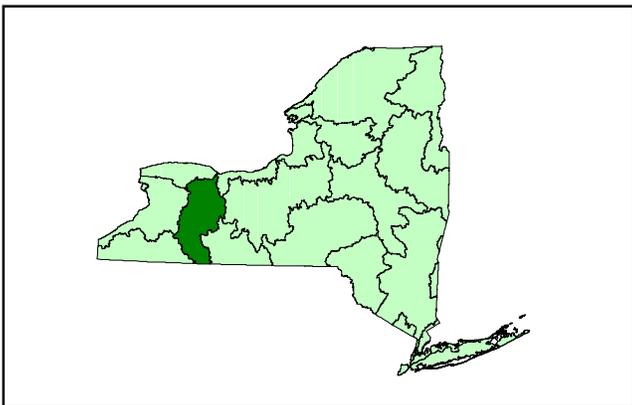
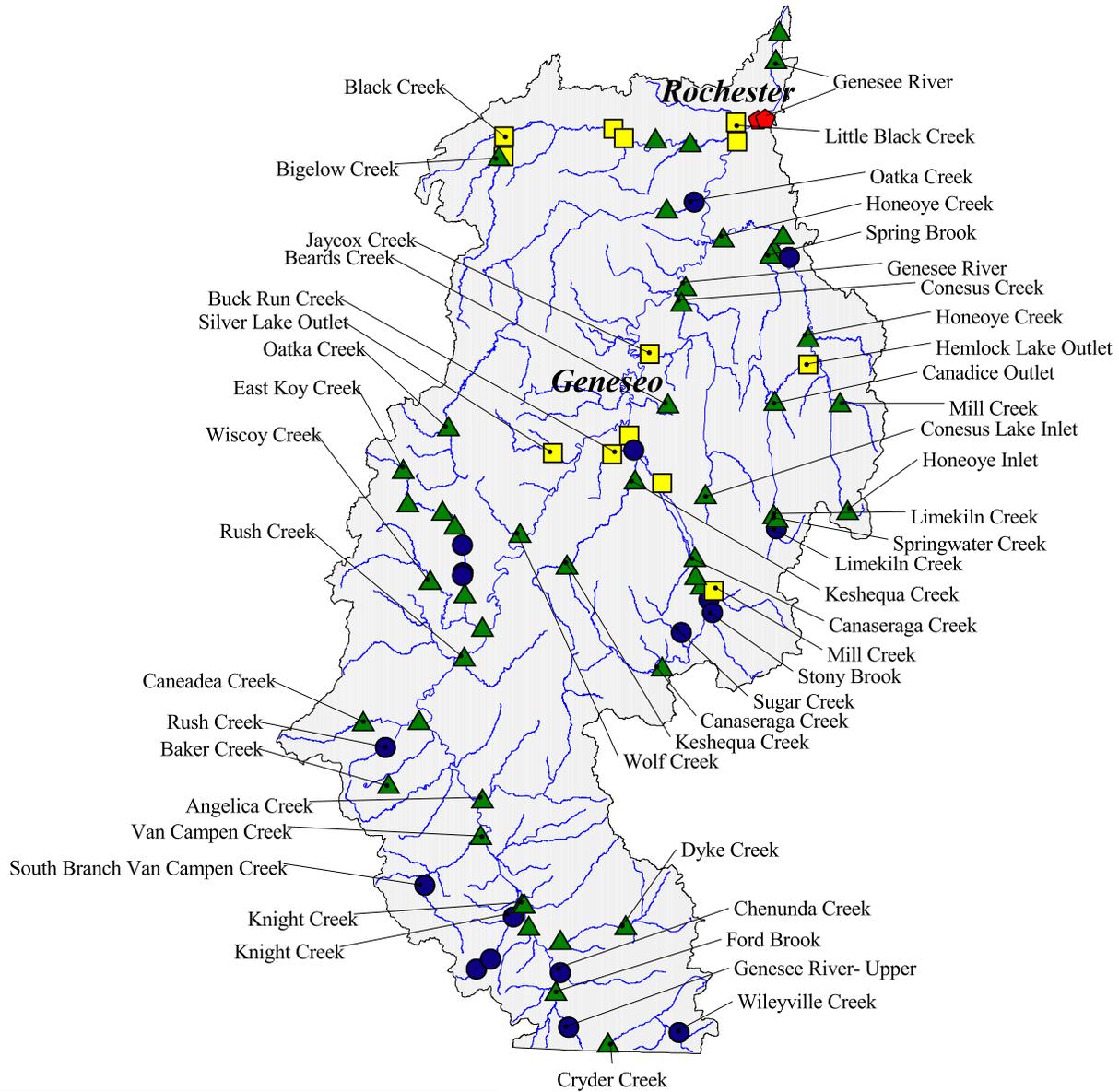


