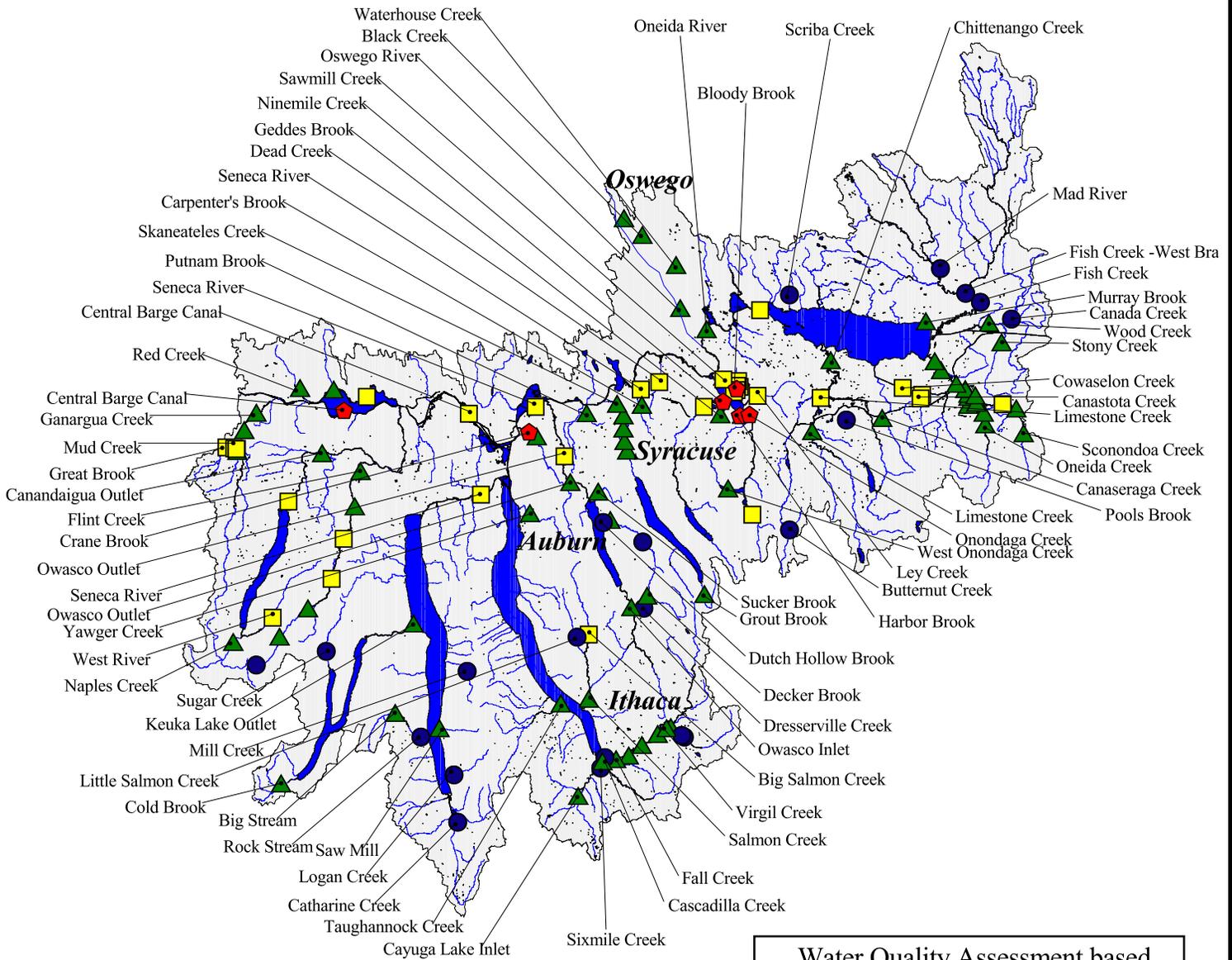
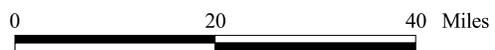
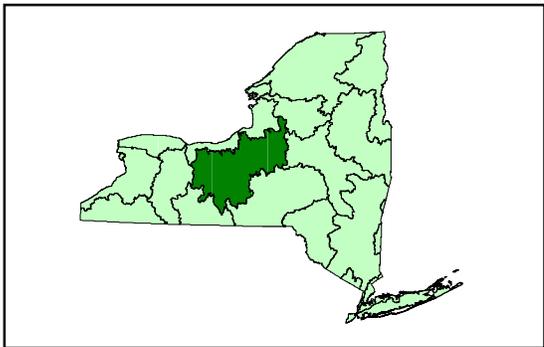


# Seneca - Oneida - Oswego Rivers Drainage Basin



**Water Quality Assessment based on Resident Macroinvertebrates**

- non-impacted
- ▲ slightly impacted
- moderately impacted
- ⬠ severely impacted



SENECA-OSWEGO-ONEIDA RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>			
<b>BARGE CANAL, CENTRAL (CCAN)</b>					
04	Port Gibson, above Wide Waters, Light 748	74	80		
05	Newark, below Wide Waters, Light 719	74	80	89	95
08	Above Lyons, Light 679	74	80		
09	Below Lyons, Light 646	74	80		
10	Above Clyde, Light 627	74	80		
11	Below Clyde, Light 586	74	80	90	95
18	Port Byron, Light 503				
	Howland Island Area	74	80	89	
19	Weedspport, Light 462	74	80		
<b>BIG SALMON CREEK (BIGS)</b>					
01	Genoa, above Rte. 90 bridge			96	98 00
<b>BIG STREAM (BGST)</b>					
01	Above Dundee, above Pre-Emption Rd				01
<b>BLACK CREEK (BLKO)</b>					
01	Bundy Crossing, below Co Rte 57 bridge				01
<b>BLOODY BROOK (BLDY)</b>					
01	Liverpool, Limestone Drive			94	
02	Liverpool, below Martin Marietta pond - Middle Branch			94	
03	Liverpool, below Vine St. culvert - West Branch			94	
04	Liverpool, below Thruway bridge - West Branch			94	
05	Liverpool, below Sunflower Dr. culvert - Middle Branch			94	
06	Liverpool, below Onondaga Lake Parkway (Rt. 370) bridge		89	94 95	01
<b>BUTTERNUT CREEK (BNUT)</b>					
01	Jamesville, above Apulla Rd bridge			96	01
<b>CANADA CREEK (CNCR)</b>					
01	Seifert Corners, above Tannery Rd bridge				01
<b>CANANDAIGUA OUTLET (CANA)</b>					
01	Canandaigua, at lake outlet	84	85	86	
02	Canandaigua, Phelps Rd, below WWTF	84	85	86	90
03	Above Chapin, County Rd 4	84	85	86	
05	Littleville, Route 19	84	85	86	
06	Manchester, Rte 96	84	85	86	
08	Manchester Center, Cty Rd 7	84	85	86	90
12	Alloway, above Alloway Rd. bridge			95	95
					01 02

SENECA-OSWEGO-ONEIDA RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>		<u>YEAR SAMPLED</u>	
CANASERAGA CREEK (SRAG)				
00	Sullivan, above Rte 5 bridge		96	
CANASTOTA CREEK (TOTA)				
01	Canastota, above N. Main St. Rd. bridge	90	95	01
CARPENTER'S BROOK (CARP)				
01	Peru, above Peru Rd bridge			01
CASCADILLA CREEK (CASC)				
01	Itahca, above Lake Ave & Madison St			01
CATHARINE CREEK (CATH)				
01	Montour Falls, above Rte 14		96	01
CAYUGA LAKE INLET (CAYG)				
01	Near Newfield Station, above Rte 34 bridge			01
CHITTENANGO CREEK (CHIT)				
01	Chittenango, Route 5	90		
02	Bridgeport, below Rt. 31 bridge		95 96	01
COLD BROOK (COBR)				
01	Hammondsport, below South Valley Rd			01
COLDSPRING BROOK (COSP)				
01	Weedsport, Oakland St (Co Rt 13B) @bridge			01 02
COWASELON CREEK (COWA)				
01	Canastota, at Rt. 13 bridge		96	
02	Canastota, Ditch Bank Road	90		
CRANE BROOK (CRAN)				
01	Montezuma, above Mentz Church Rd. bridge			02
02	Montezuma, above East Loop Rd. bridge			02
DEAD CREEK (DEAD)				
01	Near Baldwinsville, @bridge Hoag Rd			01
DECKER BROOK (DECK)				
01	Moravia, Jugg Rd @fishing access bridge			01
DRESSERVILLE CREEK (DRES)				
01	Moravia, below Rte 38A bridge			01

