Waterbody Inventory
for
The Niagara River Watershed

Water Index Number	Waterbody Segment	Category
Niagara River, Main Stem		
Ont 158 (portion 1)	Niagara River, Lower, Main Stem (0101-0027)	**Impaired Seg**
Ont 158 (portion 2)	Niagara River, Upper, Main Stem (0101-0006)	**Impaired Seg**
Ont 158 (portion 3)	Chippewa (West) Channel (0101-0028)	**Impaired Seg**
Ont 158 (portion 4)	Black Rock Canal (0101-0025)	**Impaired Seg**
Ont 158 G.I.-1 thru 6	Grand Island (all tribs to Niagara R) (0101-0011)	**Need Verific**
Tribs to Lower Niagara River, Lake Ontario to Tonawanda Creek		
Ont 158- 1 thru 5	Minor Tribs to Niagara River (0101-0029)	UnAssessed
Ont 158- 6	Gill Creek and tribs (0101-0002)	**Impaired Seg**
Ont 158- 6-P1a	Hyde Park Lake (0101-0030)	UnAssessed
Ont 158- 7 thru 11	Minor Tribs to Niagara River (0101-0031)	UnAssessed
Ont 158- 8	Cayuga Creek and minor tribs (0101-0001)	**Impaired Seg**
Ont 158- 8-1	Bergholtz Creek and tribs (0101-0004)	**Impaired Seg**
Tonawanda Creek Watershed		
Ont 158-12 (portion 1)	Tonawanda Creek, Lower, Main Stem (0102-0022)	**Impaired Seg**
Ont 158-12 (portion 1a)	NYS Barge Canal (portion 1) (0102-0044)	UnAssessed
Ont 158-12 (portion 2)	Tonawanda Creek, Middle, Main Stem (0102-0006)	**MinorImpacts**
Ont 158-12 (portion 3)	Tonawanda Creek, Middle, Main Stem (0102-0002)	**Impaired Seg**
Ont 158-12 (portion 4)	Tonawanda Creek, Upper, and minor tribs (0102-0003)	**Impaired Seg**
Ont 158-12- 1	Ellicott Creek, Lower, and tribs (0102-0018)	**Impaired Seg**
Ont 158-12- 1	Ellicott Creek, Upper, and tribs (0102-0024)	**Need Verific**
Ont 158-12- 2 thru 5 (selected)	Minor Tribs to Lower Tonawanda Creek (0102-0025)	UnAssessed
Ont 158-12- 3	Bull Creek and tribs (0102-0026)	UnAssessed
Ont 158-12- 6	Ransom Creek, Lower, and tribs (0102-0004)	**Impaired Seg**
Ont 158-12- 6	Ransom Creek, Upper, and tribs (0102-0027)	**Impaired Seg**
Ont 158-12- 7 thru 31 (selected)	Minor Tribs to Tonawanda Creek (0102-0028)	UnAssessed
Ont 158-12- 8	Mud Creek and tribs (0102-0029)	**NoKnownImpct**
Ont 158-12- 9	Beeman Creek and tribs (0102-0030)	**Impaired Seg**
Ont 158-12-11	Ledge Creek and minor tribs (0102-0012)	**Need Verific**
Ont 158-12-11-1	Murder Creek, Lower, and tribs (0102-0031)	**Impaired Seg**
Ont 158-12-11-1	Murder Creek, Upper, and tribs (0102-0032)	**Need Verific**
Ont 158-12-11-1-P13	Akron Reservoir (0102-0033)	UnAssessed
Ont 158-12-11-1-P13-	Tribs to Akron Reservoir (0102-0034)	UnAssessed

...The Niagara River Watershed

Water Index Number	Waterbody Segment	Category
Tonawanda Creek Watershed (con't)		
Ont 158-12-20-P15	Divers Lake (0102-0035)	UnAssessed
Ont 158-12-28	Bowen Brook and tribs (0102-0036)	**Impaired Seg**
Ont 158-12-32	Little Tonawanda Creek, Lower, and tribs (0102-0001)	**Impaired Seg**
Ont 158-12-32	Little Tonawanda Creek, Upper, and tribs (0102-0037)	UnAssessed
Ont 158-12-41	Tannery Brook and tribs (0102-0038)	UnAssessed
Ont 158-12-46	Crow Creek and tribs (0102-0023)	**NoKnownImpct**
Ont 158-12-46-P20	Attica Reservoir (0102-0039)	**MinorImpacts**
Ont 158-12-46-P20a	Attica Water Supply Reservoir (0102-0040)	UnAssessed
Ont 158-12-66	Stony Brook and tribs (0102-0041)	UnAssessed
Ont 158-12-77	East Fork and tribs (0102-0042)	**NoKnownImpct**
Ont 158-12-77-3-P20b	Faun Lake (0102-0043)	**NoKnownImpct**
Tribs to Upper Niagara, Tonawanda Creek to Lake Erie		
Ont 158-13	Two Mile Creek and tribs (0101-0005)	**Impaired Seg**
Ont 158-14	unnamed trib to Niagara River (0101-0032)	UnAssessed
Ont 158-15	Scajaquada Creek, Lower, and tribs (0101-0023)	**Impaired Seg**
Ont 158-15	Scajaquada Creek, Middle, and tribs (0101-0033)	UnAssessed
Ont 158-15	Scajaquada Creek, Upper, and tribs (0101-0034)	UnAssessed
Ont 158-15-P25	Delaware Park Pond (0101-0026)	**Impaired Seg**

Niagara River, Lower, Main Stem (0101-0027) Impaired Seg

Waterbody Location Information

Revised: 02/15/2005

Water Index No: Ont 158 (portion 1)
Hydro Unit Code: 04120104/110 **Str Class:** A-Spcl
Waterbody Type: River
Waterbody Size: 13.9 Miles
Seg Description: from Lake Ontario to Niagara Falls

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: LEWISTON (I-04-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
HABITAT/HYDROLGY	Impaired	Suspected

Type of Pollutant(s)

Known: PRIORITY ORGANICS (dioxin), PRIORITY ORGANICS (PCBs), PESTICIDES (mirex)
Suspected: - - -
Possible: Nonpriority Organics (PAHs)

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT (Lk Ontario)
Suspected: HABITAT MODIFICATION
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DEC/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 2b,3a (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Fish consumption in this portion of the Niagara River is impaired due to a NYS DOH health advisory that recommends restricting consumption of some species of fish due to elevated PCB, Mirex and Dioxin levels. Historical discharges resulting in contaminated river sediments and inactive hazardous waste sites are considered to be the likely source of these toxics. Shoreline development, bulkheading, dredging and other stream modifications impact the habitat along the river.

