01426500 WEST BRANCH DELAWARE RIVER AT HALE EDDY, NY

Upper Delaware Basin
Upper Delaware Subbasin

LOCATION.--Lat 42°00′11″, long 75°23′02″ referenced to North American Datum of 1927, Delaware County, NY, Hydrologic Unit 02040101, on left bank at downstream side of bridge on County Highway 56 in Hale Eddy, and 9 mi upstream from confluence of East and West Branches near Hancock. Water-quality sampling site at discharge station.

DRAINAGE AREA.--595 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1912 to current year.

REVISED RECORDS.--WSP 871: 1916. WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 946.46 ft above NGVD of 1929. Prior to Sept. 8, 1928, nonrecording gage.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Subsequent to October 1963, entire flow from 454 mi^2 drainage area controlled by Cannonsville Reservoir (see 01424997). 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 prior to construction of Cannonsville Reservoir, 28,900 ft^3/s, Mar. 22, 1948, gage height, 15.69 ft; maximum gage height, 15.8 ft, Sept. 30, 1924, from graph based on gage readings; maximum discharge since construction of Cannonsville Reservoir, 43,400 ft^3/s, June 28, 2006, gage height, 19.10 ft; minimum discharge, 17 ft^3/s, Oct. 20, 1963; minimum gage height, 1.03 ft, Aug. 4, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 10, 1903, reached a stage of 20.3 ft, from floodmarks, discharge, about 46,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,320 ft^3/s, Mar. 27, gage height, 9.04 ft; minimum discharge not determined; minimum gage height, 1.95 ft, Feb. 14.

01426500 WEST BRANCH DELAWARE RIVER AT HALE EDDY, NY—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,720	2,800	1,490	1,120	1,140	518	4,130	1,400	453	298	518	911
2	1,600	2,760	1,670	1,350	1,140	562	3,420	1,270	464	275	513	887
3	1,480	2,570	1,580	1,290	1,130	656	2,910	947	452	257	620	590
4	1,440	2,460	1,510	1,280	1,110	633	2,640	631	277	276	714	534
5	1,450	2,230	1,430	1,270	e1,040	598	2,580	405	246	275	547	578
6	1,360	1,960	1,360	1,760	e971	e612	2,360	303	233	265	487	602
7	1,280	1,730	1,310	1,660	e1,090	e996	2,130	288	293	357	503	654
8	1,230	1,690	1,250	2,160	e1,020	e1,070	1,910	274	516	502	476	753
9	1,210	1,830	1,230	1,920	e787	e1,020	1,730	246	499	529	356	480
10	1,190	1,840	1,210	1,700	e536	911	1,570	285	435	595	385	426
11	1,180	1,760	1,210	1,530	e353	729	1,420	379	420	602	326	602
12	702	1,720	1,210	1,460	e296	483	1,470	315	438	530	365	486
13	1,150	1,700	1,220	1,540	e305	494	1,610	290	408	397	416	312
14	1,150	1,660	1,210	1,660	e328	932	1,560	271	500	427	414	596
15	1,140	1,600	1,200	2,670	e422	3,450	2,020	251	712	469	410	832
16	1,130	2,860	1,180	3,910	e602	2,060	4,150	279	701	458	389	482
17	1,160	6,250	1,170	3,720	e1,150	1,690	5,460	273	460	439	621	413
18	1,240	5,240	1,170	3,290	e1,140	1,740	5,900	243	508	443	572	435
19	1,200	4,340	1,160	2,960	e1,100	1,560	6,760	247	644	363	432	473
20	2,480	3,550	1,150	2,610	e1,070	1,460	7,160	265	523	254	469	510
21	2,340	2,900	1,140	2,220	e1,080	1,370	6,330	250	288	481	400	608
22	1,830	2,490	1,160	1,970	e1,070	1,580	5,210	248	257	374	286	870
23	1,610	2,570	1,340	1,760	e1,070	2,320	4,580	245	247	312	244	604
24	1,480	2,590	1,280	1,540	e1,070	2,920	3,900	249	247	368	423	545
25	1,400	2,410	1,250	1,360	e1,060	5,060	3,460	327	516	298	517	545
26	1,340	2,260	1,430	1,200	1,020	5,380	3,150	311	624	380	503	857
27	1,300	1,960	1,430	1,210	792	7,490	2,710	268	710	485	453	795
28	2,410	1,750	1,320	1,210	572	8,120	2,250	267	708	541	456	801
29	3,050	1,580	1,150	1,180	---	7,070	1,910	259	484	459	458	905
30	3,680	1,450	871	1,150	---	5,620	1,620	290	377	511	513	934
31	3,410	---	669	1,150	---	4,910	---	268	---	524	890	---
Total	50,342	74,510	38,960	56,810	24,464	74,014	98,010	11,844	13,640	12,744	14,676	19,020
Mean	1,624	2,484	1,257	1,833	874	2,388	3,267	382	455	411	473	634
Max	3,680	6,250	1,670	3,910	1,150	8,120	7,160	1,400	712	602	890	934
Min	702	1,450	669	1,120	296	483	1,420	243	233	254	244	312

