Water-Data Report 2013

15302250 NORTH FORK KOKTULI RIVER NEAR ILIAMNA, AK

Nushagak River Basin
Mulchatna River Subbasin

LOCATION.--Lat 59°50'35.4", long 155°42'58.9" referenced to North American Datum of 1927, in SW ¼ NW ¼ SW ¼ sec.7, T.4 S., R.37 W., Lake and Peninsula Borough, AK, Hydrologic Unit 19030302, (Iliamna D-8 quad), on left bank, 3.5 mi upstream from the mouth, and 28.5 mi northwest of Iliamna.

DRAINAGE AREA.--105.62 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 2004 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 613 ft above sea level, from topographic map.

REMARKS.--Records are good except for estimated daily discharges which are poor. Rain gage at station, GOES satellite telemetry at station.

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 15302250, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/15302250.2013.pdf

15302250 NORTH FORK KOKTULI RIVER NEAR ILIAMNA, AK—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	419	e130	e65	e45	e30	e30	e35	e40	1,000	345	91	232
2	437	e125	e60	e45	e30	e35	e35	e40	961	374	94	299
3	475	e125	e60	e45	e30	e35	e35	e40	871	425	160	458
4	616	e120	e60	e40	e30	e35	e35	e40	642	572	419	594
5	498	e120	e60	e40	e30	e35	e35	e40	560	429	320	504
6	433	e120	e60	e40	e30	e35	e30	e40	513	341	345	438
7	566	e125	e60	e40	e30	e35	e30	e40	424	432	322	423
8	546	e125	e60	e35	e30	e35	e30	e40	450	422	277	392
9	444	e125	e55	e35	e30	e35	e30	e57	421	393	504	420
10	405	e125	e55	e35	e30	e30	e30	e76	381	317	506	541
11	380	e120	e55	e35	e30	e30	e30	e141	368	275	402	480
12	359	e120	e55	e35	e30	e30	e30	e301	344	244	346	422
13	334	e120	e55	e35	e30	e30	e30	e600	321	216	295	530
14	e320	e120	e50	e35	e30	e30	e30	e700	278	192	262	417
15	e290	e110	e50	e35	e30	e30	e30	e650	252	177	246	358
16	e260	e110	e40	e30	e30	e30	e30	550	247	179	243	326
17	e260	e100	e40	e30	e30	e30	e35	460	210	250	234	304
18	e250	e100	e35	e30	e30	e30	e35	368	204	295	215	285
19	e210	e90	e35	e30	e30	e30	e35	298	217	257	188	268
20	e180	e85	e35	e30	e30	e30	e35	275	205	225	189	254
21	e170	e80	e35	e30	e30	e30	e35	318	192	192	228	248
22	e165	e75	e35	e30	e30	e30	e35	683	170	169	388	229
23	e165	e75	e35	e30	e30	e30	e35	1,030	174	149	356	222
24	e165	e75	e35	e30	e30	e30	e35	1,030	161	137	288	206
25	e165	e75	e40	e30	e30	e30	e35	1,250	137	129	239	330
26	e160	e70	e40	e30	e30	e30	e40	1,790	128	118	241	403
27	e155	e70	e40	e30	e30	e35	e40	1,580	153	108	250	451
28	e145	e70	e45	e30	e30	e35	e40	1,150	134	101	282	373
29	e140	e65	e45	e30	---	e35	e40	1,160	112	98	258	312
30	e135	e65	e45	e30	---	e35	e40	1,180	116	104	233	268
31	e130	---	e45	e30	---	e35	---	1,230	---	96	214	---
Total	9,377	3,035	1,485	1,055	840	995	1,020	17,197	10,346	7,761	8,635	10,987
Mean	302	101	47.9	34.0	30.0	32.1	34.0	555	345	250	279	366
Max	616	130	65	45	30	35	40	1,790	1,000	572	506	594
Min	130	65	35	30	30	30	30	40	112	96	91	206
Ac-ft	18,600	6,020	2,950	2,090	1,670	1,970	2,020	34,110	20,520	15,390	17,130	21,790
Cfsm	2.86	0.96	0.45	0.32	0.28	0.30	0.32	5.25	3.27	2.37	2.64	3.47
In.	3.30	1.07	0.52	0.37	0.30	0.35	0.36	6.06	3.64	2.73	3.04	3.87