A NYS DOH health advisory recommends eating no white perch taken from the Niagara River (below the Falls) because of elevated PCB, Mirex and Dioxin levels. Consumption of smallmouth bass should be limited to no more than one meal per month due to PCB levels. The contaminant sources are primarily thought to be sediments attributed to inactive hazardous waste sites and historical discharges. Fish consumption in the Lower Niagara is also restricted due to a NYS DOH health advisory for Lake Ontario that applies to the first impassable fish barrier (Niagara Falls). The advisory recommends eating no American eel, channel catfish, carp, chinook salmon, and larger lake trout (> 25 inches) and brown trout (>20 inches). Consumption of white sucker, rainbow trout, smaller lake and brown trout, and larger coho salmon (>25 inches) should be limited to no more than one meal per month. These advisories are a result of elevated PCBs, mirex and dioxin in Lake Ontario sediments. (2004-05 NYS DOH Health Advisories, October 2004).

NYSDEC Rotating Intensive Basin Studies (RIBS) Routine Network monitoring of the Niagara River in Fort Niagara is conducted annually at the US Coast Guard Dock. In addition, when RIBS Intensive Network monitoring is conducted in a targeted basin every five years, additional sampling methods are employed to gain an overall assessment of water quality. In addition to water column chemistry, this Intensive Network sampling includes sediment assessment, macroinvertebrate tissue analysis and toxicity testing, as well as macroinvertebrate community analysis (see below). (DEC/DOW, BWAR/RIBS, April 2003)

At the Youngstown site, water quality was assessed as slightly impacted, based on 2000 macroinvertebrate multiplate sampling. Samples were dominated by midges and scuds. The invertebrate communities were similar to previous collections at this site since 1982.

The Niagara River is subject to a joint US-Canadian Niagara River Toxics Management Plan to reduce toxic contributions to the basin. The Niagara River from its mouth at Lake Ontario to Smokes Creek near the southern end of Buffalo Harbor has been designated an International Joint Commission (IJC) Area of Concern. Past municipal and industrial discharges, waste disposal sites and urban/storm runoff have long been a source of contaminants to the river. The history of development along the river has also changed the original shoreline, affecting fish and wildlife habitat. A Remedial Action Plan (RAP) document to address use impairments, sources, existing remediation programs and recommendations for future remedial strategies, was completed in 1994. The RAP identifies five specific use impairments. The major impairment is restrictions of fish and wildlife consumption. Restrictions of dredging activities, fish tumors and other deformities, degradation of benthos in localized near-shore areas, and loss of fish & wildlife habitat are the other use impairments identified in the RAP. Most recently the combined committee of the Friends of the Buffalo/Niagara Rivers assists the NYSDEC on implementation of the RAP. Recently, Clean Water/Clean Air Bond Act funding of $1.0 million was committed to a habitat restoration project for Strawberry Island. (DEC/DOW, BWAM and Region 9, February 2005)

The Niagara River is listed on the 2004 Section 303(d) List for PAHs. Although technical staff at both USEPA and NYSDEC have expressed concerns about the quality of the data and/or the interpretation of the results leading to this listing, NYSDEC listed this water on Part 3a - Waterbodies Segments Requiring Verification of Impairment of the List due to various PAHs, with the following footnote: "Due to analytic limitations, the treatment of non-detect results in the data evaluation, and other data evaluation and quality assurance/quality control issues, additional monitoring and verification of PAHs in the river are necessary to develop a TMDL."

The greatest concern regarding the quality of the PAH data is the variability and likely contamination that occurs when sampling PAHs. NYS's variability and contamination concerns for PAHs are illustrated by the recent large-scale multi-agency PAH monitoring effort in the NY/NJ Harbor, an independent entity (Booz Allen Hamilton) conducted an extensive data quality evaluation. While 97% of PCB results were characterized as being acceptable without qualification, only 10% of the PAH data were so characterized. The remaining 90% of the PAH data were considered to have aspects of the analysis that were absent or outside of acceptable bounds. Field blanks should generally be on the order of at least 5 times lower in concentration than actual samples. In the NY/NJ Harbor effort, the average PAH concentration was 32 ng/L and the average equipment blank was 15 ng/L. This is considered an unacceptable margin.

Also regarding PAHs, recent (2002/01) Niagara River Toxics Management Plan data actually show that the concentrations of PAHs decline from upstream to downstream sampling sites, suggesting that the PAH load is coming from Lake Erie. Reviewing the previous year's sampling (1999/2000) would suggest that significant improvement in the river occurred. Given that the available data can be interpreted as either showing significant improvement or unacceptable analytic/sampling variability, further complicates the assessment of the river.

This segment is also included on Part 2b (fish consumption) of the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the main stem of the Niagara River and all bays, arms and inlets of the river between Lake Ontario and the Niagara Falls.

Niagara River, Upper, Main Stem (0101-0006) Impaired Seg

Waterbody Location Information

Revised: 04/22/2005

Water Index No: Ont 158 (portion 2)
Hydro Unit Code: 04120104/100 **Str Class:** A-Spcl
Waterbody Type: River
Waterbody Size: 21.6 Miles
Seg Description: from Niagara Falls to Lake Erie

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: NIAGARA FALLS (I-04-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
Aquatic Life	Stressed	Suspected
HABITAT/HYDROLGY	Impaired	Suspected

Type of Pollutant(s)

Known: PRIORITY ORGANICS (PCBs)
Suspected: Water Level/Flow, Restricted Passage
Possible: Nonpriority Organics (PAHs)

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION, TOX/CONTAM. SEDIMENT
Suspected: LANDFILL/LAND DISP., Comb. Sewer Overflow, Urban Runoff
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DEC/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 2b,3a (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Fish consumption in this portion of the Niagara River is impaired due to a NYS DOH health advisory that recommends restricting consumption of some species of fish due to elevated PCB levels. Historical discharges resulting in contaminated river sediments and inactive hazardous waste sites are considered to be the likely source of these toxics. Urban runoff and CSOs contribute pollutants to the river. Shoreline development, bulkheading, dredging and other stream modifications impact the habitat along the river.