SENECA-OSWEGO-ONEIDA RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>					
<b>DUTCH HOLLOW BROOK (DUCH)</b>							
02	Niles, Old State Rd bridge	93	94		98	99	00
03	Owasco, below Rte 38A bridge						01
04	Below Owasco, Honeysuckle Rd bridge	93					
<b>FALL CREEK (FALL)</b>							
01	Red Mills, Red Mills Road bridge						87
02	Below Freeville, Route 366 bridge						87
03	Below Etna, Pinckney Road bridge						87
04	Varna, Freese Road bridge						87
05	Forest Home, opp filtration plant						87
06	Ithaca, below Ithaca Falls		95	96			01
<b>FISH CREEK (FSHO)</b>							
01	West Branch, in Blossvale, below McConnellsville Rd. bridge		95				01
03	Vienna, above "new" Oswego Rd. bridge		95				01
05	Fish Creek Landing, CR 50A, under bridge						02
<b>FLINT CREEK (FLNT)</b>							
01	Italy, below Basset Rd bridge						02
02	Italy, below Warren Rd bridge						02
03	Potter, below Rt 364 bridge						02
04	Cole Corners, below Rt 4 bridge						02
05	Stanley, below Mott Rd bridge						02
06	Seneca Castle, @Ferguson Rd bridge						02
07	Phelps, above Griffith Rd. bridge		95	96			01 02
<b>GANARGUA CREEK (GNAR)</b>							
01	East Victor, above golf course, off Plaster Mill Rd				96		
02	Brownsville, below Gillis Rd bridge				96		
03	Farmington, above Hook Rd bridge				96		
04	Macedon, above Erie St.	74	80		95	96	01 02
04A	Yellow Mills, off Rte 31	74	80				
05	East Palmyra, below Port Gibbons Rd bridge	74	80		96		
06	Mud Mills, below Mud Mills Rd bridge	74	80		96		
<b>GEDDES BROOK (GEDD)</b>							
01	Camillus, Horan Rd						89 01
<b>GREAT BROOK (GRBR)</b>							
01	Victor, below Maple Ave. bridge				96		01
02	Victor, Plaster Mill Rd				96		

SENECA-OSWEGO-ONEIDA RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>		<u>YEAR SAMPLED</u>	
<b>GROUT BROOK (GROU)</b>				
01	Grout Mill, Co Rte 101 @Sweeney Hill Rd bridge			01
<b>HARBOR BROOK (HARB)</b>				
01	Split Rock, Rte 173	89		
02	Syracuse, Hiawatha Blvd	89	95	01
<b>KEUKA LAKE OUTLET (KEUK)</b>				
01	Dresden, Kings Landing Rd	89 90	95	01
<b>LEY CREEK (LEY)</b>				
A	South branch, Syracuse, James St		90	
00	South branch, Syracuse, Court St		90	
01	Mattydale, Le Moyne Ave	89 90	95	01
02	Galeville, Route 370, USGS Gaging Station	89 90		
<b>LIMESTONE CREEK (LIME)</b>				
01	Fayetteville, Rte 5	90	96	
02	Minoa, above Kirkville Rd			01
<b>LITTLE BAY CREEK (LBAY)</b>				
01	Above Central Square, Rte 11	84		
02	Central Square, Rte 49, above WWTF	84		
03	Below Central Square, Rte 81	84		
04	Below Central Square, Rte 37	84		
<b>LITTLE SALMON CREEK (LILS)</b>				
01	Little Hollow, below Creek Rd bridge		96	
<b>LOGAN CREEK (HECT)</b>				
01	Burdett, below Rte. 5			01
<b>MAD RIVER (MADR)</b>				
01	Camden, River Rd (Co Rte 68) bridge			01 02
<b>MILL CREEK (MLOD)</b>				
01	Lodi, below Neal Rd			01
<b>MUD CREEK (MUDG)</b>				
01	East Victor, above Rt. 96 bridge		96	01
02	East Victor, above railroad bridge		96	
<b>MURRAY BROOK (MURY)</b>				
01	North Bay, East Lake Rd			01

SENECA-OSWEGO-ONEIDA RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>		<u>YEAR SAMPLED</u>	
NAPLES CREEK (NAPL)				
01	Naples, above Parish Road		96	01
NETTLE VALLEY CREEK (FLNT)				
A	Potter, below Route 364			02
NINEMILE CREEK (NINE)				
01	Amboy, Warners Road	89		
02	Lakeland, above State Fair Blvd	89 90	95	01
ONEIDA CREEK (ONEI)				
01	Above Sherrill, Peterboro Rd bridge	86		
02	Sherrill, Kenwood Ave	86		
03	Oneida Castle, Rte 5 bridge	86		
04	Oneida, Lenox Ave bridge	86		
05	Oneida, Sconondoa St bridge	86		
06	Oneida, Bennett Rd bridge	86		
07	Durhamville, Foster St bridge	86	96	01
08	Above Oneida Valley, Swallows Rd bridge	86		
09	Oneida Valley, Rte 316	86		
ONEIDA RIVER (SEOS)				
04B	Oneida River, Brewerton, Rte 11	89 90		
04A	Oneida River, above Three Rivers, Buoy 209	78	95	01
ONONDAGA CREEK (ONON)				
01	Tully Farms, Tully Farms Rd	81		
02	Tully Valley, Otisco Rd bridge, above trib.	81		
02A	Tributary stream, Tully Valley, Otisco Rd	81		
02B	Cardiff, Webster Rd	89 90	95	01
03	Below Cardiff, Indian Rd bridge	81		
05	Syracuse, Spencer St	89 90	95	01
ONONDAGA LAKE OUTLET (SEOS)				
02A	Salina, Rte 90 bridge	78	89 90	
OSWEGO RIVER (SEOS)				
05	Oswego River, below Three Rivers, Buoy 7	72 78		
06	Oswego River, below Phoenix, Buoy 30	72 78	89 90	
07	Oswego River, below Hinmansville, Buoy 73	72 78		

SENECA-OSWEGO-ONEIDA RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>			
OSWEGO RIVER (SEOS) cont'd.					
08	Oswego River, below Fulton, Buoy 102A	72	78		
09	Oswego River, above Minetto, Buoy 122A	72	89	90	95 01
10	Oswego River, below Minetto, Buoy 138	72	78		
11	Oswego River, in Oswego, Buoy 4	72	78		
OWASCO INLET (OWAS)					
I	Owasco Inlet, Moravia, Rte 30 bridge				01
OWASCO LAKE OUTLET (OWAS)					
02	Auburn, Caroga St		90		02
03	Auburn, below Auburn WWTF		90		02
05	Throopsville, Sherman Rd		90		02
06	Below Throopsville, off Robinson Rd		90		
08	Above Port Byron, Hayden Rd		90		02
09	Port Byron, Rochester St		90	95	02
10	North Port Byron, New York Central Rd		90		01 02
POOLS BROOK (POOL)					
01	Mycenae, above Rte 290 bridge			96	
PUTNAM BROOK (PUTN)					
01	North Weedsport, above Rte 31 bridge				01
RED CREEK (REDC)					
01	Palmyra, below Maple Ave				01
ROCK STREAM (ROCK)					
01	Rock Stream, above Old Lake Rd				01
SALMON CREEK (SMON)					
01	Myers Point, below falls, below gaging station			96	01 02
SAWMILL CREEK (SAWM)					
01	Liverpool, Rte 370	89		95	01
SAWMILL CREEK (SMIL)					
01	Hector, above Peach Point Rd				01

