

Water-Data Report 2011

01403540 STONY BROOK AT WATCHUNG, NJ

RARITAN RIVER BASIN

LOCATION.--Lat 40°38'11", long 74°27'05" referenced to North American Datum of 1983, Watchung Borough, Somerset County, NJ, Hydrologic Unit 02030105, on right bank at Watchung Borough Administration Building in Watchung, 150 ft downstream from bridge on Mountain Boulevard, 400 ft downstream from East Branch Stony Brook, and 2.9 mi upstream from confluence with Green Brook.

DRAINAGE AREA.--5.51 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR NJ-86-1: 1973 (P).

GAGE.--Water-stage and precipitation recorder and crest-stage gage. Datum of gage is 162.24 ft above NGVD of 1929. Prior to Oct 1, 1996, at datum 10.00 ft higher.

REMARKS.--Records good, except daily discharges below 1.0 ft³/s and estimated daily discharges, which are fair. Occasional regulation from Watchung and Best Lakes directly upstream from station and other small lakes. Several measurements of water temperature were made during the year. Channel significantly enlarged and modified in 1991, and modified again in 1997 when the right wall was replaced. Satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug 2, 1973 reached a stage of 24.5 ft (from floodmark; adjusted to current datum), discharge, 10,500 ft³/s (highest since 1896; from slope-area measurements of peak flow).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct 1	0530	727	13.12
Mar 6	2030	916	13.46
Mar 11	0100	591	12.84
Apr 16	2230	971	13.55
Apr 24	2045	577	12.81
Aug 9	1545	445	12.49
Aug 14	1115	922	13.47
Aug 28	0145	*3,900	*16.39
Sep 6	1930	1,040	13.66
Sep 8	0030	934	13.49