A NYS DOH health advisory recommends eating no more than one meal per month of carp because of elevated PCB levels. The sources of PCBs are primarily thought to be contaminated sediments attributed to inactive hazardous waste sites and historical discharges. (2002-03 NYS DOH Health Advisories, October 2004).

The Niagara River is subject to a joint US-Canadian Niagara River Toxics Management Plan to reduce toxic contributions to the basin. The Niagara River from its mouth at Lake Ontario to Smokes Creek near the southern end of Buffalo Harbor has been designated an International Joint Commission (IJC) Area of Concern. Past municipal and industrial discharges, waste disposal sites and urban/storm runoff have long been a source of contaminants to the river. Municipal CSOs which

discharge to the Niagara and other tribs in the area have been identified as needing additional control measures. The history of development along the river has also changed the original shoreline, affecting fish and wildlife habitat. A Remedial Action Plan (RAP) document to address use impairments, sources, existing remediation programs and recommendations for future remedial strategies, was completed in 1994. The RAP identifies five specific use impairments. The major impairment is restrictions of fish and wildlife consumption. Restrictions of dredging activities, fish tumors and other deformities, degradation of benthos in localized near-shore areas, and loss of fish & wildlife habitat are the other use impairments identified in the RAP. Most recently the combined committee of the Friends of the Buffalo/Niagara Rivers assists the NYSDEC on implementation of the RAP. Recently, Clean Water/Clean Air Bond Act funding of $1.0 million was committed to a habitat restoration project for Strawberry Island. (DEC/DOW, BWAM and Region 9, February 2005)

The Niagara River is listed on the 2004 Section 303(d) List for PAHs. Although technical staff at both USEPA and NYSDEC have expressed concerns about the quality of the data and/or the interpretation of the results leading to this listing, NYSDEC listed this water on Part 3a - Waterbodies Segments Requiring Verification of Impairment of the List due to various PAHs, with the following footnote: "Due to analytic limitations, the treatment of non-detect results in the data evaluation, and other data evaluation and quality assurance/quality control issues, additional monitoring and verification of PAHs in the river are necessary to develop a TMDL."

The greatest concern regarding the quality of the PAH data is the variability and likely contamination that occurs when sampling PAHs. NYS's variability and contamination concerns for PAHs are illustrated by the recent large-scale multi-agency PAH monitoring effort in the NY/NJ Harbor, an independent entity (Booz Allen Hamilton) conducted an extensive data quality evaluation. While 97% of PCB results were characterized as being acceptable without qualification, only 10% of the PAH data were so characterized. The remaining 90% of the PAH data were considered to have aspects of the analysis that were absent or outside of acceptable bounds. Field blanks should generally be on the order of at least 5 times lower in concentration than actual samples. In the NY/NJ Harbor effort, the average PAH concentration was 32 ng/L and the average equipment blank was 15 ng/L. This is considered an unacceptable margin.

Also regarding PAHs, recent (2002/01) Niagara River Toxics Management Plan data actually show that the concentrations of PAHs decline from upstream to downstream sampling sites, suggesting that the PAH load is coming from Lake Erie. Reviewing the previous year's sampling (1999/2000) would suggest that significant improvement in the river occurred. Given that the available data can be interpreted as either showing significant improvement or unacceptable analytic/sampling variability, further complicates the assessment of the river.

This segment is included on Part 2b (fish consumption) of the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the main stem of the Niagara River from the Niagara Falls to the Peace Bridge at Lake Erie, and all bays, arms and inlets; except Black Rock Canal and Chippewa (West) Channel, which are listed separately.

Chippewa (West) Channel (0101-0028) Impaired Seg

Waterbody Location Information

Revised: 02/15/2005

Water Index No: Ont 158 (portion 3)
Hydro Unit Code: 04120104/100 **Str Class:** A-Spcl
Waterbody Type: River
Waterbody Size: 12.8 Miles
Seg Description: entire channel (in NYS)

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: NIAGARA FALLS (I-04-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known

Type of Pollutant(s)

Known: PRIORITY ORGANICS (PCBs)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT
Suspected: LANDFILL/LAND DISP.
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DEC/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Fish consumption in Chippewa (west) Channel is impaired due to a NYS DOH health advisory for the Niagara River that recommends restricting consumption of some species of fish due to elevated PCB levels. Historical discharges resulting in contaminated river sediments and inactive hazardous waste sites are considered to be the likely source of these toxics.

A NYS DOH health advisory recommends eating no more than one meal per month of carp because of elevated PCB levels. The sources of PCBs are primarily thought to be contaminated sediments attributed to inactive hazardous waste sites and historical discharges. (2002-03 NYS DOH Health Advisories, October 2004).

The Niagara River, including the channel, is subject to a joint US-Canadian Niagara River Toxics Management Plan to reduce toxic contributions to the basin. The Niagara River from its mouth at Lake Ontario to Smokes Creek near the southern end of Buffalo Harbor has been designated an International Joint Commission (IJC) Area of Concern. Past municipal and industrial discharges, waste disposal sites and urban/storm runoff have long been a source of contaminants to the river. The history of development along the river has also changed the original shoreline, affecting fish and wildlife habitat. A Remedial Action Plan (RAP) document to address use impairments, sources, existing remediation programs and recommendations for future remedial strategies, was completed in 1994. The RAP identifies five specific use impairments. The major impairment is restrictions of fish and wildlife consumption. Restrictions on dredging activities,

fish tumors and other deformities, degradation of benthos in localized near-shore areas, and loss of fish & wildlife habitat are the other use impairments identified in the RAP.

The segment includes the portion of the channel along the south and west shore of Grand Island, within NYS.