# Genesee River Drainage Basin



**Water Quality Assessment based on Resident Macroinvertebrates**

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



GENESEE RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>	
<b>ANGELICA CREEK (ANGL)</b>			
01	Angelica, Camp Rd. (Co Rte 43) bridge	96	99
<b>BAKER CREEK (BAKE)</b>			
01	Angelica, above Rte 16 bridge		99
<b>BARGE CANAL, CENTRAL (CCAN)</b>			
01	Rochester, east of Genesee River junction	74 75 80	
<b>BARGE CANAL, WEST (WCAN)</b>			
11	Rochester, west of Genesee River junction	75 81	
<b>BEARDS CREEK (BERD)</b>			
01	Cuylerville, below Rte 20A bridge	96	
<b>BIGELOW CREEK (BLOW)</b>			
01	South Byron, above Caswell Rd. bridge		99
<b>BLACK CREEK (BLAK)</b>			
01	Above Byron, above Cockram Rd. bridge	96	
02	Byron, above Rte 237 bridge	96	99 00
03	Churchville, below Rte 36 bridge	95 96	
04	Churchville, below Burnt Mill Rd.	90 96	99
05	West Chili, below Rte 33A bridge	96	
06	Chili Center, below Rte 386 bridge	96	
<b>BUCK RUN CREEK (BUCK)</b>			
01	Mt. Morris, above Rte 36 bridge		99 00
<b>CANADICE LAKE OUTLET (DICE)</b>			
02	Hemlock, at Rte 15A bridge		99
<b>CANASERAGA CREEK (RAGA)</b>			
01	Canaseraga, above Rte 70 bridge	96	
02	Below Dansville, below Poag Hole Rd. bridge	96	
03	Dansville, above Rte 436 bridge	96	
04A	Cumminsville, below Rte 36 bridge		99
04	Below Dansville, above White Bridge Rd. bridge	96	
05	Below Groveland, @Pioneer Rd. bridge	96	
06A	Hampton Corners, East of I-390 bridge		99
06	Mt. Morris, Rte 408 bridge	89 90 96	
<b>CANEADEA CREEK (CNEA)</b>			
01	Rushford, below Hardy Corners Rd. bridge	96	
02	Caneadea, Mill St.; downstream of lake		99

GENESEE RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>
CHENUNDA CREEK (NUND)		
01	Stannards, above Rte 19 bridge	99
CONESUS CREEK (CONE)		
01	Ashantee, below 5 arch Rte 39 bridge	99 00
CONESUS LAKE INLET (CONI)		
01	Scottsburg, above E. Swamp Rd. bridge	99
CRYDER CREEK (CRYD)		
01	Paynesville, below Paynesville Rd. bridge	99
DYKE CREEK (DYKE)		
01	Andover, above Rte 417 bridge	99
02	Wellsville, below Rte 417 bridge	99
EAST KOY CREEK (EKOY)		
01	Wethersfield Springs, above Hermitage Rd. bridge	93
02	Hermitage, above Hardys Rd. bridge	93
03	Above Gainesville, below Shearing Rd.	93
04	Below Gainesville, below Jordan Rd.	93
05	Above Lamont, above Murphy Rd.	93
06	Griffith Corners, above Griffith Rd.	93
06A	Below Griffith Corners, below Trib 4	93
07	East Koy, below East Koy Rd	93 96 99
FORD BROOK (FORD)		
01	South of Stannards, River Rd. bridge	99
GENESEE RIVER, UPPER (UGNS)		
01	Shongo, below Graves Rd. bridge	99
02	Wellsville, Weidrick Rd. bridge	84
03	Wellsville, State St.	99
04	Below Wellsville, off Rte 19	99
05	Scio, above Knight Creek Rd. bridge	89 90 00
08	Caneadea, Co. Rte 46	99
12	Cuylerville, Rte 20A	89 90 99
GENESEE RIVER, LOWER (GENS)		
01	Avon, Rtes 5 & 20 bridge	74 80 89 90 99
02	Below Avon, below Rte 5 & 20 bridge	74 80
03	Scottsville, Brown's Bridge, Rte 253	74 80
03A	Genesee Junction, Ballantyne Bridge, Rte 252	92 93
04	Rochester, above Barge Canal	74 80 89 90 92 95 99

GENESEE RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>					
GENESEE RIVER (GENS), cont'd							
05	Rochester, below Elmwood Ave. bridge	74	80	92	93		99
05A	Rochester, below upper falls						99
06	Rochester, 0.1 miles below Rte 104 bridge	74	80	89	90	92	93
06A	Rochester, at Kodak Park			90	92		
06B	Rochester, below Kodak STP discharge			90	92		
06C	Rochester, below Merrill St storm sewer					92	93
07	Rochester, opposite Genesee Docks at Boxart St	74	80	89	90	92	95
08	Rochester, above Stutson St bridge	74					99
							00
HEMLOCK LAKE OUTLET (HEML)							
01A	Frost Hollow, Co. Rte 15 bridge						99
HONEOYE CREEK (HONY)							
01	Honeoye, Rte 20A	78					
02	Below Honeoye, Cty Rd. 15	78					
03	Idaho, below ford @Gray Rd.	78				96	
08	Honeoye Falls, Rte 65						99
09	Mendon, Sibley Rd. bridge			89	90	95	
10	Mendon, Plains Rd. bridge			89	90		
12	West Rush, Creek side Rd.						99
							00
HONEOYE INLET (HONI)							
01	Hunt Hollow, South of Old West Lake Rd. junction					95	99
JAYCOX CREEK (JCOX)							
01	Geneseo, above Nations Rd. bridge						99
KESHEQUA CREEK (KESH)							
01	Nunda, @Creek Rd. bridge						99
04	Sonyea, below Rte 36 bridge						99
							00
KNIGHT CREEK (KNIT)							
01	Below Allentown, Allen Rd. bridge			91			00
02	Below Allentown, Rte 417 bridge			91			00
03	Above Scio, Knight Ck Rd. bridge			91			00
04	Scio, Back River Rd. bridge			91			99
							00
LIMEKILN CREEK (LIMK)							
01	Above Springwater, above Marvin Hill Rd. bridge					95	
02	Below Springwater, above Marvin Hill Rd. bridge						99