SENECA-OSWEGO-ONEIDA RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>			<u>YEAR SAMPLED</u>	
SCONONDOA CREEK (SCON)					
01	Skinner Cemetery, Simmons Rd	86			
02	Above Vernon, Stuhlman Rd	86			
03	Below Vernon, railroad bridge	86			
04	Sherrill, Williams St	86			02
05	Sherrill, Second St	86			
06	Oneida Castle, Rte 365	86		95	01
SCRIBA CREEK (SCRB)					
01	Constantia, above Co Rte 23 bridge				01 02
SENECA RIVER, UPPER (CCAN)					
12	Below Seneca Lake outlet, unnumbered light	74 80			
13	Above Waterloo, Light 50	74 80			
14	Below Waterloo, Light 87	74 80			
15	Seneca Falls, Light 70	74 80			
15A	Seneca Falls, Bridge St		89 90		01
16	Above Cayuga Lake Outlet, Light 56	74 80			
17	Above junction with Erie Canal, Light 13	74 80			
SENECA RIVER (SEOS)					
01A	Seneca River, Weedsport, Buoy 460	78			
01B	Seneca River, Jacks Reef		89 90	95	01
01	Seneca River, Baldwinsville, Buoy 339A	72 78			
02	Seneca River, below Baldwinsville, Buoy 302	72 78			
03	Seneca River, below Onondaga Lake outlet jct.	72 78			
04	Seneca River, above Belgium	72 78			
SIXMILE CREEK (SXML)					
01	Ithaca, S. Plain & S. Titus intersection; @ pedestrian bridge				01
SKANEATELES CREEK (SKAN)					
01	Skaneateles, below lake outlet dam			92	
02	Willow Glen, Fennel St			92	
03	Skaneateles Falls, Jordan Rd			92	
04	Skaneateles Junction, Case Rd bridge	88		92	
05	Skaneateles Junction, Rodak Rd bridge	88			
06	Elbridge, Hamilton Rd bridge	88		92	
07	Above Jordan, Valley Dr			92	
08	Below Jordan, Rte 31			92	01

SENECA-OSWEGO-ONEIDA RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>			
STONY CREEK (STN7)					
01	above Verona Mills, below Wehling Rd. bridge		96		01
SUCKER BROOK (SCKR)					
01	Auburn, Co Rte 72 bridge				01
SUGAR CREEK (SGAR)					
01	Branchport, below County House Rd				01
TAUGHANNOCK CREEK (TGHN)					
01	Taughanock Falls State Park, above Rte 89				01
VIRGIL CREEK (VIRG)					
01	Dryden, Route 13 bridge	80	87		
02	Below Dryden, Spring Rd bridge	80	87		
03	Above Freeville, Johnson Rd bridge				01
		80	87		
VLY CREEK (VLY)					
01	Lakeport, Lakeport Rd		90		
WATERHOUSE CREEK (WHOS)					
01	Fulton, below Fremont Rd bridge				01 02
WEST ONONDAGA CREEK (WONN)					
01	South Onondaga, below Rte 80 bridge				01
WEST RIVER (WEST)					
01	Middlesex, below Valley View Rd. bridge		96		
WOOD CREEK (WDCR)					
00	Rome, Rte 69				02
01	Seifert Corners, above Seifert Rd		96		01
YAWGER CREEK (YAWG)					
05	Cross Roads, Cross Rd bridge		93 94	98 99	00 01

ASSESSMENTS OF WATER QUALITY OF STREAMS IN THE SENECA-ONEIDA-OSWEGO RIVER DRAINAGE BASIN, BASED ON MACROINVERTEBRATE COMMUNITIES

<u>Site/Reach</u>	<u>Water Quality Assessment</u>	<u>Change from 1992</u>
Barge Canal, Central, Newark	moderately impacted	no change
Barge Canal, Central, below Clyde	moderately impacted	<b>DECLINED</b>
Barge Canal, Central, Howland Island	severely impacted	<b>DECLINED</b>
Big Salmon Creek, Genoa	moderately impacted	no prior data
Big Stream, above Dundee	slightly impacted	no prior data
Black Creek, Bundy Crossing	slightly impacted	no prior data
Bloody Brook, Middle Branch, Liverpool, below Limestone Dr.	severely impacted	no prior data
Bloody Brook, Middle Branch, Liverpool, below Martin Marietta pond	moderately impacted	no prior data
Bloody Brook, Middle Branch, Liverpool, below Sunflower Dr.	moderately impacted	no prior data
Bloody Brook, West Branch, Liverpool, below Vine St.	moderately impacted	no prior data
Bloody Brook, West Branch, below Thruway bridge	moderately impacted	no prior data
Bloody Brook, Liverpool, below Rt. 370	moderately impacted	<b>IMPROVED</b>
Butternut Creek, Jamesville	non-impacted	no prior data
Canada Creek, Seiffert Corners	non-impacted	no prior data
Canandaigua Outlet, Canandaigua	moderately impacted	<b>DECLINED</b>
Canandaigua Outlet, Manchester Center	slightly impacted	no change
Canandaigua Outlet, Alloway	slightly impacted	no prior data
Canaseraga Creek, Sullivan	slightly impacted	no prior data
Canastota Creek, Canastota	moderately impacted	no change
Carpenter's Brook, Peru	slightly impacted	no prior data
Cascadilla Creek, Ithaca	slightly impacted	no prior data
Catharine Creek, Montour Falls	non-impacted	no prior data
Cayuga Lake Inlet, near Newfield Station	slightly impacted	no prior data
Chittenango Creek, Bridgeport	slightly impacted	no prior data
Cold Brook, Hammondsport	slightly impacted	no prior data
Coldspring Brook, Weedsport	moderately impacted	no prior data
Cowaselon Creek, Canastota	moderately impacted	no change
Crane Brook, Montezuma, above Mentz Church Rd.	slightly impacted	no prior data
Crane Brook, Montezuma, East Loop Rd.	severely impacted	no prior data

ASSESSMENTS OF WATER QUALITY OF STREAMS IN THE SENECA-ONEIDA-OSWEGO RIVER DRAINAGE BASIN, BASED ON MACROINVERTEBRATE COMMUNITIES

<u>Site/Reach</u>	<u>Water Quality Assessment</u>	<u>Change from 1992</u>
Dead Creek, near Baldwinsville	moderately impacted	no prior data
Decker Brook, Moravia	slightly impacted	no prior data
Dresserville Creek, Moravia	non-impacted	no prior data
Dutch Hollow Brook, Niles	non-impacted	no prior data
Dutch Hollow Brook, Owasco	non-impacted	no prior data
Dutch Hollow Brook, below Owasco	non-impacted	no prior data
Fall Creek, Ithaca	non-impacted	<b>IMPROVED</b>
Fish Creek, West Branch, in Blossvale	non-impacted	no prior data
Fish Creek, Vienna	non-impacted	no prior data
Fish Creek, Fish Creek Landing	slightly impacted	no prior data
Flint Creek, Italy, below Basset Rd	non-impacted	no prior data
Flint Creek, Italy, below Warren Rd	slightly impacted	no prior data
Flint Creek, Potter	slightly impacted	no prior data
Flint Creek, Cole Corners	moderately impacted	no prior data
Flint Creek, Stanley	moderately impacted	no prior data
Flint Creek, Seneca Castle	slightly impacted	no prior data
Flint Creek, Phelps, above Griffith Rd.	slightly impacted	no prior data
Ganargua Creek, East Victor	moderately impacted	no prior data
Ganargua Creek, Brownsville	slightly impacted	no prior data
Ganargua Creek, Farmington	slightly impacted	no prior data
Ganargua Creek, Macedon	slightly impacted	<b>DECLINED</b>
Ganargua Creek, East Palmyra	slightly impacted	no prior data
Ganargua Creek, Mud Mills	moderately impacted	<b>DECLINED</b>
Geddes Brook, Camillus	slightly impacted	<b>IMPROVED</b>
Great Brook, Victor, below Maple Ave.	moderately impacted	no prior data
Great Brook, Victor, Plaster Mill Rd.	moderately impacted	no prior data
Grout Brook, Grout Mill	slightly impacted	no prior data
Harbor Brook, Syracuse	severely impacted	no change
Keuka Lake Outlet, Dresden	slightly impacted	no change
Ley Creek, Mattydale	moderately impacted	<b>IMPROVED</b>
Limestone Creek, Fayetteville	slightly impacted	no change
Limestone Creek, north of Minoa	moderately impacted	no prior data
Little Salmon Creek, Little Hollow	non-impacted	no prior data