Black Rock Canal (0101-0025) Impaired Seg

Waterbody Location Information

Revised: 02/15/2005

Water Index No: Ont 158 (portion 4)
Hydro Unit Code: 04120104/100 **Str Class:** C
Waterbody Type: River
Waterbody Size: 1.0 Miles
Seg Description: entire canal

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: BUFFALO NORTHEAST (J-05-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
Aquatic Life	Stressed	Possible
HABITAT/HYDROLGY	Impaired	Suspected

Type of Pollutant(s)

Known: PRIORITY ORGANICS (PCBs)
Suspected: - - -
Possible: Nonpriority Organics (PAHs)

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT
Suspected: HABITAT MODIFICATION, LANDFILL/LAND DISP.
Possible: Comb. Sewer Overflow, Urban Runoff

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DEC/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Fish consumption in Black Rock Canal is impaired due to a NYS DOH health advisory for the Niagara River that recommends restricting consumption of some species of fish due to elevated PCB levels. Historical discharges resulting in contaminated river sediments and inactive hazardous waste sites are considered to be the likely source of these toxics.

A NYS DOH health advisory recommends eating no more than one meal per month of carp because of elevated PCB levels. The sources of PCBs are primarily thought to be contaminated sediments attributed to inactive hazardous waste sites and historical discharges. (2002-03 NYS DOH Health Advisories, October 2004).

The Niagara River, including the canal, is subject to a joint US-Canadian Niagara River Toxics Management Plan to reduce toxic contributions to the basin. The Niagara River from its mouth at Lake Ontario to Smokes Creek near the southern end of Buffalo Harbor has been designated an International Joint Commission (IJC) Area of Concern. Past municipal and industrial discharges, waste disposal sites and urban/storm runoff have long been a source of contaminants to the river. The history of development along the river has also changed the original shoreline, affecting fish and wildlife habitat. A Remedial Action Plan (RAP) document to address use impairments, sources, existing remediation programs

and recommendations for future remedial strategies, was completed in 1994. The RAP identifies five specific use impairments. The major impairment is restrictions of fish and wildlife consumption. Restrictions on dredging activities are the result of contaminated sediments in the canal that prevent the open lake disposal of dredge material. Fish tumors and other deformities, degradation of benthos in localized near-shore areas, and loss of fish & wildlife habitat are the other use impairments identified in the RAP.

This segment includes the waters east of Squaw Island and Bird Island Pier.

Grand Island (all tribs to Niagara R) (0101-0011) Need Verific

Waterbody Location Information

Revised: 04/29/2003

Water Index No: Ont 158 G.I.-1 thru 6
Hydro Unit Code: 04120104.100 **Str Class:** B
Waterbody Type: River
Waterbody Size: 53.7 Miles
Seg Description: total length of all Grand Island tribs to Niagara River

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: TONAWANDA WEST (I-05-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible
Habitat/Hydrolgy	Threatened	Known

Type of Pollutant(s)

Known: - - -
Suspected: SILT/SEDIMENT
Possible: Nutrients, Pathogens

Source(s) of Pollutant(s)

Known: - - -
Suspected: URBAN RUNOFF
Possible: Construction, Hydro Modification

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 1 (Waterbody Nominated, Problem Not Verified)
Lead Agency/Office: DEC/FWMR **Resolution Potential:** Medium
TMDL/303d Status: n/a ()

Further Details

Natural resources (fishery) habitat in the tribs of Grand Island are threatened by elevated stream temperatures, silt/sediment and other nonpoint inputs related to suburban/urban development in surrounding primarily residential areas. The major tributary streams of Grand Island have notable northern pike runs. These same development impacts may also affect aquatic life support in the tribs.

A biological (macroinvertebrate) assessment of Grand Island tribs was attempted in 2000, but stream flow, depth and substrate was unsuitable for this type of sampling.

This segment includes the total length of all tribs to the Niagara River on Grand Island. Tribs within this segment, including Big Burnt Ship Creek (-1*), Gun Creek (-2) and Spicer Creek (-3), Woods Creek, Big Gun Creek, are Class B.

Gill Creek and tribs (0101-0002) Impaired Seg

Waterbody Location Information

Revised: 04/29/2003

Water Index No: Ont 158- 6
Hydro Unit Code: 04120104/110 **Str Class:** C
Waterbody Type: River
Waterbody Size: 13.8 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: NIAGARA FALLS (I-04-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: Aesthetics (debris)
Suspected: UNKNOWN TOXICITY, Priority Organics (dioxin)
Possible: Pesticides

Source(s) of Pollutant(s)

Known: URBAN RUNOFF
Suspected: TOX/CONTAM. SEDIMENT
Possible: Landfill/Land Disp., Municipal, Storm Sewers

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 1 (High Priority for TMDL Development by NYSDEC)

Further Details

Aquatic life support and recreational uses in Gill Creek are impaired and aesthetics are significantly impacted by various toxic and other contaminants from historic/past discharges, contaminated sediments, municipal/industrial inputs and other urban nonpoint sources to the stream.

A biological (macroinvertebrate) assessment of Gill Creek in Niagara Falls (at Route 384) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. Impact Source Determination indicated that municipal/industrial inputs were the primary cause of impact. (DEC/DOW, BWAR/SBU, April 2003)

The area around Gill Creek has been subject to a number of remedial activities. Most of the remediation work, including the removal of PCB contaminated sediment in the creek and tribs, was completed in the 1980s. Post remedial sampling indicated a significant reduction in contaminant levels in fish. A previous fish consumption advisory for Gill Creek (eat none, all species, due to PCBs, dioxin) was lifted in 1999. (Registry of Inactive Hazardous Waste Disposal Sites in NYS, Vol 9, DEC/DER, April 2002)

This segment is included on the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the entire stream and tribs. The waters of the stream are Class C for the entire reach. Tribs to this reach/segment are also Class C.

Cayuga Creek and minor tribs (0101-0001) Impaired Seg

Waterbody Location Information

Revised: 01/27/2005

Water Index No: Ont 158- 8
Hydro Unit Code: 04120104/110 **Str Class:** C
Waterbody Type: River
Waterbody Size: 21.8 Miles
Seg Description: entire stream and selected tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: TONAWANDA WEST (I-05-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: PRIORITY ORGANICS (dioxin), Metals (nickel, zinc), Pesticides (DDD/DDE)
Suspected: Algal/Weed Growth
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT, URBAN RUNOFF
Suspected: - - -
Possible: Landfill/Land Disp., Storm Sewers

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Fish consumption, aquatic life support and recreational uses in Cayuga Creek are impaired and aesthetics are significantly impacted by various toxic, metals and other contaminants from historic/past discharges, contaminated sediments, municipal/industrial inputs and other urban nonpoint sources to the stream.