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	698	619	696	659	685	1,298	1,766	953	724	686	676	699
Max	2,123	2,484	3,164	2,494	3,107	3,617	5,167	2,322	3,734	1,456	1,698	2,569
(WY)	(1976)	(2007)	(1997)	(1978)	(1976)	(1986)	(1993)	(1996)	(2006)	(1971)	(1968)	(2004)
Min	33.2	41.8	172	127	94.2	158	194	122	132	76.2	107	45.4
(WY)	(1964)	(1965)	(1982)	(1970)	(1989)	(1981)	(1985)	(1985)	(1965)	(1965)	(1985)	(1964)

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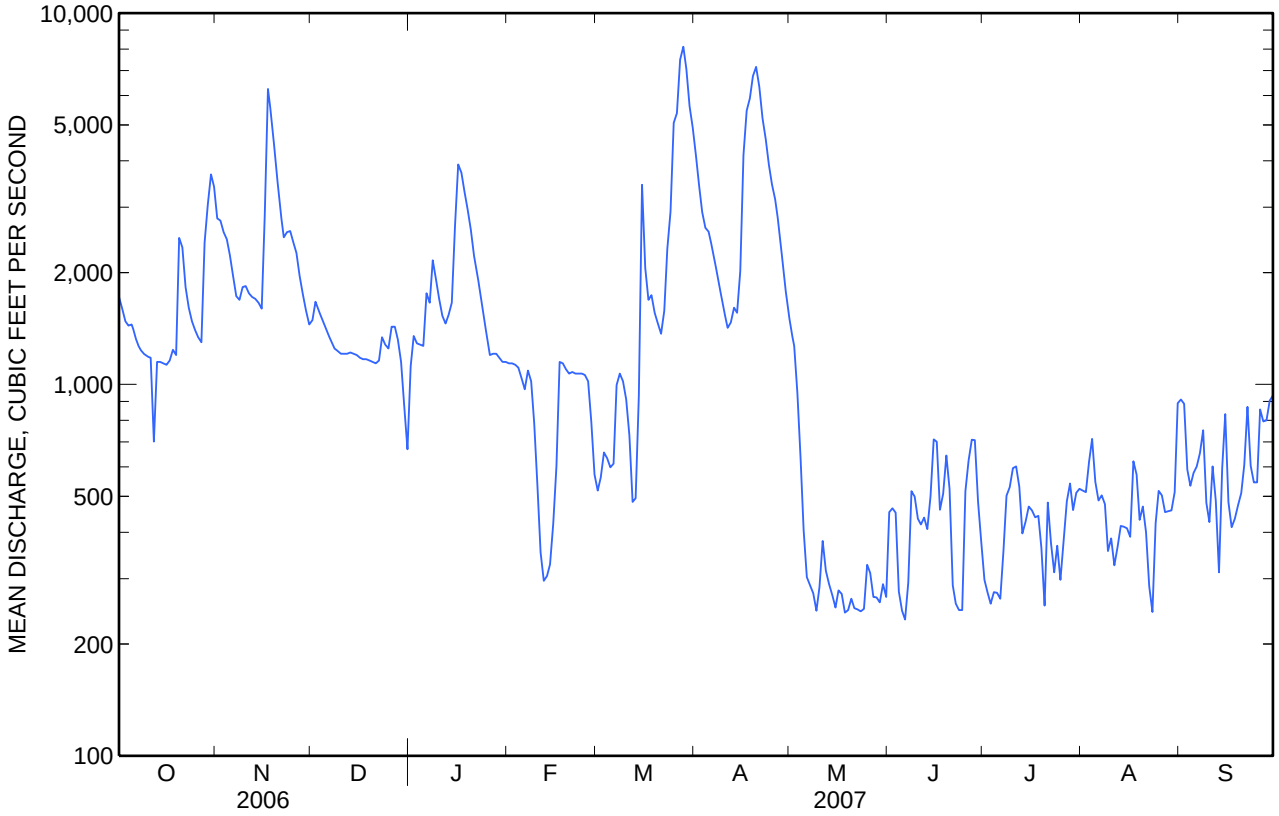
SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1964 - 2007	
Annual total	564,950		489,034			
Annual mean	1,548		1,340		847	
Highest annual mean					1,411	1978
Lowest annual mean					204	1965
Highest daily mean	35,200	Jun 28	8,120	Mar 28	35,200	Jun 28, 2006
Lowest daily mean	231	Apr 21	233	Jun 6	18	Oct 20, 1963
Annual seven-day minimum	321	Mar 29	250	May 18	26	Oct 15, 1963
10 percent exceeds	2,780		2,820		1,850	
50 percent exceeds	1,150		1,070		502	
90 percent exceeds	433		292		130	