ASSESSMENTS OF WATER QUALITY OF STREAMS IN THE SENECA-ONEIDA-OSWEGO RIVER DRAINAGE BASIN, BASED ON MACROINVERTEBRATE COMMUNITIES

<u>Site/Reach</u>	<u>Water Quality Assessment</u>	<u>Change from 1992</u>
Logan Creek, Burdett	non-impacted	no prior data
Mad River, Camden	non-impacted	no prior data
Mill Creek, Lodi	non-impacted	no prior data
Mud Creek, East Victor, above Rt. 96	slightly impacted	no prior data
Mud Creek, East Victor, below STP	moderately impacted	no prior data
Murray Brook, North Bay	slightly impacted	no prior data
Naples Creek, Naples	slightly impacted	no prior data
Nettle Valley Creek, Potter	slightly impacted	no prior data
Ninemile Creek, Lakeland	severely impacted	no change
Oneida Creek, Durhamville	slightly impacted	no prior data
Oneida River, Three Rivers	slightly impacted	no change
Onondaga Creek, Cardiff	moderately impacted	<b>DECLINED</b>
Onondaga Creek, Syracuse	severely impacted	no change
Oswego River, above Minetto	slightly impacted	no change
Owasco Inlet, Moravia	slightly impacted	no prior data
Owasco Outlet, Auburn, above STP	slightly impacted	no change
Owasco Outlet, Auburn, below STP	slightly impacted	<b>IMPROVED</b>
Owasco Outlet, Throopsville	slightly impacted	<b>IMPROVED</b>
Owasco Outlet, above Port Byron	slightly impacted	<b>IMPROVED</b>
Owasco Outlet, Port Byron	slightly impacted	no change
Owasco Outlet, North Port Byron	slightly impacted	<b>IMPROVED</b>
Pools Brook, Mycenae	non-impacted	no prior data
Putnam Brook, North Weedsport	slightly impacted	no prior data
Red Creek, Palmyra	slightly impacted	no prior data
Rock Stream, Rock Stream	non-impacted	no prior data
Salmon Creek, Myers Point	slightly impacted	no prior data
Sawmill Creek, Liverpool	moderately impacted	no change
Saw Mill, Hector	slightly impacted	no prior data
Sconondoa Creek, Sherrill, Williams St.	slightly impacted	no change
Sconondoa Creek, Oneida Castle	slightly impacted	no change
Scriba Creek, Constantia	non-impacted	no prior data
Seneca River, Upper, Seneca Falls	moderately impacted	<b>DECLINED</b>

ASSESSMENTS OF WATER QUALITY OF STREAMS IN THE SENECA-ONEIDA-OSWEGO RIVER DRAINAGE BASIN, BASED ON MACROINVERTEBRATE COMMUNITIES

<u>Site/Reach</u>	<u>Water Quality Assessment</u>	<u>Change from 1992</u>
Seneca River, Jacks Reef	moderately impacted	<b>DECLINED</b>
Sixmile Creek, Ithaca	non-impacted	no prior data
Skaneateles Creek, Jordan	slightly impacted	no change
Stony Creek, above Verona Mills	slightly impacted	no prior data
Sucker Brook, Auburn	slightly impacted	no prior data
Sugar Creek, Branchport	non-impacted	no prior data
Taughannock Creek, Taughannock State Park	slightly impacted	no prior data
Virgil Creek, above Freeville	slightly impacted	<b>DECLINED</b>
Waterhouse Creek, Fulton	slightly impacted	no prior data
West Onondaga Creek, South Onondaga	slightly impacted	no prior data
West River, Middlesex	moderately impacted	no prior data
Wood Creek, Rome	slightly impacted	no prior data
Wood Creek, Seifert Corners	slightly impacted	no prior data
Yawger Creek, Cross Roads	slightly impacted	no prior data

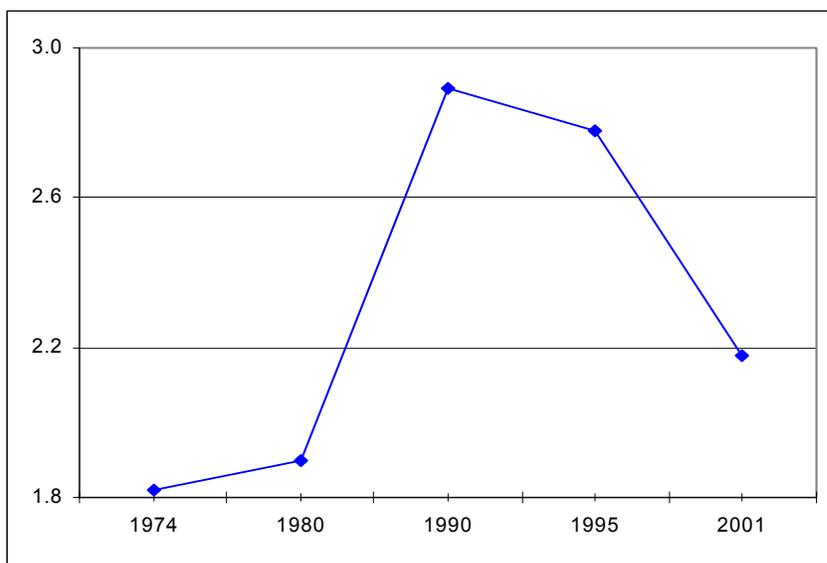
REPORTS OF MACROINVERTEBRATE SURVEYS WITHIN THE SENECA-OSWEGO-ONEIDA RIVER WATERSHED

STREAM	YEAR OF SURVEY	REPORT
Bloody Brook	1994	SBU,1994
Bloody Brook	2001	ESF
Canandaigua Outlet	1972	EPA
Canandaigua Outlet	1973	AVON
Canandaigua Outlet	1984	DOH,1985
Canandaigua Outlet	1985	DOH,1985
Canandaigua Outlet	1986	SBU,1987
Chittenango Creek	1972	AVON
Limestone Creek	1972	AVON
Cowaselon Creek	1975	AVON
Fall Creek	1974	AVON
Fall Creek	1987	SBU,1987
Flint Creek	2002	SBU,2002
Ganargua Creek	1996	SBU,1997
Keuka Inlet/Outlet	1974	AVON
Little Bay Creek	1984	DOH
Ninemile Creek	1973	AVON
Oneida Creek	1972	AVON
Oneida Creek	1986	SBU,1987
Onondaga Creek	1981	DOH,1982
Onondaga Creek	2001	ESF
Onondaga Lake Tributaries	1989	SBU,1989
Owasco Inlet/Outlet	1974	AVON
Owasco Outlet	1990	SBU,1990
Owasco Outlet	2002	SBU,2003
Sanders Creek	2002	SBU,2003
Sconondoa Creek	1976	AVON
Sconondoa Creek	1986	SBU,1987
Seneca River	1972	AVON
Seneca/Oswego Rivers	1972/1978	DOH
Skaneateles Creek	1972	AVON
Skaneateles Creek	1988	SBU,1988
Skaneateles Creek	1992	SBU,1993
Skaneateles Creek	2000	SBU,2001
Three Rivers System	1981	UFI
Virgil Creek	1987	SBU,1987
Watershed Streams	1989-1990	RIBS,1992
Watershed Streams	1995-1996	RIBS,1999

AVON	Avon Pollution Investigations Unit, Div. of Fish & Wildlife, NYS DEC
DOH	New York State Department of Health
ESF	SUNY College of Environmental Science & Forestry (Alexander Smith)
RIBS	Rotating Intensive Basin System, Statewide Waters Assessment Section, NYS DEC
SBU	Stream Biomonitoring Unit, Division of Water, NYS DEC
UFI	Upstate Freshwater Institute

### Barge Canal

Multiplate sampling downstream of Wide Waters near Newark continues to indicate moderately impacted water quality, based on sampling in 1995 and 2001. The samples were inundated with zebra mussels. The herbicide EPTC was found in zebra mussel tissue at a concentration of 860 µg/kg at this site in 1996. Elevated levels of 4 PAHs were also recorded in the zebra mussels, at or exceeding the levels of concern for mollusks for these compounds.