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2004 - 2013, BY WATER YEAR (WY) #

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	348	182	116	82.2	57.6	47.5	80.3	663	416	223	286	365
Max	583	385	217	180	103	78.9	238	1,049	711	284	472	697
(WY)	(2007)	(2005)	(2005)	(2009)	(2008)	(2008)	(2005)	(2005)	(2008)	(2008)	(2006)	(2012)
Min	188	100	47.9	34.0	30.0	27.8	34.0	400	218	146	132	167
(WY)	(2011)	(2009)	(2013)	(2013)	(2013)	(2011)	(2013)	(2007)	(2007)	(2007)	(2007)	(2004)

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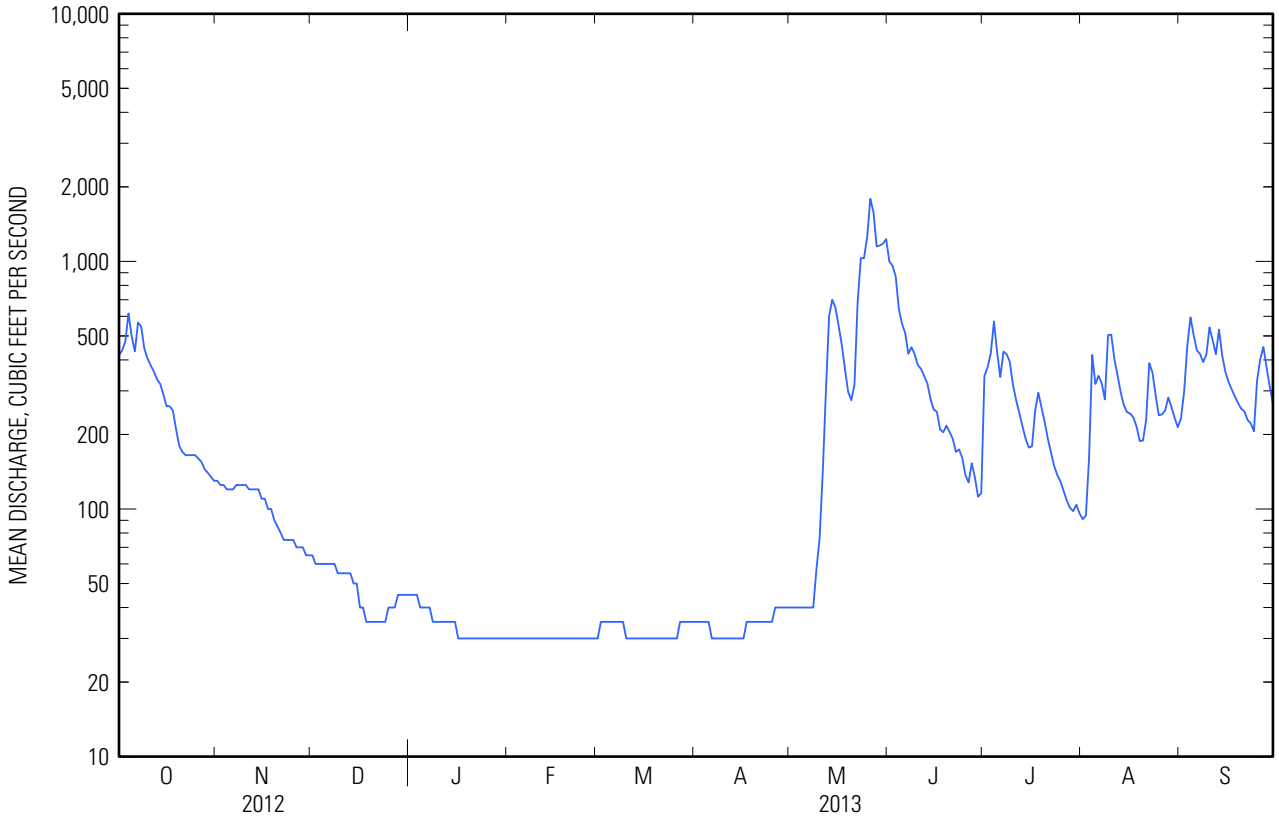
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 2004 - 2013#	
Annual total	96,103		72,733			
Annual mean	263		199		242	
Highest annual mean					316	2005
Lowest annual mean					198	2011
Highest daily mean	1,620	Sep 23	1,790	May 26	2,050	May 13, 2009
Lowest daily mean	30	Mar 20	30	Jan 16	23	Apr 16, 2011
Annual seven-day minimum	30	Mar 20	30	Jan 16	23	Apr 13, 2011
Maximum peak flow			1,900	May 26	2,310	May 13, 2009
Maximum peak stage			20.09	May 26	20.53	May 13, 2009
Maximum peak stage			[a] 22.20	Jan 14		
Annual runoff (ac-ft)	190,600		144,300		175,200	
Annual runoff (cfsm)	2.49		1.89		2.29	
Annual runoff (inches)	33.85		25.62		31.12	
10 percent exceeds	714		450		548	
50 percent exceeds	120		110		155	
90 percent exceeds	35		30		40	