Fish consumption in Cayuga Creek is impaired due to a NYS DOH health advisory that recommends eating no fish of any species because of elevated dioxin levels. The sources of dioxin are contaminated sediments attributed to inactive hazardous waste sites and historical discharges. (2002-03 NYS DOH Health Advisories, April 2003).

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network (mini-study) monitoring of Cayuga Creek in Niagara Falls (at Route 62) was conducted in 2001. The focus of the limited mini-study was to re-evaluate/confirm continuing poor water quality in the stream. Sampling of the water column, sediments, and invertebrate tissues was conducted, as well as macroinvertebrate community analysis (see below). The parameters of concern in the water column include iron, zinc and total dissolved solids. Toxicity testing revealed no significant mortality of reproductive

impairment. Due to site limitations, bottom sediment sampling was conducted upstream and Route 182. In sediments, zinc and 6 PAHs were found at level exceeding their respective Probable Effects Level - levels at which adverse effects are expected to occur. Four metals and four PAHs exceed Threshold Effects Levels - levels at which adverse effect occasionally occur - and are considered to be of concern. (DEC/DOW, BWAR/RIBS, April 2003)

A biological (macroinvertebrate) assessment of Cayuga Creek in Niagara Falls (at Route 182) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. Impact Source Determination indicated that toxic inputs were the primary cause of impact. The macroinvertebrate fauna was dominated by tolerant sow bugs and riffle beetles. Specific conductance was high at this site, typical of urban streams affected by nonpoint urban runoff. Macroinvertebrate tissue samples collected in 2001 also show significantly high levels of DDE/DDD, Mirex, nickel and zinc. (DEC/DOW, BWAR/SBU, April 2003)

The area around Cayuga Creek has been subject to a number of remedial activities, including remediation at the Hooker Chemical Love Canal site. Most of the remediation work, including the removal of contaminated sediment in the creek and tribs, was completed in the 1980s. Post remedial sampling indicated a significant reduction in dioxin levels in young-of-the-year fish. Sampling to monitor contaminant levels in fish is continuing. (Registry of Inactive Hazardous Waste Disposal Sites in NYS, Vol 9, DEC/DER, April 2002)

This segment is included on Part 2b (fish consumption) of the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the entire stream and selected/smaller tribs. The waters of the stream are Class C for the entire reach. Tribs to this reach/segment are also Class C. Bergholtz Creek (-1) is listed separately.

Bergholtz Creek and tribs (0101-0004) Impaired Seg

Waterbody Location Information

Revised: 04/29/2003

Water Index No: Ont 158- 8-1
Hydro Unit Code: 04120104/110 **Str Class:** C
Waterbody Type: River
Waterbody Size: 33.1 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: TONAWANDA WEST (I-05-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: PRIORITY ORGANICS (PCBs)
Suspected: NUTRIENTS (phosphorus), PATHOGENS, Metals, Pesticides
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT, URBAN RUNOFF
Suspected: - - -
Possible: Landfill/Land Disp., Municipal, Storm Sewers

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 1,2b (High Priority for TMDL Development by NYSDEC)

Further Details

Fish consumption, aquatic life support and recreational uses in Bergholtz Creek are impaired and aesthetics are significantly impacted by various toxic and other contaminants from historic/past discharges, contaminated sediments, municipal/industrial inputs and other urban nonpoint sources to the stream.

A fish consumption advisory recommending eating no fish of any species is in place for Cayuga Creek. This advisory extends into Bergholtz Creek, a trib of Cayuga, up to the first impassible barrier. (2002-03 NYS DOH Health Advisories and DEC/FWMR, Habitat, October 2002)

A biological (macroinvertebrate) assessment of Bergholtz Creek in Niagara Falls (at Williams Road) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. Organic wastes were the likely source of impact, as determined by Impact Source Determination. The fauna was dominated by sewage-tolerant sowbugs. (DEC/DOW, BWAR/SBU, April 2003)

The area around Cayuga and Bergholtz Creek has been subject to a number of remedial activities. Most of the remediation work, including the removal of contaminated sediment in Bergholtz and Black Creeks, was completed in the 1980s. Post remedial sampling indicated a significant reduction in dioxin levels in young-of-the-year fish. Sampling to monitor contaminant levels in fish is continuing. (Registry of Inactive Hazardous Waste Disposal Sites in NYS, Vol 9, DEC/DER, April 2002)

This segment is included on the NYS 2004 Section 303(d) List of Impaired Waters due to urban runoff sources and a fish consumption advisory.

This segment includes the entire stream and all tribs. The waters of the stream are Class C. Tribs to this reach/segment, including Black Creek (-1), are also Class C.

Tonawanda Creek, Lower, Main Stem (0102-0022) Impaired Seg

Waterbody Location Information

Revised: 05/02/2003

Water Index No: Ont 158-12 (portion 1)
Drain Basin: Lake Erie-Niagara River
Hydro Unit Code: 04120104/080 **Str Class:** C
Niagara River
Waterbody Type: River
Reg/County: 9/Niagara Co. (32)
Waterbody Size: 12.3 Miles
Quad Map: TONAWANDA EAST (I-05-3)
Seg Description: from mouth to NYS Barge Canal in Pendleton

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
Aquatic Life	Stressed	Suspected
Recreation	Stressed	Suspected

Type of Pollutant(s)

Known: PRIORITY ORGANICS (PCBs)
Suspected: Nutrients, Silt/Sediment
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT, Urban Runoff
Suspected: Streambank Erosion, Storm Sewers
Possible: Landfill/Land Disp., Municipal

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DEC/FWMR **Resolution Potential:** Medium
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Fish consumption in this portion of Tonawanda Creek is impaired by toxic organics contamination attributed to historic/past discharges and contaminated sediments. Aquatic life support and recreational uses are thought to experience minor impacts due to silt/sediment loadings and nutrient levels from municipal discharges and various nonpoint sources. However sampling in the specific reach has not been conducted recently and conditions need to be verified.

Fish consumption in the western NYS Barge Canal (from Lockport to the Niagara River, including Lower Tonawanda Creek) is impaired due to a NYS DOH health advisory that recommends eating no more than one meal per month of carp because of PCB levels. The sources of PCBs are contaminated sediments likely attributed to historic/past discharges. (2002-03 NYS DOH Health Advisories, April 2003).