GENESEE RIVER DRAINAGE BASIN SAMPLING SITES, 1972-2002

<u>STATION</u>	<u>LOCATION</u>	<u>YEAR SAMPLED</u>	
LITTLE BLACK CREEK (LBLA)			
01	Chili, above Beahan Rd. bridge		99
MILL CREEK (MILD)			
01	Dansville, Red Jacket/Know Road bridge		99
MILL CREEK (MILH)			
01	Honeoye, below Co. Rte 33 bridge		99
OATKA CREEK (OATK)			
00	Warwaw, Rte 20A bridge		99
01	Garbutt, Union St bridge	89 90	95
02	Scottsville, below Rte 251 bridge		99 00
RUSH CREEK (RSHC)			
01	McGrawville, above Barber Hill Rd. bridge		99
RUSH CREEK (RUSH)			
01	East of Fillmore, below Co. Rte 4 bridge		99
SILVER LAKE OUTLET (SILO)			
01	Perry, above Twin Bridge Rd. culvert		95 99
SPRING BROOK (SPRG)			
01	Moran Corners, under Monroe Rd. bridge		99
SPRINGWATER CREEK (SPRN)			
01	Springwater, above Kellogg Rd. bridge		99
STONY BROOK (STNB)			
01	Stony Brook State Park, Rte 36 bridge		99
SUGAR CREEK (SUGA)			
01	Near Ossian, above Co. Rte 17 bridge		99
VAN CAMPEN CREEK (VCAM)			
01	Belvidere, above Rte 19 bridge	89	96 99
VAN CAMPEN CREEK, SOUTH BRANCH (VCAM)			
02	Friendship, Rte 275 bridge		99
WILEYVILLE CREEK (WILY)			
01	East of Whitesville, above Co Rte 124 bridge		99
WISCOY CREEK (WCOY)			
04	Pike, above Rte 19 bridge		99 00
07	Roszburg, above Rte 19A bridge		99
WOLF CREEK (WOLF)			
01	Castile, below Park Rd. in Letchworth State Park		99

ASSESSMENTS OF WATER QUALITY OF STREAMS IN THE GENESEE RIVER DRAINAGE BASIN, BASED ON MACROINVERTEBRATE COMMUNITIES

<u>Site/Reach</u>	<u>Water Quality Assessment</u>	<u>Change from 1992</u>
Angelica Creek, Angelica	slightly impacted	no prior data
Baker Creek, Angelica	slightly impacted	no prior data
Beards Creek, Cuylerville	slightly impacted	no prior data
Bigelow Creek , near South Byron	slightly impacted	no prior data
Black Creek, above Byron	slightly impacted	no prior data
Black Creek, Byron	moderately impacted	no prior data
Black Creek, Churchville	moderately impacted	no change
Black Creek, below Churchville	moderately impacted	no prior data
Black Creek, West Chili	slightly impacted	no prior data
Black Creek, Chili Center	slightly impacted	no prior data
Buck Run Creek, Mount Morris	moderately impacted	no prior data
Canadice Outlet, Hemlock	slightly impacted	no prior data
Canaseraga Creek, Canaseraga	slightly impacted	no prior data
Canaseraga Creek, above Dansville	non-impacted	no prior data
Canaseraga Creek, Dansville	slightly impacted	no prior data
Canaseraga Creek, below Dansville	slightly impacted	no prior data
Canaseraga Creek, Cumminsville	slightly impacted	no prior data
Canaseraga Creek, below Groveland	moderately impacted	no prior data
Canaseraga Creek, Mt. Morris	moderately impacted	<b>DECLINED</b>
Canaseraga Creek, below Hampton Corners	non-impacted	no prior data
Caneadea Creek, Rushford	slightly impacted	no prior data
Caneadea Creek, Caneadea	slightly impacted	no prior data
Chenunda Creek , Stannards	slightly impacted	no prior data
Conesus Creek, Ashantee	slightly impacted	no prior data
Conesus Lake Inlet, Scottsburg	slightly impacted	no prior data
Cryder Creek, Paynesville	slightly impacted	no prior data
Dyke Creek, Andover	slightly impacted	no prior data
Dyke Creek, Wellsville	slightly impacted	no prior data
East Koy Creek, Wethersfield Springs	slightly impacted	no prior data
East Koy Creek, Hermitage	slightly impacted	no prior data
East Koy Creek, Gainesville	slightly impacted	no prior data
East Koy Creek, below Gainesville	slightly impacted	no prior data

