

## BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA  
(Pennsylvania Water-Quality Network Station)

**LOCATION.**--Lat 40°45'48", long 80°18'55", Beaver County, Hydrologic Unit 05030104, on left bank at Beaver Falls, 200 ft upstream from pumping plant of Beaver Falls Municipal Authority, 7.0 mi downstream from Connoquenessing Creek, at mile 5.5.

**DRAINAGE AREA.**--3,106 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--October 1935 to current year (fragmentary records only prior to October 1956). Gage-height records collected at same site since 1908 are contained in reports of U.S. Weather Bureau.

**REVISED RECORDS.**--WSP 1725: 1960 (adjusted runoff); Instantaneous low flow for water years 1997, 1998 were published in error.

**GAGE.**--Water-stage recorder and concrete dam control. Datum of gage is 727.48 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Dec. 3, 1941, nonrecording gage at site 200 ft downstream at same datum.

**REMARKS.**--No estimated daily discharges. Records good above 2,000 ft<sup>3</sup>/s, and fair below, except those below 1,200 ft<sup>3</sup>/s, which are poor. Pumpage from gage pool, averaging 3.4 ft<sup>3</sup>/s in 1935 and 6.0 ft<sup>3</sup>/s at present, for local water supply, returns to river 2 mi downstream; information furnished by Beaver Falls Municipal Authority. Flow regulated since 1916 by Milton Reservoir, since November 1929 by Meander Creek Reservoir, since December 1933 by Pymatuning Reservoir (station 03100500), since December 1942 by Berlin Lake, since October 1943 by Mosquito Creek Lake, since December 1966 by Michael J. Kirwan Reservoir, since January 1967 by Shenango River Lake, all over 50 mi upstream, and since May 1969 by Lake Arthur (station 03106280) 29 mi upstream. U.S. Army Corps of Engineers satellite telemetry at station.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood of Mar. 27, 1913 reached a stage of 17.4 ft, discharge, 103,000 ft<sup>3</sup>/s, from rating curve extended above 60,000 ft<sup>3</sup>/s.

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	908	791	1130	9070	1280	3970	3790	1650	12900	1480	8120	4360
2	789	719	1090	15200	1390	3730	3540	1940	9150	1370	7560	22800
3	707	620	987	9490	1420	3960	3300	2180	6410	1390	9410	17300
4	732	584	830	7370	3180	3760	3130	2000	5270	1460	10800	13400
5	815	503	937	6210	5250	5390	7260	1930	5240	3390	9810	8730
6	755	534	916	5410	3760	7820	10000	2820	5000	2280	10100	6580
7	677	714	830	4940	3960	5840	8350	2670	4700	4920	9020	5400
8	628	719	919	4880	3370	5540	7530	2260	4220	5750	9030	4700
9	621	602	829	4900	3000	11700	8080	2490	5680	9950	8700	3940
10	609	571	778	4810	2880	10800	7650	9000	5020	8320	15500	3310
11	610	2150	889	4190	2350	7510	6950	11000	3850	13900	10500	2750
12	597	2550	1180	3400	2160	6530	4970	7590	3710	9050	7470	2460
13	605	1680	1510	2920	1740	8610	4030	6500	8160	6650	6170	2010
14	596	1180	3060	2780	1630	13300	3710	7260	11300	5270	5500	1870
15	583	945	5400	2520	1630	10200	3410	6680	7820	4320	5210	1930
16	715	956	3980	2010	1470	9420	2910	6660	5800	4180	5040	2460
17	1080	1350	3080	1760	1360	9180	2970	6460	4900	3870	6070	2040
18	971	1960	2480	1520	1490	8670	2870	5990	5870	3360	5130	1760
19	822	1740	2220	1530	1560	7330	2650	4620	5530	3040	4660	6410
20	923	1810	3960	1550	1590	5580	2210	4090	5140	2620	3760	8510
21	920	1690	4740	1490	1590	4700	3010	9060	4390	2690	2630	5860
22	770	1480	3490	1380	1850	4480	3360	8070	3420	16200	1860	4950
23	681	1600	3140	1270	7770	4520	2840	5930	2960	32200	1660	11500
24	612	1620	2820	1300	7660	4030	2800	11900	2670	30700	1550	9120
25	595	1500	2680	1270	5810	3630	2650	11000	2110	17700	1500	7050
26	1110	1410	2620	1270	4880	3690	2190	7840	1890	8730	2230	6060
27	1480	1270	2220	1180	4270	4240	1990	6440	1860	8400	4180	6920
28	1080	1220	1940	1190	4140	3990	1900	5570	1770	30600	2970	11600
29	858	1150	1890	1240	---	3800	1710	4820	1520	23000	2120	9900
30	802	1130	1810	1160	---	4750	1610	3770	1450	12300	10000	7000
31	819	---	3210	1160	---	4440	---	4930	---	9160	7250	---
TOTAL	24470	36748	67565	110370	84440	195110	123370	175120	149710	288250	195510	202680
MEAN	789	1225	2180	3560	3016	6294	4112	5649	4990	9298	6307	6756
MAX	1480	2550	5400	15200	7770	13300	10000	11900	12900	32200	15500	22800
MIN	583	503	778	1160	1280	3630	1610	1650	1450	1370	1500	1760
CFSM	0.25	0.39	0.70	1.15	0.97	2.03	1.32	1.82	1.61	2.99	2.03	2.18
IN.	0.29	0.44	0.81	1.32	1.01	2.34	1.48	2.10	1.79	3.45	2.34	2.43