Biological (macroinvertebrate) assessment of the lower reach of Tonawanda Creek have not been conducted since 1981. At that time water quality was assessed as slightly impacted at both North Tonawanda and at Pendleton. Conditions at both sites represented a significant improvement over conditions in the mid-1970s. In the lower end of the reach the improvement was attributed to water quality improvement in the Niagara River, which feeds the Tonawanda Creek/Barge

Canal during the navigation season. Improved water quality in the upper end of the reach was attributed to WWTP upgrades at the Amherst (T) facility. (Twenty Year Trends, DEC/DOW, BWAR/SBU, 1993)

Biological sampling of the creek in Millersport (at Route 78) just above the reach was conducted in 2000. Sampling results at this site indicated non-impacted water quality conditions, with a good diversity of clean-water mayflies, stoneflies, and caddisflies. These sampling results may represent an improvement at the sampling site, and may suggest possible improvement in the downstream reach. However the character of the creek at this site is different than the canal reach of the lower creek and independent sampling, assessment and verification of conditions is needed. (DEC/DOW, BWAR/SBU, April 2003)

This segment is included on Part 2b (fish consumption) of the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the portion of the stream from the mouth in Tonawanda to the NYS Barge Canal in Pendleton. The waters of this portion of the stream are Class C. This section of the stream/canal receives flow from the Niagara River during the navigation season, and from Tonawanda Creek during the winter months.

Tonawanda Creek, Middle, Main Stem (0102-0006) MinorImpacts

Waterbody Location Information

Revised: 01/27/2005

Water Index No: Ont 158-12 (portion 2)
Hydro Unit Code: 04120104/ **Str Class:** B
Waterbody Type: River
Waterbody Size: 50.1 Miles
Seg Description: from NYS Barge Canal to East Pembroke

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: CLARENCE CENTER (I-06-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Suspected
Recreation	Stressed	Suspected

Type of Pollutant(s)

Known: SILT/SEDIMENT
Suspected: Nutrients
Possible: Priority Organics (PAHs), Thermal Changes

Source(s) of Pollutant(s)

Known: STREAMBANK EROSION
Suspected: Agriculture
Possible: Failing On-Site Syst, Tox/Contam. Sediment

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: ext/WQCC **Resolution Potential:** Medium
TMDL/303d Status: n/a ()

Further Details

Aquatic life and recreational uses in this portion of Tonawanda Creek are affected by silt/sediment loads, nutrient and other nonpoint inputs from streambank erosion, agricultural activities. While these various nonpoint sources are of some concern, there are no significant specific impairments to water uses of this portion of the stream. Some impact and threat to natural resources (fishery) support in the stream have also been noted.

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network monitoring of Tonawanda Creek in Rapids, Niagara County, (at Rapids Road) was conducted in 2001. This sampling site is located on the Niagara Erie County line approximately 20 miles above the confluence of the creek and the Erie Barge Canal. Sampling of the water column, sediments, and invertebrate tissues was conducted, as well as macroinvertebrate community analysis (see below). Parameters of concern in the water column include iron, aluminum and dissolved oxygen. Water column toxicity testing results showed no significant mortality or reproductive impacts. Sediment sampling revealed no contaminants exceeding probable effects levels. However cadmium, benzo(a)anthracene, chlordane and DDT and its metabolites were found to be above threshold effects levels and are of possible concern. PCBs were found to be below threshold effects levels and are unlikely to cause adverse biological effects to sediment-dwelling organisms. (DEC/DOW, BWAR/RIBS, April 2005)

Biological (macroinvertebrate) assessments of Tonawanda Creek in Millersport (at Route 78) and in Rapids (at Rapids Road) were conducted in 2000. Field assessment of the Millersport sample indicated non-impacted water quality conditions, with a good diversity of clean-water mayflies, stoneflies, and caddisflies. This may represent an improvement from slightly impacted conditions noted in 1988, but this conclusion needs verification, as the 2000 sample was not processed in the lab. Additionally, this sample was from a high-flow year, and is likely not representative of typical flow conditions. The sample collected in 2001 in from Rapids, 3 miles upstream, resulted in an assessment of slight impact. The Rapids site was also assessed as slightly impacted in 1993 and 1994. Based on these data, the creek at Millersport is considered to likely be slightly impacted as well. (DEC/DOW, BWAR/SBU, April 2002)

Sediment from streambank erosion is thought to threaten a productive warm water fishery habitat. The segment contains a high diversity of freshwater mussels including some rare species. A New York State Threatened species, the long eared sunfish has also been identified in the segment. (DEC/FWMR, 1996)

Nonpoint source impacts, particularly those related to wet-weather events, have been sited as concerns by local agencies. Several small communities along the creek have no central waste collection/treatment facilities, raising concerns about impacts from failing and/or inadequate on-site septic systems. (Genesee County WQCC/SWCD, May 2002)

This segment includes the portion of the stream from the NYS Barge Canal in Pendleton to the Dam in East Pembroke. The waters of this portion of the stream are Class B.

Tonawanda Creek, Middle, Main Stem (0102-0002) Impaired Seg

Waterbody Location Information

Revised: 05/02/2003

Water Index No: Ont 158-12 (portion 3)
Hydro Unit Code: 04120104/020 **Str Class:** C
Waterbody Type: River
Waterbody Size: 10.9 Miles
Seg Description: from East Pembroke to Batavia

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 8/Genesee Co. (19)
Quad Map: OAKFIELD (I-07-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Suspected

Type of Pollutant(s)

Known: NUTRIENTS (phosphorus), SILT/SEDIMENT
Suspected: D.O./Oxygen Demand
Possible: Metals, Pathogens

Source(s) of Pollutant(s)

Known: STREAMBANK EROSION, STORM SEWERS, URBAN RUNOFF
Suspected: Agriculture, Municipal (Batavia WWTP), Failing On-Site Syst (East Pembroke)
Possible: Landfill/Land Disp.

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg8 **Resolution Potential:** Medium
TMDL/303d Status: 3a ()

Further Details

Aquatic life support and recreational uses in this portion of Tonawanda Creek are impacted by municipal/industrial inputs. Silt/sediment loads, nutrients and inputs from streambank erosion, agricultural activity and other nonpoint sources also contribute to water quality impacts.