See Period of Record; partial year was used in monthly statistics

[a] Backwater from ice



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2007 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: May 2007 to current year.

INSTRUMENTATION.--Electronic water-temperature recorder set for 15 minute recording interval.

REMARKS.--Record represents water temperature at the sensor within 0.5°C. Temperature was compared with the stream average by cross section on June 25 and July 29. A variation of 0.3°C was found. The variation found between mean stream temperature and sensor temperature was less than 0.3°C. Heavy shore ice occurs near the gage.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 19.8°C, July 28, 2013; Minimum, 0.0°C on many days during fall, winter, and spring breakup.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 19.8°C, July 28; Minimum, 0.0°C on many days during fall,winter, and spring breakup.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
[ft, feet; ft³/s, cubic feet per second; °C, degrees Celsius]

Date	Sample start time	Stream width, ft (00004)	Location in cross section, distance from left bank looking down-stream, ft (00009)	Discharge, instanta-neous, ft³/s (00061)	Sampling method (82398)	Tempera-ture, water, °C (00010)
June 25, 2013	**1340**	95.0	92.0	137	EWI	12.7
June 25, 2013	**1341**	95.0	68.0	137	EWI	12.4
June 25, 2013	**1342**	95.0	44.0	137	EWI	12.4
June 25, 2013	**1343**	95.0	20.0	137	EWI	12.5
June 25, 2013	**1344**	95.0	6.00	137	EWI	12.4
July 29, 2013	**1724**	50.0	46.0	104	EWI	18.4
July 29, 2013	**1726**	50.0	34.0	104	EWI	18.4
July 29, 2013	**1728**	50.0	23.0	104	EWI	18.4
July 29, 2013	**1730**	50.0	11.0	104	EWI	18.3
July 29, 2013	**1731**	50.0	5.00	104	EWI	18.3

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TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
1	4.5	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	5.5	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	7.5	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	6.0	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	6.0	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	7.5	5.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	7.5	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	6.0	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	6.0	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	4.5	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	1.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
Month	7.5	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

15302250 NORTH FORK KOKTULI RIVER NEAR ILIAMNA, AK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.5
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	1.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	1.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	1.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	2.5
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	2.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	1.0	3.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.0	2.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.5	1.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.5	1.5
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.5	2.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.5	2.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.5	1.5
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.5	3.5
29	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0	7.0	1.5	4.0
30	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0	7.0	2.0	4.5
31	---	---	---	0.0	0.0	0.0	---	---	---	6.0	2.5	4.0
Month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	1.2