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2003, BY WATER YEAR (WY)

MEAN	1789	2976	4684	4779	5455	6681	5851	4061	2965	2406	1783	1850
MAX	6760	11520	11880	11620	12360	13040	13620	10880	11090	9298	6505	6756
(WY)	1991	1986	1991	1993	1990	1993	1957	1996	1989	2003	1980	2003
MIN	531	439	540	714	887	1606	1861	1271	966	916	777	739
(WY)	1992	1992	1961	1961	1963	1969	1971	1962	1992	1965	1991	1999

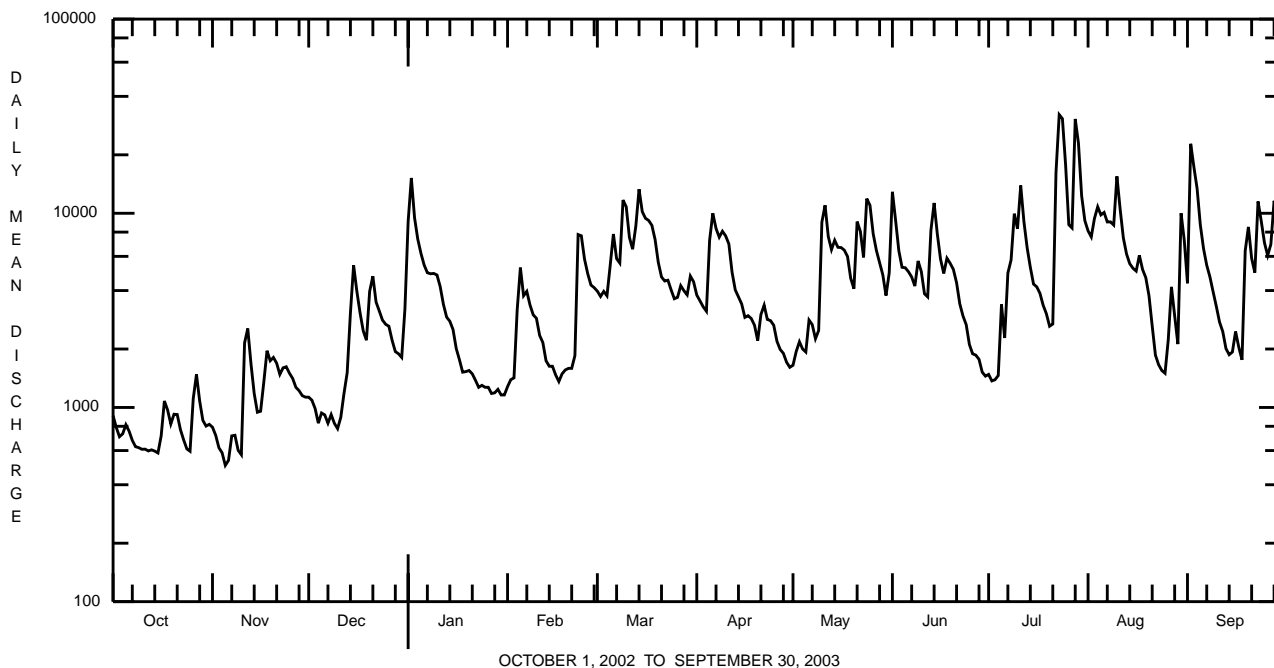
BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1957 - 2003	
ANNUAL TOTAL	1106897		1653343			
ANNUAL MEAN	3033		4530		3764	
HIGHEST ANNUAL MEAN					5146	1997
LOWEST ANNUAL MEAN					1938	1963
HIGHEST DAILY MEAN	25000	Apr 15 <sup>a</sup>	32200	Jul 23	65400	Jan 22 1959
LOWEST DAILY MEAN	503	Nov 5	503	Nov 5	320	Nov 5 1991
ANNUAL SEVEN-DAY MINIMUM	603	Oct 9	603	Oct 9	333	Nov 1 1991
MAXIMUM PEAK FLOW			36600	Jul 28	<sup>b</sup> 69900	Jan 22 1959
MAXIMUM PEAK STAGE			10.40	Jul 28	14.42	Jan 22 1959
ANNUAL RUNOFF (CFSM)	0.98		1.46		1.21	
ANNUAL RUNOFF (INCHES)	13.26		19.80		16.47	
10 PERCENT EXCEEDS	7050		9170		8300	
50 PERCENT EXCEEDS	1790		3360		2330	
90 PERCENT EXCEEDS	801		847		900	

