Water-Data Report 2012

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY

Upper Delaware Basin
East Branch Delaware Subbasin

LOCATION.--Lat 41°58′23″, long 75°10′27″ referenced to North American Datum of 1983, Delaware County, NY, Hydrologic Unit 02040102, on right bank 3,000 ft upstream from bridge on County Highway 28 at Fishs Eddy, 0.6 mi upstream from Fish Creek, 4.2 mi downstream from Beaver Kill, and 11 mi upstream from the confluence of East and West Branches near Hancock. Water-quality sampling site at discharge station.

DRAINAGE AREA.--784 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1912 to current year. October 2001 through September 2004 published as East Branch Delaware River above Read Creek at Fishs Eddy (01420980). Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 955.96 ft above NGVD of 1929. Prior to Sept. 27, 1928, nonrecording gage and Sept. 26, 1928 to Nov. 1, 1967, water-stage recorder at site 3,000 ft downstream at datum 5.0 ft lower, Nov. 2, 1967 to Sept. 30, 2001, at site on left bank at same datum, and Oct. 1, 2001 to Sept. 30, 2004, at site 0.30 mi upstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Satellite and telephone gage-height and temperature telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge since construction of Pepacton Reservoir, 77,400 ft^3/s, June 28, 2006, gage height, 21.43 ft, from rating curve extended above 29,000 ft^3/s; minimum discharge, 52 ft^3/s, July 23, 1964, gage height, 1.16 ft, site and datum then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 9, 1903, reached a stage of 23.6 ft, at site 3,000 ft downstream at datum 5.0 ft lower, from description obtained in April 1939, from local residents who had experienced the flood (discharge, about 70,000 ft^3/s, from rating curve extended above 22,000 ft^3/s).

EXTREMES FOR PERIOD PRIOR TO REGULATION.--Maximum discharge prior to construction of Pepacton Reservoir, 53,300 ft^3/s, Aug. 24, 1933, gage height, 20.60 ft, site and datum then in use, from rating curve extended above 22,000 ft^3/s; minimum daily discharge, 68 ft^3/s, Aug. 28, 1949, minimum instantaneous discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,100 ft^3/s, Sept. 19, gage height, 13.50 ft; minimum discharge, 196 ft^3/s, Sept. 18, gage height, 4.00 ft.

Suggested citation: U.S. Geological Survey, 2013, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 01421000, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/01421000.2012.pdf

