

Watershed Summary Information

Accounting Unit Name:	Upper Delaware
State(s):	NJ PA
Political Boundaries:	Warren, Sussex, Northampton, Bucks, Hunterdon, Mercer, Morris, Somerset, Monmouth, Monroe
Major Waterways:	Delaware R Paulins Kill Musconetcong R Pohatcong R Tohickon Cr
Number of Stations in Watershed:	Tier1 - 11 Tier2 - 26 Tier3 - 11

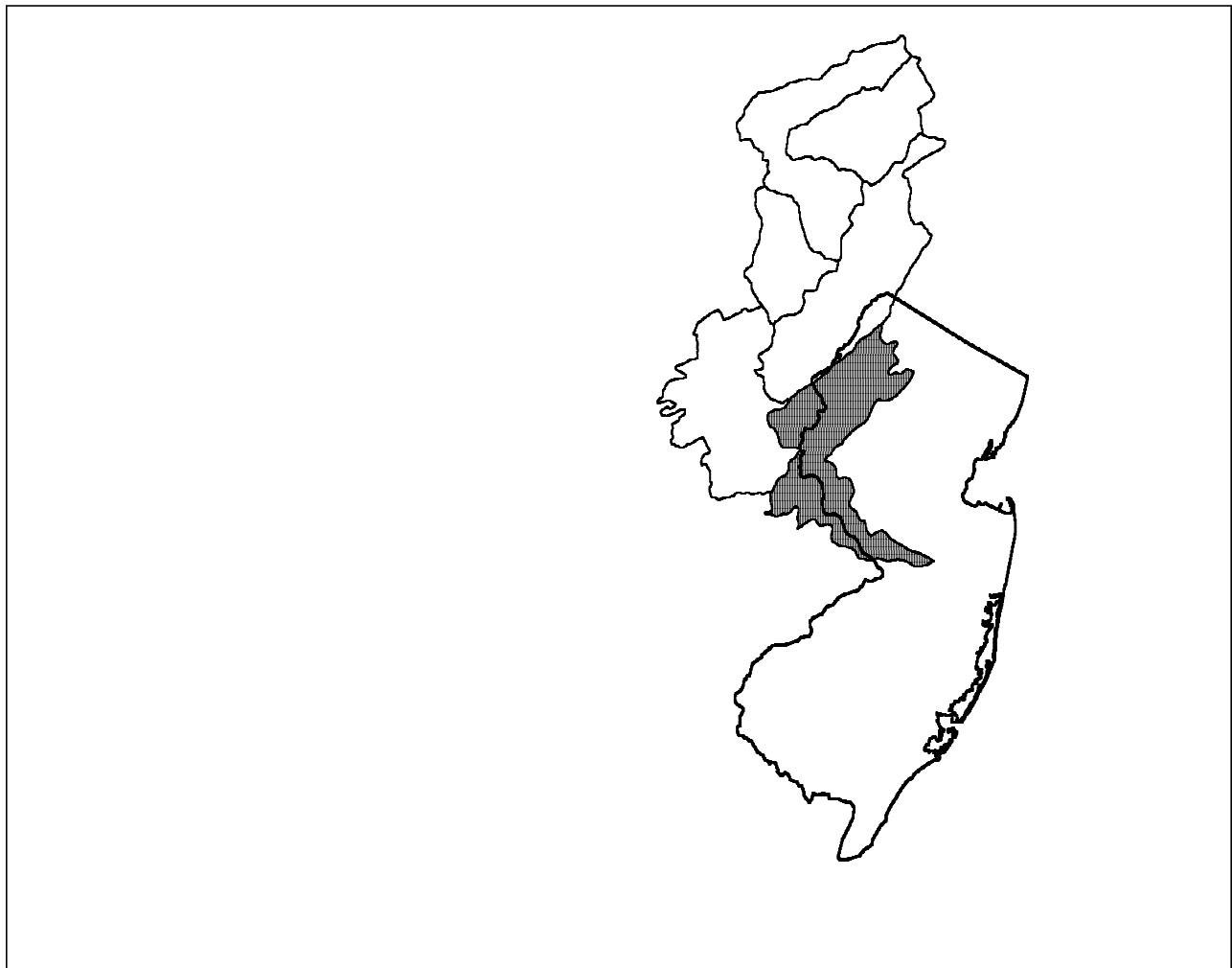


Figure 15. Watershed Location Map

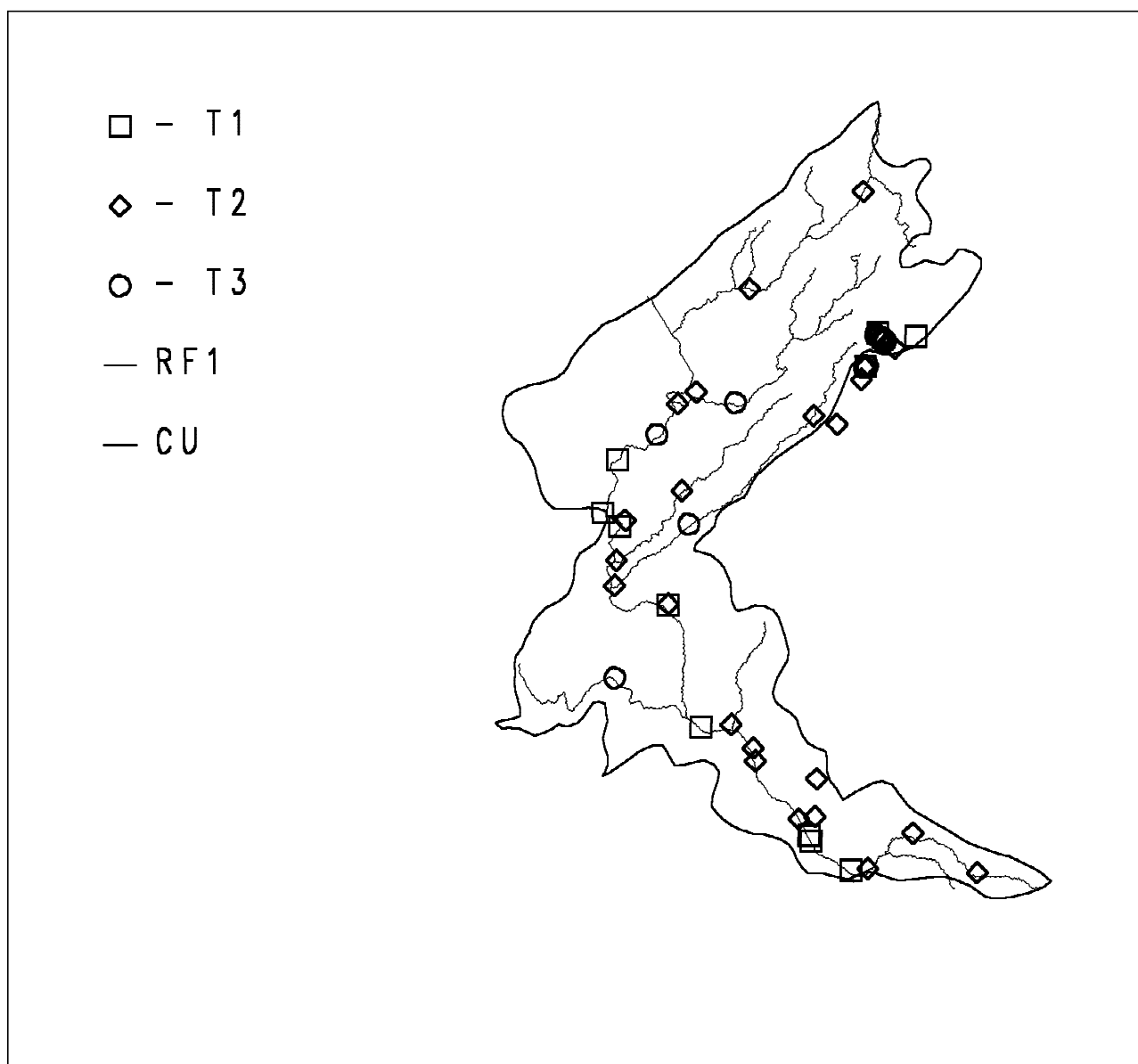


Figure 16. Major Waterways and Location of Sampling Stations

Data Source(s) Used in Evaluation

Source: **STORET** Agency: **11121XWQ**
 Monitoring Program: **USEPA Region 3 Environ Services Div.**
 Num. of Stations: 4 Date Range: 1988-89