ASSESSMENTS OF WATER QUALITY OF STREAMS IN THE GENESEE RIVER DRAINAGE BASIN,  
 BASED ON MACROINVERTEBRATE COMMUNITIES

<u>Site/Reach</u>	<u>Water Quality Assessment</u>	<u>Change from 1992</u>
East Koy Creek, above Lamont	non-impacted	no prior data
East Koy Creek, Griffith Corners	non-impacted	no prior data
East Koy Creek, below Griffith Corners	non-impacted	no prior data
East Koy Creek, East Koy	slightly impacted	no prior data
Ford Brook, South of Stannards	slightly impacted	no prior data
Genesee River, Upper, Shongo	non-impacted	no prior data
Genesee River, Upper, Wellsville	slightly impacted	no prior data
Genesee River, Upper, below Wellsville	slightly impacted	no prior data
Genesee River, Upper, Scio	slightly impacted	<b>DECLINED</b>
Genesee River, Upper, Caneadea	non-impacted	no prior data
Genesee River, Upper, Cuylerville	non-impacted	no change
Genesee River, Avon	slightly impacted	no change
Genesee River, Rochester - Genesee Valley Park	severely impacted	<b>DECLINED</b>
Genesee River, Rochester, below Barge Canal	severely impacted	<b>DECLINED</b>
Genesee River, Rochester, below Upper Falls	moderately impacted	no prior data
Genesee River, Rochester, below Rt. 104 bridge	slightly impacted	<b>IMPROVED</b>
Genesee River, Rochester, Genesee Docks at Boxart St.	slightly impacted	<b>IMPROVED</b>
Hemlock Lake Outlet, Frost Hollow	moderately impacted	no prior data
Honeoye Creek, Idaho	slightly impacted	no change
Honeoye Creek, Honeoye Falls	non-impacted	no prior data
Honeoye Creek, Mendon	slightly impacted	no change
Honeoye Creek, West Rush	slightly impacted	no prior data
Honeoye Inlet, below Hunt Hollow	slightly impacted	no prior data
Jaycox Creek, Genesee	moderately impacted	no prior data
Keshequa Creek, Nunda	slightly impacted	no prior data
Keshequa Creek, Sonyea	slightly impacted	no prior data
Knight Creek, below Allentown	non-impacted	no change
Knight Creek, below Allentown	non-impacted	no change
Knight Creek, above Scio	non-impacted	no change

ASSESSMENTS OF WATER QUALITY OF STREAMS IN THE GENESEE RIVER DRAINAGE BASIN,  
 BASED ON MACROINVERTEBRATE COMMUNITIES

<u>Site/Reach</u>	<u>Water Quality Assessment</u>	<u>Change from 1992</u>
Knight Creek, Scio	slightly impacted	<b>DECLINED</b>
Limekiln Creek, above Springwater	non- impacted	no prior data
Limekiln Creek, below Springwater	slightly impacted	no prior data
Little Black Creek, Chili	moderately impacted	no prior data
Mill Creek, Dansville	moderately impacted	no prior data
Mill Creek, Honeoye	slightly impacted	no prior data
Oatka Creek, Warsaw	slightly impacted	no prior data
Oatka Creek, Garbutt	slightly impacted	no change
Oatka Creek, Scottsville	non-impacted	no prior data
Rush Creek, McGrawville	non-impacted	no prior data
Rush Creek, East of Fillmore	slightly impacted	no prior data
Silver Lake Outlet, below Perry	moderately impacted	no prior data
Spring Brook, Moran Corners	slightly impacted	no prior data
Springwater Creek, Springwater	slightly impacted	no prior data
Stony Brook, Stony Brook State Park	non-impacted	no prior data
Sugar Creek, near Ossian	non-impacted	no prior data
Van Campen Creek, Belvidere	slightly impacted	no change
Van Campen Creek, South Branch, Friendship	non-impacted	no prior data
Wileyville Creek, east of Whitesville	non-impacted	no prior data
Wiscoy Creek, Pike	slightly impacted	no prior data
Wiscoy Creek, Rossburg	slightly impacted	no prior data
Wolf Creek, Castile	slightly impacted	no prior data

REPORTS OF MACROINVERTEBRATE SURVEYS WITHIN THE GENESEE RIVER  
WATERSHED

STREAM	YEAR OF SURVEY	REPORT
Black Creek	1996	SBU,1997
Canaseraga Creek	1973	AVON
Canaseraga Creek	1996	SBU,1997
East Koy Creek	1993	SBU,1993
Genesee River	1974	DOH
Genesee River	1980	SBU
Genesee River	1984	SBU,1984
Knight Creek	1927	NYCD
Knight Creek	1991	SBU,1991
Knight Creek	2000	SBU,2001
Oatka Creek	1973	AVON
Oatka Creek	2002	DFW
Spring Creek	2002	DFW
Upper Genesee River	1973	EPA
Watershed Streams	1989-1990	RIBS, 1992

AVON	Avon Pollution Investigations Unit, Div. of Fish & Wildlife, NYS DEC
DFW	Division 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

### Angelica Creek

A site on Angelica Creek below Angelica was assessed as slightly impacted in 1996 and 1999 macroinvertebrate sampling. Nonpoint source nutrient enrichment was the likely stressor, but the impact was considered to be minor.