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5,280	1,490	2,930	2,030	2,050	539	721	817	807	330	478	234
2	5,120	1,540	2,440	2,000	2,020	528	874	833	1,070	317	437	226
3	4,200	1,570	2,180	1,850	1,840	583	730	996	972	315	370	222
4	3,400	1,550	2,010	1,630	1,730	796	643	1,230	1,080	309	330	229
5	2,840	1,510	1,880	1,690	1,650	658	591	1,170	1,170	298	317	432
6	2,420	1,480	1,950	1,650	1,580	554	552	1,040	961	295	489	434
7	2,020	1,460	3,030	1,600	1,530	616	522	968	906	290	373	317
8	1,780	1,440	6,930	1,550	1,470	746	500	1,650	813	288	317	292
9	1,670	1,410	4,040	1,490	1,420	1,860	485	3,440	755	276	293	423
10	1,590	1,400	3,740	1,450	1,370	1,590	472	2,440	726	268	315	333
11	1,530	1,410	3,370	1,420	1,350	1,370	463	1,920	658	393	317	293
12	1,480	1,360	2,940	1,550	1,270	1,300	463	1,560	671	310	333	273
13	1,520	1,330	2,500	1,790	1,270	1,440	431	1,350	1,520	343	306	261
14	2,550	1,320	2,190	1,690	1,230	1,740	409	1,270	1,020	341	274	254
15	2,700	1,400	2,020	e1,370	1,050	1,550	405	7,990	823	405	524	255
16	2,120	1,420	2,100	e1,340	1,030	1,430	399	6,790	725	746	485	244
17	2,030	1,600	1,890	e1,290	1,040	1,390	372	3,140	665	380	366	206
18	1,860	1,500	1,750	1,600	1,010	1,280	346	2,110	620	304	329	3,850
19	1,770	1,460	1,680	e1,280	969	1,190	336	1,660	597	273	308	9,140
20	1,880	1,450	1,680	e1,280	938	1,680	325	1,380	567	323	305	2,500
21	1,780	1,420	1,710	e1,230	843	1,380	321	1,230	522	345	309	1,550
22	1,690	1,340	2,100	e1,210	564	1,200	373	1,530	493	291	278	1,200
23	1,640	3,130	2,450	e1,350	554	1,080	1,630	1,790	467	291	263	1,320
24	1,580	2,790	2,340	1,780	589	987	1,740	1,690	433	310	249	994
25	1,530	2,320	2,150	1,690	578	900	1,480	1,530	438	300	241	796
26	1,490	2,080	2,040	1,570	495	832	1,270	1,290	438	351	234	691
27	1,540	1,920	2,020	3,280	479	738	1,190	1,060	397	710	235	627
28	1,640	1,810	3,260	3,730	519	711	1,040	877	370	483	346	1,460
29	1,560	1,880	2,510	2,790	504	707	913	770	366	1,470	317	1,870
30	1,570	4,240	2,280	2,360	---	647	828	1,430	348	993	265	1,350
31	1,550	---	2,140	2,150	---	681	---	996	---	613	245	---
Total	67,330	52,030	78,250	54,690	32,942	32,703	20,824	57,947	21,398	12,961	10,248	32,276
Mean	2,172	1,734	2,524	1,764	1,136	1,055	694	1,869	713	418	331	1,076
Max	5,280	4,240	6,930	3,730	2,050	1,860	1,740	7,990	1,520	1,470	524	9,140
Min	1,480	1,320	1,680	1,210	479	528	321	770	348	268	234	206

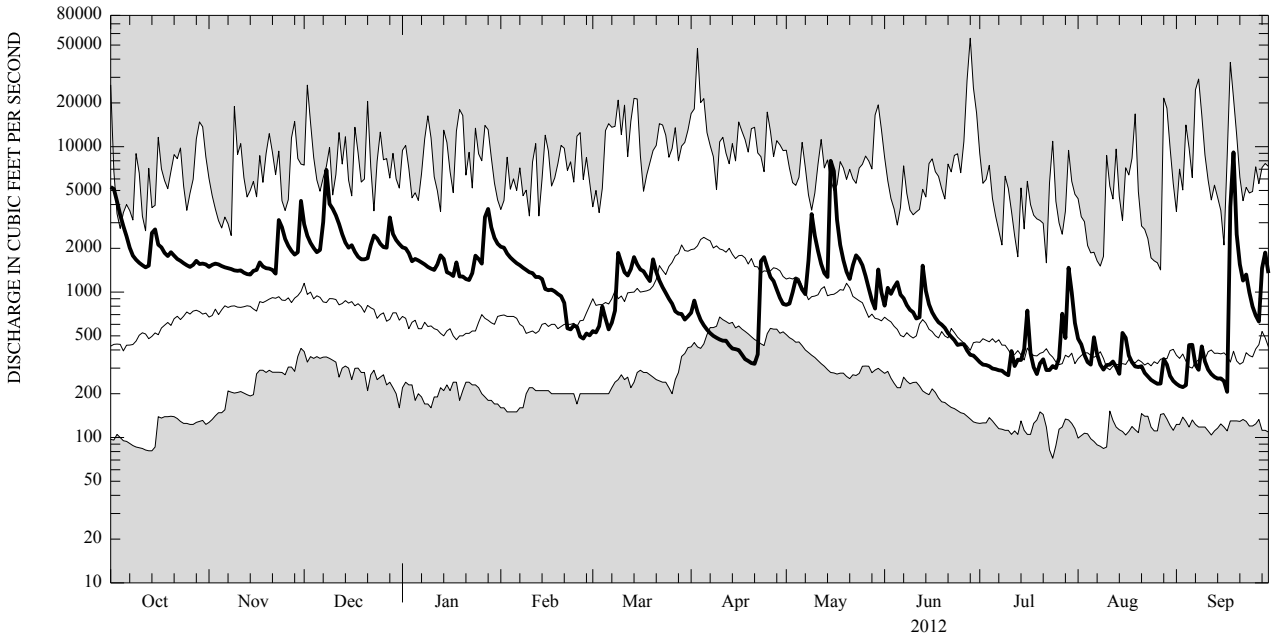
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	922	1,190	1,310	1,095	1,020	1,794	2,533	1,474	956	578	572	720
Max	3,261	3,382	5,017	3,507	3,297	5,359	5,957	3,465	5,619	1,750	2,815	5,256
(WY)	(2004)	(2004)	(1997)	(2006)	(1976)	(2008)	(1993)	(1984)	(2006)	(1996)	(2011)	(2011)
Min	163	311	404	277	213	530	694	432	229	157	136	139
(WY)	(1974)	(1999)	(1961)	(1981)	(1980)	(2006)	(2012)	(1987)	(1977)	(1966)	(1965)	(1972)