Source: **STORET** Agency: **112WRD**
 Monitoring Program: **US Geological Survey Data**
 Num. of Stations: 25 Date Range: 1980-92

Source: **STORET** Agency: **21NJDEP1**
 Monitoring Program: **New Jersey Dept Environ Protection Data - Div of Water Resources**
 Num. of Stations: 14 Date Range: 1980

Source: STORET Agency: 21PA

Monitoring Program: Pennsylvania Dept of Environmental Resources Data

Num. of Stations: 5 Date Range: 1982-92

Chemicals Responsible for Sampling Station Classification as Tier 1 or Tier 2

Classifying Parameter	Number of Stations							
	All Parameters				Aquatic Life		Human Health	
	Total	T.1&2	Tier1	Tier2	Tier1	Tier2	Tier1	Tier2
Polychlorinated biphenyls	33	21	8	13	1	3	7	14
Chlordane	34	16	.	16	.	15	.	10
DDT	33	15	1	14	1	13	.	1
Copper	45	11	.	11	.	11	.	.
Lead	45	11	.	11	.	10	.	1
Zinc	42	9	.	9	.	9	.	.
Arsenic	38	7	.	7	.	7	.	.
Cadmium	46	6	.	6	.	6	.	.
Dieldrin	32	5	.	5	.	1	.	4
Mercury	40	4	1	3	1	3	.	.
Nickel	42	4	.	4	.	4	.	.
Chromium	45	3	1	2	1	2	.	.
Fluoranthene	6	3	1	2	1	2	.	.
Phenanthrene	4	3	1	2	1	2	.	.
Pyrene	6	3	1	2	1	2	.	.
Benzo(a)anthracene	6	2	1	1	1	1	.	2
Chrysene	6	2	1	1	1	1	.	.
Benzo(ghi)perylene	4	2	.	2	.	2	.	.
Diazinon/Spectracide	19	2	.	2	.	2	.	.
Indeno(1,2,3-cd)pyrene	6	2	.	2	.	1	.	2
Fluorene	6	1	1	.	1	.	.	.
Naphthalene	6	1	1	.	1	.	.	.
Anthracene	6	1	.	1	.	1	.	.
Benzo(a)pyrene	6	1	.	1	.	1	.	1
Benzo(b)fluoranthene	6	1	.	1	.	.	.	1

Sediment Chemistry Data: Chemical Summary

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Acenaphthene	4	0.00	0.00	0	.	.
Acenaphthylene	4	0.00	0.00	0	.	.
Aldrin	52	0.01	0.00	2	0.60	0.10
Anthracene	4	210.00	0.00	1	840.00	840.00
Arsenic	59	3696.36	1681.00	39	56180.00	336.00
Benzo(a)anthracene	4	942.50	335.00	2	3100.00	670.00