### Baker Creek

Baker Creek near Angelica was sampled in 1999 and was field-assessed as slightly impacted. The sample was laboratory-sorted to order and based on this it was determined that the field assessment was appropriate.

### Beards Creek

This stream was sampled in Cuylerville in 1996, and water quality was assessed as slightly impacted. The macroinvertebrate fauna was dominated by clean-water mayflies, and water quality problems were considered to be minor.

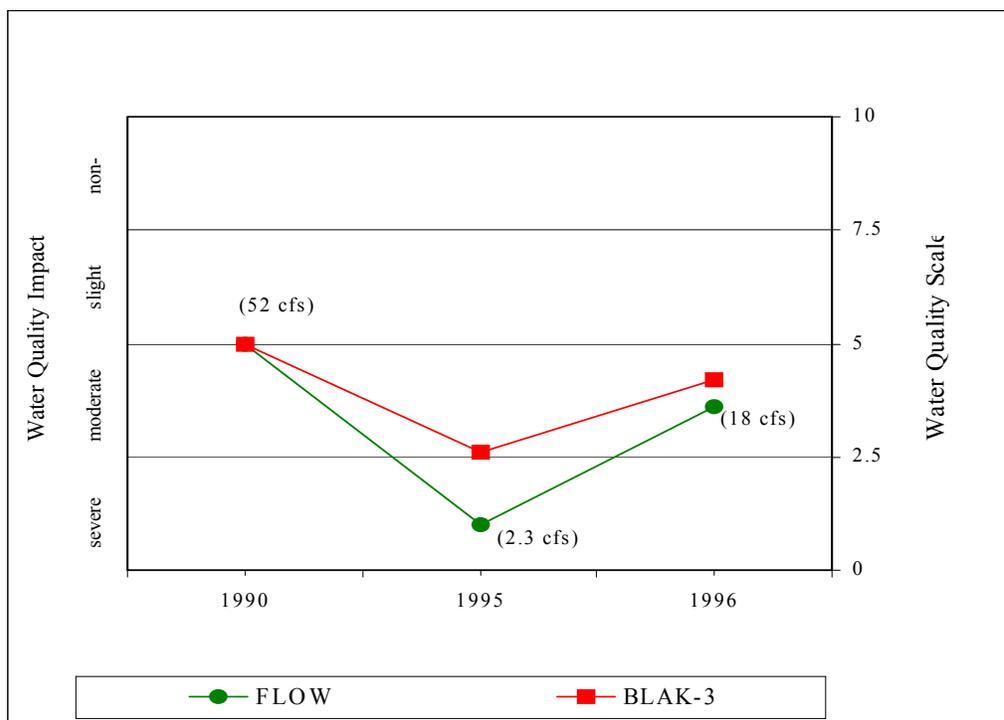
### Bigelow Creek

Moderately impacted water quality was indicated by the 1999 sample taken in South Byron. The stream was in a highly agricultural area, and Impact Source Determination denoted both nutrient enrichment and toxic stressors. The macroinvertebrate fauna was dominated by algal-feeding riffle beetles and filter-feeding caddisflies.

### Black Creek

In a 1996 macroinvertebrate study sampling 6 Black Creek sites from above Byron to Chili Center, water quality assessments ranged from slightly to moderately impacted.

Moderate impacts were observed downstream of the discharges of the South Byron (V) Sewage Treatment Plant and the Churchville (V) Sewage Treatment Plant. The South Byron site was also assessed as moderately impacted in



**Figure 4-1. Biological Assessment Profile of index values, Black Creek at Churchville, 1990-1996, and flow at Churchville during these years. Flow values are of average 7-day low flow period during the 2-month period prior to invertebrate sampling, derived from values from the USGS gage at Churchville.**

1999 and 2000. Sampling downstream of the Churchville (V) STP discharge yielded assessments of slightly impacted (borderline moderately impacted) in 1990, and moderately impacted in 1995, 1996, and 1999. Water quality was demonstrated to be closely correlated with stream flow and volume of dilution water.

#### Buck Run

Moderate impact was assessed for this small sluggish stream, based on 1999 invertebrate sampling in Mount Morris. The primary cause of impact was apparently toxic, and a small grey-water discharge was noted upstream. Habitat was also a likely factor at this site.

#### Canadice Lake Outlet in Hemlock

Slight impact was assessed for this site, based on 1999 macroinvertebrate sampling. The primary cause of impact was impoundment effect, since the site was less than one mile below the outlet of Canadice Lake. The fauna was dominated by caddisflies and midges.

#### Canaseraga Creek

A macroinvertebrate survey of Canaseraga Creek from Canaseraga to Mount Morris in 1996 documented water quality ranging from non-impacted in Dansville to moderately impacted in Mount Morris. Slight impact was documented downstream of the Dansville (V) Sewage Treatment Plant. A site below Dansville was field-assessed as non-impacted in 1999, but this sample was not processed in the laboratory, and the assessment is unverified. The most frequently monitored site has been downstream at Mount Morris, despite the generally poor habitat. Moderate impact was found in 1989, slight impact in 1990, and moderate impact in 1996. The site was relocated one mile upstream to Hampton Corners in 1999 at more suitable habitat, and water quality was determined to be slightly impacted.

