Water-Data Report 2013

01362500 ESOPUS CREEK AT COLDBROOK, NY

Upper Hudson Basin
Middle Hudson Subbasin

LOCATION.--Lat 42°00′51″, long 74°16′14″ referenced to North American Datum of 1983, Ulster County, NY, Hydrologic Unit 02020006, on left bank at downstream side of bridge on Nissen Road in Coldbrook, 0.3 mi downstream from Little Beaver Kill, 1.5 mi upstream from Ashokan Reservoir, and 2.5 mi south of Mount Tremper. Water-quality sampling site at discharge station.

DRAINAGE AREA.--192 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1914 to September 1925 (monthly discharge only, furnished by State engineer and surveyor of New York, published in WSP 1302), October 1925 to September 1931 (monthly discharge only, furnished by Board of Water Supply, City of New York, published in WSP 1302), October 1931 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 621.54 ft above NGVD of 1929. Prior to June 15, 1916, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since 1924, water diverted from Schoharie Reservoir through Shandaken Tunnel (station 01362230) enters Esopus Creek 10.5 mi upstream from station and is included in records of daily discharge. Slight diversion from Beaver Kill into Cooper Lake for water supply of Kingston. Satellite and telephone gage-height and temperature telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,800 ft^3/s, Aug. 28, 2011, gage height, 23.34 ft, outside gage height was 23.75 ft, from crest-stage gage, from rating curve extended above 15,000 ft^3/s, on basis of slope-area measurements at gage heights 12.39 ft, 15.15 ft, and 20.70 ft; minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,100 ft^3/s, Dec. 21, gage height, 12.40 ft; minimum discharge, 164 ft^3/s, Aug. 2, gage height, 3.74 ft.

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 01362500, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/01362500.2013.pdf

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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	445	1,580	642	534	1,120	630	537	493	1,170	583	344	859
2	498	1,210	973	525	849	554	557	472	1,100	897	284	941
3	470	964	1,030	481	730	512	531	462	659	759	297	580
4	577	784	1,050	478	635	482	521	448	533	570	283	337
5	593	652	1,050	463	552	466	522	437	398	479	258	294
6	487	548	1,040	449	549	463	519	425	353	394	231	277
7	427	486	1,030	450	515	455	514	486	586	341	226	262
8	385	431	1,070	440	519	459	532	631	1,180	368	233	255
9	345	388	1,060	430	494	459	699	811	719	499	816	248
10	358	353	1,100	428	e440	478	1,460	839	1,080	469	617	259
11	342	322	1,140	434	e450	508	1,620	966	3,440	439	397	263
12	291	298	1,080	465	487	4,050	1,430	932	1,900	409	340	398
13	261	552	785	542	462	3,360	1,320	805	2,350	417	321	433
14	247	456	650	1,040	455	1,780	1,110	909	3,740	402	312	319
15	239	387	649	1,100	447	1,240	934	953	2,450	387	285	288
16	232	369	652	961	460	986	819	930	1,640	373	271	273
17	220	353	720	796	431	792	806	890	1,210	363	259	257
18	226	337	1,680	668	e390	690	752	863	961	354	251	249
19	3,630	325	1,330	635	e384	671	772	849	760	347	246	243
20	3,180	315	951	617	e377	543	1,780	812	603	341	237	236
21	1,640	301	5,970	563	e375	470	1,260	627	501	336	235	231
22	1,160	298	3,320	513	e370	445	1,080	482	429	346	231	257
23	915	288	1,840	447	394	416	938	502	440	641	226	234
24	815	277	1,310	e410	403	409	768	689	452	423	221	227
25	665	261	1,040	e400	399	407	687	895	430	372	217	223
26	654	249	838	e410	392	396	620	1,040	419	358	218	224
27	1,380	248	794	e420	667	388	584	796	411	349	311	221
28	1,350	243	633	e440	776	384	556	695	1,040	369	226	217
29	1,060	234	563	482	---	375	534	845	417	364	226	216
30	2,490	240	498	546	---	371	517	1,480	366	341	220	222
31	2,260	---	447	1,750	---	388	---	1,090	---	333	619	---
Total	27,842	13,749	36,935	18,317	14,522	24,027	25,279	23,554	31,737	13,423	9,458	9,543
Mean	898	458	1,191	591	519	775	843	760	1,058	433	305	318
Max	3,630	1,580	5,970	1,750	1,120	4,050	1,780	1,480	3,740	897	816	941
Min	220	234	447	400	370	371	514	425	353	333	217	216