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TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	6.0	3.0	4.5	10.0	7.5	8.5	15.0	12.0	13.5	11.5	8.5	10.0
2	6.5	3.0	4.5	9.0	7.0	8.0	15.0	11.0	12.5	11.5	10.0	10.5
3	6.5	3.0	4.5	8.5	7.0	7.5	13.0	11.0	12.0	10.5	9.5	9.5
4	6.5	3.0	4.5	9.0	6.5	7.5	12.5	10.5	11.5	10.0	8.5	9.0
5	9.5	3.5	6.0	10.5	6.5	8.5	13.5	10.0	12.0	10.5	8.0	8.5
6	9.5	3.5	6.0	11.0	7.0	9.0	12.5	10.0	11.0	9.0	7.5	8.0
7	10.5	4.0	7.0	11.5	7.0	8.5	15.0	10.0	12.0	9.5	7.5	8.0
8	11.5	4.5	8.0	10.0	7.5	8.5	12.0	9.5	10.5	11.0	7.5	8.5
9	12.0	5.0	8.5	11.5	7.0	9.0	12.0	9.0	10.5	10.0	8.0	8.5
10	12.5	6.0	9.0	14.0	8.0	10.5	12.5	9.5	10.5	10.5	8.0	9.0
11	12.5	6.0	9.5	16.0	7.5	11.5	12.5	9.5	11.0	10.0	8.0	9.0
12	13.5	6.5	10.0	17.0	9.0	13.0	12.0	9.0	10.5	9.0	7.0	8.0
13	13.5	7.0	10.0	17.5	9.5	13.5	13.0	9.5	11.0	10.0	7.5	8.5
14	14.0	7.0	10.5	17.0	10.0	13.5	11.5	9.0	10.5	11.0	6.5	8.5
15	15.0	7.5	11.0	13.5	10.5	12.0	13.0	9.0	10.5	9.5	6.0	7.5
16	15.0	7.5	11.0	12.0	10.0	11.0	11.0	9.0	10.0	9.0	5.0	7.0
17	16.5	8.0	12.0	12.0	10.0	11.0	13.0	9.0	11.0	7.5	4.5	6.0
18	16.0	9.5	12.0	13.0	10.0	11.0	15.0	10.0	12.5	7.0	3.0	5.0
19	12.5	8.5	10.5	14.0	10.0	12.0	13.0	10.0	10.5	6.5	3.0	4.5
20	14.0	8.0	10.5	14.0	10.0	12.0	13.0	9.0	11.0	5.5	2.0	3.5
21	12.5	7.5	10.0	15.5	9.0	12.5	11.5	10.0	10.5	5.5	2.5	4.0
22	9.5	7.0	8.0	18.5	10.0	14.0	10.5	9.0	10.0	4.5	0.5	2.5
23	10.0	6.5	8.0	17.5	11.0	14.0	11.0	8.5	9.5	5.0	1.5	3.5
24	11.0	7.0	9.0	17.5	11.5	14.5	14.0	7.5	10.5	4.0	1.0	2.5
25	15.5	7.0	11.0	19.5	11.5	15.5	11.0	7.5	9.0	5.5	4.0	4.5
26	18.0	9.5	13.5	19.5	12.0	15.5	10.0	9.0	9.5	6.0	4.0	5.0
27	14.0	10.5	11.5	19.5	11.5	15.5	11.0	8.0	9.5	6.5	4.5	5.5
28	13.5	9.5	11.5	20.0	12.5	16.0	10.5	8.5	9.5	6.0	3.0	4.5
29	16.5	9.5	12.5	19.0	13.0	15.5	10.5	8.0	9.0	3.0	2.0	2.5
30	13.5	8.5	10.0	19.5	12.5	16.0	11.5	7.5	9.5	3.0	0.5	1.5
31	---	---	---	18.0	12.0	15.0	10.0	8.5	9.0	---	---	---
Month	18.0	3.0	9.2	20.0	6.5	11.9	15.0	7.5	10.6	11.5	0.5	6.4

	Max	Min	Mean
Year	20.0	0.0	3.5