#### Caneadea Creek

Based on sampling at two sites on Caneadea Creek, water quality is assessed as slightly impacted. A site in Caneadea was field-assessed as slightly impacted in 1999, but the sample was not laboratory-sorted. A site in Rushford was sampled in 1996, and was assessed as slightly impacted by nonpoint source nutrient enrichment.

#### Chenunda Creek

A site in Stannards was field-assessed as slightly impacted in 1999. The sample was laboratory-sorted to order and based on this it was determined that the field assessment was appropriate. Diatoms were very abundant at this site, and filter-feeding caddisflies dominated the sample indicating nutrient enrichment. The area was typified by dairy farms.

#### Conesus Creek

Sampling in 2000 at Ashantee yielded a sample that was initially assessed as non-impacted, based on the metrics. This assessment was adjusted to slight impact, based on ISD and best professional judgement. Nonpoint source nutrient enrichment is strongly indicated at this site. Moderate impact was assessed for a site at this site in 1999, although this assessment is somewhat uncertain due to upstream streambank work.

#### Conesus Inlet

Slight impact was assessed for a site at Scottsburg, based on 1999 sampling. The cause of

impact could not be determined. Mayflies, stoneflies, caddisflies, and hellgrammites were present at this site.

#### Cryder Creek

Water quality was assessed as slightly impacted, based on 1999 invertebrate sampling in Paynesville. Although mayflies, stoneflies, and caddisflies were present, the fauna indicated organic enrichment.

#### Dyke Creek

Based on 1999 invertebrate sampling at Andover and Wellsville, water quality was assessed as slightly impacted. Organic inputs were denoted as the cause of impact, possibly livestock.

#### East Koy Creek

East Koy Creek was sampled from Weathersfield Springs to East Koy in 1993. Slight impact was found at most sites, with the exception of a non-impacted reach from Lamont to Griffith Corners. A tributary entering the creek below Griffith Corners carried wastes from a large dairy farm, and impacted the stream for a short distance. The continuing monitoring site in East Koy was assessed as slightly impacted in 1993, field-assessed as non-impacted in 1996, and assessed as slightly impacted in 1999. Impacts were likely due to nonpoint nutrient enrichment and additions of organic wastes.

#### Ford Brook

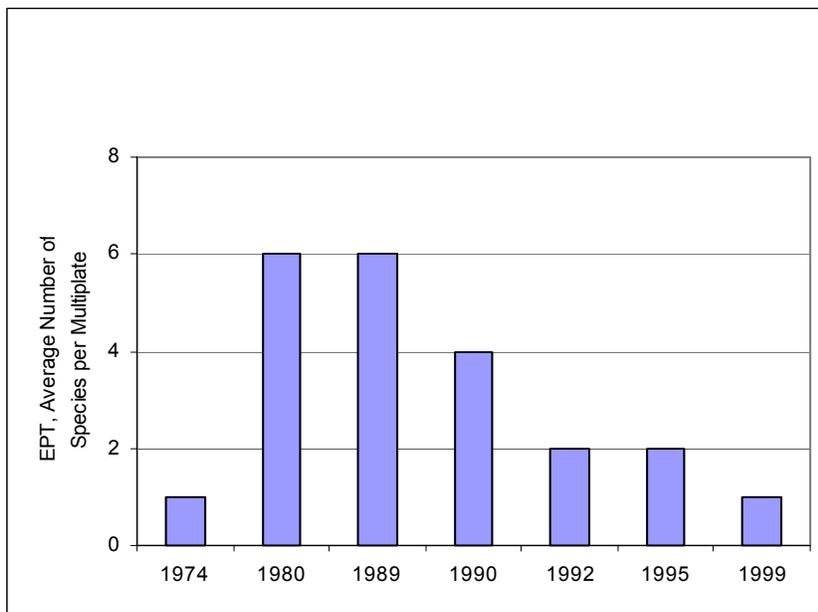
This small stream was sampled in 1999 south of Stannards, where it ran through a dairy farm. Heavy growths of diatoms in the stream indicated nutrient enrichment. The site was field-assessed as slightly impacted, the sample was laboratory-sorted to order, and based on this it was determined that the field assessment was appropriate.

#### Genesee River

Non-impacted water quality was assessed for a site in Shongo, based on 1999 invertebrate sampling. The fauna was diverse and well-balanced, with many mayflies, stoneflies, and caddisflies. Slightly impacted water quality was assessed for the State Street site in Wellsville (UGNS-3), based on 1999 invertebrate sampling. Nonpoint source nutrient enrichment was the primary cause of impact. A site approximately one mile downstream of Wellsville (UGNS-4) was field-assessed as slightly impacted. The sample was partially processed, and determined to be no more than slightly impacted. A site in Scio was assessed as slightly impacted in 1989, non-impacted in 1990, and slightly impacted in 2000. A site in Caneadea was field-assessed as non- to slightly impacted 1999. The Cuylerville site was assessed as non-impacted in 1989 and 1990, and was field-assessed as non-impacted in 1999. In summary, the upper Genesee River appears to be non-impacted upstream of Wellsville, slightly impacted from Wellsville to Scio, and non-impacted from Caneadea to Cuylerville. In the lower Genesee River, the site in Avon was assessed as slightly impacted in all years sampled: 1974, 1980, 1989, 1990, and 1999.