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY—Continued

SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1955 - 2012	
Annual total	925,936		473,599			
Annual mean	2,537		1,294		1,180	
Highest annual mean					2,423	2011
Lowest annual mean					604	1965
Highest daily mean	29,200	Sep 8	9,140	Sep 19	55,700	Jun 28, 2006
Lowest daily mean	300	Jan 31	206	Sep 17	72	Jul 24, 1964
Annual seven-day minimum	311	Jan 28	248	Aug 29	84	Oct 9, 1954
10 percent exceeds	5,270		2,330		2,590	
50 percent exceeds	1,640		1,220		680	
90 percent exceeds	468		309		245	



CURRENT WATER YEAR DAILY MEAN DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
SHADED AREAS SHOW HIGHEST AND LOWEST DAILY MEAN FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-59, 1968 to current year.
CHEMICAL DATA: 1958-59 (d), 1970 (b), 1971-74 (d), 1975 (c).
MINOR ELEMENTS DATA: 1971-74 (a).
ORGANIC DATA: OC--1974 (a), 1975 (c).
NUTRIENT DATA: 1971-75 (d).
BIOLOGICAL DATA: Bacteria--1971 (c), 1973-75 (c).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: November 1967 to current year. From October 2001 to September 2004, published as East Branch Delaware River above Read Creek at Fishs Eddy (01420980).

INSTRUMENTATION.--Water-temperature satellite and telephone telemeter provides 15-minute-interval readings. Prior to June 1993, water-temperature recorder since October 1975, provided one-hour-interval readings. Prior to October 1975, water-temperature recorder provided continuous recordings.

REMARKS.--Temperature readings prior to Oct. 1, 2007, rounded to the nearest 0.5°C. Water temperature is affected by release of water from upstream reservoir.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Prior to Oct. 1, 2007--Maximum (water years 1968-75, 1978, 1980-82, 1984, 1986-95, 1999-2003, 2005-07), 31.5°C, Aug. 2, 1975; minimum (water years 1968-76, 1978-79, 1981-2007), 0.0°C on many days during winter periods, except 1978.
WATER TEMPERATURE: After Oct. 1, 2007--Maximum, 27.4°C, July 22, 2011; minimum, 0.0°C, Jan. 20, Feb. 12, 29, 2008, several days during 2009 and 2010 winter periods, many days during 2011 winter period, Jan. 15, 16, Mar. 6, 2012.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.6°C, July 18; minimum, 0.0°C, Jan. 15, 16, Mar. 6.