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: 1971-74 (d), 1975 (c).
BIOLOGICAL DATA: Bacteria--1971, 1973 (c); 1974 (d); 1975 (c).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1967 to current year (no winter record for water years 1969-77).

INSTRUMENTATION.--Water-temperature satellite telemeter provides 15-minute-interval readings. From October 1976 to April 1993, water-temperature recorder provided one-hour-interval readings. Prior to October 1976, water-temperature recorder provided continuous readings.

REMARKS.--Water temperature is affected by release of water from upstream reservoir.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum (water years 1968-77, 1979-83, 1985, 1988-96, 1998-2007), 30.5°C, July 22, 23, 1972, June 16, 1981; minimum (water years 1968, 1978-2007), 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 20.5°C, May 24; minimum, 0.0°C on several days during winter period.

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TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
1	11.0	9.5	10.0	12.5	11.0	11.5	10.0	8.5	9.0	6.0	5.0	5.5
2	11.5	9.0	10.0	11.5	10.0	10.5	8.5	6.5	7.0	6.0	4.5	5.5
3	11.5	9.0	10.0	10.5	9.0	9.5	7.5	6.5	7.0	6.0	4.5	5.0
4	11.5	9.5	10.5	10.0	8.5	9.5	7.0	5.5	6.5	6.5	4.5	5.5
5	12.0	9.0	10.5	9.5	8.5	9.0	7.0	5.5	6.0	6.5	5.5	6.0
6	11.0	9.0	9.5	10.5	8.5	9.0	7.0	5.5	6.0	8.0	6.5	7.0
7	12.0	8.5	10.0	10.0	8.5	9.0	7.0	5.5	6.5	6.5	5.5	6.0
8	12.0	8.5	10.0	9.5	9.0	9.5	5.5	4.5	5.0	6.0	5.0	5.5
9	12.5	9.5	10.5	10.5	9.0	9.5	7.0	5.5	6.0	5.5	4.0	4.5
10	12.5	9.0	10.5	9.5	8.5	9.0	8.0	5.5	6.5	4.5	3.5	4.0
11	11.0	10.0	10.5	10.5	8.5	9.0	7.5	6.0	6.5	5.0	3.0	4.0
12	13.0	9.5	11.5	9.5	8.5	9.0	7.5	6.5	7.0	5.5	4.0	4.5
13	11.5	8.5	9.5	9.5	8.5	9.0	7.5	6.5	7.0	6.0	4.5	5.5
14	11.0	8.5	9.5	9.5	9.0	9.0	7.5	6.5	7.0	6.0	4.5	5.0
15	11.5	8.5	9.5	10.0	9.0	9.5	7.5	6.0	6.5	5.5	4.0	5.0
16	12.5	8.5	10.5	12.0	9.5	10.5	6.5	5.5	6.0	5.5	3.5	4.5
17	11.0	9.5	10.5	11.5	10.0	10.5	7.5	5.5	6.5	4.5	3.0	3.5
18	12.0	11.0	11.5	10.0	10.0	10.0	7.0	6.0	7.0	5.0	3.5	4.0
19	13.0	11.0	12.0	10.0	9.5	10.0	6.5	5.0	6.0	5.0	4.0	4.0
20	12.0	10.0	11.0	9.5	9.0	9.5	7.0	5.0	5.5	4.0	3.0	3.5
21	11.0	9.5	10.5	10.0	8.5	9.0	7.0	5.0	5.5	4.0	3.0	3.5
22	11.0	10.0	10.5	9.5	8.5	8.5	5.5	5.0	5.5	4.0	3.0	3.5
23	11.0	10.0	10.5	9.0	8.0	8.5	6.5	5.5	6.0	5.0	3.0	3.5
24	11.0	10.0	10.5	9.5	8.0	8.5	6.5	5.0	6.0	4.5	3.5	4.0
25	11.0	10.0	10.5	9.5	7.5	8.5	5.5	5.0	5.0	4.0	1.5	3.0
26	11.0	10.0	10.5	9.0	8.0	8.5	6.0	5.5	5.5	3.0	1.5	2.0
27	11.5	9.5	10.5	9.0	8.0	8.5	5.5	5.0	5.5	3.5	2.0	2.5
28	10.5	9.0	10.0	9.0	8.0	8.5	6.0	5.0	5.5	4.5	2.5	3.5
29	10.5	8.5	9.5	9.0	8.0	8.5	6.5	4.5	5.5	3.5	2.0	2.5
30	12.0	10.0	11.0	9.5	8.0	8.5	5.5	4.5	5.0	4.0	2.0	2.5
31	12.0	10.5	11.0	---	---	---	6.0	4.0	5.0	3.5	2.0	3.0
Month	13.0	8.5	10.4	12.5	7.5	9.2	10.0	4.0	6.1	8.0	1.5	4.2

