



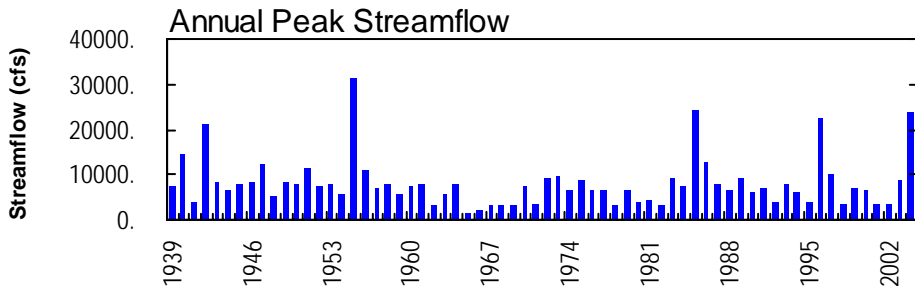
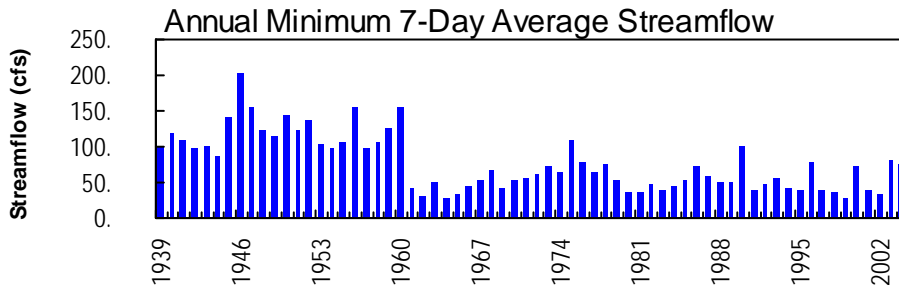
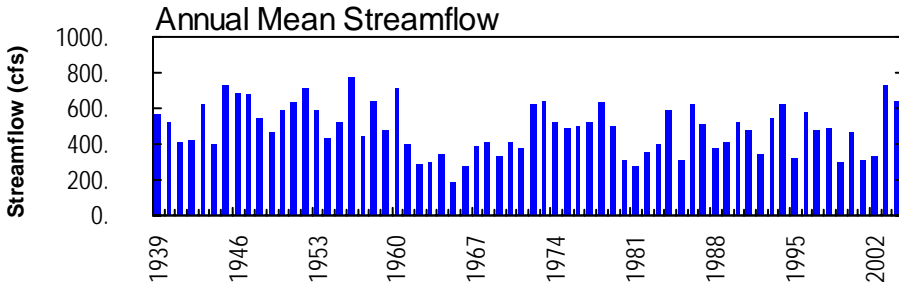