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	525	785	908	801	750	1,153	1,317	876	626	488	407	437
Max	2,509	1,699	2,083	2,123	2,756	2,810	3,309	2,320	2,291	1,364	1,810	1,909
(WY)	(1956)	(1943)	(1974)	(1996)	(1981)	(1936)	(1940)	(1989)	(2006)	(1945)	(2011)	(2011)
Min	22.3	43.6	178	145	137	406	552	410	233	52.0	44.9	27.3
(WY)	(1942)	(1965)	(1965)	(1981)	(1980)	(1960)	(1985)	(1993)	(1933)	(1965)	(1962)	(1962)

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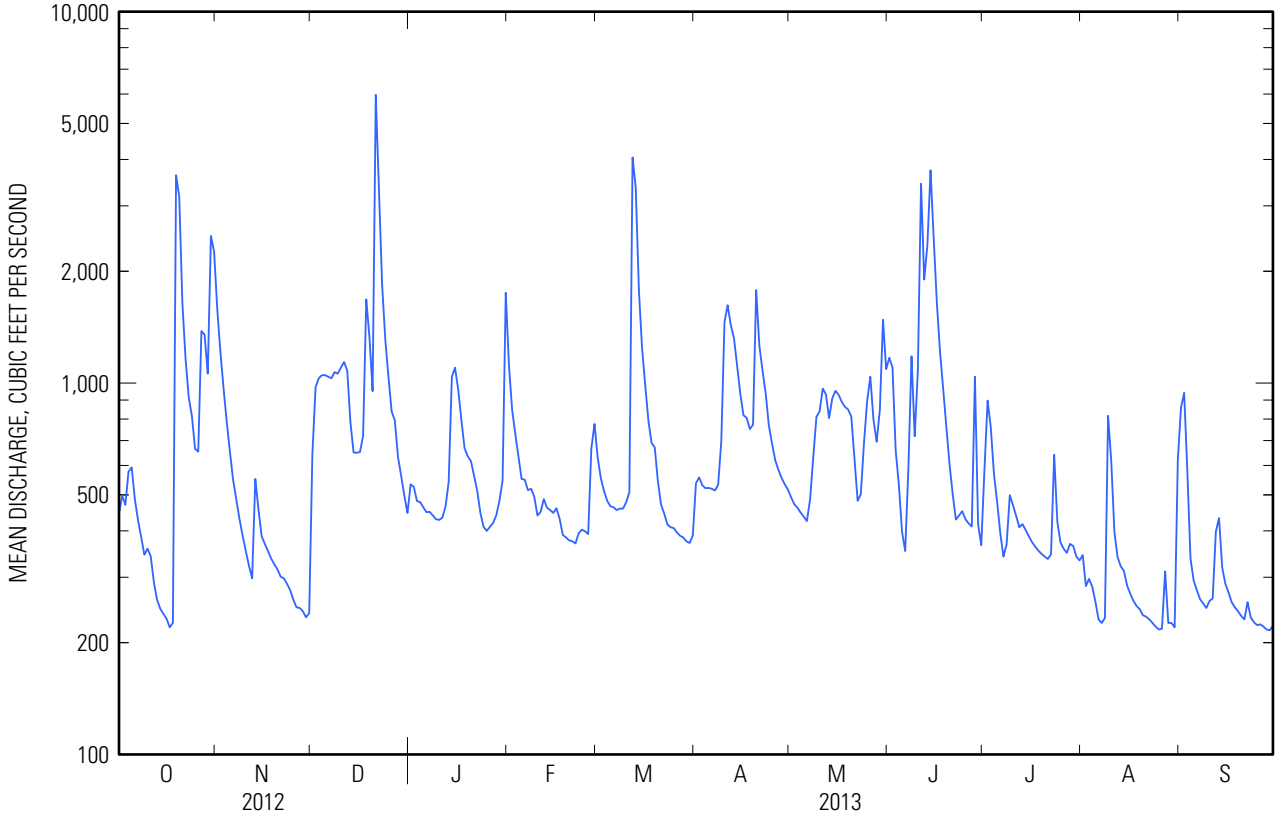
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1932 - 2013	
Annual total	226,042		248,386			
Annual mean	618		681		756	
Highest annual mean					1,308	2006
Lowest annual mean					419	1985
Highest daily mean	5,970	Dec 21	5,970	Dec 21	29,000	Aug 28, 2011
Lowest daily mean	220	Aug 14	216	Sep 29	9.3	Aug 27, 1949
Annual seven-day minimum	225	Aug 3	221	Sep 24	16	Sep 24, 1943
10 percent exceeds	1,090		1,160		1,440	
50 percent exceeds	445		482		537	
90 percent exceeds	239		249		187	



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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1996 to current year.

