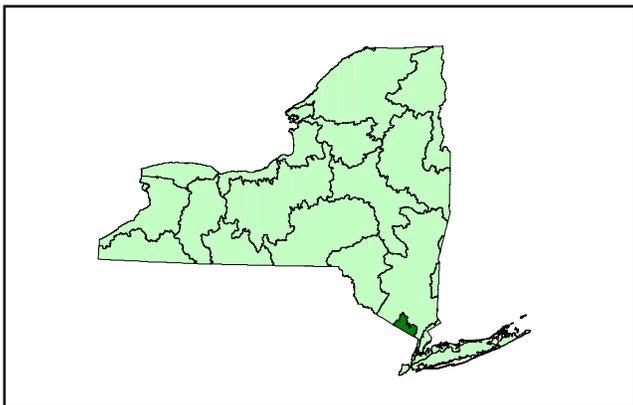
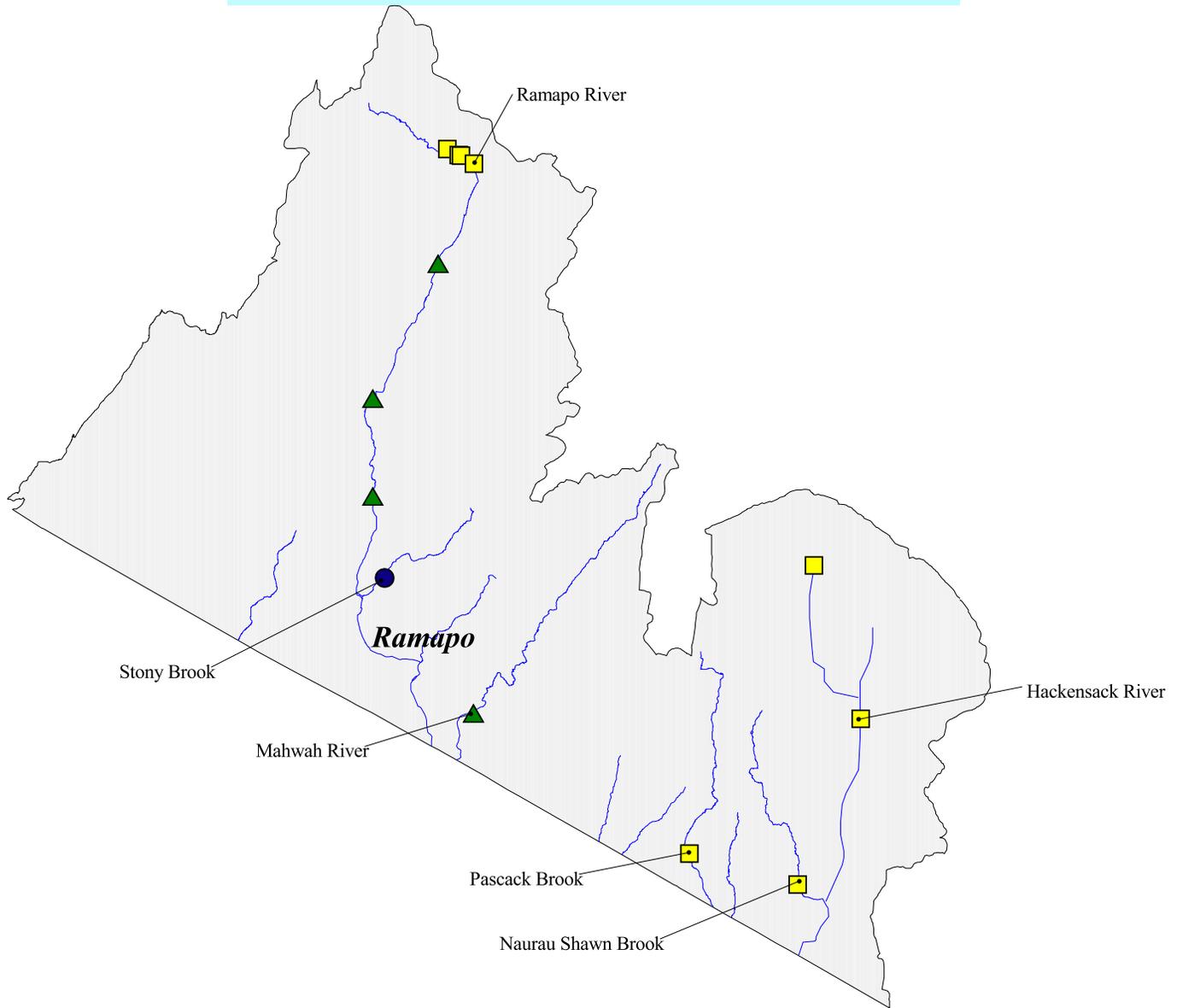