**Figure 7-1. Species diversity in the Central Barge Canal below Clyde, 1974-2001.**

Multiplate sampling of the Barge Canal directly downstream of the Clyde River at Clyde showed moderate impact in 2001, representing a decline in water quality (Figure 7-1). These samples were not influenced by zebra mussels. The high biotic index indicates impact from organic (decomposable) wastes. Sampling at this site in 1995 and 1990 showed only slight impact.

Severe impact is assessed for the Barge Canal at Port Byron, based on multiplate samples collected in 2001. This represents a decline in water quality, compared to assessments of moderate impact for the years 1974, 1980, and 1989. The cause of this difference is undoubtedly the arrival of zebra mussels in the canal in the early 1990's. One multiplate sample from 2001 contained over 21,000 zebra mussels, compared to average invertebrate densities at this site of less than 2000 individuals. The degree to which the 2001 samples reflect actual water quality versus macroinvertebrate population dynamics is undetermined.

### Big Salmon Creek

Water quality was assessed as moderately impacted, based on macroinvertebrate sampling at Genoa in 1998 and 2000. Nonpoint source nutrient enrichment is considered the primary stressor.

### Big Stream

Macroinvertebrate sampling was conducted in 2001 upstream of Dundee. Water quality was assessed as slightly impacted by nonpoint source nutrient enrichment. No prior data were available for this stream.

### Black Creek

Water quality was assessed as slightly impacted, based on macroinvertebrate sampling at Bundy Crossing in 2001. ISD denoted nonpoint source nutrient enrichment as the primary stressor.

### Bloody Brook

Water quality remains moderately impacted at most Bloody Brook sites. Six sites were sampled in 1994, and all sites were assessed as moderately impacted, with the exception of the most upstream site, which was assessed as severely impacted. Crayfish collected for tissue analysis showed elevated levels of cadmium, copper, mercury, and PCBs. The primary source was determined to be municipal/industrial and urban runoff. Mayflies are still entirely absent from the creek, and are looked for as an indicator of recovery.

### Butternut Creek

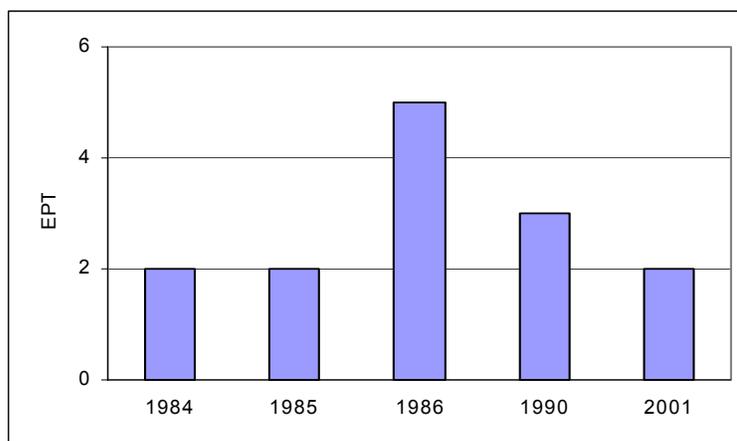
Water quality is assessed as non-impacted, based on macroinvertebrate sampling at Jamesville in 1996 and 2001. The fauna contained a diversity of clean-water mayflies, stoneflies, and caddisflies.

### Canada Creek

Based on macroinvertebrate sampling at Seiffert Corners in 2001, water quality was assessed as non-impacted. The fauna was dominated by clean-water mayflies.

### Canandaigua Outlet

Sampling at Phelps Road in Canandaigua downstream of the Canandaigua (C) Sewage Treatment Plant has shown an apparent decline in water quality from 1990 to 2001 (Figure 7-2). Sampling at this site in 1990 documented improved conditions compared to previous years, with an assessment of slight impact. Sampling in 2001 found moderate impact, with a fauna composed almost entirely of caddisflies and midges. Further sampling is recommended at this site to determine if this decline is genuine.



**Figure 7-2. EPT trends (sensitive mayflies, stoneflies, and caddisflies), Canandaigua Outlet, Canandaigua, 1984-2001.**

Water quality at Manchester did not change from 1990, being assessed as slightly impacted in 1995. In recent years the downstream site at Alloway has been monitored instead. Water quality at this site was determined to be slightly impacted by nonpoint sources, based on kick sampling in 1995 and 2001.

### Canaseraga Creek

The downstream site at East Boston that was sampled in 1995 yielded an anomalous sample that was attributed to poor habitat, and considered invalid. A different site upstream at Sullivan was sampled in 1996, and this was assessed as slightly impacted, likely by nutrient enrichment.

### Canastota Creek

Water quality at Canastota was assessed as moderately impacted in 2001, with toxicity being the primary stressor. This site was assessed as slightly impacted in 1995 and moderately impacted in 1990. Similar impacts had been documented previously by the NYS DEC Avon team in 1975.

### Carpenter's Brook

This stream was sampled at Peru in 2001, and water quality was assessed as slightly impacted. Nonpoint source nutrient enrichment was the primary stressor.

### Cascadilla Creek

This creek was sampled in 2001 at Lake Avenue and Madison Street in Ithaca. Water quality was assessed as slightly impacted, with the fauna dominated by filter-feeding caddisflies. The primary stressor is considered to be urban runoff.

### Catharine Creek

Non-impacted water quality was assessed for this site in 1996 and 2001 samplings at Montour Falls. ISD denoted siltation as a stressor.

### Cayuga Lake Inlet

Water quality was assessed as slightly impacted, based on 2001 macroinvertebrate sampling near Newfield Station. Nonpoint source nutrient enrichment was indicated to be the primary stressor.

### Chittenango Creek

Slightly impacted water quality has been assessed for all years sampled in Chittenango Creek: 1990, 1995, 1996, and 2001. Nonpoint source nutrient enrichment is the primary stressor. Macroinvertebrate species richness was very low in these samples.

### Cold Brook

Water quality is assessed as slightly impacted for this stream, based on macroinvertebrate sampling at Hammondsport in 2001. Nonpoint source nutrient enrichment was indicated to be the primary stressor.

### Coldspring Brook

This stream was sampled in Weedsport at Oakland Street in 2001. Water quality was assessed as moderately impacted. The macroinvertebrate fauna was dominated by scuds and caddisflies, and ISD denoted municipal/industrial type of wastes as the primary stressor. Specific conductance at this site was very high, measured at 3380  $\mu\text{mhos}$ , and is likely related to the impact.

### Cowaselon Creek

Based on a 1996 kick sample taken at Canastota, water quality was assessed as moderately impacted. Poor habitat is a probable influence on the fauna at this site. Previous sampling in 1990 also found moderate impact. The Canastota (V) Water Pollution Control Facility discharge is the apparent cause of impact.

### Crane Brook

Severe impact was documented in Crane Brook near Montezuma in 2002 macroinvertebrate sampling. A potato processing plant discharge was the cause of the impact. Specific conductance at the site was 6979  $\mu\text{mhos/cm}$ , and dissolved oxygen was 0.8 mg/l. Upstream of this site, water quality was assessed as slightly impacted by nonpoint source nutrient enrichment. This problem is expected to be remediated in the near future.



