



2004 Water Year
CLARION RIVER BASIN

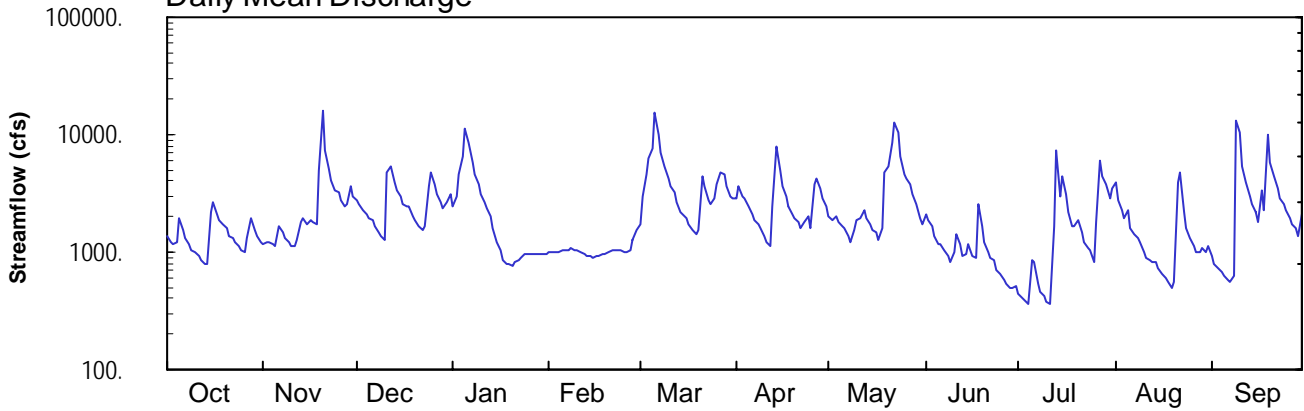
03029500 Clarion River at Cooksburg, PA

Latitude: 41° 19' 50"
Jefferson County

Longitude: 079° 12' 33"
Datum: 1147.00 feet

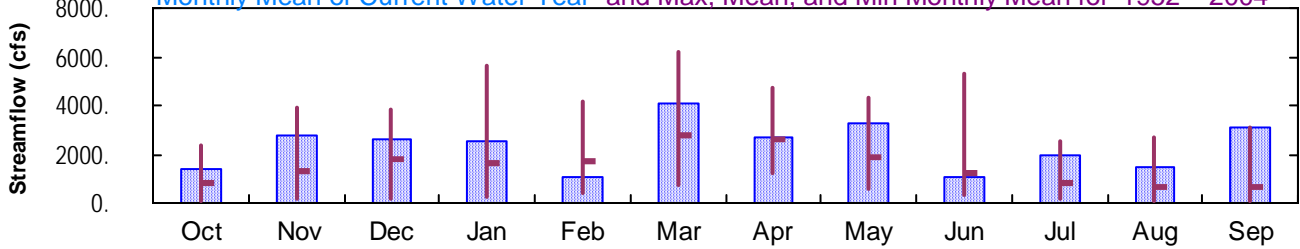
Hydrologic Unit Code: 05010005
Drainage Area: 807. mi²

Daily Mean Discharge

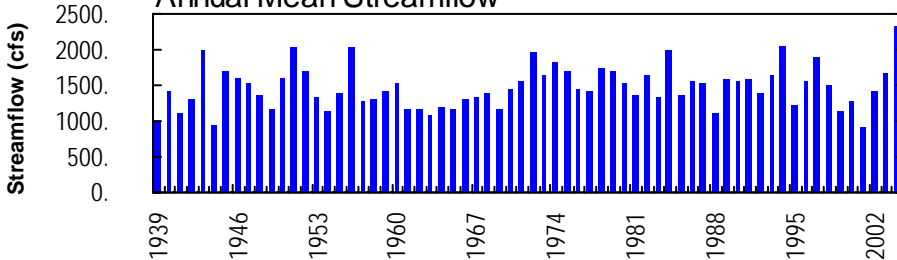


Monthly Statistics

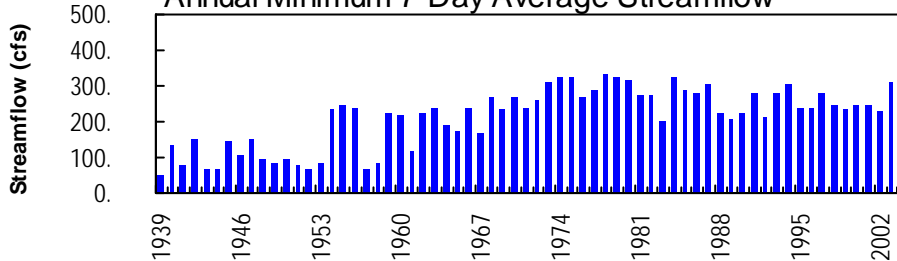
Monthly Mean of Current Water Year and Max, Mean, and Min Monthly Mean for 1952 – 2004