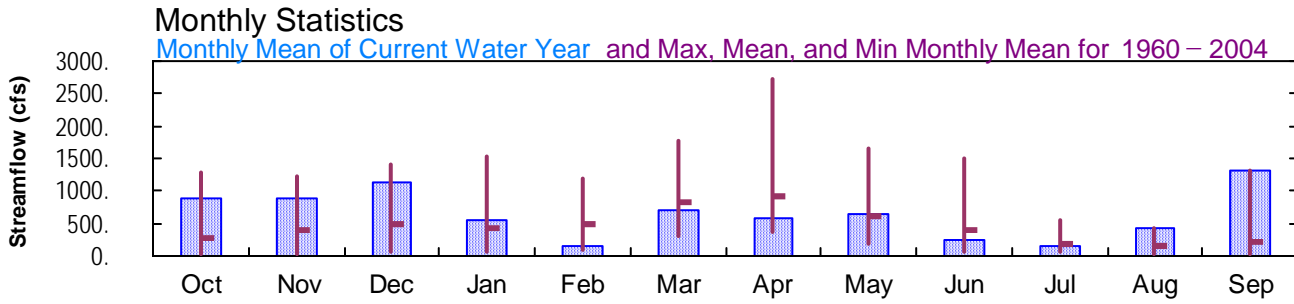
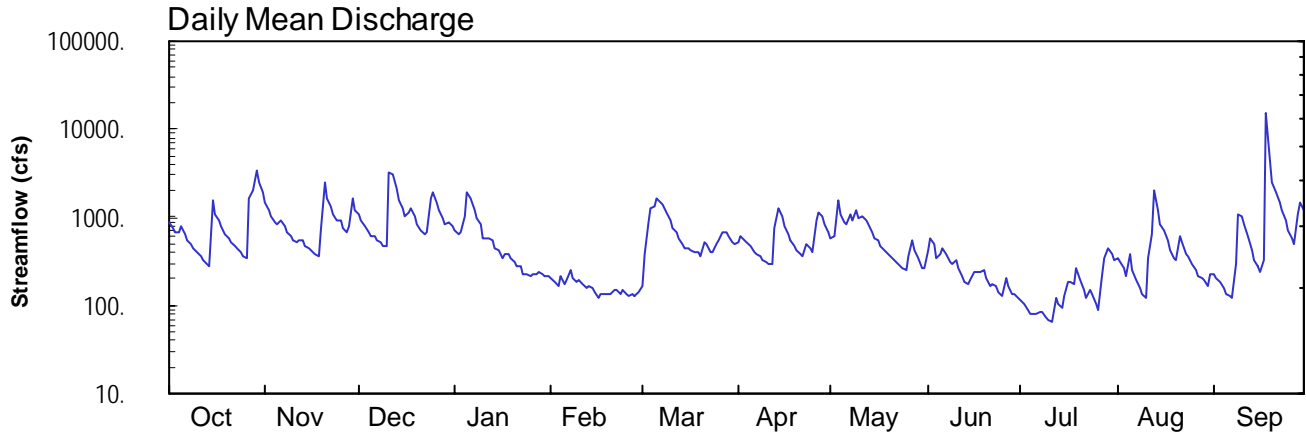
2004 Water Year LACKAWANNA RIVER BASIN