**Figure 7-3. Crane Brook near Montezuma, 2002.**

### Dead Creek

Moderately impacted water quality was assessed for this stream, based on macroinvertebrate sampling near Baldwinsville in 2001. The stream was small and sluggish, and had high specific conductance. ISD denoted nonpoint source nutrient enrichment as the primary stressor.

### Decker Brook

This stream was sampled in Moravia in 2001. Water quality was assessed as slightly impacted, but very near the range of non-impact. ISD denoted nonpoint source nutrient enrichment as the likely stressor, but the impact is considered to be minor.

### Dresserville Creek

Non-impacted water quality was assessed for this stream, based on macroinvertebrate sample in Moravia in 2001. The fauna was dominated by clean-water mayflies.

### Dutch Hollow Brook

Water quality in Dutch Hollow Brook has ranged from non-impacted to slightly impacted over 5 samplings from 1993-2001. Most sampling has been conducted at the upstream location of Niles. Water quality here was assessed as non-impacted in 1993, 1999, and 2000, and slightly impacted in 1994 and 1998. Overall, this site is considered non-impacted. Downstream sites sampled above and below Owasco in 1993 and 2001 were also assessed as non-impacted.

### Fall Creek

Following the initial sampling of 6 sites from Red Mills to Ithaca in 1987, only the site downstream of Ithaca Falls has been sampled since. Water quality at this site was assessed as slightly impacted in 1995 and 1996, and non-impacted in 2001. In 1995, lead was measured in crayfish tissue at a level of 5.9 µg/g, above the provisional level of concern of 4 µg/g for this organism. Based on the most recent sampling, current water quality is assessed as non-impacted, representing an improvement from 1987, but continued monitoring is recommended to verify this.

### Fish Creek

Based on macroinvertebrate sampling at Vienna and on the West Branch at Blossvale in 1995 and 2001, non-impacted water quality was indicated for Fish Creek. The macroinvertebrate fauna included a high number of intolerant mayflies, stoneflies, and caddisflies. A downstream site was sampled for macroinvertebrates at Fish Creek Landing in 2002. Using sandy stream criteria to account for the low-gradient habitat and fine-sediment substrate at this site, slight impact was indicated.

### Flint Creek

Most of Flint Creek is assessed as slightly impacted, based on sampling of 7 sites in 2002. Previous sampling at Phelps in 1995 and 1996 also found slight impact. The middle reach from Cole Corners to Stanley is assessed as moderately impacted, likely due to a combination of agricultural runoff, point sources such as the Gorham (T) Sewage Treatment Plant, and the influence of a large swampy area above Cole Corners. A site sampled upstream at Italy was assessed as non-impacted.

### Ganargua Creek

Current water quality in Ganargua Creek is mostly assessed as slightly impacted, based on macroinvertebrate sampling of 6 mainstream sites and 4 tributary sites in 1996. Moderate impact was documented in two short reaches of the stream - one downstream of the Farmington (T) Sewage Treatment Plant and the Victor (V) Sewage Treatment Plant, and the other downstream of the Newark (V) Wastewater Treatment Facility.

Slight impact at the Macedon site, from nonpoint source nutrient enrichment, represents a decline in water quality compared to macroinvertebrate data from 1974 and 1980, when this site was used as an example of non-impacted conditions. Ganargua Creek has its headwaters in the town of Victor, a rapidly growing suburb of Rochester. In the 1980's and 1990's, development increased along the creek, including the construction of a golf course. Sampling in 1995, 1996, 2001 and 2002

confirmed the enriched conditions at this site from upstream development. The stream is typical of many in the State, in which non-impacted sites are becoming slightly impacted through development and nonpoint source nutrient enrichment.

Moderate impact at Mud Mills, downstream of the Newark (V) Wastewater Treatment Facility also represents a worsening of water quality compared to 1974 and 1980 data, when this reach was assessed as slightly impacted.

#### Geddes Brook

Geddes Brook was sampled at Camillus in 2001 and assessed as slightly impacted by municipal/industrial stressors. This represents an apparent improvement from conditions documented in 1989, when the fauna was heavily dominated by tolerant worms and sowbugs, and was assessed as moderately impacted. The reason for the improvement has not been determined.

#### Great Brook

Based on sampling in 2001, water quality was assessed as moderately impacted upstream of the Victor (V) Sewage Treatment Plant. This site had been assessed as slightly impacted in 1996. Downstream of the STP, water quality was assessed in 1996 as moderately impacted by sewage effluent.

#### Grout Brook

This stream was sampled at Grout Mill in 2001 and water quality was assessed as slightly impacted. ISD denoted nonpoint source nutrient enrichment as the primary stressor. No prior data were available for this stream.

#### Harbor Brook

Water quality remains severely impacted at this tributary to Onondaga Lake, based on 2001 macroinvertebrate sampling. The fauna consisted almost entirely of tolerant worms and midges. A 1995 kick sample indicated moderate impact, but the actual change in fauna was small. ISD denoted municipal/industrial discharges and decomposable wastes as the primary causes of impact.

#### Keuka Lake Outlet

Based on sampling in 1995 and 2001 at Dresden, water quality was assessed as slightly impacted, mostly by nonpoint source nutrient enrichment. These assessments are similar to those of sampling in 1989 and 1990.

#### Ley Creek

Water quality was assessed as moderately impacted, based on kick sampling in 1995 and 2001 at Mattydale. Toxicity was determined to be the primary cause of the impact. This represents an improvement from 1989-90, when the site was assessed as severely impacted. Samples from 1995 and 2001 each contained two species of caddisflies. None were found in the 1989 and 1990 samples. Mayflies are still not found at this site, and are looked for as an indicator of continuing improvement.

### Limestone Creek

Water quality at Fayetteville is assessed as slightly impacted, mostly by nonpoint source nutrient enrichment, based on 1996 kick sampling, similar to results of sampling in 1990. In the 2001 sampling, a site further downstream at Minoa was sampled, and was determined to be moderately impacted, probably by decomposable wastes. Although this is downstream of the discharge of the Minoa (V) Sewage Treatment Plant, the impact more likely reflects effects of discharges from the larger Onondaga County Meadowbrook-Limestone Wastewater Treatment Facility, located upstream of Minoa. The plant is reported to be frequently in violation of their permit.

### Little Salmon River

The 1996 kick sample taken at Little Hollow was assessed as non-impacted, although definite nonpoint nutrient enrichment was evident. No prior data were available for this stream.

### Logan Creek

Water quality was assessed as non-impacted for this stream, based on 2001 sampling in Burdett. The habitat was largely bedrock, but harbored a diversity of clean-water mayflies, stoneflies, and caddisflies.

### Mad River

Water quality was clearly non-impacted at this site, based on samplings in 2001 and 2002 at Camden. An exemplary macroinvertebrate fauna was present, and the habitat was very good.

### Mill Creek (Seneca County)

Non-impacted water quality was assessed for this site, based on macroinvertebrate sampling in 2001 at Lodi. The fauna was dominated by clean-water mayflies and caddisflies, with stoneflies, riffle beetles, dragonflies, and hellgrammites also present.

### Mud Creek

This tributary of Ganargua Creek was assessed as slightly impacted in 2001 at the site upstream of the Farmington STP in East Victor. Water quality had been assessed as non-impacted in 1996 sampling. Downstream of the STP water quality was assessed as moderately impacted by municipal/industrial wastes. Elevated levels of ammonia and/or chlorine may be primary causes of impact.

### Murray Brook

Water quality was assessed as slightly impacted by nonpoint source nutrient enrichment, based on macroinvertebrate sampling in 2001 at North Bay. A high diversity of organisms was present, and water quality impairments were considered to be minor.

### Naples Creek

Water quality is assessed as slightly impacted for this stream, based on sampling near Naples in 2001. The impact may reflect impoundment effect, and is not considered substantial. A good diversity of macroinvertebrates was present, including mayflies, stoneflies, and caddisflies. However many worms and scuds were also present, likely reflecting high levels of silt and algae.