INSTRUMENTATION.--Water-temperature satellite and telephone telemeter provides 15-minute-interval readings.

REMARKS.--Temperature readings prior to Oct. 1, 2007, rounded to nearest 0.5 °C.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Prior to Oct. 1, 2007--Maximum, 27.0 °C, Aug. 2, 2006; minimum (water year 1997-2007), 0.0 °C on many days during winter periods.
WATER TEMPERATURE: After Oct. 1, 2007--Maximum, 26.9 °C, Aug. 10, 2010; minimum, -0.5 °C, Jan. 21, Feb. 29, 2008.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.9 °C, Aug. 30, Sept. 1; minimum, 0.0 °C on many days during winter period.

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	15.1	12.8	13.7	10.1	9.2	9.6	5.0	2.5	3.7	2.4	0.5	1.6
2	14.1	13.1	13.6	9.7	8.4	9.2	6.1	5.0	5.5	1.2	0.1	0.5
3	15.7	14.0	14.8	8.8	7.6	8.1	7.1	5.5	6.1	0.4	0.0	0.2
4	15.7	14.8	15.3	8.8	6.8	7.6	6.9	5.4	6.1	2.2	0.4	1.2
5	16.4	13.8	15.2	7.3	5.6	6.6	6.6	4.7	6.0	2.3	0.9	1.5
6	15.4	12.8	14.3	6.4	4.4	5.4	5.3	3.8	4.5	2.2	0.9	1.6
7	12.8	11.4	12.0	5.3	4.3	4.9	5.1	4.3	4.7	3.0	1.1	2.2
8	12.6	10.7	11.7	5.8	4.2	4.9	5.8	5.0	5.4	2.2	0.2	1.2
9	12.2	10.8	11.6	6.2	3.8	5.1	5.9	5.3	5.5	2.1	0.5	1.4
10	13.2	11.8	12.3	8.2	6.1	7.2	6.8	5.3	5.9	3.0	1.6	2.2
11	12.3	10.1	11.2	9.5	7.4	8.4	6.2	4.7	5.6	2.5	1.3	1.9
12	11.1	8.6	9.9	10.6	7.2	9.0	5.3	4.0	4.5	4.0	2.5	3.1
13	9.8	7.0	8.6	10.8	7.0	9.0	4.9	3.5	4.0	4.2	2.9	3.5
14	12.1	9.0	10.5	7.0	5.3	6.3	4.5	2.9	3.6	4.9	3.5	4.1
15	13.2	11.5	12.3	5.9	4.2	5.1	4.8	3.4	4.0	3.7	2.7	3.3
16	12.4	9.7	11.3	5.4	4.0	4.7	4.2	4.0	4.1	3.1	1.6	2.2
17	11.9	8.2	10	5.7	3.7	4.7	4.8	4.2	4.5	3.2	1.9	2.4
18	11.7	8.8	10.4	5.3	3.4	4.4	5.6	4.5	5.1	2.2	0.2	1.0
19	12.7	11.3	12.1	4.9	3.0	4.0	5.3	3.8	4.7	2.7	0.2	1.4
20	13.3	11.5	12.5	5.3	3.2	4.3	4.0	3.2	3.6	3.8	1.4	2.6
21	11.8	10.7	11.2	5.6	4.0	4.7	5.0	2.8	3.9	1.4	0.2	0.7
22	12.2	10.2	11.1	5.4	3.2	4.4	4.4	3.1	3.9	0.4	0.0	0.1
23	11.3	10.1	10.8	6.0	3.4	4.8	3.9	3.0	3.3	0.1	0.0	0.0
24	11.7	11.1	11.3	5.9	3.3	4.8	3.6	2.9	3.2	0.1	0.0	0.0
25	12.3	11.3	11.7	3.7	2.7	3.3	3.7	2.8	3.3	0.1	0.0	0.0
26	14.0	11.8	12.8	4.2	3.1	3.7	2.8	0.7	2.1	0.1	0.0	0.0
27	13.2	12.5	12.8	4.1	3.5	3.8	1.7	0.2	0.9	0.4	0.0	0.1
28	12.7	12.2	12.4	4.3	2.9	3.7	2.4	1.0	1.6	0.6	0.0	0.2
29	12.5	12.1	12.2	3.7	2.0	2.9	1.6	0.9	1.2	2.1	0.6	1.4
30	12.4	10.8	11.4	3.3	2.2	2.8	1.1	0.1	0.7	3.0	1.4	2.1
31	10.8	9.4	10.0	---	---	---	1.5	0.1	0.8	2.1	0.6	1.4
Month	16.4	7.0	12.0	10.8	2.0	5.6	7.1	0.1	3.9	4.9	0.0	1.5

