

## CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA  
(Pennsylvania Water-Quality Network Station)

**LOCATION.**--Lat 41°19'50", long 79°12'33", Clarion County, Hydrologic Unit 05010005, on right bank at downstream side of bridge on State Highway 36 at Cooksburg, 300 ft downstream from Toms Run, and 2.7 mi upstream from Cathers Run.

**DRAINAGE AREA.**--807 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1938 to current year. Monthly discharge only for October, November 1938, published in WSP 1305.

**REVISED RECORDS.**--WSP 1305: 1939 (M). WDR PA-85-3: 1979 (M).

**GAGE.**--Water-stage recorder. Datum of gage is 1,147.00 ft above National Geodetic Vertical Datum of 1929. Prior to May 17, 1939, nonrecording gage at same site and datum.

**REMARKS.**--Records good except those for estimated daily discharges, which are poor. Flow regulated since June 1952 by East Branch Clarion River Lake (station 03027000) and at low flow by industrial plants above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Maximum stage since 1935, 19 ft, Mar. 17, 1936, from floodmarks, discharge, about 56,000 ft<sup>3</sup>/s.

**PEAK DISCHARGES FOR CURRENT YEAR.**--Peak discharges greater than a base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge ft <sup>3</sup> /s	Gage Height (ft)	Date	Time	Discharge ft <sup>3</sup> /s	Gage Height (ft)
Jan. 2	0700	10,200	9.59	Apr. 5	1700	*12,600	*10.42
Mar. 21	0800	11,800	10.16				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	433	915	3110	e988	e2020	1680	549	2570	483	5110	603
2	377	447	e781	8540	e997	e1890	1820	751	2010	444	5350	4370
3	356	449	e608	5300	e1060	e1800	1800	1080	1720	414	4480	3490
4	346	421	e479	4020	e1300	e1760	1640	855	1760	397	4320	3300
5	346	409	e461	3290	e2830	e1690	7810	787	1910	396	3320	2940
6	367	459	e434	2770	e2330	e1690	7080	986	1810	406	2990	2260
7	353	825	e470	2330	e2030	e1680	4950	1420	1500	441	2360	1790
8	333	692	e525	2050	e1810	e1830	4070	1500	1620	454	2780	1480
9	316	568	469	1860	e1700	e2340	3740	1990	2070	424	3180	1270
10	311	504	331	1780	e1600	e3190	3420	1940	2010	427	2550	1120
11	308	606	435	1590	e1510	e2580	3020	1770	1680	454	2330	971
12	308	981	734	1340	e1450	e2370	2550	1850	1760	502	2000	839
13	310	788	1380	1200	e1370	e2260	2110	1990	2920	383	1670	744
14	311	678	1380	1190	e1310	e2080	1820	1970	2620	347	1430	665
15	314	603	2280	1080	e1240	e2260	1650	1740	2270	325	1250	691
16	307	586	1800	945	e1170	e2830	1510	1660	2020	334	1060	1080
17	333	1450	1470	870	e1160	e3820	1390	1810	1650	338	1170	917
18	379	2620	1200	e915	e1150	e4930	1240	1560	1490	393	1000	701
19	340	1730	1100	e923	e1140	e6390	1110	1390	1280	436	868	670
20	502	1530	3150	e915	e1160	e7960	1030	1270	1110	406	767	1200
21	567	1370	5150	e956	e1170	10300	1010	2840	1040	881	713	1120
22	372	1670	3500	e956	e1270	9130	1070	2730	1210	7070	674	909
23	310	1930	2780	e980	e2000	6610	990	2230	959	5620	639	1820
24	293	1550	2230	e964	e3350	4880	894	2170	796	4960	594	1900
25	289	1370	1930	e956	e2860	3940	807	2110	690	4930	552	1500
26	481	1260	1710	e956	e2560	3430	828	1740	614	3070	e585	1530
27	1220	1140	1420	e939	e2330	2980	957	1480	553	2290	e699	1330
28	719	1030	1280	e948	e2160	2510	686	1370	512	6120	e712	1550
29	530	935	1180	e956	---	2220	625	1290	498	4410	585	1690
30	428	907	1090	e956	---	2110	569	1130	475	3100	639	1500
31	417	---	1190	e948	---	1850	---	1120	---	2400	705	---
TOTAL	12548	29941	43862	56533	47005	107330	63876	49078	45127	53055	57082	45950
MEAN	405	998	1415	1824	1679	3462	2129	1583	1504	1711	1841	1532
MAX	1220	2620	5150	8540	3350	10300	7810	2840	2920	7070	5350	4370
MIN	289	409	331	870	988	1680	569	549	475	325	552	603
CFSM	0.50	1.24	1.75	2.26	2.08	4.29	2.64	1.96	1.86	2.12	2.28	1.90
IN.	0.58	1.38	2.02	2.61	2.17	4.95	2.94	2.26	2.08	2.45	2.63	2.12

e Estimated.