A similar situation was found in 1996 sampling, although the metrics from that sampling was within the range of non-impacted water quality.

### Nettle Valley Creek

This small tributary of Flint Creek was assessed as slightly impacted in a 2002 macroinvertebrate sampling. ISD denoted nonpoint source nutrient enrichment as the primary factor affecting the fauna.

### Ninemile Creek

Water quality in Ninemile Creek at Lakeland remains severely impacted, based on macroinvertebrate sampling in 2001. The fauna was heavily dominated by tolerant midges and worms, and ISD denoted sewage wastes as the primary stressor. This site was also assessed as severely impacted in 1989-90. The site was sampled in 1995, and metrics were within the range of moderate impact. Poor habitat is also a factor at the site.

### Oneida Creek

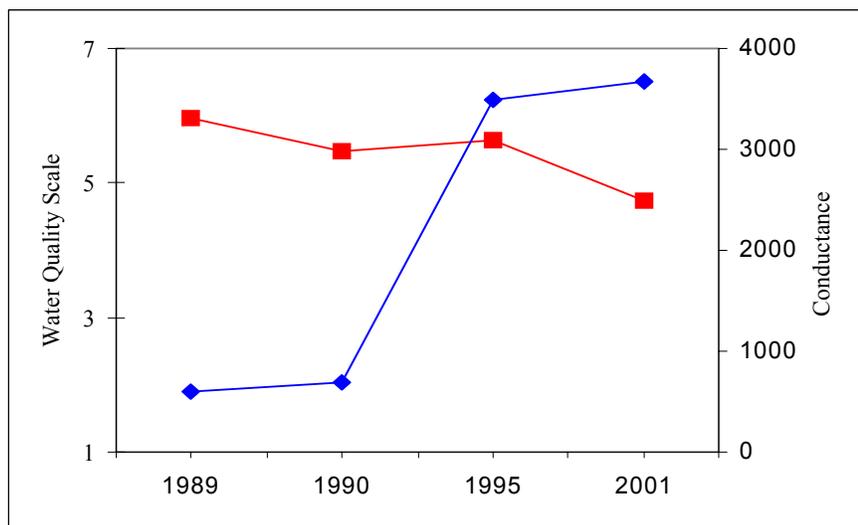
Water quality monitoring in Oneida Creek has been continued at the Durhamville site. Water quality continues to be assessed as slightly impacted at this site, based on kick samples taken in 1995, 1996, and 2001. Nonpoint source nutrient enrichment and possible toxicity were indicated.

### Oneida River

Based on multiplate sampling in 1995 and 2001 above Three Rivers, water quality was assessed as slightly impacted. Several species of mayflies and caddisflies were found at this site, and zebra mussels were numerous in the August sample. Multiplate sampling near here in 1978 also yielded assessments of slight impact.

### Onondaga Creek

Current water quality at Cardiff is assessed as moderately



**Figure 7-4. Water quality (red) vs. conductance (blue) in upper Onondaga Creek at Cardiff, 1989-2001.**

impacted, representing an apparent decline from previous findings (Figure 7-4). Slight impact had been indicated by the kick sampling in 1989, 1990, and 1995. High turbidity and high conductivity from mud boils continue to be the primary factors influencing the invertebrate fauna. Continued monitoring of this site is recommended to verify the apparent decline.

The water quality of Onondaga Creek at Spenser Street in Syracuse continues to be severely impacted by municipal/industrial sources, based on 2001 kick sampling. The macroinvertebrate fauna was composed entirely of tolerant worms and midges. This site was previously assessed as

moderately impacted in 1995, and severely impacted in 1989-90. Combined sewer overflows are the likely cause of impairment.

Oswego River

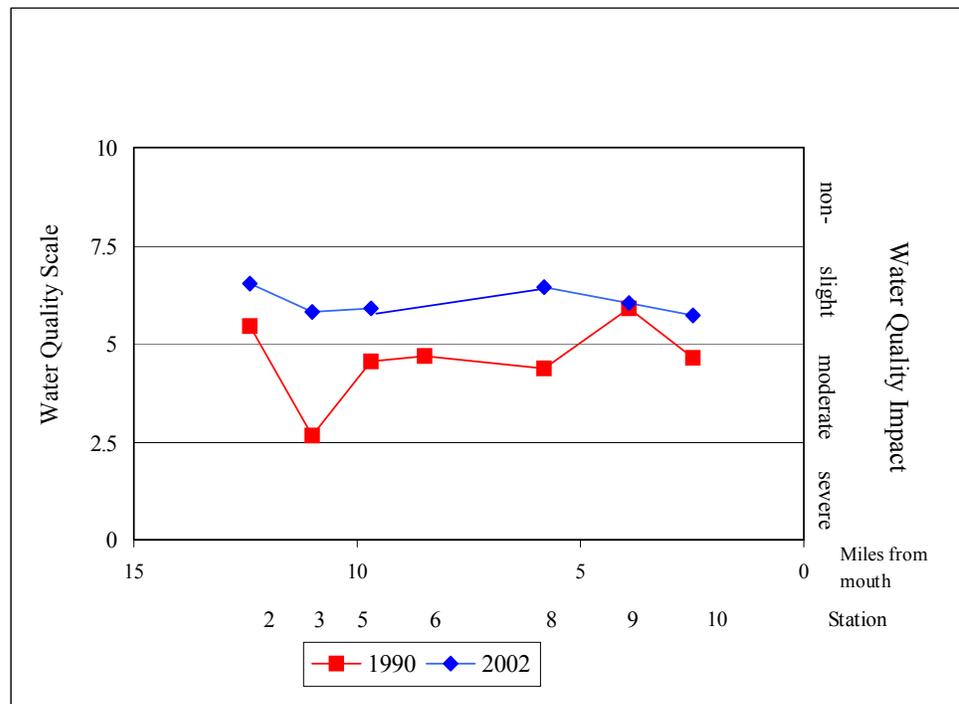
Slight impact was determined for the Minetto site, based on three month's multiplate samples in both 1995 and 2001. Zebra mussels were found here, and were likely responsible for the increase in water clarity compared to previous years. The assessment represents no change from water quality documented in 1990 sampling.

Owasco Inlet

Owasco Inlet was assessed as slightly impacted in 2001, based on sampling at Moravia. ISD denoted nonpoint source nutrient enrichment as the likely stressor.

Owasco Outlet

Water quality in Owasco Outlet is currently assessed as slightly impacted at all sites, representing a substantial improvement compared to conditions documented in 1990



**Figure 7-5. Water quality in Owasco Outlet, Auburn to North Port Byron, 1990 and 2002.**

(Figure 7-5). Of the 6 sites sampled from Auburn to North Port Byron in 2002, 4 had been assessed as moderately impacted in 1990. Most of the improvement is linked to substantial improvements in the Auburn (C) Sewage Treatment plant, upgraded in 1995. The new treatment includes activated sludge treatment, phosphorus removal, post-aeration, and UV disinfection. A notable indicator of improved water quality in the stream is the mayfly populations which now comprise 8-17% of the fauna, compared to 1990 when they were 0-4% of the fauna.

Pools Brook

The site at Mycenae was a moss-dominated headwater habitat, and resulted in anomalous community indices. The overall assessment of non-impacted water quality was based on the similarity to other invertebrate communities with similar habitat conditions. The fauna was heavily dominated by scuds, and the indices were not considered representative of actual water quality.



**Figure 7-6. Owasco Outlet at North Port Byron, 2002.**

#### Putnam Brook

Putnam Brook was assessed as slightly impacted in 2001, based on sampling at North Weedsport. ISD denoted nonpoint source nutrient enrichment as the likely stressor.

#### Red Creek

Water quality of Red Creek is assessed as slightly impacted, based on macroinvertebrate sampling at Palmyra in 2001. The stream carried an abundance of duckweed, indicating pond-like conditions upstream, and this likely was a major factor influencing the fauna. Specific conductance was high at this site: 1762  $\mu\text{mhos/cm}$ .