# Passaic - Newark Drainage Basin



## Water Quality Assessment based on Resident Macroinvertebrates

- non-impacted
- ▲ slightly impacted
- moderately impacted
- ◆ severely impacted

0 9 Miles

PASSAIC - NEWARK DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>			
<b>HACKENSACK RIVER (HACK)</b>					
01	West Nyack, above CR 15 bridge				02
<b>HACKENSACK RIVER, WEST BRANCH (HACK)</b>					
02	Centenary, below Old State Rte 304 bridge				02
<b>MAHWAH RIVER (MAWA)</b>					
01	Antrim, above Montebello Rd. bridge				02
<b>NAURAUSHAUN BROOK (NAUR)</b>					
01	Nauraushaun, below Sickletown Rd. bridge				02
<b>PASCACK BROOK (PASC)</b>					
01	Pearl River, above West Washington St. bridge				02
<b>RAMAPO RIVER (RAMA)</b>					
00	Harriman/Monroe Park, at River Rd. bridge	91	93	98	
01	Harriman, above Rte 17 bridge	86			
02	Harriman, below Rte 17 bridge	86	91	93	
03	Harriman, Nepera Rd. bridge	86	91	93	98
04	Arden, Rte 17	86	91	93	98
05	Below Southfields, Rte 210 bridge	86	91	93	
06	Tuxedo Park, East Village Rd.	86	91	93	98
07	Hillburn, 4th St. bridge	91	93	97	98
					02
<b>SADDLE RIVER (SADL)</b>					
01	Upper Saddle River, NJ, above Lake Rd bridge				02
<b>STONY BROOK (STOB)</b>					
01	Sloatsburg, above Seven Lakes Rd bridge				02

ASSESSMENTS OF WATER QUALITY OF STREAMS IN THE PASSAIC - NEWARK DRAINAGE BASIN,  
 BASED ON MACROINVERTEBRATE COMMUNITIES

<u>Site/Reach</u>	<u>Water Quality Assessment</u>	<u>Change from 1992</u>
Hackensack River, West Nyack	moderately impacted	no prior data
Hackensack River, West Branch, Centenary	moderately impacted	no prior data
Mahwah River, Antrim	slightly impacted	no prior data
Nauraushaun Brook, Nauraushaun	moderately impacted	no prior data
Pascack Brook, Pearl River	moderately impacted	no prior data
Ramapo River, Harriman, below River Rd.	moderately impacted	no change
Ramapo River, Harriman, downstream of Rte 17	moderately impacted	<b>IMPROVED</b>
Ramapo River, Harriman, at Nepera plant bridge	moderately impacted	<b>IMPROVED</b>
Ramapo River, Arden	slightly impacted	<b>IMPROVED</b>
Ramapo River, Southfields	slightly impacted	no change
Ramapo River, Tuxedo Park	slightly impacted	no change
Ramapo River, Hillburn	slightly impacted	no change
Saddle River, Upper Saddle River, NJ	slightly impacted	no prior data
Stony Brook, Sloatsburg	non-impacted	no prior data

REPORTS OF MACROINVERTEBRATE SURVEYS WITHIN THE PASSAIC - NEWARK  
WATERSHED

STREAM	YEAR OF SURVEY	REPORT
Ramapo River	1973	AVON
Ramapo River	1986	SBU,1986
Ramapo River	1991	SBU,1991
Ramapo River	1993	SBU,1993
Ramapo River	1998	SBU,1998
Watershed Streams	1991-1992	RIBS,1994

AVON Avon Pollution Investigations Unit, Div. of Fish & Wildlife, NYS DEC  
 DOH New York State Department of Health  
 RIBS Rotating Intensive Basin System, Statewide Waters Assessment Section, NYS DEC  
 SBU Stream Biomonitoring Unit, Division of Water, NYS DEC

### Hackensack River

Moderately impacted water quality is assessed for the Hackensack River and West Branch Hackensack River. Sites at West Nyack and Centenary were sampled for macroinvertebrates in 2002. Macroinvertebrate communities were dominated by facultative caddisflies and midges at both sites. ISD denoted municipal/industrial inputs as the primary stressor. No prior data were available for the river.

### Mahwah River

Water quality is assessed as slightly impacted for the Mahwah River, based on macroinvertebrate sampling in Antrim in 2002. The fauna was dominated by facultative midges, although hellgrammites were also numerous. ISD denoted nonpoint source nutrient enrichment as the primary stressor. Specific conductance was 1035  $\mu\text{mhos/cm}$  at this site, likely reflecting urban runoff. No prior data were available for the stream.

### Nauraushaun Brook

Moderately impacted water quality is assessed for Nauraushaun Brook, based on macroinvertebrate sampling in 2002. The fauna was heavily dominated by facultative caddisflies and midges. ISD denoted nonpoint source nutrient enrichment as the primary stressor. No prior data were available for the stream.