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	766	1298	1763	1591	1769	2725	2578	1872	1209	782	639	639
MAX (WY)	2357	3906	3821	5654	4138	6185	4721	4314	5307	2565	2732	1995
MIN (WY)	1991	1986	1978	1952	1976	1979	1994	2002	1972	1992	1994	1992
MIN (WY)	86.6	204	150	211	369	764	1217	566	325	139	117	109
(WY)	1952	1961	1961	1961	1987	1969	1976	1985	1999	1952	1952	1952

SUMMARY STATISTICS FOR 2002 CALENDAR YEAR FOR 2003 WATER YEAR WATER YEARS 1952 - 2003

ANNUAL TOTAL	528629	611387	
ANNUAL MEAN	1448	1675	1467
HIGHEST ANNUAL MEAN			2066
LOWEST ANNUAL MEAN			912
HIGHEST DAILY MEAN	14700	May 13	10300
LOWEST DAILY MEAN	225	Sep 14	289
ANNUAL SEVEN-DAY MINIMUM	231	Sep 8	310
MAXIMUM PEAK FLOW			12600
MAXIMUM PEAK STAGE			10.42
INSTANTANEOUS LOW FLOW			268
ANNUAL RUNOFF (CFSM)	1.79	2.08	1.82
ANNUAL RUNOFF (INCHES)	24.37	28.18	24.70
10 PERCENT EXCEEDS	3370	3290	3200
50 PERCENT EXCEEDS	968	1270	900
90 PERCENT EXCEEDS	295	416	296

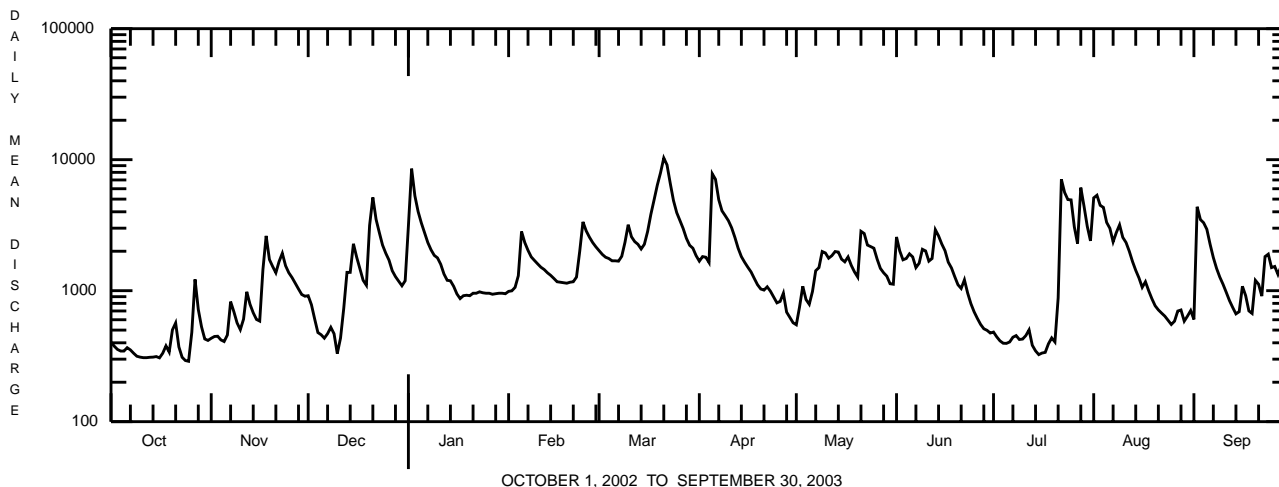
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1951, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	590	1085	1475	1891	1961	3055	2969	1971	1154	579	288	348
MAX (WY)	2134	4241	3050	3962	3881	6815	6288	3965	2789	1765	580	1078
MIN (WY)	1946	1951	1941	1950	1951	1945	1940	1943	1946	1942	1950	1945
MIN (WY)	113	170	337	417	764	1610	725	606	261	158	94.2	82.8
(WY)	1950	1950	1944	1944	1941	1949	1946	1941	1939	1949	1944	1943