01426500 WEST BRANCH DELAWARE RIVER AT HALE EDDY, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	4.5	2.5	3.0	4.0	1.0	2.5	3.0	2.0	2.5	8.0	5.0	6.0
2	4.0	2.5	3.0	5.0	2.0	3.0	5.0	2.5	3.5	10.0	5.5	7.0
3	4.0	1.5	2.5	4.5	1.5	2.5	6.0	3.0	4.0	11.0	4.5	7.5
4	3.5	1.5	2.0	3.5	1.0	2.0	4.0	3.0	3.0	12.0	4.5	8.5
5	3.0	1.0	1.5	3.0	0.0	1.5	4.0	2.0	3.0	13.0	6.0	9.5
6	3.5	0.5	1.5	1.5	0.0	0.5	3.5	2.0	2.5	14.5	7.0	11.0
7	3.5	1.0	2.0	4.0	0.0	1.5	4.0	2.0	3.0	15.5	8.0	12.0
8	3.0	1.0	1.5	3.5	0.5	1.5	3.5	2.0	2.5	17.0	9.5	13.0
9	2.5	1.0	1.5	5.0	0.5	2.5	4.0	2.5	3.0	18.5	11.0	14.5
10	2.0	0.5	1.5	5.0	1.5	3.0	5.0	2.0	3.5	18.0	13.0	15.0
11	3.0	0.0	1.0	4.0	2.0	3.0	6.0	2.0	4.0	17.5	13.0	15.0
12	2.5	0.5	1.5	6.0	0.5	3.5	4.5	2.5	3.5	17.5	12.5	15.0
13	1.5	0.0	0.5	6.0	2.0	3.5	4.0	3.0	3.5	16.5	10.5	13.5
14	1.5	0.0	0.0	4.0	1.0	2.5	5.0	2.5	3.5	17.0	9.0	13.0
15	0.5	0.0	0.0	1.0	0.5	1.0	3.5	3.0	3.5	20.0	11.5	15.5
16	0.0	0.0	0.0	0.5	0.0	0.5	3.0	1.5	2.5	16.5	12.0	14.5
17	0.5	0.0	0.0	2.5	0.0	1.0	3.5	2.5	3.0	13.5	10.5	12.0
18	3.0	0.0	1.5	4.0	1.0	2.0	4.0	3.0	3.5	11.0	9.0	10.0
19	3.5	0.5	1.5	3.0	1.0	2.0	5.0	3.0	4.0	10.0	8.5	9.0
20	4.0	1.5	2.5	5.0	1.5	3.0	5.5	3.0	4.0	13.5	8.0	11.0
21	4.5	2.0	3.0	5.0	1.0	2.5	6.0	3.5	4.5	16.5	9.0	12.5
22	3.0	1.5	2.0	6.0	2.5	3.5	6.5	3.5	5.0	17.5	9.0	13.0
23	3.5	1.0	2.0	4.0	2.0	3.0	6.5	4.0	5.0	18.0	10.5	14.0
24	4.5	0.5	2.0	3.5	1.5	2.5	6.5	4.5	5.5	20.5	12.0	16.0
25	3.5	1.5	2.5	3.5	2.0	2.5	5.0	4.0	4.5	16.5	11.0	14.0
26	3.0	2.0	2.5	3.5	2.0	2.5	7.0	4.5	5.5	17.0	10.5	13.5
27	3.5	2.0	2.5	3.5	2.0	2.5	6.0	5.0	5.5	17.5	11.0	14.0
28	5.5	1.5	3.5	4.0	2.0	3.0	6.5	5.5	6.0	19.5	13.0	16.0
29	---	---	---	3.5	1.5	2.5	8.0	5.5	6.0	19.0	11.5	15.0
30	---	---	---	4.0	1.5	2.5	10.0	5.0	7.0	18.0	10.0	14.5
31	---	---	---	4.0	2.0	3.0	---	---	---	19.0	11.5	15.0
Month	5.5	0.0	1.7	6.0	0.0	2.3	10.0	1.5	4.0	20.5	4.5	12.6