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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
		February			March			April			May	
1	1.1	0.0	0.5	2.7	1.3	2.0	7.7	3.9	5.6	15.0	8.8	11.8
2	0.4	0.0	0.2	3.3	1.3	2.0	5.6	1.9	3.5	15.8	9.1	12.4
3	0.9	0.0	0.3	2.5	0.5	1.4	6.2	1.6	3.5	15.9	10.4	12.9
4	0.7	0.0	0.2	3.2	0.3	1.5	7.1	1.5	4.2	16.1	9.4	12.6
5	0.8	0.0	0.3	4.2	0.6	2.3	8.5	3.2	5.5	15.9	9.7	12.6
6	1.8	0.1	0.8	3.0	2.0	2.4	7.7	2.5	5.0	16.1	9.3	12.5
7	1.2	0.0	0.3	3.0	1.7	2.3	7.9	3.7	5.6	16.9	10.3	13.0
8	0.6	0.0	0.4	2.4	1.2	1.7	10.5	4.7	7.5	12.9	11.2	11.7
9	1.1	0.0	0.3	5.3	0.9	2.9	12.0	6.7	9.2	12.9	10.4	11.4
10	0.6	0.0	0.2	5.7	1.2	3.4	9.0	7.5	8.0	14.0	9.7	11.5
11	1.8	0.0	0.8	4.7	2.5	3.7	8.0	6.2	7.3	12.0	10.9	11.3
12	2.2	1.4	1.7	4.1	2.5	3.6	6.2	5.3	5.5	13.3	9.6	11.4
13	3.6	1.2	2.2	4.4	2.4	3.2	7.2	5.1	6.1	10.3	8.3	9.1
14	3.6	1.1	2.3	3.0	1.2	2.0	7.0	5.2	6.0	12.0	7.6	9.6
15	4.2	1.3	2.6	2.5	0.5	1.6	9.7	4.3	6.8	11.8	8.2	9.6
16	3.0	1.1	2.2	3.3	1.3	2.3	8.2	6.5	7.3	15.7	9.0	12.0
17	1.4	0.0	0.5	3.7	0.8	2.2	12.3	7.4	9.6	14.3	9.7	11.7
18	0.7	0.0	0.2	2.4	0.3	1.3	9.4	6.6	8.2	12.4	9.5	11.1
19	1.1	0.0	0.5	2.5	0.2	1.2	10.9	8.4	9.5	11.9	10.4	11.1
20	2.2	0.0	0.8	3.6	1.1	2.2	10.6	6.9	9.1	17.5	10.0	13.3
21	1.7	0.0	0.5	4.1	0.6	2.3	10.1	5.0	7.4	16.8	11.5	14.0
22	1.8	0.0	0.7	3.2	0.7	2.1	10.5	5.2	7.7	16.3	13.2	14.7
23	1.9	0.9	1.4	5.5	1.5	3.2	7.8	6.1	6.9	14.8	12.7	13.8
24	3.0	1.1	2.0	5.8	1.6	3.6	12.4	5.4	8.9	14.0	10.1	12.3
25	3.4	0.9	2.0	5.1	2.6	3.9	12.6	8.0	10.3	10.4	9.2	9.8
26	3.0	0.6	1.9	5.8	3.0	4.2	12.6	6.9	9.7	11.3	8.8	10
27	1.7	0.1	0.8	6.1	2.1	4.1	12.8	6.8	9.9	15.1	8.4	11.5
28	2.5	1.0	1.8	5.5	3.0	4.2	13.7	7.8	10.8	11.8	9.4	10.9
29	---	---	---	6.5	2.9	4.5	11.0	9.3	9.9	16.2	10.7	13.3
30	---	---	---	7.9	2.9	5.3	14.2	8.9	11.2	17.6	12.5	14.8
31	---	---	---	5.8	3.1	4.7	---	---	---	17.9	12.8	15.2
Month	4.2	0.0	1.0	7.9	0.2	2.8	14.2	1.5	7.5	17.9	7.6	12.0

