

Watershed Summary Information

Accounting Unit Name:	Lower Hudson
State(s):	NJ NY
Political Boundaries:	Monmouth, Richmond, Middlesex, Essex, Union, Hudson
Major Waterways:	Navesink R
Number of Stations in Watershed:	Tier1 - 60 Tier2 - 21 Tier3 - 19

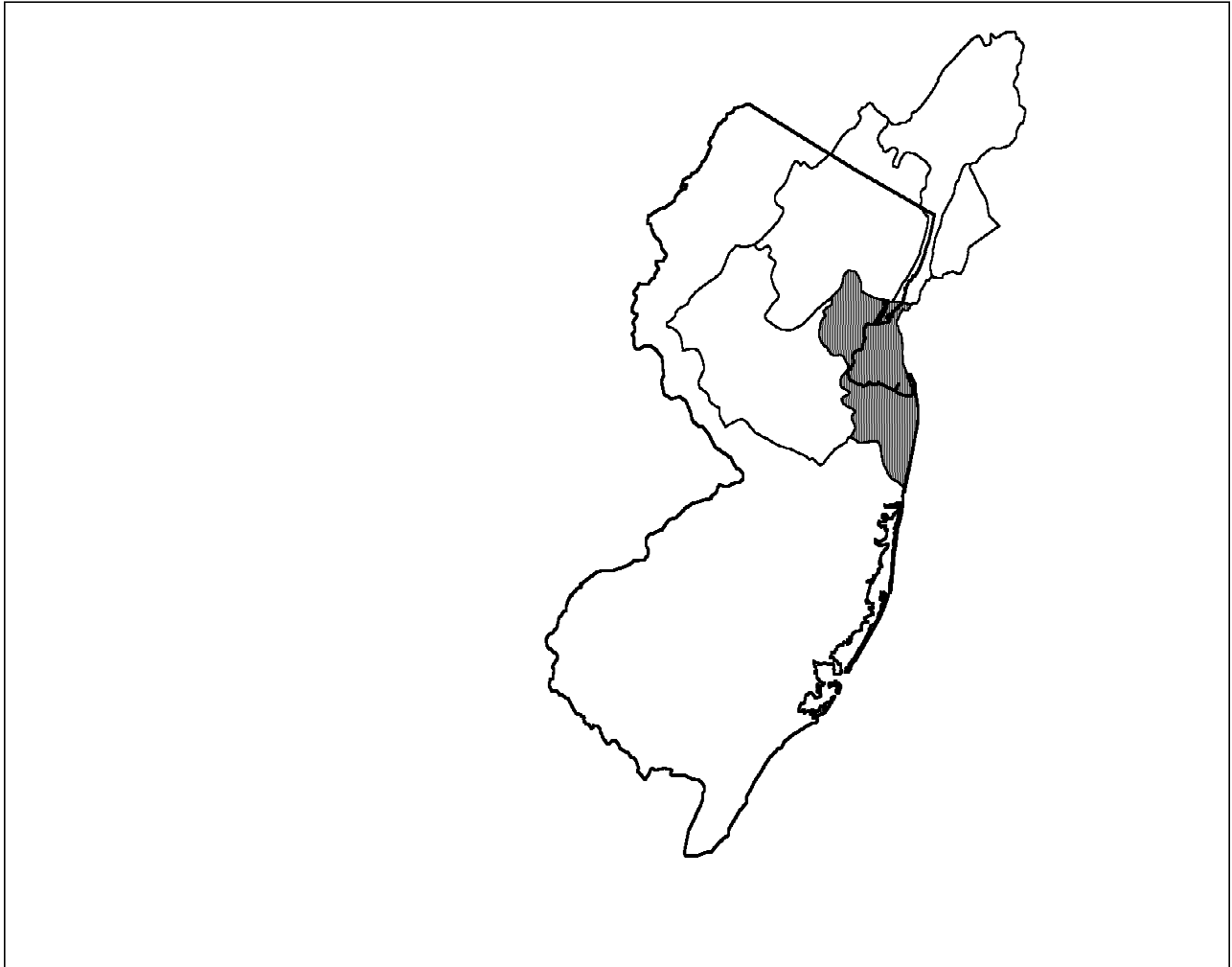


Figure 9. Watershed Location Map

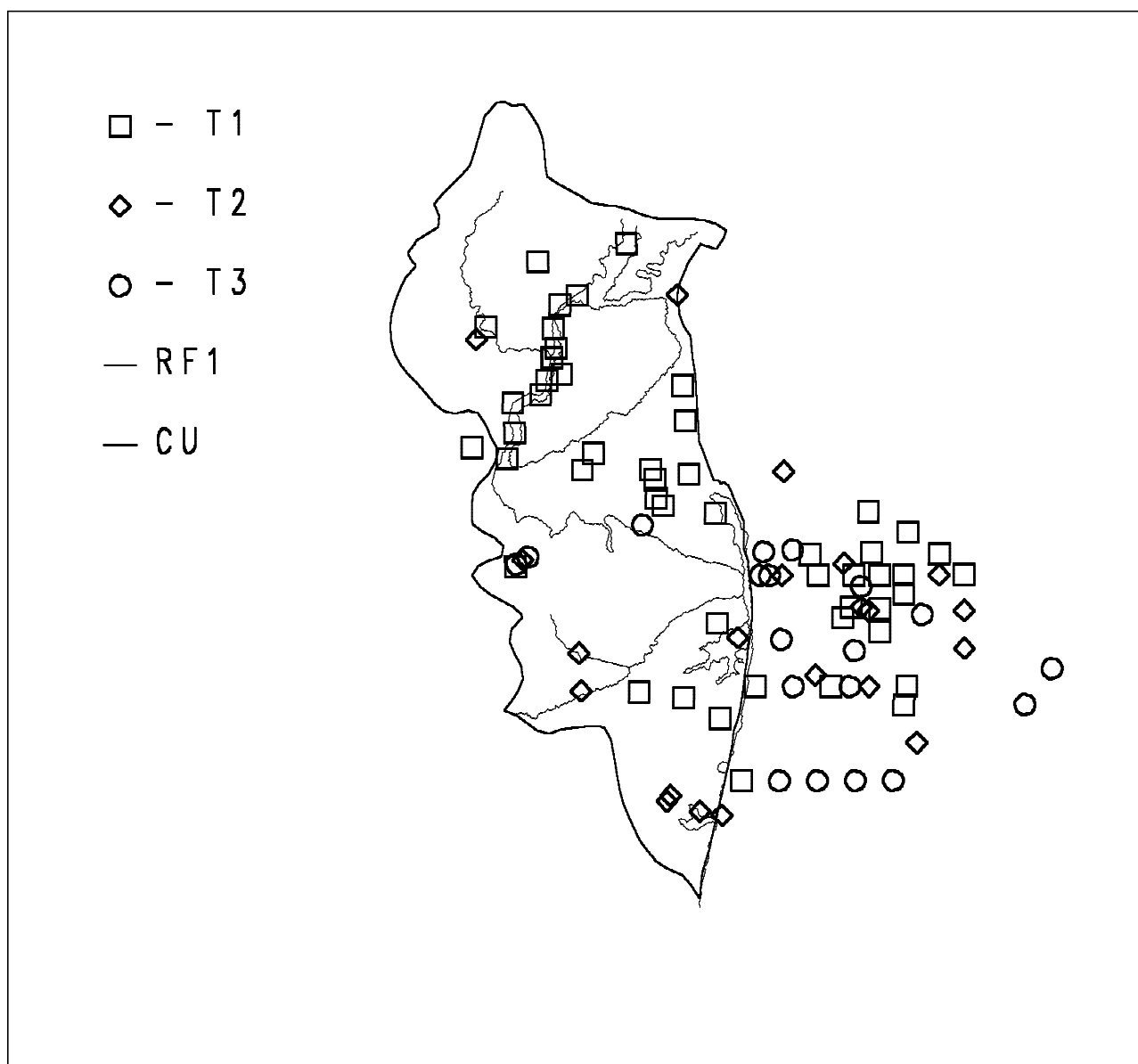


Figure 10. Major Waterways and Location of Sampling Stations

Data Source(s) Used in Evaluation

Source: **COSED** Agency: **NS&T**
 Monitoring Program: **NOAA/National Status and Trends**
 Num. of Stations: 16 Date Range: 1984-91

Source: **EMAP-VA** Agency: **EMAPVA**
 Monitoring Program: **EMAP-VA Province**
 Num. of Stations: 5 Date Range: 1990-91

Source: **SEACOE** Agency: **NOAA84**
 Monitoring Program: **Benthic Surveillance 1984**
 Num. of Stations: 4 Date Range: 1985

Source: **STORET** Agency: **111H030**
Monitoring Program: **USEPA Region 2 Data**
Num. of Stations: 62 Date Range: 1980-88

Source: **STORET** Agency: **112WRD**
Monitoring Program: **US Geological Survey Data**
Num. of Stations: 7 Date Range: 1980-90