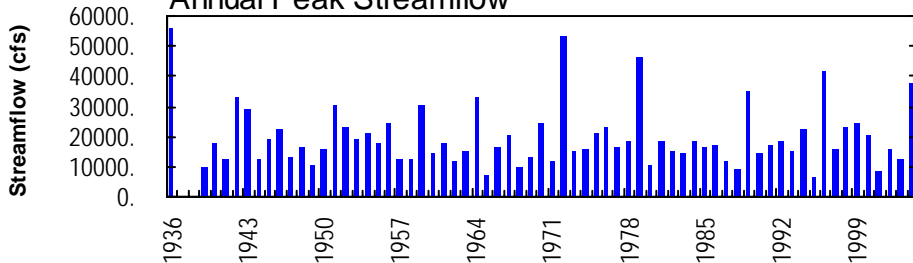
Annual Mean Streamflow



Annual Minimum 7-Day Average Streamflow



Annual Peak Streamflow



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 mi².

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 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 10,000 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Nov. 20	0300	21,200	12.97	July 13	1100	12,700	10.45
Jan. 5	1400	13,100	10.61	Sept. 9	1800	22,900	13.40
Mar. 6	1500	16,600	11.72	Sept. 18	0900	*37,800	*16.46
May 22	1230	16,100	11.60				

**DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES**

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1370	1160	2770	2490	e1000	e1750	2880	2000	2100	436	3850	939
2	1240	1200	2600	2940	e1020	e3030	3670	1890	1850	406	2810	805
3	1170	1210	2310	4650	e1020	e4630	3020	2020	1670	376	2280	726
4	1220	1150	2090	6620	e1020	e6170	2910	1800	1370	361	1960	669
5	1970	1120	1970	11300	e1020	e7720	2480	1660	1160	841	2260	626
6	1520	1670	1840	8620	e1050	15100	2130	1590	1170	827	1600	587
7	1330	1470	1640	5880	e1060	10100	1900	1370	1060	527	1410	549
8	1190	1310	1490	4630	e1060	7040	1690	1210	934	451	1330	622
9	1050	1210	1350	3830	e1060	5320	1580	1530	821	423	1200	13000
10	981	1130	1260	3070	e1030	4210	1380	1900	993	379	995	10500
11	913	1120	4800	e2680	e1000	3580	1230	1960	1420	365	897	5260
12	844	1280	5370	e2390	e979	3180	1130	2260	1180	1650	872	3880
13	801	1780	3940	e2050	e938	2650	2460	1920	927	7180	831	3030
14	787	1970	3300	e1570	e910	2150	7970	1690	955	2950	821	2500
15	2190	1720	2940	e1200	e905	2140	4870	1560	1160	4370	731	2170
16	2670	1840	2540	e1030	e916	1930	3640	1480	939	3100	658	1800
17	2060	1830	2440	e856	e927	1750	2940	1250	899	2190	608	3370
18	1850	1730	2410	e806	e949	1560	2470	1630	2540	1670	549	2230
19	1710	4960	2060	e783	e974	1440	2100	4800	1680	1640	496	10200
20	1570	15700	1840	e770	e1010	1510	1960	5360	1230	1870	553	5700
21	1380	7400	1680	e820	e1050	4340	1780	8460	1000	1490	3860	4360
22	1310	5240	1550	e856	e1060	3560	1610	12600	889	1220	4680	3510
23	1230	4070	1640	e906	e1060	2780	1790	10600	845	1070	2210	2920
24	1110	3410	3570	e956	e1040	2540	2040	6470	711	1020	1620	2540
25	1020	3280	4770	e948	e1000	2830	1600	4640	644	816	1320	2270
26	987	2760	3740	e952	e987	3710	3780	4180	589	1830	1110	1950
27	1320	2470	3120	e962	e1050	4830	4220	3760	534	6030	1010	1750
28	1940	2560	2680	e957	e1270	4530	3430	3100	487	4470	1020	1630
29	1520	3620	2370	e962	e1510	3610	2860	2560	500	3720	1070	1350
30	1340	2980	2680	e967	---	3000	2440	1970	511	2820	985	2080
31	1210	---	3110	e972	---	2870	---	1710	---	3470	1110	---
TOTAL	42803	84350	81870	78423	29875	125560	79960	100930	32768	59968	46706	93523
MEAN	1381	2812	2641	2530	1030	4050	2665	3256	1092	1934	1507	3117
MAX	2670	15700	5370	11300	1510	15100	7970	12600	2540	7180	4680	13000
MIN	787	1120	1260	770	905	1440	1130	1210	487	361	496	549
CFSM	1.71	3.48	3.27	3.13	1.28	5.02	3.30	4.03	1.35	2.40	1.87	3.86
IN.	1.97	3.89	3.77	3.62	1.38	5.79	3.69	4.65	1.51	2.76	2.15	4.31

e Estimated.