01536000 Lackawanna River at Old Forge, PA

Latitude: 41° 21' 33"
Lackawanna County

Longitude: 075° 44' 41"
Datum: 595.26 feet

Hydrologic Unit Code: 02050107
Drainage Area: 332. mi²



LACKAWANNA RIVER BASIN

01536000 LACKAWANNA RIVER AT OLD FORGE, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 41°21'33", long 75°44'41", Lackawanna County, Hydrologic Unit 02050107, on right bank 100 ft downstream from bridge on SR 3017, 150 ft upstream from Delaware, Lackawanna, and Western Railroad bridge in Old Forge, and 0.5 mi upstream from St. Johns Creek.

DRAINAGE AREA.--332 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WSP 1432: 1939(M), 1940, 1945. WDR PA-90-2: 1985(M).

GAGE.--Water-stage recorder. Datum of gage is 595.26 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1974, water-stage recorder at same site and datum. Oct. 1, 1974, to Aug. 17, 1975, nonrecording gage at site 150 ft upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since December 1959 by Stillwater Dam (station 01534180) about 33 mi upstream. Several measurements of water temperature were made during the year. Satellite and landline telemetry at station.

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	863	1460	1100	697	e200	169	524	588	414	115	349	229
2	757	1190	943	628	e180	384	596	609	571	104	308	209
3	673	1020	777	663	e170	890	545	1570	488	88	266	180
4	687	863	668	1040	217	1240	516	1100	352	80	217	154
5	775	837	617	1960	171	1340	466	878	378	82	386	135
6	633	908	623	1650	197	1610	407	846	450	79	250	128
7	548	785	564	1220	253	1450	374	1100	376	86	194	120
8	483	680	511	998	207	1370	354	913	311	82	157	290
9	436	595	471	815	183	1150	335	1170	291	73	135	1090
10	397	554	466	577	199	929	312	969	320	68	122	1040
11	353	532	3290	567	179	767	287	1040	260	63	341	842
12	321	558	3060	584	157	686	287	917	217	121	640	594
13	292	547	2090	547	165	576	742	817	189	104	1990	425
14	277	480	1550	446	157	490	1300	670	172	95	1190	329
15	1550	435	1280	415	145	452	1010	570	196	127	842	273
16	1100	404	1010	e350	121	437	798	544	235	187	709	236
17	949	391	1150	e380	135	434	649	481	234	180	536	320
18	781	372	1270	379	138	412	538	420	233	174	419	15000
19	658	722	1010	348	134	393	479	392	250	266	350	4460
20	574	2500	853	313	133	368	419	354	205	198	322	2460
21	517	1680	725	280	153	517	391	331	165	146	625	1910
22	479	1310	654	280	149	485	356	312	173	121	510	1470
23	438	1080	694	e230	137	410	491	285	168	150	374	1190
24	397	904	1640	e230	146	411	456	267	140	136	357	922
25	359	911	1910	e220	132	487	407	253	126	102	288	706
26	348	759	1520	e230	128	555	931	361	208	91	250	576
27	1670	678	1220	e230	133	691	1160	561	167	213	221	505
28	2030	776	997	e240	130	682	1030	427	135	344	201	1080
29	3430	1670	853	e230	142	596	832	345	135	452	192	1470
30	2480	1190	865	e220	---	522	690	272	120	373	169	1230
31	1950	---	802	e210	---	483	---	265	---	320	228	---
TOTAL	27205	26791	35183	17177	4691	21386	17682	19627	7679	4820	13138	39573
MEAN	878	893	1135	554	162	690	589	633	256	155	424	1319
MAX	3430	2500	3290	1960	253	1610	1300	1570	571	452	1990	15000
MIN	277	372	466	210	121	169	287	253	120	63	122	120

e Estimated.

LACKAWANNA RIVER BASIN

01536000 LACKAWANNA RIVER AT OLD FORGE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	277	408	497	435	494	818	921	605	388	188	152	224
MAX	1276	1223	1414	1521	1198	1767	2712	1658	1498	566	432	1319
(WY)	1978	1973	1997	1996	1981	1977	1993	1989	2003	1984	1994	2004
MIN	37.3	45.2	76.2	61.4	88.7	291	353	192	69.8	46.4	45.4	37.8
(WY)	1965	1965	1999	1981	1980	1981	1985	2001	1962	1965	1999	1964

SUMMARY STATISTICS FOR 2003 CALENDAR YEAR FOR 2004 WATER YEAR WATER YEARS 1960 - 2004

ANNUAL TOTAL	296129	234952		
ANNUAL MEAN	811	642	450	
HIGHEST ANNUAL MEAN			731	2003
LOWEST ANNUAL MEAN			194	1965
HIGHEST DAILY MEAN	5750	Jun 1	15000	Sep 18 2004
LOWEST DAILY MEAN	116	Jul 20	63	Jul 11 1999
ANNUAL SEVEN-DAY MINIMUM	141	Jul 14	76	Jul 5 1999
MAXIMUM PEAK FLOW			a23800	Sep 18 ab24000 Sep 27 1985
MAXIMUM PEAK STAGE			16.70	Sep 18 16.70 Sep 18 2004
10 PERCENT EXCEEDS	1650		1230	1070
50 PERCENT EXCEEDS	547		436	250
90 PERCENT EXCEEDS	224		137	65

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1959, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	305	503	600	512	531	986	1195	814	454	360	303	229
MAX	1618	1199	1260	1047	1263	1652	2614	1750	866	1375	1448	778
(WY)	1956	1956	1939	1949	1939	1945	1958	1947	1946	1947	1955	1945
MIN	106	122	169	166	160	526	368	262	188	125	130	116
(WY)	1942	1942	1942	1944	1940	1941	1946	1941	1955	1955	1954	1943