The Genesee River entering Rochester upstream of the canal junction exhibited a substantial decline in water quality from 1989 to 1999. During the 1980's this site showed greatly improved water quality following the 1977 upgrade of the Gates-Chili-Ogden Sewage Treatment Plant. The number of EPT (mayflies, stoneflies, and caddisflies) illustrated this change, but these numbers

returned to 1974 levels (Figure 4-2) in 1999, and water quality is assessed as severely impacted. This situation is likely to be reversed, as all Monroe County wastewater treatment facilities discharge into Lake Ontario, as of late 1999. Resampling of this reach is planned for 2004. The Genesee River near the mouth currently exhibits good water quality, being assessed as slightly impacted in 1995 and 1999. The 1992 assessment of slight impact was considered somewhat inflated by high flows, but improvement now is verified at this site.



**Figure 4-2. Genesee River at Rochester, upstream of Barge Canal. EPT data (species of sensitive mayflies, stoneflies, and caddisflies), 1974-1999.**

#### Hemlock Lake Outlet

Moderate impact was indicated for a site at Frost Hollow, although at the high end of this category, bordering on slight impact. The fauna was heavily dominated by riffle beetles, indicating nutrient enrichment.

#### Honeoye Creek

Water quality assessments of Honeoye Creek have ranged from non-impacted to slightly impacted by nonpoint source nutrient enrichment. Of the four sites from Idaho to West Rush sampled since 1992, only the Honeoye Falls site is assessed as non-impacted. Much of the drainage area is agricultural. A statement in “20 year trends in water quality of rivers and streams in New York State” (Bode et al., 1993) referring to non-impacted conditions at Mendon was in error.

#### Honeoye Inlet

Based on 1999 invertebrate sampling at Hunt Hollow, water quality was assessed as slightly impacted, though bordering on non-impacted. Impact Source Determination showed slight nutrient enrichment, but the fauna contained many mayflies, stoneflies, and caddisflies.

#### Jaycox Creek

Moderate impact was assessed for a site north of Geneseo, based on 1999 invertebrate sampling. The fauna was dominated by sewage-tolerant worms and midges. This was a small, muddy, pasture stream with livestock waste along the banks. Poor habitat is also a factor at this site.

#### Keshequa Creek

Slightly impacted water quality was indicated by the 1999 invertebrate sampling in Nunda and below Sonyea. Nonpoint nutrient enrichment was the most likely cause of impact. Sampling

at the Sonyea site in 2000 also indicated slight impact, but ISD denoted a toxic stressor.

### Knight Creek

Knight Creek was sampled from Allentown to Scio in 1991 and 2000. The 1991 survey documented non-impacted conditions at all four sites. The 2000 survey showed the upper three sites to be non-impacted, but the Scio site showed slight impact, from nonpoint source nutrient additions (Figure 4-3). Similar conditions at this site were also documented in 1999 sampling .

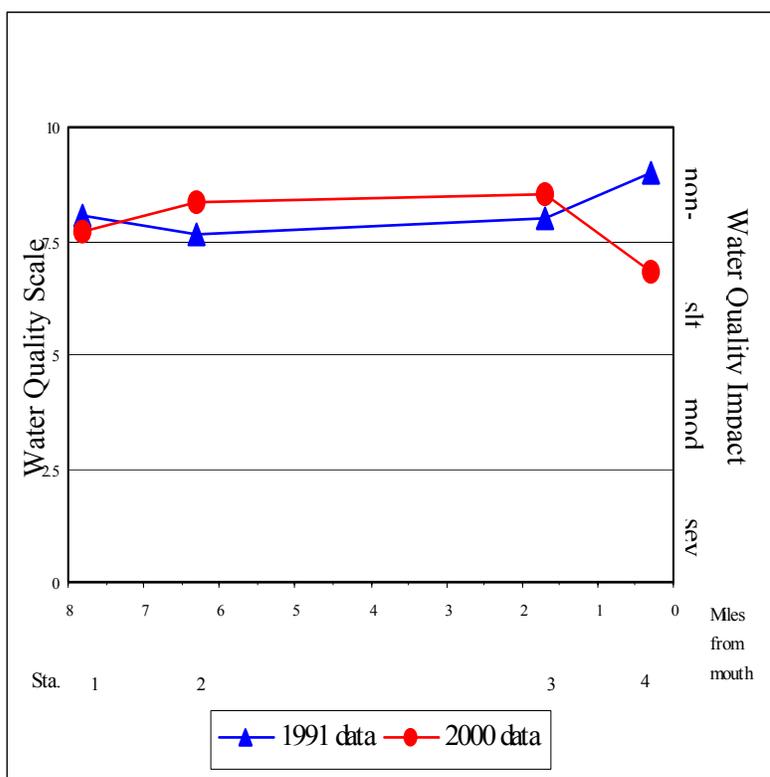


Figure 4-3. Water quality in Knight Creek, 1991 and 2000.

### Limekiln Creek

Slightly impacted water quality was indicated by the invertebrate sample taken downstream of Springwater in 1999, a dry summer. Nonpoint nutrient enrichment was indicated, although Impact Source Determination showed the community to be most similar to natural communities. A site above Springwater had been assessed as non-impacted in 1995 macroinvertebrate sampling.