01426500 WEST BRANCH DELAWARE RIVER AT HALE EDDY, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	15.5	10.0	12.5	14.0	8.5	11.5	15.5	8.0	11.5	12.5	7.0	9.0
2	15.0	8.0	11.5	15.0	8.5	11.5	15.5	8.0	11.5	12.5	7.0	9.0
3	13.5	10.5	12.5	17.0	9.0	13.0	13.5	8.0	10.5	14.5	7.0	10.5
4	14.0	12.0	13.0	13.5	10.0	11.0	14.5	7.5	10.5	14.0	7.5	10.5
5	17.5	12.0	14.5	16.0	10.0	13.0	15.5	7.0	11.0	11.5	7.5	9.5
6	17.0	11.0	14.0	19.0	12.5	15.5	11.5	9.0	10.0	14.0	7.5	10.5
7	18.0	10.0	13.5	17.0	12.0	14.5	12.5	8.0	10.5	14.0	8.0	10.5
8	16.0	7.5	11.5	15.5	8.0	11.5	16.0	9.0	12.5	12.5	8.5	10.0
9	16.0	9.0	12.5	16.5	8.5	12.5	14.5	9.5	12.5	12.5	8.5	10.5
10	15.5	8.0	11.5	14.5	8.0	11.0	12.5	11.0	11.5	12.0	9.0	10.5
11	16.0	8.0	12.0	10.5	7.5	9.0	18.0	10.0	14.0	12.5	9.0	11.0
12	15.0	8.5	11.5	13.5	7.0	10.5	17.0	10.5	14.0	13.5	9.0	11.5
13	17.0	7.5	12.0	14.5	8.0	11.0	16.5	9.5	12.5	15.0	9.0	12.0
14	14.0	8.5	11.0	15.5	8.0	11.5	15.0	8.0	11.5	12.5	9.0	10.0
15	12.5	6.5	9.0	14.0	8.0	11.0	14.0	8.0	11.0	11.0	8.0	9.5
16	12.5	6.0	9.0	15.5	7.5	11.5	16.0	8.5	12.0	11.5	7.5	9.5
17	15.0	6.5	10.5	15.0	7.5	11.5	13.5	8.5	10.5	13.5	7.5	10.5
18	15.0	7.5	11.0	11.0	8.5	10.0	13.5	7.0	10.0	13.5	8.0	10.5
19	13.5	6.5	10.0	11.5	8.0	10.0	13.0	7.5	10.0	13.5	8.0	10.5
20	15.0	7.5	11.0	15.5	10.5	13.0	10.5	7.5	9.0	13.5	8.5	10.5
21	15.5	8.5	12.0	14.5	9.0	11.5	10.0	8.0	9.0	12.5	8.5	10.5
22	16.0	10.5	13.0	16.5	7.0	11.5	11.0	8.5	10.0	12.5	8.0	10.0
23	17.5	9.5	13.5	13.0	9.5	10.0	13.5	10.5	12.0	14.0	8.0	10.5
24	17.5	10.0	14.0	17.5	10.0	13.5	14.5	10.5	12.5	13.5	7.5	10.5
25	15.0	8.0	11.5	17.5	12.0	15.0	15.0	9.0	12.0	13.5	8.0	10.5
26	15.0	7.0	10.5	17.5	10.0	14.0	12.5	9.0	10.5	12.5	8.5	10.5
27	13.5	6.5	10.0	13.5	9.0	11.5	15.0	8.0	11.0	12.5	9.0	10.5
28	11.0	8.0	9.5	15.5	10.5	13.0	14.0	8.5	11.0	11.5	9.0	10.0
29	15.5	7.0	10.5	16.0	10.0	12.5	15.0	8.5	11.5	12.0	9.0	10.0
30	16.0	7.0	11.5	15.5	9.0	11.5	13.0	8.5	11.0	13.0	8.5	10.5
31	---	---	---	15.0	8.0	11.0	11.5	7.5	9.5	---	---	---
Month	18.0	6.0	11.7	19.0	7.0	11.9	18.0	7.0	11.2	15.0	7.0	10.3

	Max	Min	Mean
Year	20.5	0.0	8.0