SUMMARY STATISTICS WATER YEARS 1939 - 1959

ANNUAL MEAN	566	
HIGHEST ANNUAL MEAN	781	1956
LOWEST ANNUAL MEAN	401	1944
HIGHEST DAILY MEAN	14000	Aug 19 1955
LOWEST DAILY MEAN	73	Sep 26 1943
ANNUAL SEVEN-DAY MINIMUM	87	Oct 8 1943
MAXIMUM PEAK FLOW	a31000	Aug 19 1955
MAXIMUM PEAK STAGE	c20.05	Aug 19 1955
INSTANTANEOUS LOW FLOW	54	Sep 1,2 1957
ANNUAL RUNOFF (CFSM)	1.70	
ANNUAL RUNOFF (INCHES)	23.16	
10 PERCENT EXCEEDS	1200	
50 PERCENT EXCEEDS	340	
90 PERCENT EXCEEDS	138	

- a From rating curve extended above 3,800 ft³/s on basis of slope-area measurements at gage heights 15.30 ft, 16.49 ft, and at peak flow.
- b At gage height 16.49 ft, from floodmark.
- c From floodmark.

LACKAWANNA RIVER BASIN

01536000 LACKAWANNA RIVER AT OLD FORGE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

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

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 unfltrd recover-able, mg/L (00916)	Magnesium, water, unfltrd recover-able, mg/L (00927)
OCT 2003	21...	1028	9813	515	10.7	7.6	7.4	194	188	12.0	54	11.9	5.9
DEC	03...	1028	9813	765	14.5	8.0	7.4	177	164	2.8	47	10.4	5.0
FEB 2004	18...	1028	9813	138	17.4	7.5	7.5	370	383	1.0	87	19.1	9.6
APR	15...	1028	9813	1040	--	7.0	6.9	188	183	6.1	36	9.5	3.0
JUN	23...	1028	9813	164	10.8	7.9	7.2	288	274	23.2	70	15.9	7.3
AUG	05...	1028	9813	371	9.5	7.3	6.9	231	212	21.3	49	12.6	4.3

Date	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (00417)	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, µg/L (01105)	Copper, water, unfltrd recover-able, µg/L (01042)
OCT 2003	21...	34.6	134	<2	.070	.86	<.040	.10	.134	1.3	2.9	<200	<10
DEC	03...	29.8	134	4	.030	.80	<.040	.07	.104	1.1	2.4	<200	<10
FEB 2004	18...	52.5	272	<2	.210	1.86	.670	.28	.392	3.1	3.2	<200	<10
APR	15...	17.7	438	18	.030	.54	.040	.04	.085	.70	2.3	300	<10
JUN	23...	40.0	182	<2	.050	2.13	<.040	.31	.354	2.3	2.9	<200	<10
AUG	05...	21.0	152	46	.090	1.60	<.040	.29	.348	2.2	3.5	1100	<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	21...	150	<1.0	60	<50	20
DEC	03...	210	<1.0	80	<50	20
FEB 2004	18...	190	<1.0	130	<50	30
APR	15...	520	2.0	110	<50	20
JUN	23...	250	1.3	60	<50	20
AUG	05...	1720	7.0	160	<50	40

LACKAWANNA RIVER BASIN

01536000 LACKAWANNA RIVER AT OLD FORGE, 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	08/20/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Nemertea (PROBOSCIS WORMS)	
Enopla	
Hoploneurtea	
Tetrastemmatidae	
<i>Prostoma</i>	2
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	3
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Crangonyctidae	
<i>Crangonyx</i>	1
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
<i>Caecidotea</i>	13
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<i>Acentrella</i>	1
<i>Baetis</i>	12
Heptageniidae	
<i>Stenonema</i>	6
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<i>Cheumatopsyche</i>	12
<i>Hydropsyche</i>	15
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<i>Optioservus</i>	2
<i>Stenelmis</i>	3
Psephenidae (WATER PENNIES)	
<i>Psephenus</i>	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	25
Simuliidae (BLACK FLIES)	
<i>Simulium</i>	8
Total Organisms	105
Total Taxa	15