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Benzo(a)pyrene	4	107.50	0.00	1	430.00	430.00
Benzo(b)fluoranthene	4	700.00	0.00	1	2800.00	2800.00
Benzo(ghi)perylene	4	725.00	550.00	2	1800.00	1100.00
Benzo(k)fluoranthene	4	185.00	0.00	1	740.00	740.00
Bis(2-ethylhexyl)phthalate	2	0.00	0.00	0	.	.
Bromophenyl phenyl ether, 4-	2	0.00	0.00	0	.	.
Butyl benzyl phthalate	2	0.00	0.00	0	.	.
BHC	58	0.00	0.00	0	.	.
Cadmium	74	174.34	0.00	15	4600.00	34.00
Chlordane	58	4.13	1.00	31	51.00	1.00
Chromium	73	23810.36	3000.00	62	1100000	400.00
Chrysene	4	932.50	365.00	2	3000.00	730.00
Copper	73	13898.01	4535.00	63	180000.0	1000.00
Di-n-butyl phthalate	2	0.00	0.00	0	.	.
Di-n-octyl phthalate	2	0.00	0.00	0	.	.
Diazinon/Spectracide	40	0.11	0.00	2	4.20	0.30
Dibenzo(a,h)anthracene	4	0.00	0.00	0	.	.
Dichlorobenzene, 1,2-	2	0.00	0.00	0	.	.
Dichlorobenzene, 1,3-	2	0.00	0.00	0	.	.
Dichlorobenzene, 1,4-	2	0.00	0.00	0	.	.
Dieldrin	55	0.19	0.00	20	3.50	0.10
Diethyl phthalate	2	0.00	0.00	0	.	.
Dimethyl phthalate	2	0.00	0.00	0	.	.
Dimethylphenol, 2,4-	2	0.00	0.00	0	.	.
DDT	169	1.11	0.10	92	32.00	0.10
Endosulfan mixed isomers	50	0.01	0.00	1	0.30	0.30
Endosulfan, alpha-	2	0.00	0.00	0	.	.
Endosulfan, beta-	2	0.00	0.00	0	.	.
Endrin	52	0.00	0.00	0	.	.
Ethion/Bladen	39	0.00	0.00	0	.	.
Fluoranthene	4	2562.50	1075.00	3	8100.00	850.00
Fluorene	4	210.00	0.00	1	840.00	840.00
Heptachlor	52	0.00	0.00	0	.	.
Heptachlor epoxide	52	0.01	0.00	1	0.30	0.30
Hexachlorobenzene	2	0.00	0.00	0	.	.
Hexachlorobutadiene	2	0.00	0.00	0	.	.
Hexachloroethane	2	0.00	0.00	0	.	.
Indeno(1,2,3-cd)pyrene	4	285.00	215.00	2	710.00	430.00
Isophorone	2	0.00	0.00	0	.	.
Lead	73	22842.33	10440.00	54	270000.0	740.00
Malathion	39	0.00	0.00	0	.	.
Mercury	66	34.85	0.00	25	780.00	10.00
Methoxychlor	52	0.08	0.00	2	3.10	1.00
Mirex/Dechlorane	50	0.02	0.00	1	1.00	1.00

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Naphthalene	4	1600.00	0.00	1	6400.00	6400.00
Nickel	74	3417.73	0.00	26	36000.00	900.00
Nitrosodiphenylamine, N-	2	0.00	0.00	0	.	.
Pentachlorophenol	2	0.00	0.00	0	.	.
Phenanthrene	4	1080.00	410.00	3	3500.00	360.00
Phenol	2	0.00	0.00	0	.	.
Polychlorinated biphenyls	66	7.89	0.00	29	230.00	1.00
Pyrene	4	2460.00	1020.00	3	7800.00	640.00
Silver	2	0.00	0.00	0	.	.
Toxaphene	52	0.00	0.00	0	.	.
Trichlorobenzene, 1,2,4-	2	0.00	0.00	0	.	.
Zinc	74	70673.11	39000.00	72	574900.0	5000.00

Tissue Residue Data: Chemical Summary

Tissue Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Acenaphthene	4	0.00	0.00	0	.	.
Aldrin	17	0.00	0.00	0	.	.
Aniline	2	0.00	0.00	0	.	.
Anthracene	4	0.00	0.00	0	.	.
Antimony	4	0.00	0.00	0	.	.
Arsenic	15	0.00	0.00	0	.	.
Benzidine	2	0.00	0.00	0	.	.
Benzo(a)anthracene	4	0.00	0.00	0	.	.
Benzo(a)pyrene	4	0.00	0.00	0	.	.
Benzo(b)fluoranthene	4	0.00	0.00	0	.	.
Benzo(k)fluoranthene	4	0.00	0.00	0	.	.
Benzoic acid	1	0.00	0.00	0	.	.
Benzyl alcohol	2	0.00	0.00	0	.	.
Beryllium	2	0.00	0.00	0	.	.
Bis(2-chloroethyl)ether	2	0.00	0.00	0	.	.
Bromophenyl phenyl ether, 4-	2	0.00	0.00	0	.	.
Butyl benzyl phthalate	2	0.00	0.00	0	.	.
BHC	40	0.00	0.00	0	.	.
Cadmium	18	271.17	77.50	14	1210.00	17.00
Chlordane	29	30.69	0.00	9	300.00	3.00
Chloronaphthalene, 2-	2	0.00	0.00	0	.	.
Chlorophenol, 2-	2	0.00	0.00	0	.	.
Chromium	18	309.00	165.50	12	1060.00	104.00
Chrysene	4	0.00	0.00	0	.	.
Copper	18	2371.44	1870.00	16	7010.00	552.00
Cresol, o	2	0.00	0.00	0	.	.

