Water-Data Report 2013

01118500 PAWCATUCK RIVER AT WESTERLY, RI

MASSACHUSETTS-RHODE ISLAND COASTAL BASIN
PAWCATUCK RIVER SUBBASIN

LOCATION.--Lat 41°23′01″, long 71°50′01″ referenced to North American Datum of 1927, Washington County, Hydrologic Unit 01090005, on left bank at Westerly, 2.1 mi downstream from Shunock River.

DRAINAGE AREA.--295 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge: November 1940 to current year. Water-quality records: Water years 1953, 1963, 1968, 1971-72, 1974-2002, and 2007 to current year.

REVISED RECORDS.--WSP 1051: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 1.76 ft below sea level.

COOPERATION.--Rhode Island Water Resources Board.

REMARKS.--Records good except those for estimated daily discharge, which are poor. Many days are adjusted for tidal backwater, which lasts as much as 4 hours during times of high tide. Diurnal fluctuation at low flow prior to 1962 by mills upstream; regulation much greater prior to 1958. Diversion upstream for municipal supply of Westerly.

Suggested citation: U.S. Geological Survey, 2014, Water-resources data for the United States, Water Year 2013: U.S. Geological Survey Water-Data Report WDR-US-2013, site 01118500, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/01118500.2013.pdf

01118500 PAWCATUCK RIVER AT WESTERLY, RI—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	185	381	151	861	735	e1,920	e600	371	356	772	211	195
2	167	327	144	767	716	e1,830	603	364	313	787	214	302
3	160	269	146	e673	622	e1,650	583	350	291	772	215	660
4	163	231	152	e608	532	e1,430	541	e345	303	732	207	e998
5	159	207	155	565	471	e1,240	502	e326	303	666	187	e851
6	151	186	146	537	e432	e1,120	469	e312	273	593	170	e668
7	143	183	140	519	e408	e1,040	e454	e295	333	537	163	e500
8	139	214	155	505	e413	e994	e443	e292	1,520	485	157	e369
9	137	228	173	490	e409	e944	e440	e317	1,970	442	e175	e278
10	140	238	e330	489	e437	e887	e437	e376	1,960	452	236	e254
11	146	212	e621	e498	e507	e828	e446	e403	2,460	551	243	e240
12	146	193	e648	e578	e705	e811	e495	449	e2,650	598	216	e238
13	141	187	e509	e639	e818	e979	e640	442	e2,350	587	e189	e266
14	132	187	e411	e653	817	e1,100	e653	393	e2,480	546	e175	e284
15	130	192	e362	e641	787	1,060	611	354	e2,450	488	e164	e284
16	130	187	e345	e672	795	982	543	333	e2,170	e443	e149	e263
17	128	176	e386	e700	786	889	494	318	e1,920	e396	e138	e240
18	131	173	e533	694	694	802	469	293	e1,670	e368	e138	e227
19	137	167	e673	638	694	839	448	278	e1,450	e327	e131	e214
20	227	166	e656	592	881	1,020	518	322	e1,290	e317	e128	e207
21	372	163	e615	558	961	1,040	627	e342	e1,150	e305	e124	e202
22	336	151	e820	532	895	991	613	e321	e1,040	e297	e117	e210
23	268	148	824	484	e832	913	e550	e298	e936	e283	e118	e225
24	236	151	707	e442	e851	849	e503	e401	e857	e288	e118	e227
25	214	147	e615	e413	e969	e778	e469	e537	e794	e297	e114	225
26	207	135	e551	e390	e978	e723	e433	e540	e725	e283	113	207
27	207	142	e853	e376	e1,280	e696	e415	e475	e691	e292	167	195
28	193	157	e1,230	e352	e2,010	e661	e401	e401	e708	e274	280	186
29	203	157	e1,160	e350	---	e625	e389	366	e735	e261	301	176
30	310	154	e1,080	e394	---	e599	e381	371	728	e241	253	168
31	416	---	970	e550	---	e575	---	381	---	226	219	---
Total	5,954	5,809	16,261	17,160	21,435	30,815	15,170	11,366	36,876	13,906	5,530	9,559
Mean	192	194	525	554	766	994	506	367	1,229	449	178	319
Max	416	381	1,230	861	2,010	1,920	653	540	2,650	787	301	998
Min	128	135	140	350	408	575	381	278	273	226	113	168
Cfsm	0.65	0.66	1.78	1.88	2.60	3.37	1.71	1.24	4.17	1.52	0.60	1.08
In.	0.75	0.73	2.05	2.16	2.70	3.89	1.91	1.43	4.65	1.75	0.70	1.21