### Little Black Creek

Moderately impacted water quality was indicated by the 1999 invertebrate sample taken in Chili. Impact Source Determination denoted possible toxicity affecting the fauna. Although the habitat was satisfactory at this site, mayflies were not found.

### Mill Creek (Livingston County)

Moderate impact was assessed for the Dansville site, based on 1999 invertebrate sampling. It was not clear what factors were affecting the fauna most, although siltation appeared to be a factor. Stoneflies were present at this site, but mayflies were not found.

### Mill Creek (Ontario County)

Slightly impacted water quality was indicated by the 1999 invertebrate sample taken in Honeoye. The impact was considered very minor, as the community was similar to natural communities, although siltation was denoted as a stressor.

### Oatka Creek

Oatka Creek has been assessed as slightly impacted in nearly all samplings by the Stream Biomonitoring Unit. One exception was a non-impacted assessment based on sampling at Scottsville in 2000, a high-flow year. Nonpoint source nutrient enrichment and siltation are indicated

to be the primary factors affecting the invertebrate fauna. Independent monitoring of Oatka Creek (Oatka Trail to Scottsville) and the tributary Spring Creek has been conducted by Dr. William Sutton in 1992, 1993, 1997, and 2002, and these results are summarized in his 2002 report. Water quality assessments in nearly all of these samplings have been non-impacted or slightly impacted. No significant trends were identified over this time period.

#### Rush Creek

This small creek enters the Genesee River just east of Fillmore, Allegany County. The site near Fillmore above the confluence was field-assessed as slightly impacted in 1999. Abundant diatoms indicated nutrient enrichment at the site. The sample was laboratory-sorted to order and based on this it was determined that the field assessment was appropriate.

#### Rush Creek

This creek flows north into Rushford Lake, in Allegany County. A site in McGrawville was field-assessed as non-impacted in 1999. The sample was laboratory-sorted to order and based on this it was determined that the field assessment was appropriate.

#### Silver Lake Outlet

Based on macroinvertebrate sampling downstream of Perry in 1999, water quality was assessed as moderately impacted. The sample was dominated by filtering caddisfly larvae. The impact was likely a combination of impoundment effect and enrichment from the Perry sewage treatment facility. The stream was previously sampled in 1995, and was also determined to be slightly impacted.

#### Spring Brook

Based on sampling in Moran Corner in 1999, water quality was field-assessed as slightly impacted. The sample was laboratory-sorted to order and based on this it was determined that the field assessment was appropriate. The cause of impact was undetermined.

#### Springwater Creek

Slightly impacted water quality was assessed for this site, based on 1999 invertebrate sampling in Springwater. Mayflies, stoneflies, and caddisflies were well-represented. Worms composed a large portion of the fauna, but they were not pollution-tolerant worms. The impact is considered to be minor, and the cause was undetermined.

#### Stony Brook

Non-impacted water quality was assessed for a site in Stony Brook State Park, Steuben County, based on 1999 invertebrate sampling. The fauna was diverse and well-balanced, with many mayflies, stoneflies, and caddisflies.

#### Sugar Creek

Non-impacted water quality was assessed for a site below Ossian Center, based on 1999 invertebrate sampling. The fauna was diverse and well-balanced, with many mayflies, stoneflies, and caddisflies. Community indices were very high.

#### Van Campen Creek

Slightly impacted water quality was assessed for the site in Belvidere, based on

macroinvertebrate sampling 1989 and 1999. Nonpoint source nutrient enrichment was strongly indicated to be the primary factor, with filtering caddisflies dominated the fauna. A screening sample taken in 1996, a high-flow year, was field assessed as non-impacted, and the sample was not retained. This assessment is not considered typical of normal water quality in this stream. A site sampled on the South Branch, in Friendship in 1999 was assessed as non-impacted. The fauna was diverse and well-balanced, with many mayflies, stoneflies, and caddisflies.

#### Wileyville Creek

Non-impacted water quality was assessed for a site in Whitesville, based on 1999 invertebrate sampling. The fauna was diverse and well-balanced, with many mayflies, stoneflies, and caddisflies. Community indices were very high.

#### Wisoy Creek

The site in Pike was assessed as non-impacted in 1999 and slightly impacted in 2000. The 2000 impact was attributed to nonpoint source nutrient enrichment and siltation. Since 1999 flows were low and 2000 flows were high, the 2000 impact is likely derived from greater runoff. At the downstream site at Rossburg, approximately 0.5 miles upstream of the confluence with the Genesee River, water quality was assessed as slightly impacted in 1999. Nonpoint source nutrient enrichment was strongly indicated to be the primary factor, with filter-feeding caddisflies dominating the fauna.

#### Wolf Creek

Water quality was determined to be slightly impacted, based on 1999 invertebrate sampling in Letchworth State Park east of Castile, 0.2 miles above the confluence with the Genesee River. Although clean-water stoneflies were numerous, mayflies were scarce, and tolerant scuds were numerous. Municipal and/or industrial inputs were indicated by Impact Source Determination, likely originating in Castile. The specific conductance at this site was very high (1013  $\mu\text{mhos/cm}$ ). Habitat was very good at this site, and should have supported a very good invertebrate fauna.