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
1	13.0	12.4	12.7	6.9	5.1	6.0	6.7	5.4	5.9	6.1	5.3	5.7
2	13.5	12.0	12.8	7.3	5.7	6.4	5.5	4.9	5.3	5.8	3.3	4.5
3	13.2	12.0	12.5	7.2	5.7	6.5	5.4	4.6	5.1	3.3	0.5	1.9
4	12.5	11.4	12.0	7.6	5.9	6.8	6.1	4.6	5.3	1.2	0.1	0.7
5	13.6	11.8	12.5	6.2	4.5	5.4	6.7	5.1	5.9	2.2	1.1	1.7
6	12.0	9.9	11.0	6.0	4.1	5.1	8.1	6.7	7.6	3.3	2.0	2.6
7	11.4	9.2	10.4	6.6	4.5	5.6	8.0	6.3	7.5	3.5	2.3	2.9
8	11.8	9.3	10.6	8.6	6.6	7.5	6.3	4.8	5.3	3.5	2.7	3.3
9	12.1	9.8	11.0	8.8	7.2	7.9	5.3	4.4	4.9	3.1	1.9	2.5
10	12.2	10.0	11.1	8.1	7.5	8.0	5.5	4.5	5.1	3.5	2.8	3.1
11	12.1	10.3	11.3	7.5	5.5	6.4	4.7	3.8	4.3	3.8	2.6	3.3
12	11.5	10.5	10.9	6.5	4.9	5.7	4.8	3.8	4.3	4.1	3.4	3.8
13	11.6	10.2	10.8	6.4	5.0	5.7	4.6	3.4	4.1	4.1	1.9	3.3
14	13.8	11.5	12.4	6.8	6.0	6.3	5.3	4.1	4.7	1.9	1.0	1.5
15	12.4	10.0	11.0	8.2	6.8	7.6	6.0	5.3	5.6	1.1	0.0	0.5
16	10.2	9.4	9.9	8.0	7.7	7.9	6.0	5.0	5.4	1.3	0.0	0.6
17	10.9	9.2	10.0	7.9	5.6	6.9	5.0	3.6	4.5	1.8	1.3	1.6
18	9.7	8.5	9.2	5.6	4.2	4.8	3.6	1.9	2.5	2.0	1.0	1.6
19	10.3	8.7	9.4	5.3	3.9	4.7	3.7	1.7	2.4	1.2	0.2	0.8
20	12.0	10.3	11.1	7.2	5.1	6.1	4.6	3.7	4.3	1.3	0.4	0.8
21	10.4	9.1	9.6	7.4	6.1	6.9	5.4	4.4	4.8	1.0	0.3	0.7
22	9.1	8.6	8.9	6.1	5.3	5.7	6.3	5.4	5.9	1.4	0.3	0.9
23	10.0	8.2	9.0	6.6	6.0	6.3	6.1	4.3	5.5	2.4	1.4	1.9
24	9.1	7.7	8.6	6.3	5.2	5.8	4.3	2.6	3.4	2.4	2.0	2.2
25	9.4	8.0	8.7	6.5	5.3	5.8	3.8	2.4	3.0	2.0	1.7	1.8
26	8.6	7.9	8.2	6.5	5.2	5.9	4.4	3.8	4.1	2.2	1.8	2.0
27	8.6	7.0	8.1	6.7	5.4	6.1	4.4	3.3	3.7	2.5	2.2	2.3
28	7.2	5.7	6.6	8.1	6.7	7.5	4.5	2.5	3.9	3.3	2.2	2.8
29	6.6	4.7	5.7	9.9	7.9	8.7	2.5	1.2	1.8	2.8	1.7	2.3
30	6.1	4.1	5.1	9.7	6.7	8.3	4.1	2.3	3.3	2.3	1.7	2.0
31	6.3	4.8	5.6	---	---	---	5.4	4.1	4.7	3.8	1.9	2.8
Month	13.8	4.1	9.9	9.9	3.9	6.5	8.1	1.2	4.6	6.1	0.0	2.2