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	777	1326	1780	1609	1755	2750	2580	1898	1207	804	655	686
MAX	2357	3906	3821	5654	4138	6185	4721	4314	5307	2565	2732	3117
(WY)	1991	1986	1978	1952	1976	1979	1994	2002	1972	1992	1994	2004
MIN	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 2003 CALENDAR YEAR FOR 2004 WATER YEAR WATER YEARS 1952 - 2004

ANNUAL TOTAL		734059		856736								
ANNUAL MEAN		2011		2341						1484		
HIGHEST ANNUAL MEAN										2341		2004
LOWEST ANNUAL MEAN										912		2001
HIGHEST DAILY MEAN			15700	Nov 20	15700	Nov 20			43200		Jun 23	1972
LOWEST DAILY MEAN			325	Jul 15	361	Jul 4			59		Sep 14	1952
ANNUAL SEVEN-DAY MINIMUM			365	Jul 13	440	Jun 28			67		Sep 8	1952
MAXIMUM PEAK FLOW					37800	Sep 18			a53300		Jun 23	1972
MAXIMUM PEAK STAGE					16.46	Sep 18			b18.84		Jun 23	1972
INSTANTANEOUS LOW FLOW					350	Jul 4,12			57		Sep 14	1952
ANNUAL RUNOFF (CFSM)			2.49		2.90				1.84			
ANNUAL RUNOFF (INCHES)			33.84		39.49				24.98			
10 PERCENT EXCEEDS			3770		4630				3230			
50 PERCENT EXCEEDS			1620		1670				918			
90 PERCENT EXCEEDS			668		821				297			

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	2134	4241	3050	3962	3881	6815	6288	3965	2789	1765	580	1078
(WY)	1946	1951	1941	1950	1951	1945	1940	1943	1946	1942	1950	1945
MIN	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					1951						
LOWEST ANNUAL MEAN	953					1944						
HIGHEST DAILY MEAN	24600				Dec 30	1942						
LOWEST DAILY MEAN	43				Aug 30	1939						
ANNUAL SEVEN-DAY MINIMUM	50				Aug 29	1939						
MAXIMUM PEAK FLOW	32700				Jul 19	1942						
MAXIMUM PEAK STAGE	14.96				Jul 19	1942						
INSTANTANEOUS LOW FLOW	41				Aug 30	1939						
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 ft³/s.

b From peak-stage indicator.

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.

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 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, µS/cm 25 degC (90095)	Specif. conductance, wat unfltrd lab, µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003 29...	1230	1028	9813	1500	11.6	7.5	6.4	154	161	8.3	39	10.0	3.4
DEC 30...	1300	1028	9813	2590	12.8	7.1	6.9	137	129	3.3	35	9.0	3.1
APR 2004 12...	1045	1028	9813	1110	11.9	7.3	7.0	199	198	6.8	55	14.4	4.5
JUN 07...	1100	1028	9813	1060	11.0	7.6	6.7	193	196	15.7	59	15.7	4.9
AUG 09...	1045	1028	9813	1200	10.7	7.7	7.5	186	161	17.9	46	12.2	3.9

Date	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC, wat fltrd, 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, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
OCT 2003 29...	15	41.4	108	10	<.020	.17	<.040	.01	.025	.37	3.0	<200	<10
DEC 30...	11	37.4	80	<2	<.020	.31	<.040	.01	.018	.49	1.6	<200	<10
APR 2004 12...	14	57.4	138	2	<.020	.28	<.040	<.01	.012	.39	2.4	<200	<10
JUN 07...	20	57.3	110	<2	<.020	.22	<.040	<.01	.012	.55	2.8	<200	<10
AUG 09...	18	48.2	132	10	<.020	.18	<.040	.01	.014	.29	2.5	<200	<10

Date	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
OCT 2003 29...	420	<1.0	130	<50	<10
DEC 30...	290	<1.0	150	<50	<10
APR 2004 12...	320	<1.0	180	<50	<10
JUN 07...	420	<1.0	110	<50	<10
AUG 09...	580	<1.0	60	<50	<10

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/29/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	7
Mollusca	
Bivalvia (CLAMS)	
Veneroidea	
Sphaeriidae	
<i>Sphaerium</i>	4
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbricina	2
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<i>Plauditus</i>	1
Caenidae	
<i>Caenis</i>	3
Ephemerellidae	
<i>Ephemerella</i>	39
<i>Eurylophella</i>	8
Heptageniidae	
<i>Stenacron</i>	7
<i>Stenonema</i>	37
Isonychiidae	
<i>Isonychia</i>	3
Trichoptera (CADDISFLIES)	
Glossosomatidae	
<i>Protoptila</i>	1
Hydropsychidae	
<i>Cheumatopsyche</i>	2
Hydroptilidae	
<i>Hydroptila</i>	7
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<i>Optioservus</i>	1
Psephenidae (WATER PENNIES)	
<i>Psephenus</i>	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	11
Empididae (DANCE FLIES)	
<i>Hemerodromia</i>	2
Tipulidae (CRANE FLIES)	
<i>Antocha</i>	1
Total Organisms	138
Total Taxa	19