Source: **STORET** Agency: **21NJDEP1**
Monitoring Program: **New Jersey Dept Environ Protection Data - Div of Water Resources**
Num. of Stations: 5 Date Range: 1983-84

Source: **STORET** Agency: **21NYDECA**
Monitoring Program: **NY Dept of Env. Cons. Water Quality Network Data**
Num. of Stations: 1 Date Range: 1984

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
Mercury	92	64	53	11	53	11	.	.
Copper	91	62	.	62	.	62	.	.
Lead	92	62	.	62	.	62	.	.
Arsenic	71	53	3	50	3	50	.	.
Chromium	94	51	9	42	9	42	.	.
Zinc	93	51	.	51	.	51	.	.
Silver	84	45	37	8	37	8	.	.
Nickel	70	43	.	43	.	43	.	.
Cadmium	92	42	.	42	.	42	.	.
Pyrene	44	40	8	32	8	32	.	.
DDT	41	35	17	18	17	18	.	8
Benzo(a)anthracene	37	34	6	28	6	28	.	27
Chrysene	36	33	2	31	2	31	.	.
Benzo(a)pyrene	35	32	4	28	4	27	.	32
Naphthalene	31	30	1	29	1	29	.	.
Anthracene	35	29	5	24	5	24	.	.
Polychlorinated biphenyls	35	28	19	9	19	4	.	28
Chlordane	36	27	.	27	.	26	.	9
Fluorene	26	26	1	25	1	25	.	.
Bis(2-ethylhexyl)phthalate	27	25	20	5	20	5	.	20
Dibenzo(a,h)anthracene	25	21	4	17	4	17	.	21
Fluoranthene	46	21	3	18	3	18	.	.
Acenaphthylene	17	16	2	14	2	14	.	.
Dieldrin	34	16	.	16	.	5	.	15
Phenanthrene	41	15	3	12	3	12	.	.
BHC	34	14	.	14	.	14	.	.
Benzo(b)fluoranthene	13	10	.	10	.	.	.	10

Classifying Parameter	Number of Stations							
	All Parameters				Aquatic Life		Human Health	
	Total	T.1&2	Tier1	Tier2	Tier1	Tier2	Tier1	Tier2
Acenaphthene	27	8	.	8	.	8	.	.
Methylnaphthalene, 2-	8	7	.	7	.	7	.	.
Aldrin	28	5	.	5	.	.	.	5
Diazinon/Spectracide	6	5	.	5	.	5	.	.
Indeno(1,2,3-cd)pyrene	16	5	.	5	.	1	.	5
HMW_PAHs	4	4	.	4	.	4	.	.
LMW_PAHs	4	4	.	4	.	4	.	.
Dichlorobenzene, 1,4-	5	2	2	.	2	.	.	.
Benzo(ghi)perylene	15	1	.	1	.	1	.	.
Endosulfan mixed isomers	6	1	.	1	.	1	.	.
Trichlorobenzene, 1,2,4-	2	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	46	86.02	41.50	46	1770.00	13.10
Acenaphthylene	23	188.25	59.00	22	1900.00	8.00
Aldrin	42	0.69	0.00	15	8.00	0.24
Anthracene	57	422.32	250.00	55	4600.00	4.60
Antimony	85	3225.85	1600.00	55	49100.00	400.00
Arsenic	137	16535.01	11000.00	129	140000.0	1000.00
Benzene	10	0.85	0.55	10	3.40	0.10
Benzo(a)anthracene	59	885.51	555.00	59	5000.00	26.00
Benzo(a)pyrene	57	699.69	581.60	55	2500.00	16.00
Benzo(b)fluoranthene	15	502.14	529.48	15	1300.00	3.40
Benzo(ghi)perylene	21	385.14	400.00	18	1060.00	62.00
Benzo(k)fluoranthene	15	458.97	400.00	15	1300.00	3.40
Biphenyl	39	53.05	48.00	38	240.00	6.00
Bis(2-ethylhexyl)phthalate	27	26063.59	16000.00	27	98000.00	68.00
BHC	58	0.47	0.00	20	7.00	0.13
Cadmium	186	1771.88	0.00	72	22000.00	329.00
Chlordane	66	6.11	3.98	59	82.00	0.29
Chlorobenzene	3	96.03	3.10	3	284.00	1.00
Chromium	190	95750.03	44850.00	175	760000.0	1000.00
Chrysene	58	929.61	630.75	58	7100.00	31.00
Copper	187	116825.5	37000.00	159	860000.0	600.00
Di-n-butyl phthalate	12	246.17	140.00	12	740.00	89.00
Di-n-octyl phthalate	11	1363.09	650.00	11	4200.00	24.00
Diazinon/Spectracide	18	0.19	0.00	8	0.90	0.20
Dibenzo(a,h)anthracene	50	127.56	110.00	46	380.00	35.76
Dichlorobenzene, 1,2-	2	40.00	40.00	2	48.00	32.00
Dichlorobenzene, 1,3-	3	33.57	28.00	3	65.00	7.70