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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	115	1.9	61	2.6	3.9	22	9.6	9.9	3.7	1.2	1.5	6.6
2	9.2	2.0	13	8.7	14	16	8.7	9.0	3.0	1.2	0.94	5.7
3	4.5	2.0	6.9	9.4	14	13	7.0	8.2	2.6	7.3	1.1	6.7
4	3.6	14	5.0	5.8	8.9	12	6.7	10	2.6	3.9	2.6	5.3
5	3.8	8.2	4.1	4.5	9.4	11	7.3	8.6	2.5	2.0	1.4	5.3
6	2.9	4.7	3.8	3.9	16	153	6.5	6.9	2.5	1.5	1.0	137
7	1.9	3.1	3.3	3.9	14	75	6.4	6.1	2.3	1.3	1.8	44
8	1.4	2.7	3.5	3.5	20	22	5.8	5.7	2.2	6.3	1.4	129
9	1.5	2.9	2.8	3.2	14	17	6.0	6.3	3.3	8.4	41	20
10	1.6	2.3	2.4	2.8	11	84	5.2	4.2	3.4	2.6	3.9	13
11	3.1	2.0	2.4	2.8	8.7	156	5.3	4.6	17	1.8	4.1	11
12	6.5	1.9	45	3.2	7.7	29	16	4.2	4.4	1.5	1.9	9.2
13	2.9	1.9	25	2.7	6.9	20	40	3.9	3.3	1.2	1.2	7.9
14	2.3	1.7	9.6	2.6	12	16	14	3.9	3.9	1.0	223	7.5
15	4.7	1.8	7.3	2.6	17	14	10	9.6	4.0	1.0	55	6.9
16	2.7	2.5	5.5	2.5	11	24	138	9.2	2.8	0.91	44	5.9
17	2.0	12	4.4	2.4	21	15	123	11	37	0.88	11	5.1
18	1.8	12	3.8	6.6	65	12	22	48	7.0	1.0	7.5	4.7
19	2.1	0.28	3.8	13	36	10	17	22	4.1	0.71	14	4.4
20	1.9	0.27	3.3	11	17	8.8	15	14	3.2	0.78	10	4.2
21	1.7	0.94	3.1	8.3	15	15	13	11	3.1	0.78	7.4	4.0
22	1.6	2.0	2.9	e6.0	12	13	11	8.4	2.3	0.66	8.4	4.6
23	1.5	2.1	2.7	e4.7	10	25	41	7.7	2.6	0.58	6.6	13
24	1.5	2.3	2.6	e4.2	9.6	29	66	7.2	3.4	0.60	6.1	9.9
25	1.4	2.2	2.4	e4.0	106	18	38	6.0	3.2	1.9	2.0	5.7
26	2.2	3.1	2.9	4.9	27	14	18	5.2	2.3	2.3	8.8	4.8
27	2.1	2.6	3.1	5.4	19	12	15	4.6	2.0	1.0	72	4.3
28	1.6	2.1	2.6	4.4	47	10	21	6.5	1.7	0.75	797	6.3
29	1.6	1.9	2.4	4.1	---	9.0	14	6.7	1.5	5.2	26	13
30	1.7	2.1	2.2	3.9	---	8.3	11	7.8	1.4	1.9	16	7.8
31	1.9	---	2.3	3.8	---	7.9	---	4.7	---	1.2	7.9	---
Total	194.2	101.49	245.1	151.4	573.1	891.0	717.5	281.1	138.3	63.35	1,386.54	512.8
Mean	6.26	3.38	7.91	4.88	20.5	28.7	23.9	9.07	4.61	2.04	44.7	17.1
Max	115	14	61	13	106	156	138	48	37	8.4	797	137
Min	1.4	0.27	2.2	2.4	3.9	7.9	5.2	3.9	1.4	0.58	0.94	4.0
Cfsm	1.14	0.61	1.43	0.89	3.71	5.22	4.34	1.65	0.84	0.37	8.12	3.10
In.	1.31	0.69	1.65	1.02	3.87	6.02	4.84	1.90	0.93	0.43	9.36	3.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7.06	8.98	12.7	13.0	12.2	18.3	15.9	11.0	6.85	5.92	5.31	5.79
Max	33.3	25.6	37.1	37.5	24.8	64.5	45.4	37.8	29.1	32.1	44.7	30.8
(WY)	(2006)	(1996)	(1984)	(1979)	(2008)	(2010)	(2007)	(1989)	(2003)	(1975)	(2011)	(1999)
Min	0.81	1.48	1.21	1.08	1.86	4.03	3.89	2.83	1.80	0.55	0.75	0.87
(WY)	(1995)	(2002)	(1999)	(1981)	(2002)	(2006)	(1985)	(2005)	(1999)	(1999)	(1998)	(1983)

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	Calendar Year 2010	Water Year 2011	Water Years 1975 - 2011	
Annual total	4,149.84	5,255.88		
Annual mean	11.4	14.4	10.2	
Highest annual mean			16.0	1984
Lowest annual mean			3.96	2002
Highest daily mean	715 Mar 13	797 Aug 28	814 Sep 16, 1999	
Lowest daily mean	0.27 Nov 20	0.27 Nov 20	0.00 Sep 18, 1982	
Annual seven-day minimum	0.70 Aug 5	0.73 Jul 18	0.06 Sep 13, 1982	
Maximum peak flow		^a 3,900 Aug 28	^a 5,380 Sep 16, 1999	
Maximum peak stage		16.39 Aug 28	^b 20.40 Jul 14, 1975	
Instantaneous low flow		0.21 Jul 18	0.00 Sep 13, 1982	
Annual runoff (cfsm)	2.06	2.61	1.86	
Annual runoff (inches)	28.02	35.48	25.27	
10 percent exceeds	23	22	20	
50 percent exceeds	3.6	5.2	4.7	
90 percent exceeds	0.85	1.5	1.2	

^a From rating curve extended above 500ft³/s on basis of step-backwater computation of peak flow.

^b Adjusted to current datum.