Tissue Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Cresol, p-	2	0.00	0.00	0	.	.
Di-n-butyl phthalate	1	0.00	0.00	0	.	.
Di-n-octyl phthalate	2	0.00	0.00	0	.	.
Dibenzo(a,h)anthracene	4	0.00	0.00	0	.	.
Dibenzofuran	2	0.00	0.00	0	.	.
Dichlorobenzene, 1,2-	2	0.00	0.00	0	.	.
Dichlorobenzene, 1,3-	2	0.00	0.00	0	.	.
Dichlorobenzene, 1,4-	2	0.00	0.00	0	.	.
Dichlorobenzidine, 3,3'-	2	0.00	0.00	0	.	.
Dichlorophenol, 2,4-	2	0.00	0.00	0	.	.
Dieldrin	15	1.80	0.00	2	18.00	9.00
Diethyl phthalate	1	0.00	0.00	0	.	.
Dimethyl phthalate	2	0.00	0.00	0	.	.
Dimethylphenol, 2,4-	2	0.00	0.00	0	.	.
Dinitrophenol, 2,4-	2	0.00	0.00	0	.	.
Dinitrotoluene, 2,4-	2	0.00	0.00	0	.	.
Dinitrotoluene, 2,6-	2	0.00	0.00	0	.	.
DDT	81	18.28	0.00	19	400.00	10.00
Endosulfan, alpha-	2	0.00	0.00	0	.	.
Endosulfan, beta-	2	0.00	0.00	0	.	.
Endrin	15	0.00	0.00	0	.	.
Fluoranthene	4	0.00	0.00	0	.	.
Fluorene	2	0.00	0.00	0	.	.
Heptachlor	11	0.00	0.00	0	.	.
Heptachlor epoxide	11	0.00	0.00	0	.	.
Hexachlorobenzene	2	0.00	0.00	0	.	.
Hexachlorobutadiene	4	0.00	0.00	0	.	.
Hexachloroethane	2	0.00	0.00	0	.	.
Indeno(1,2,3-cd)pyrene	4	0.00	0.00	0	.	.
Isophorone	2	0.00	0.00	0	.	.
Lead	18	737.11	285.00	17	4080.00	55.00
Mercury	6	186.33	135.00	5	640.00	18.00
Methoxychlor	17	594.71	0.00	4	4700.00	480.00
Mirex/Dechlorane	1	0.00	0.00	0	.	.
Naphthalene	4	0.00	0.00	0	.	.
Nickel	4	0.00	0.00	0	.	.
Nitrobenzene	2	0.00	0.00	0	.	.
Nitrophenol, 4	2	0.00	0.00	0	.	.
Nitrosodi-n-propylamine, N-	2	0.00	0.00	0	.	.
Nitrosodiphenylamine, N-	2	0.00	0.00	0	.	.
Pentachlorophenol	2	0.00	0.00	0	.	.
Polychlorinated biphenyls	41	56.34	0.00	11	390.00	60.00
Pyrene	4	0.00	0.00	0	.	.
Selenium	4	150.00	60.00	2	480.00	120.00

Tissue Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Silver	4	0.00	0.00	0	.	.
Toxaphene	4	0.00	0.00	0	.	.
Trichlorobenzene, 1,2,4-	2	0.00	0.00	0	.	.
Trichlorophenol, 2,4,5-	2	0.00	0.00	0	.	.
Trichlorophenol, 2,4,6-	2	0.00	0.00	0	.	.
Zinc	4	7875.00	7700.00	4	9500.00	6600.00