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Dichlorobenzene, 1,4-	5	227.60	65.00	5	500.00	28.00
Dichloroethene, trans-1,2-	3	1.70	1.80	3	1.90	1.40
Dichloromethane	14	34.05	8.25	14	271.00	0.20
Dichloropropane, 1,2-	2	1.10	1.10	2	1.50	0.70
Dieldrin	62	2.77	1.95	52	13.00	0.20
Diethyl phthalate	9	38.56	32.00	9	80.00	13.00
DDT	283	664.26	5.20	248	148000.0	0.11
Endosulfan mixed isomers	17	0.34	0.00	1	5.70	5.70
Endosulfan, alpha-	4	0.00	0.00	0	.	.
Endosulfan, beta-	4	0.00	0.00	0	.	.
Endrin	21	0.00	0.00	0	.	.
Ethion/Bladen	17	0.01	0.00	1	0.10	0.10
Ethylbenzene	4	1.72	1.55	4	3.00	0.80
Fluoranthene	68	1448.32	735.74	68	19900.00	2.50
Fluorene	47	125.11	69.00	47	2320.00	26.00
Heptachlor	50	0.51	0.00	22	5.00	0.20
Heptachlor epoxide	38	0.38	0.00	13	2.20	0.10
Hexachlorobenzene	47	1.44	1.10	43	9.00	0.20
HMW_PAHs	4	2675.00	2550.00	4	3300.00	2300.00
Indeno(1,2,3-cd)pyrene	22	345.88	370.75	18	912.00	64.00
Isophorone	2	10.60	10.60	2	15.00	6.20
Lead	186	118574.2	62000.00	151	1100000	680.00
LMW_PAHs	4	822.50	745.00	4	1100.00	700.00
Malathion	17	0.01	0.00	1	0.10	0.10
Mercury	189	1681.16	500.00	116	31000.00	10.00
Methoxychlor	21	0.42	0.00	1	8.90	8.90
Methylnaphthalene, 2-	8	104.20	86.50	7	274.00	22.60
Mirex/Dechlorane	51	1.03	0.60	27	6.40	0.31
Naphthalene	53	222.38	210.00	53	820.00	2.00
Nickel	118	27115.88	30050.00	90	120000.0	3700.00
Phenanthrene	63	716.93	380.00	63	11800.00	4.60
Phenol	2	58.50	58.50	2	76.00	41.00
Polychlorinated biphenyls	82	176.99	5.00	47	4300.00	1.00
Pyrene	66	1714.04	955.00	66	14900.00	5.30
Silver	165	3176.02	0.00	76	36000.00	790.00
Tetrachloromethane	5	5.36	2.50	5	12.00	0.70
Toluene	8	2.92	1.75	8	6.80	1.10
Toxaphene	21	0.00	0.00	0	.	.
Trichlorobenzene, 1,2,4-	2	70.50	70.50	2	120.00	21.00
Trichloroethane, 1,1,1-	2	0.80	0.80	2	1.00	0.60
Trichloroethene	5	5.08	5.40	5	9.80	0.90
Trichloromethane/Chloroform	4	1.67	1.00	4	4.30	0.40
Zinc	194	204238.3	102000.0	193	1800000	4400.00

Tissue Residue Data: Chemical Summary

Tissue Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Cadmium	4	317.50	320.00	4	360.00	270.00
Chromium	4	2530.00	2145.00	4	4780.00	1050.00
Lead	4	942.50	905.00	4	1150.00	810.00
Mercury	4	0.00	0.00	0	.	.

Biotoxicity Data

Lat.	Long.	Date	Species Name	Phase	% Mortality		Sign.
					Test	Control	
Monitoring Program: EMAP-VA Province							
40.1897	74.0317	90-08-10	Ampelisca Abdita	S	26.60	6.80	no
40.3433	73.9867	90-08-09	Ampelisca Abdita	S	10.80	6.80	no
40.5112	74.3000	91-08-04	Ampelisca Abdita	S	73.00	16.00	Yes
40.6467	74.0583	90-07-30	Ampelisca Abdita	S	17.00	9.00	no