SUMMARY STATISTICS WATER YEARS 1939 - 1951

ANNUAL MEAN	1444
HIGHEST ANNUAL MEAN	2023
LOWEST ANNUAL MEAN	953
HIGHEST DAILY MEAN	24600
LOWEST DAILY MEAN	43
ANNUAL SEVEN-DAY MINIMUM	50
MAXIMUM PEAK FLOW	32700
MAXIMUM PEAK STAGE	14.96
INSTANTANEOUS LOW FLOW	41
ANNUAL RUNOFF (CFSM)	1.79
ANNUAL RUNOFF (INCHES)	24.31
10 PERCENT EXCEEDS	3350
50 PERCENT EXCEEDS	793
90 PERCENT EXCEEDS	140

- a From rating curve extended above 40,000 ft<sup>3</sup>/s.
- b From peak-stage indicator.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

## CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued  
(Pennsylvania Water-Quality Network Station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Some values for "dissolved" parameters exceed values for the corresponding "total" parameter. These results are within the limits of analytical precision and methods. Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd $\mu$ S/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 26...	1330	1028	9813	1260	40	13.3	7.5	157	4.2	42	11.2	3.3	16
MAR 2003 26...	1230	1028	9813	3430	40	11.1	7.1	118	8.4	36	9.0	3.2	8
MAY 20...	1430	1028	9813	1220	40	11.4	8.3	147	14.8	42	10.6	3.7	14
JUL 30...	1400	1028	9813	2990	40	9.2	6.8	97	18.3	31	8.0	2.6	10
SEP 23...	0930	1028	9813	1500	40	8.8	7.3	155	16.3	39	10.2	3.3	18

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC, wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water, unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Ortho-phosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, $\mu$ g/L (01105)	Copper, water, unfltrd recover -able, $\mu$ g/L (01042)	Iron, water, unfltrd recover -able, $\mu$ g/L (01045)
NOV 2002 26...	36.0	128	<2	<.020	.31	<.040	.02	.026	.28	2.1	<200	<10	230
MAR 2003 26...	30.6	86	8	<.020	.34	<.040	<.01	.021	.40	1.9	400	<10	600
MAY 20...	37.1	116	<2	<.020	.10	<.040	.01	.018	.24	2.0	<200	<10	250
JUL 30...	22.2	40	24	<.020	.22	<.040	.02	.036	.37	2.7	400	<10	770
SEP 23...	32.0	122	12	<.020	.19	<.040	.02	.046	.41	3.5	300	<10	840

Date	Lead, water, unfltrd recover -able, $\mu$ g/L (01051)	Manganese, water, unfltrd recover -able, $\mu$ g/L (01055)	Nickel, water, unfltrd recover -able, $\mu$ g/L (01067)	Zinc, water, unfltrd recover -able, $\mu$ g/L (01092)
NOV 2002 26...	<1.0	120	<50	<10
MAR 2003 26...	<1.0	240	<50	40
MAY 20...	1.2	140	<50	40
JUL 30...	<1.0	180	<50	50
SEP 23...	<1.0	190	<50	50

## CLARION RIVER BASIN

## 03029500 CLARION RIVER AT COOKSBURG, PA--Continued

BIOLOGICAL DATA  
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	8/22/02
Benthic Macroinvertebrate	Count
Nemertea (PROBOSAS WORMS)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
<u>Ferrissia</u> sp	4
Planorbidae	
<u>Helisoma</u> sp	2
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
<u>Sphaerium</u> sp	2
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	4
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	
Hygrobatidae	
<u>Hygrobates</u> sp	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Baetis</u> sp	4
Heptageniidae	
<u>Stenonema</u> sp	13
Isonychiidae	
<u>Isonychia</u> sp	24
Tricorythidae	
<u>Tricorythodes</u> sp	6
Trichoptera (CADDISFLIES)	
Brachycentridae	
<u>Brachycentrus</u> sp	2
Hydropsychidae	
<u>Cheumatopsyche</u> sp	20
<u>Hydropsyche</u> sp	3
<u>Macrostemum</u> sp	7
Hydroptilidae	
<u>Hydroptila</u> sp	2
Leptoceridae	
<u>Ceraclea</u> sp	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	6
<u>Stenelmis</u> sp	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	69
Total Organisms	172