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	4.6	3.4	3.9	1.8	1.2	1.6	6.5	5.8	6.2	11.7	10.0	10.8
2	4.1	2.8	3.6	2.6	1.8	2.2	8.8	5.1	6.8	11.2	10.5	10.8
3	3.3	1.9	2.7	5.5	2.1	3.6	9.5	5.0	7.4	13.9	10.0	11.8
4	3.8	2.8	3.2	3.9	2.4	3.1	11.4	7.2	9.2	16.3	12.8	14.4
5	2.9	1.9	2.5	3.6	1.0	2.0	10.5	7.1	8.6	17.1	13.5	15.0
6	3.7	1.6	2.7	3.2	0.0	1.6	10.4	6.0	8.2	16.6	13.0	14.9
7	2.9	2.4	2.7	5.6	1.3	3.4	10.3	5.9	8.2	14.4	13.1	13.8
8	2.6	1.7	2.3	7.0	3.6	5.4	11.3	6.5	9.0	13.1	11.3	12.0
9	3.4	1.7	2.5	6.6	3.0	4.7	10.2	7.4	8.8	12.9	11.0	11.9
10	2.8	1.4	2.2	3.2	1.3	2.3	9.4	6.8	8.2	12.1	10.0	11.1
11	3.5	2.3	2.9	5.3	1.2	3.2	8.5	7.0	7.8	12.8	8.8	10.8
12	2.3	0.7	1.1	6.6	3.1	4.9	10.3	6.9	8.4	14.6	9.7	12.3
13	2.7	0.8	1.6	8.7	5.8	7.1	12.0	6.5	9.2	16.0	12.3	14.2
14	2.6	1.7	2.1	8.6	6.2	7.4	12.5	8.1	10.5	14.8	13.4	14.2
15	3.0	2.3	2.6	7.9	5.5	6.8	12.6	11.1	11.9	13.4	12.2	12.7
16	2.6	2.0	2.1	7.6	6.5	7.0	16.9	11.3	14.0	14.7	11.8	13.2
17	4.1	2.1	3.0	10.2	6.6	8.3	17.5	14.2	15.7	14.2	11.5	12.9
18	3.3	2.1	2.7	11.0	7.5	9.2	14.4	11.9	13.0	14.5	10.7	12.7
19	4.1	2.3	3.1	11.2	8.5	9.9	15.5	10.1	12.9	16.1	11.5	13.9
20	4.1	2.2	3.0	12.6	10.0	11.0	17.5	12.4	14.9	17.8	13.3	15.6
21	2.5	1.3	2.1	13.3	10.0	11.6	16.6	14.4	15.4	16.0	14.3	14.8
22	4.9	2.4	3.6	14.1	10.9	12.4	14.5	10.2	12.5	15.7	13.8	14.7
23	5.2	3.9	4.4	12.7	11.1	12.0	10.2	8.2	8.9	18.3	14.9	16.5
24	4.1	2.3	2.9	11.9	10.6	11.1	8.5	7.5	8.0	18.2	16.5	17.3
25	2.5	1.0	2.0	11.5	9.5	10.4	9.2	6.8	8.0	18.3	16.6	17.4
26	3.0	0.2	1.4	10.9	7.0	9.7	8.0	6.9	7.5	19.8	16.6	18.1
27	2.5	0.5	1.5	7.7	4.1	6.1	7.6	5.6	6.7	19.9	16.6	18.3
28	4.1	1.9	2.7	8.8	5.1	6.9	9.5	4.7	7.1	22.0	17.4	19.7
29	2.7	1.5	2.0	8.3	6.5	7.5	11.4	6.6	9.0	22.6	18.7	20.6
30	---	---	---	9.4	5.2	7.4	12.1	7.2	9.8	20.5	18.2	19.2
31	---	---	---	8.3	6.4	7.0	---	---	---	19.4	16.5	17.9
Month	5.2	0.2	2.6	14.1	0.0	6.7	17.5	4.7	9.7	22.6	8.8	14.6