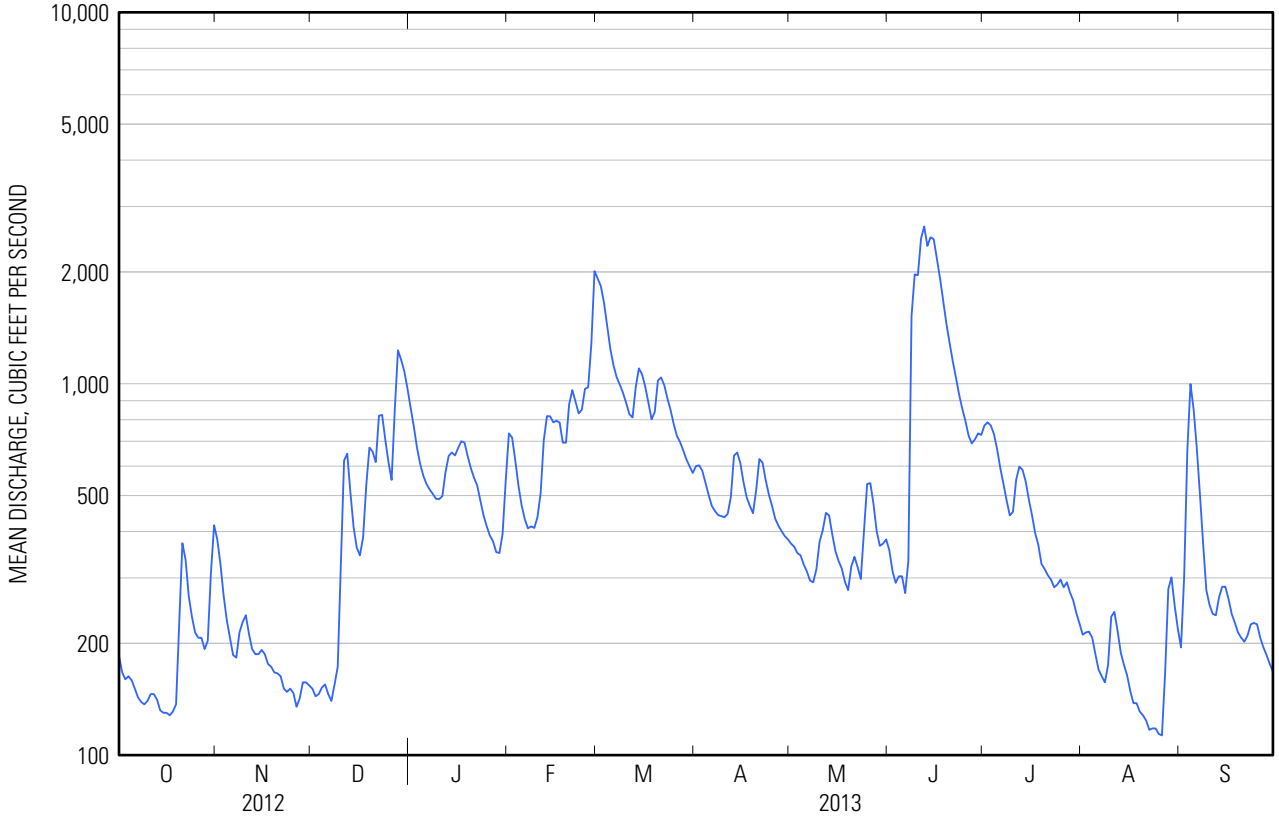
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	282	463	686	755	811	1,053	1,013	726	529	283	234	226
Max	1,186	1,450	1,789	2,151	1,377	2,703	2,603	1,274	2,246	1,555	763	1,233
(WY)	(1956)	(1956)	(1987)	(1979)	(1982)	(2010)	(1983)	(1948)	(1982)	(2009)	(1946)	(1954)
Min	68.3	88.9	115	131	223	453	371	325	210	98.5	71.9	65.7
(WY)	(2008)	(2002)	(1966)	(1981)	(2002)	(2002)	(1966)	(1986)	(1942)	(1957)	(1999)	(1964)

01118500 PAWCATUCK RIVER AT WESTERLY, RI—Continued

SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1941 - 2013	
Annual total	148,528		189,841			
Annual mean	406		520		590	
Highest annual mean					892	2010
Lowest annual mean					251	1981
Highest daily mean	1,390	May 11	2,650	Jun 12	8,700	Mar 31, 2010
Lowest daily mean	101	Sep 3	113	Aug 26	25	Aug 17, 1941
Annual seven-day minimum	112	Aug 29	119	Aug 20	47	Sep 2, 1995
Maximum peak flow			2,850	Jun 12	10,800	Mar 30, 2010
Maximum peak stage			8.08	Jun 12	15.38	Mar 30, 2010
Instantaneous low flow			111	Aug 26	97	Sep 1, 2012
Annual runoff (cfsm)	1.38		1.76		2.00	
Annual runoff (inches)	18.73		23.94		27.16	
10 percent exceeds	819		978		1,220	
50 percent exceeds	330		401		460	
90 percent exceeds	130		152		127	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water-quality records: Water years 1953, 1963, 1968, 1971-72, 1974-2002, and 2007 to current year.

