOR TO REGULATION.--Maximum discharge prior to construction of Quabbin Reservoir in 1939, 7,590 ft<sup>3</sup>/s, Mar. 19, 1936, gage height, 15.00 ft.

## 01175500 SWIFT RIVER AT WEST WARE, MA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	52	81	48	49	49	51	52	202	282	166	119	117
2	47	47	47	49	49	50	52	202	304	159	91	117
3	47	47	47	49	49	50	52	202	294	151	50	117
4	47	48	47	49	49	50	53	209	285	147	50	117
5	47	49	47	49	49	50	54	214	275	143	87	117
6	48	47	47	49	49	60	54	215	268	138	115	120
7	48	47	47	49	49	84	55	218	256	133	118	123
8	47	48	47	49	49	62	55	223	245	132	117	142
9	47	47	47	49	49	58	56	226	237	128	118	133
10	47	47	47	49	49	56	56	225	240	120	119	134
11	47	47	46	49	49	67	58	224	239	113	117	135
12	47	47	48	49	49	61	62	222	241	77	117	135
13	47	47	50	49	49	59	72	219	234	55	117	135
14	47	47	49	49	49	57	75	217	220	53	117	133
15	50	47	49	49	49	56	77	230	214	52	126	135
16	48	47	49	49	49	59	79	248	209	51	82	136
17	47	49	49	49	49	59	105	262	211	51	51	133
18	47	47	49	49	49	59	109	288	208	51	51	132
19	69	47	49	49	49	58	116	300	197	51	50	130
20	112	47	49	49	49	57	124	317	193	51	50	128
21	113	47	49	49	49	98	129	325	181	51	50	127
22	113	47	49	49	49	158	131	328	174	92	50	129
23	112	47	49	49	49	157	141	322	189	117	50	136
24	112	47	49	49	49	155	152	328	192	117	49	146
25	112	47	49	48	51	154	159	340	189	118	92	146
26	112	47	49	48	51	154	166	338	188	119	116	146
27	115	47	49	49	49	154	172	327	183	119	117	146
28	114	47	49	48	51	154	180	316	178	119	140	146
29	114	47	49	48	---	94	195	305	180	119	121	159
30	113	47	49	48	---	52	199	299	171	119	119	158
31	112	---	49	48	---	52	---	292	---	118	118	---
<b>Total</b>	2,280	1,450	1,497	1,513	1,378	2,545	3,040	8,183	6,677	3,230	2,884	4,008
<b>Mean</b>	73.5	48.3	48.3	48.8	49.2	82.1	101	264	223	104	93.0	134
<b>Max</b>	115	81	50	49	51	158	199	340	304	166	140	159
<b>Min</b>	47	47	46	48	49	50	52	202	171	51	49	117
<b>Cfsm</b>	0.39	0.26	0.26	0.26	0.26	0.43	0.54	1.40	1.18	0.55	0.49	0.71
<b>In.</b>	0.45	0.29	0.29	0.30	0.27	0.50	0.60	1.61	1.31	0.64	0.57	0.79

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2011, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	70.9	74.8	74.1	84.5	87.2	91.8	187	177	132	80.9	82.1	81.1
<b>Max</b>	222	858	656	856	779	511	1,099	775	1,192	301	274	157
<b>(WY)</b>	(1956)	(1956)	(1997)	(2006)	(2006)	(1997)	(1953)	(1953)	(1984)	(1948)	(2009)	(2009)
<b>Min</b>	30.3	31.3	28.0	27.5	27.6	27.7	26.2	27.4	28.6	31.2	30.7	30.3
<b>(WY)</b>	(1945)	(1945)	(1995)	(1995)	(1995)	(1995)	(1995)	(1995)	(1945)	(1944)	(1944)	(1990)

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SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1940 - 2011	
<b>Annual total</b>	53,652		38,685			
<b>Annual mean</b>	147		106		102	
<b>Highest annual mean</b>					369	1997
<b>Lowest annual mean</b>					30.7	1945
<b>Highest daily mean</b>	1,010	Apr 2	340	May 25	3,040	Jun 1, 1984
<b>Lowest daily mean</b>	37	Jul 8	46	Dec 11	9.1	Dec 15, 1968
<b>Annual seven-day minimum</b>	37	Jul 8	47	Dec 5	24	Nov 11, 1996
<b>Maximum peak flow</b>			345	May 26	<sup>a</sup> 3,070	Jun 1, 1984
<b>Maximum peak stage</b>			3.68	May 26	11.58	Jun 1, 1984
<b>Instantaneous low flow</b>			46	Dec 9 <sup>b</sup>		
<b>Annual runoff (cfsm)</b>	0.778		0.561		0.539	
<b>Annual runoff (inches)</b>	10.56		7.61		7.32	
<b>10 percent exceeds</b>	303		219		177	
<b>50 percent exceeds</b>	82		59		47	
<b>90 percent exceeds</b>	39		47		32	

<sup>a</sup> Maximum discharge since construction of Quabbin Reservoir in 1939.

<sup>b</sup> Also occurred Dec. 11-12, 2010.