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	17.1	15.2	15.9	25.4	21.2	23.1	22.2	19.1	20.5	23.1	18.6	20.6
2	16.4	14.6	15.3	24.1	20.5	22.3	24.3	19.5	21.7	22.8	18.2	20.3
3	15.9	13.8	15.0	24.5	19.9	22.3	24.9	20.6	22.7	20.1	17.8	18.5
4	14.9	13.2	14.3	26.0	21.4	23.6	26.1	21.4	23.6	18.5	16.9	17.7
5	13.6	12.1	12.9	26.5	22.4	24.3	24.3	22.5	23.2	19.2	17.6	18.4
6	15.3	12.3	13.8	26.3	21.1	23.8	23.4	21.1	22.3	20.4	17.6	19.0
7	17.2	13.5	15.4	24.3	22.4	23.4	23.3	19.4	21.3	21.5	18.5	19.8
8	18.8	14.6	16.8	25.1	20.9	23.0	24.1	19.6	21.7	20.4	18.2	19.2
9	17.4	15.4	16.1	24.6	20.2	22.3	24.3	20.6	22.4	19.5	17.2	18.3
10	20.2	14.9	17.4	23.8	19.3	21.5	22.3	20.5	21.2	18.6	15.5	17.0
11	20.4	17.3	19.0	23.0	19.0	20.9	22.7	19.8	21.0	18.0	14.1	15.9
12	18.9	16.3	17.4	23.4	18.3	20.9	23.6	19.4	21.4	18.9	14.4	16.6
13	18.0	15.2	16.6	22.4	19.6	21.0	23.4	20.1	21.5	19.9	15.6	17.6
14	20.2	15.5	17.9	22.2	18.9	20.5	21.0	19.3	20.1	20.0	16.4	18.1
15	20.9	16.6	18.8	21.1	19.4	20.1	20.2	18.2	19.3	18.5	15.8	17.1
16	21.8	17.1	19.5	23.0	19.3	21.2	22.4	18.1	20.2	18.1	14.5	16.1
17	21.6	17.7	19.7	24.9	20.3	22.5	20.6	18.9	19.7	17.9	14.0	16.0
18	19.6	17.1	18.0	26.6	22.1	24.3	21.9	17.9	19.7	17.0	15.8	16.3
19	19.6	16.5	17.9	25.5	22.6	23.9	20.5	17.4	18.9	16.0	14.1	14.9
20	23.8	18.3	21.0	23.2	19.5	21.1	19.4	17.2	18.3	14.8	12.8	13.9
21	25.8	21.1	23.4	23.6	18.6	20.8	21.2	16.8	18.8	14.7	13.7	14.1
22	24.5	22.0	23.3	23.5	19.5	21.5	21.4	17.6	19.5	15.7	13.7	14.6
23	23.9	20.1	21.9	23.9	20.4	21.9	22.7	18.1	20.2	14.9	13.2	14.1
24	22.9	19.5	21.3	23.4	20.2	21.6	22.8	18.4	20.6	14.4	12.3	13.2
25	21.8	18.9	20.4	24.0	19.0	21.4	22.6	19.0	20.9	14.4	11.1	12.8
26	18.9	16.6	17.7	24.1	20.3	22.0	23.4	19.2	21.3	13.7	13.0	13.4
27	20.5	15.0	17.8	23.2	21.2	22.1	21.9	19.7	20.8	16.6	13.2	14.8
28	22.6	17.1	19.9	22.0	20.4	21.2	22.6	19.3	20.8	15.1	13.2	13.9
29	25.4	19.9	22.5	20.8	19.1	20.2	22.4	18.6	20.3	13.6	12.8	13.2
30	25.1	20.9	23.1	22.7	18.7	20.7	21.7	17.8	19.6	13.3	12.1	12.7
31	---	---	---	21.4	20.2	20.7	22.1	17.5	19.7	---	---	---
Month	25.8	12.1	18.3	26.6	18.3	21.9	26.1	16.8	20.7	23.1	11.1	16.3

	Max	Min	Mean
Year	26.6	0.0	11.2