INSTRUMENTATION.--Miscellaneous water-quality measurements, water years 1953, 1963, 1968, 1971-72, 1974-2002, and 2007 to current year.

REMARKS.--Water-quality data are not rated.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 1 of 6

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Sample date-time	Barometric pressure, mm Hg (00025)	Discharge, instantaneous, ft³/s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, laboratory, µS/cm at 25°C (90095)	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Stream width, ft (00004)
10-25-2012 1115	773	212	9.8	6.5	--	82	13.3	1.1	110
10-31-2012 1230	--	495	9.1	6.5	E 98	87	14.3	2.0	105
11-29-2012 1030	774	150	13.4	6.8	--	99	3.4	--	112
12-19-2012 1000	755	642	12.1	6.3	--	82	5.7	2.9	80.0
01-31-2013 1230	--	--	--	6.4	--	98	--	--	--
03-05-2013 1400	765	1,250	14.0	5.8	--	61	4.8	1.2	110
04-02-2013 1300	760	601	11.2	6.4	--	92	10.4	1.0	110
04-25-2013 1230	770	467	11.4	6.5	--	95	13.7	1.2	100
06-03-2013 1245	762	298	8.1	6.5	--	104	22.4	1.9	80.0
06-26-2013 1130	761	--	7.5	6.1	--	87	24.5	2.3	110
07-30-2013 1200	770	--	10.0	7.2	--	89	23.5	1.3	100
08-26-2013 1130	769	91	9.0	7.2	--	122	22.1	33	80.0

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 2 of 6

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Sample date-time	Number of sampling points, count (00063)	Sample purpose (71999)	Sample splitter type, field (84171)	Sampler type (84164)	Sampling method (82398)	Purpose, site visit (50280)
10-25-2012 1115	9	Routine	CS p 8L cooler spgt	US DH-81 Teflon	EWI	Fixed frequency SW
10-31-2012 1230	10	Routine	CS p 8L cooler spgt	US DH-95 Teflon	EWI	Storm hydrograph SW
11-29-2012 1030	10	Routine	CS p 8L cooler spgt	US DH-81 Teflon	EWI	Fixed frequency SW
12-19-2012 1000	9	Routine	CS p 8L cooler spgt	US DH-95 Teflon	EWI	Fixed frequency SW
01-31-2013 1230	--	--	--	--	--	--
03-05-2013 1400	10	Routine	CS p 8L cooler spgt	US DH-95 Teflon	EWI	Fixed frequency SW
04-02-2013 1300	10	Routine	CS p 8L cooler spgt	US DH-95 Teflon	EWI	Fixed frequency SW
04-25-2013 1230	9	Routine	CS p 8L cooler spgt	US DH-95 Teflon	EWI	Fixed frequency SW
06-03-2013 1245	10	Routine	CS p 8L cooler spgt	US DH-95 Teflon	EWI	Fixed frequency SW
06-26-2013 1130	10	Routine	CS p 8L cooler spgt	US DH-95 plastic	EWI	Fixed frequency SW
07-30-2013 1200	9	Routine	CS p 8L cooler spgt	Weighted-bottle	Multiple verticals	Fixed frequency SW
08-26-2013 1130	10	Routine	CS p 8L cooler spgt	US DH-81	EWI	Fixed frequency SW

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 3 of 6

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Sample date-time	Source of blank solution (99101)	Type of blank sample (99102)	Type of blank solution (99100)	Type of quality assurance data associated with sample (99111)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)	Magne-sium, water, filtered, mg/L (00925)	Sodium, water, filtered, mg/L (00930)
10-25-2012 1115	--	--	--	No assoc QA data	< 15	4.46	1.30	9.60
10-31-2012 1230	--	--	--	No assoc QA data	< 15	4.33	1.39	10.9
11-29-2012 1030	--	--	--	No assoc QA data	--	5.26	1.57	12.0
12-19-2012 1000	--	--	--	No assoc QA data	--	4.10	1.34	10.4
01-31-2013 1230	--	--	--	--	--	4.76	1.47	11.9
03-05-2013 1400	District lab	lab blank	Inorganic-free water	Blank	--	3.15	1.11	9.55
04-02-2013 1300	--	--	--	--	--	4.20	1.23	12.7
04-25-2013 1230	--	--	--	No assoc QA data	--	4.24	1.26	12.0
06-03-2013 1245	--	--	--	No assoc QA data	--	4.31	1.33	12.3
06-26-2013 1130	--	--	--	No assoc QA data	--	4.18	1.19	11.7
07-30-2013 1200	--	--	--	No assoc QA data	--	5.13	1.55	13.2
08-26-2013 1130	--	--	--	No assoc QA data	--	5.73	1.67	14.5