A biological (macroinvertebrate) assessment of Tonawanda Creek in Batavia (at Lyons Street) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. The primary causes of the impact were determined to by municipal/industrial inputs and nutrient enrichment. This site is located downstream of the Batavia WWTP discharge. Water quality conditions remains similar to that found in 1992, following the 1990 upgrade of the WWTP. Prior to the WWTP upgrade, the stream was assessed as severely impacted. (DEC/DOW, BWAR/SBU, July 2002)

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network monitoring of Tonawanda Creek downstream in Rapids, Niagara County, (at Rapids Road) was conducted in 2001. This sampling site is located on the Niagara Erie County line approximately 20 miles above the confluence of the creek and the Erie Barge Canal. Sampling of the water

column, sediments, and invertebrate tissues was conducted, as well as macroinvertebrate community analysis (see below). Parameters of concern in the water column include iron, aluminum and dissolved oxygen. Water column toxicity testing results showed no significant mortality or reproductive impacts. Sediment sampling revealed no contaminants exceeding probable effects levels. However cadmium, benzo(a)anthracene, chlordane and DDT and its metabolites were found to be above threshold effects levels and are of possible concern. PCBs were found to be below threshold effects levels and are unlikely to cause adverse biological effects to sediment-dwelling organisms. (DEC/DOW, BWAR/RIBS, April 2005)

Although the Batavia WWTP discharge has some impact on water quality in the Tonawanda Creek receiving water, discharge sampling results show the facility to be regularly meeting it SPDES permit limits. Some elevated phosphorus levels occurred during the winter of 2002-03, however this appears to have been due to exceptionally low temperature (alum additive did not form precipitate) and operation improved as temperatures rose. The nature of the treatment facility may also have some bearing on the biological assessment. The Batavia WWTP uses polishing wetlands as the final phase of its innovative treatment process. Downstream macroinvertebrate communities now resemble those typically found below lake outlets. (DEC/DOW, Region 9, April 2003)

Nonpoint source impacts such as streambank erosion, agricultural runoff and particularly those related to wet-weather events (urban runoff, storm sewers in Batavia) are significant sources of impacts to the creek. Several small communities along the creek have no central waste collection/treatment facilities, raising concerns about impacts from failing and/or inadequate on-site septic systems. There are particular concerns regarding on-site systems serving East Pembroke, which have some history of failures. (Genesee County WQCC/SWCD, May 2002)

This segment is included on Part 3a (needing verification of impairment) of the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the portion of the stream from the dam in East Pembroke to the water supply dam in Batavia, including Gouinlocks Pond (P16). The waters of this portion of the stream are Class C.

Tonawanda Creek, Upper, and minor tribs (0102-0003) Impaired Seg

Waterbody Location Information

Revised: 01/27/2005

Water Index No: Ont 158-12 (portion 4)
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: River
Waterbody Size: 254.9 Miles
Seg Description: stream and selected tribs, above Batavia

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 8/Genesee Co. (19)
Quad Map: BATAVIA SOUTH (J-08-1)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
WATER SUPPLY	Impaired	Known
Aquatic Life	Stressed	Known
Recreation	Stressed	Known

Type of Pollutant(s)

Known: SILT/SEDIMENT, Nutrients
Suspected: D.O./Oxygen Demand, Thermal Changes
Possible: - - -

Source(s) of Pollutant(s)

Known: AGRICULTURE, STREAMBANK EROSION
Suspected: Hydro Modification, Municipal (Attica WWTP), Storm Sewers
Possible: Failing On-Site Syst

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg8 **Resolution Potential:** Medium
TMDL/303d Status: 3a ()

Further Details

Water supply use in this portion of Tonawanda Creek is impaired by silt/sediment loads, while aquatic life support and recreational uses are affected by nutrient and other nonpoint inputs from streambank erosion, agricultural activities. Impacts due to municipal discharges were also evident. Natural resources (fishery) and hydrologic impacts have also been cited as problems.

The water supply for Batavia is normally withdrawn from Tonawanda Creek. However, during wet weather the creek becomes very turbid and the City then switches to a groundwater well until the creek clears up. Agricultural practices and streambank erosion are the source of the silt/sediment loads. Riparian vegetation has been removed through natural streambank erosion, and has also resulted in a general warming of the stream. DEC Fisheries staff indicate that the stream supports a very limited warm water fishery; but trout are no longer supported. (DEC/DOW and DFWMR, Region 8, April 2003)

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network monitoring of Tonawanda Creek in Earls, Wyoming County, (at Eck Road) was conducted in 2001. This sampling location is approximately 95 miles above the

confluence of the creek and the Erie Barge Canal and is considered a background site. Sampling of the water column, sediments, and invertebrate tissues was conducted, as well as macroinvertebrate community analysis (see below). The only identified parameter of concern is iron, which is considered to be naturally occurring and not a source of water quality impacts. Toxicity testing of the water column showed not significant mortality or reproductive impacts. Bottom sediment sampling results revealed one PAH (dibenzo(a,h)anthracene) to be the only substance to exceed the Threshold Effects level - levels at which adverse impacts occasionally occur. (DEC/DOW, BWAR/RIBS, January 2005)

Biological (macroinvertebrate) assessments of Tonawanda Creek were conducted in Attica (at Stroh Road) in 2000 and in Earls (at Eck Road) in 2000 and 2001. At both sites, water quality was assessed as slightly impacted. Organic wastes were identified as the cause of the impact below Attica. This impact is likely a result of the Attica (V) WWTP discharge. In Earls the cause was determined to be a result of nutrient enrichment. A 1992 macroinvertebrate survey found water quality upstream of the Batavia STP to be slightly impacted; nonpoint nutrient sources were the likely cause of the impact. (DEC/DOW, RIBS/SBU, April 2003)

Sand/salt storage and application, and storm sewer discharges to the creek have also been identified by local/county agencies as contributing to water quality problems. Log and debris cause jams in the creek and frequently results in flooding. A flood control project to control peak flows is being planned. (Genesee County WQCC/SWCD, May 2002)

This segment is included on Part 3a (needing verification of impairment) of the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the portion of the stream and selected/smaller tribs above the water supply dam in Batavia. The waters of the stream are Class A. Tribs to this reach/segment, including Perry Brook (-78), are primarily Class A, A(T),A(TS). Tannery Brook (-41), Crow Creek (-46), Stony Brook (-66) and East Fork (-77) are listed separately.