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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	17.2	12.7	14.9	18.8	17.5	18.1	17.7	16.5	16.9	23.9	20.1	21.3
2	16.6	13.4	15.0	19.1	17.2	18.1	22.6	15.7	18.9	22.1	20.2	21.0
3	17.9	14.4	15.9	19.1	17.2	18.1	20.9	16.3	18.7	20.9	18.4	19.5
4	17.8	12.0	14.8	21.9	17.0	19.5	20.6	16.0	17.9	21.9	17.1	19.2
5	17.9	11.8	15.0	23.4	18.4	20.8	21.5	15.3	18.0	20.5	16.6	18.4
6	15.6	13.4	14.7	22.8	18.9	21.0	20.0	14.9	17.6	18.4	14.4	16.4
7	14.4	13.5	13.8	23.8	19.5	21.8	18.1	16.5	16.8	19.5	14.3	17.0
8	16.5	13.1	14.7	23.5	20.1	21.8	20.6	16.6	18.4	20.5	16.8	18.3
9	18.0	13.2	15.6	21.2	18.3	19.6	19.5	17.7	18.7	19.0	14.1	16.8
10	16.0	13.9	14.4	19.9	17.4	18.7	20.8	16.8	18.7	19.5	16.6	18.0
11	14.7	13.2	14.0	22.0	17.3	19.2	20.1	15.4	17.9	23.2	18.2	20.5
12	15.0	13.0	13.8	20.4	16.6	18.3	20.5	16.0	18.2	21.3	18.7	20.0
13	13.3	12.1	12.5	18.3	16.2	17.3	19.5	17.0	18.1	20.1	16.3	18.5
14	13.4	11.5	12.4	20.7	16.3	18.4	19.5	15.6	17.4	18.6	14.8	16.5
15	15.6	11.4	13.2	23.2	17.1	19.9	19.9	14.7	17.3	17.9	13.5	15.9
16	13.9	11.6	12.6	23.3	17.0	19.9	19.6	15.1	17.4	17.6	15.2	16.2
17	17.2	12.2	14.5	23.6	17.1	20.2	21.3	15.3	18.3	17.8	13.3	15.5
18	15.3	13.0	14.2	23.7	17.2	20.4	19.1	16.6	18.0	18.0	12.5	15.4
19	17.9	12.2	14.8	23.5	17.8	20.4	20.3	16.4	18.4	18.7	13.3	16.1
20	18.3	12.0	15.1	21.8	17.4	19.5	22.6	16.4	19.5	19.4	14.0	16.9
21	18.7	13.4	16.2	21.0	16.7	18.8	23.0	16.9	20.0	19.3	15.0	17.3
22	19.8	14.7	17.3	21.2	16.7	18.9	23.1	17.6	20.4	18.0	14.4	16.1
23	20.5	16.1	18.3	22.0	18.7	20.0	23.0	18.1	20.6	17.0	12.6	14.8
24	20.0	15.9	17.8	21.3	17.3	19.0	22.4	16.7	19.6	17.2	12.3	14.9
25	20.4	15.3	17.8	19.4	14.6	17.0	22.6	16.5	19.6	17.7	12.7	15.4
26	18.4	15.9	17.1	21.4	15.0	18.0	20.4	17.7	19.2	17.8	13.5	15.8
27	20.8	15.3	17.8	21.8	15.5	18.5	23.2	18.4	20.7	17.6	13.0	15.6
28	19.7	17.5	18.5	18.3	16.1	17.1	22.5	18.4	20.7	18.5	13.9	16.3
29	21.5	16.9	19.1	21.5	16.3	18.4	22.3	18.8	20.3	18.1	13.2	15.8
30	20.8	17.5	19.2	19.5	15.3	17.4	23.9	18.6	21.3	18.1	13.6	16.0
31	---	---	---	20.6	15.4	17.8	22.8	19.5	21.0	---	---	---
Month	21.5	11.4	15.5	23.8	14.6	19.1	23.9	14.7	18.9	23.9	12.3	17.2

	Max	Min	Mean
Year	23.9	0.0	9.8