01118500 PAWCATUCK RIVER AT WESTERLY, RI—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 4 of 6

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Sample date-time	Sodium, water, unfiltered, recoverable, mg/L (00929)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	Chloride, water, filtered, mg/L (00940)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)
10-25-2012 1115	10.2	--	15.4	--	--	< .010	0.25	0.001	0.012
10-31-2012 1230	--	--	16.2	.39	.48	< .010	.31	.006	.028
11-29-2012 1030	--	--	18.0	.23	.26	< .010	.52	.002	.010
12-19-2012 1000	--	--	15.9	.36	.39	.027	.27	< .001	.011
01-31-2013 1230	--	.72	18.8	.35	.44	.077	.51	.003	.019
03-05-2013 1400	--	.35	15.1	.25	.29	.011	.25	< .001	< .004
04-02-2013 1300	--	.33	18.8	.22	.25	< .010	.37	.001	< .004
04-25-2013 1230	--	.25	18.9	.26	.33	.027	.31	.002	.008
06-03-2013 1245	--	.60	19.2	.43	.42	.035	.44	.008	.020
06-26-2013 1130	--	.82	17.4	.51	.61	.041	.34	.003	.020
07-30-2013 1200	--	.21	20.6	.31	.31	< .010	.54	.003	.021
08-26-2013 1130	--	.18	22.0	.30	.29	< .010	.67	.003	.017

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 5 of 6

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft, feet; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Sample date-time	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, filtered, analytically determined, mg/L (62854)	Total nitrogen, water, unfiltered, analytically determined, mg/L (62855)	Enterococci, mEI MF method, water, col/100 mL (90909)	Cadmium, water, filtered, µg/L (01025)	Chromium, water, filtered, µg/L (01030)	Copper, water, filtered, µg/L (01040)
10-25-2012 1115	--	0.022	0.032	0.58	0.56	22	--	--	--
10-31-2012 1230	--	.044	.070	--	--	--	< .016	.18	.98
11-29-2012 1030	--	.015	.023	--	--	26	--	--	--
12-19-2012 1000	--	.020	.038	--	--	--	< .016	.19	< .80
01-31-2013 1230	.069	.029	.046	.82	--	--	--	--	--
03-05-2013 1400	.035	.008	.017	.48	--	--	--	--	--
04-02-2013 1300	.060	.007	.017	.56	--	--	< .016	.13	< .80
04-25-2013 1230	.034	.017	.027	.59	.60	--	.018	.19	< .80
06-03-2013 1245	.045	.036	.050	.82	.85	--	.018	.21	1.2
06-26-2013 1130	.062	.036	.052	.78	.77	--	.031	.31	3.3
07-30-2013 1200	.018	.032	.040	.80	.82	--	--	--	--
08-26-2013 1130	.022	.027	.036	.88	.88	--	--	--	--

01118500 PAWCATUCK RIVER AT WESTERLY, RI—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 6 of 6

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft, feet; ft^3/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than; E, estimated]

Sample date-time	Lead, water, filtered, µg/L (01049)	Mercury, water, unfiltered, recover-able, µg/L (71900)	Nickel, water, filtered, µg/L (01065)	Zinc, water, filtered, µg/L (01090)	Suspended sediment concen-tration, mg/L (80154)
10-25-2012 1115	--	--	--	--	2
10-31-2012 1230	.252	< .005	.32	2.8	11
11-29-2012 1030	--	--	--	--	4
12-19-2012 1000	.321	--	.31	4.2	5
01-31-2013 1230	--	--	--	--	5
03-05-2013 1400	--	--	--	--	3
04-02-2013 1300	.179	--	1.0	3.8	3
04-25-2013 1230	.237	--	.42	3.0	12
06-03-2013 1245	.470	--	.30	3.7	4
06-26-2013 1130	.700	--	.43	4.4	4
07-30-2013 1200	--	--	--	--	3
08-26-2013 1130	--	--	--	--	1