### Pascack Brook

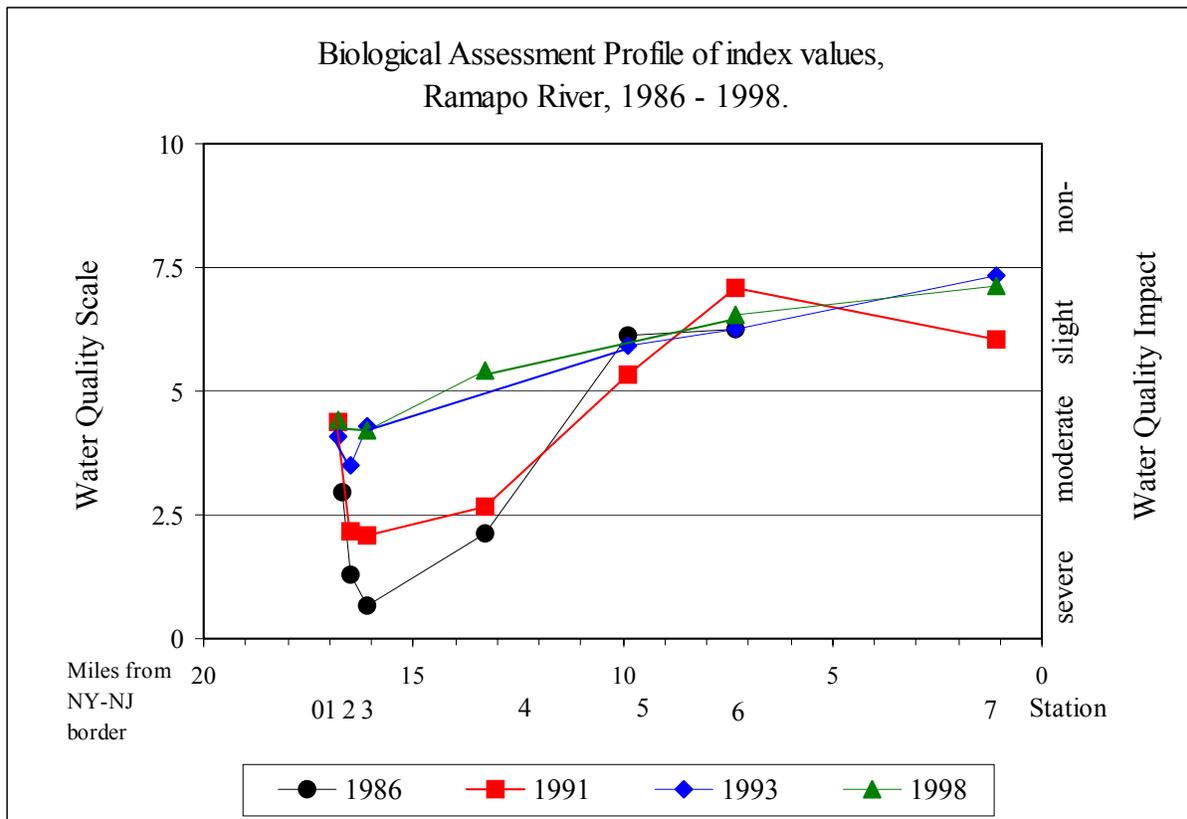
Water quality is assessed as moderately impacted for this small stream, likely by municipal/industrial inputs. A site at Pearl River was sampled for macroinvertebrates in 2002. The fauna was heavily dominated by facultative filter-feeding caddisflies, and species richness was low. No prior data were available for the stream.

### Ramapo River

Water quality in the Ramapo River ranges from moderately impacted at the Harriman sites to slightly impacted downstream to Hillburn, representing substantial improvement compared to severe impact documented in 1986 and 1991 (Figure 15-1). The Orange County Sewer District # 1 treatment facility was upgraded in 1987, but was not operating within permit limits until 1992, and severe impact persisted. The macroinvertebrate survey of 1993 documented substantial improvements at Harriman and Arden. The plant discharge currently has a very minor and short-lived impact on the river's water quality. Upstream of Harriman, the river continues to be moderately impacted, likely by urban runoff from Monroe. Downstream of Harriman, water quality in the river improves steadily downstream to Hillburn. Macroinvertebrate sampling conducted from Harriman to Hillburn in 1998 indicated that water quality was very similar to that documented in 1993. The Hillburn site was also sampled in 1997 and 2002 and was similarly assessed as slightly impacted.

### Saddle River

Slightly impacted water quality is assessed for the Saddle River, based on macroinvertebrate sampling in 2002 at Upper Saddle River, New Jersey. The fauna was heavily dominated by facultative filter-feeding midges and caddisflies, and municipal/industrial inputs were denoted to be the primary stressor. No prior data were available for the stream.



Stony Brook

Non-impacted water quality was assessed for this stream, based on macroinvertebrate sampling in Sloatsburg in 2002. The fauna was heavily dominated by clean-water mayflies, with stoneflies, caddisflies, and dragonflies also present. No prior data were available for the stream.