#### Rock Stream

Water quality was assessed as non-impacted for this stream, based on macroinvertebrate sampling in 2001. This was a small bedrock stream in a gorge-like setting. Productivity was low, but the fauna was diverse and well-balanced.

#### Salmon Creek

Water quality is assessed as slightly impacted, based on macroinvertebrate sampling at Ludlowville in 2001. ISD denoted siltation and nonpoint source nutrient enrichment as the primary stressors. A previous kick sample in 1996 was field-assessed as non-impacted, but this sample was not retained for laboratory processing.

### Sawmill Creek (Onondaga County)

Water quality at Liverpool was determined to be moderately impacted, probably by toxic discharges, based on kick sampling in 1995 and 2001. This assessment is the same as the 1989 assessment.

### Sawmill Creek (Schuyler County)

This small tributary of Seneca Lake was assessed as slightly impacted, based on macroinvertebrate sampling in 2001 near the mouth at Hector. The assessment of impact may be an anomaly, as the fauna consisted almost entirely of clean-water species. Low species richness may be a function of the substrate of loose slate and rubble. No prior data were available for this stream.

### Sconodoa Creek

Water quality in Sconodoa Creek is currently assessed as slightly impacted. The site in Sherrill was sampled in 2002 and assessed as slightly impacted by nonpoint sources, as in 1986. The downstream site at Oneida Castle was sampled in 1986, 1995, and 2001. All samplings indicated slight impact from nonpoint sources. Siltation may also be an influence on the invertebrate fauna. No change in water quality is indicated for the past ten years.

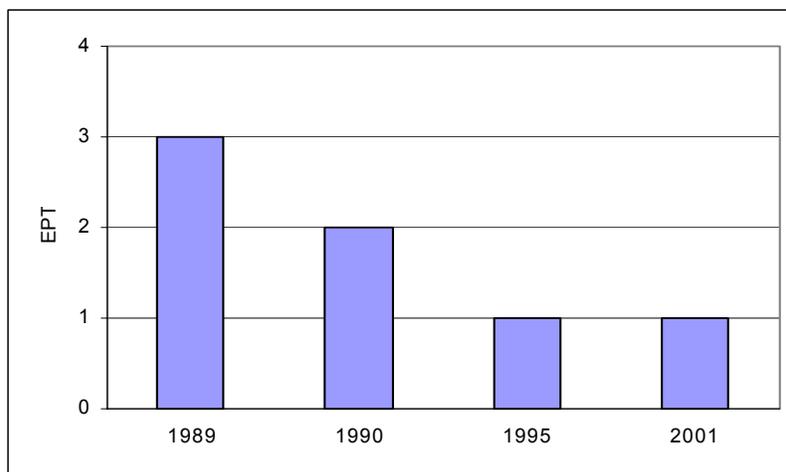
### Scriba Creek

Non-impacted water quality was assessed for this stream, based on macroinvertebrate sampling at Constantia in 2002. Sampling at this site in 2001 yielded an assessment of slight impact. No prior data were available for the stream.

### Seneca River

Moderate impact is assessed for the Seneca River at Seneca Falls, based on multiplate sampling in 2001. This represents a decline compared to results of sampling in 1989-1990 (Figure 7-7). The fauna was comprised almost entirely of facultative and tolerant midges. The cause of the decline is unknown.

Water quality at Jacks Reef is assessed as moderately impacted, based on multiplate sampling in 1995 and 2001. Species richness was low, and mayflies and caddisflies were rare. This represents a decline from 1989-90 conditions, and may be related to heavy zebra mussel populations. Depletion of dissolved oxygen levels in this reach due to high zebra mussel densities was documented by Effler and Siegfried (1994). Chlorpyrifos was detected in the zebra mussel



**Figure 7-7. EPT trends (sensitive mayflies, stoneflies, and caddisflies), Seneca River at Jacks Reef, 1989-2001.**

tissue collected at this site in 1996 at a concentration of 510  $\mu\text{g}/\text{kg}$ ; any detectable quantities of the organophosphate pesticides are considered to be of concern.

### Sixmile Creek

Non-impacted water quality was indicated for this stream, based on macroinvertebrate sampling in Ithaca in 2001. The fauna was dominated by clean-water mayflies. No prior data were available for the stream.

### Skaneateles Creek

Slight impact from nonpoint sources was indicated in sampling in Jordan in 1995, 1996, and 2001. This is also consistent with macroinvertebrate sampling at this site in 1992. Crayfish collected at this site in 1995 contained 0.55 µg/g of mercury, above the level of concern of 0.30 µg/g for this organism.

Skaneateles Creek biota have been documented with elevated levels of PCBs for many years. Intensive sampling of crayfish at several sites in Skaneateles Junction in 2000 pinpointed the apparent source of the PCBs, and remediation efforts are underway..

### Stony Creek

Slightly impacted water quality was assessed for this sluggish nutrient-rich stream near Verona Mills, based on sampling in 1996 and 2001. Algae was abundant in the stream, and the macroinvertebrate community was dominated by filter-feeding caddisflies and midges.

### Sucker Brook

This tributary of Owasco Lake is assessed as slightly impacted by nonpoint source nutrient enrichment, based on macroinvertebrate sampling at Auburn in 2001. Algal-feeding riffle beetles dominated the fauna. No prior data were available for the stream.

### Sugar Creek

Non-impacted water quality is assessed for this tributary of Keuka Lake. A macroinvertebrate sample was taken in Branchport in 2001, yielding a diverse fauna of clean-water organisms. No prior data were available for the stream.

### Taughannock Creek

Water quality was assessed as slightly impacted for this stream in Taughannock Falls State Park, based on sampling in 2001 near the mouth at Cayuga Lake. Rocks were covered with diatoms, and nonpoint source nutrient enrichment was indicated as the primary stressor.

### Virgil Creek

Water quality upstream of Freeville was assessed in 2001 as slightly impacted by nonpoint source nutrient enrichment. This represents an apparent decline in water quality compared to 1987 sampling, when non-impacted water quality was documented from Dryden to Freeville. Further monitoring at this site is recommended to verify the apparent decline.

### Waterhouse Creek

Slightly impacted water quality was assessed for this stream, based on macroinvertebrate sampling in Fulton in 2001. Urban runoff and siltation were the likely stressors affecting the fauna. No prior data were available for this stream.

### West Onondaga Creek

Based on macroinvertebrate sampling at South Onondaga in 2001, water quality was assessed as slightly impacted. Mayflies and stoneflies were present in the fauna, but filter-feeding caddisflies were overwhelmingly dominant. ISD denoted nonpoint source nutrient enrichment as the primary stressor.

### West River

Water quality at Middlesex was assessed as moderately impacted, based on a 1996 kick sample. Nonpoint sources were the likely cause of the impact. No prior data were available for this stream.

### Wood Creek

Water quality for this stream, sampled at Seifert Corners, is assessed as slightly impacted, based on sampling in 2001. The primary stressors include nonpoint source nutrient enrichment, siltation, and likely decomposable wastes. Habitat is also a mitigating factor at this stream, which is mostly composed of runs rather than riffles. This site was sampled in 1996 and water quality was assessed as severely impacted, but this assessment is considered non-representative. Dissolved oxygen measured at midday in the 1996 sampling was only 4.5 ppm, possibly attributable to upstream wetlands. An upstream site in Rome was sampled in 2002, and was also found to be slightly impacted, likely from urban runoff.

### Yawger Creek

Yawger Creek was sampled extensively from 1993 to 2001 in a nonpoint source study. All assessments at the Cross Roads site have indicated slight impact, with the exception of 1999, when the metrics fell within the range of moderate impact. The watershed is predominantly agricultural, and nonpoint source nutrient enrichment is the major stressor affecting the fauna.

### Literature cited:

Effler, S. W., and C. Siegfried. 1994. Zebra mussel (*Dreissena polymorpha*) populations in the Seneca River, New York: impact on oxygen resources. Environ. Sci. Technol. 28(12): 2216-2221.