<sup>a</sup> Also May 14.

<sup>b</sup> From rating curve extended above 57,000 ft<sup>3</sup>/s.



## BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued  
(Pennsylvania Water-Quality Network Station)

## WATER-QUALITY RECORDS

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

REMARKS.--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)
Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat fltr 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)
JAN 2003 08...	1130	1028	9813	4850	40	15.8	7.6	579	4.0	140	38.8	10.0	63
MAR 05...	1200	1028	9813	4910	40	14.6	7.6	676	3.5	160	46.8	10.5	64
MAY 20...	0935	1028	9813	3840	40	8.2	8.5	433	18.0	120	30.5	10.4	69
JUL 07...	1345	1028	9813	4770	40	6.5	7.3	393	--	130	37.7	8.5	72
SEP 04...	1000	1028	9813	14300	40	8.3	7.0	301	20.0	100	29.4	7.0	60
JAN 2003 08...	<.2	59.7	384	8	.100	1.91	<.200	.04	.081	2.6	4.8	400	<10
MAR 05...	<.2	64.2	436	<2	.130	1.93	<.200	.04	.065	2.5	4.5	300	<10
MAY 20...	<.2	54.3	348	14	.060	.97	<.200	.04	.152	1.8	5.9	1400	<10
JUL 07...	<.2	48.2	299	86	.060	1.30	<.200	.18	.201	2.1	6.6	2700	<10
SEP 04...	<.2	39.4	230	108	.040	.82	<.040	.07	.160	1.4	6.9	2700	<10
Date	Iron, water, unfltrd recover -able, $\mu$ g/L (01045)	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)	Phenolic compounds, water, unfltrd $\mu$ g/L (32730)							
JAN 2003 08...	780	4.2	130	<50	30	<5							
MAR 05...	660	1.2	160	<50	20	<5							
MAY 20...	2680	5.6	240	<50	150	<5							
JUL 07...	4210	3.5	180	<50	30	<5							
SEP 04...	4350	5.8	320	<50	30	<5							

## BEAVER RIVER BASIN

## 03107500 BEAVER RIVER AT BEAVER FALLS, 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	9/25/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	3
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
<u>Ferrissia</u> sp	4
Hydrobiidae	63
<u>Amnicola limosa</u>	1
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
<u>Corbicula fluminea</u>	1
Arthropoda	
Crustacea	
Cladocera	59
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	3
<u>Stenacron</u> sp	3
Tricorythidae	
<u>Tricorythodes</u> sp	1
Trichoptera (CADDISFLIES)	
Polycentropodidae	
<u>Neureclipsis</u> sp	16
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	160
Total Organisms	314