Ellicott Creek, Lower, and tribs (0102-0018) Impaired Seg

Waterbody Location Information

Revised: 01/27/2005

Water Index No: Ont 158-12- 1
Hydro Unit Code: 04120104/080 **Str Class:** B
Waterbody Type: River
Waterbody Size: 112.1 Miles
Seg Description: stream and tribs, from mouth to Alden

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: TONAWANDA EAST (I-05-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Fish Consumption	Stressed	Possible
AQUATIC LIFE	Impaired	Suspected
Recreation	Stressed	Known
Aesthetics	Stressed	Possible

Type of Pollutant(s)

Known: - - -
Suspected: NUTRIENTS (phosphorus), SILT/SEDIMENT, Pesticides (chlordane), Thermal Changes
Possible: D.O./Oxygen Demand, Pathogens

Source(s) of Pollutant(s)

Known: URBAN RUNOFF
Suspected: HABITAT MODIFICATION, HYDRO MODIFICATION, MUNICIPAL, Agriculture, Tox/Contam. Sediment, Storm Sewers
Possible: Industrial, Failing On-Site Syst

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 3a ()

Further Details

Aquatic life support and corresponding recreational uses (fishing) in Ellicott Creek are affected by nutrient and other urban/suburban nonpoint source inputs. Impacts from municipal/industrial sources have been indentified in the lower reach of the creek. Hydrologic and habitat modifications (water withdrawals, channelization) are also thought to contribute to water quality impacts in the stream.

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network (mini-study) monitoring of Ellicott Creek in Amherst, Erie County, (at Route 324/Sheridan Drive) was conducted in 2001. This sampling location is approximately 10 miles above the confluence of the creek and Tonawanda Creek. The focus of the limited mini-study was to re-sample this previous RIBS site to evaluate if conditions had changed since the 1993-94 sampling effort. Sampling of the water column, sediments, and invertebrate tissues was conducted, as well as macroinvertebrate community analysis (see below). Water column sampling revealed total dissolved solids to be the only parameter of concern. Toxicity testing of the water column showed no significant mortality or reproductive impacts. Bottom sediment sampling results revealed chlordane

to be exceeding the Probable Effects Level - a level at which adverse impacts are expected. Eight PAHs and DDT and its metabolites were found to be above Threshold Effects level - levels at which adverse impacts occasionally occur. PCB and metals were found to be below TELs. (DEC/DOW, BWAR/RIBS, January 2005)

A biological (macroinvertebrate) survey of Ellicott Creek at multiple sites between Amherst to Alden was conducted in 2001. Sampling results indicated water quality conditions ranged between slightly and moderately impacted. Most of the impact is in the lower portion of the creek in Amherst. A site upstream of Bowmansville was assessed as moderately impacted in the 2001 sampling, but poor habitat may be partially responsible for that assessment. The Sheridan Avenue site between Williamsville and Amherst was clearly moderately impacted in the 1993 and 1994 samples, and again in 2001. The sampling in 2000, a high-flow year, yielded only slight impact at this site, with 2 species of mayflies found. Nonpoint source runoff is considered to be the major cause of impact, with municipal/industrial inputs indicated for the lower portion of the stream. Fish sampling at 7 sites in 2001 showed similar trends as the macroinvertebrates. (Ellicott Creek Biological Assessment Report, DEC/DOW, RIBS/SBU, March 2002)

Though streams with potential trout habitat are rare in northern Erie County, some exist in the upper reaches of the Ellicott Creek Watershed. These waters are less affected by urban/suburban nonpoint runoff, but agricultural sources and cattle access to streams contribute to silt/sediment loads and expose the stream to thermal warming. Dorsch Creek (-16) has been upgraded to C(T) and has considerable potential for trout habitat. A riparian corridor management plan has been discussed by DEC Fisheries staff and could produce beneficial results for this tributary. (DEC/FWMR, Region 9, 1998)

This segment is included on Part 3a (needing verification of impairment) of the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the portion of the stream and all tribs from the mouth to trib -17 near Alden. The waters of the stream are Class C from the mouth to trib -1 and Class B for the remainder of the reach. Tribs to this reach/segment, including Dorsch Creek (-16), are primarily Class C; with some portions designated B and C(T).

Ellicott Creek, Upper, and tribs (0102-0024) Need Verific

Waterbody Location Information

Revised: 05/02/2003

Water Index No: Ont 158-12- 1
Hydro Unit Code: 04120104/080 **Str Class:** C*
Waterbody Type: River
Waterbody Size: 112.1 Miles
Seg Description: stream and tribs, above Alden

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: CORFU (J-07-1)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible
Recreation	Stressed	Possible

Type of Pollutant(s)

Known: - - -
Suspected: SILT/SEDIMENT
Possible: Nutrients, Salts

Source(s) of Pollutant(s)

Known: - - -
Suspected: AGRICULTURE
Possible: Deicing (stor/appl)

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 1 (Waterbody Nominated, Problem Not Verified)
Lead Agency/Office: DOW/BWAR **Resolution Potential:** Medium
TMDL/303d Status: n/a ()

Further Details

Aquatic life support and corresponding recreational uses (fishing) may be affected by agricultural activity, streambank erosion and various other nonpoint sources. Deicing practices may also contribute to water quality concerns.

Silt/sediment from streambank erosion and agricultural runoff increases turbidity in the creek. There are also concerns regarding a large dairy operation (CAFO) in the watershed that does not have adequate waste storage capacity. Runoff from sand/salt storage facilities and from the Six Flags Darien Lakes Amusement Park have also been cited as water quality concerns. (Genesee County WQCC/SWCD, May 2002)

This segment includes the portion of the stream and all tribs above trib -17. The waters of this portion of the stream are Class C. Tribs to this reach/segment, including Spring/Peck Creek (-18) and Crooked Brook (-21), are primarily Class C, C(T); with some headwaters designated Class B.

Ransom Creek, Lower, and tribs (0102-0004) Impaired Seg

Waterbody Location Information

Revised: 05/05/2003

Water Index No: Ont 158-12- 6
Hydro Unit Code: 04120104/070 **Str Class:** C
Waterbody Type: River
Waterbody Size: 49.5 Miles
Seg Description: stream and tribs, from mouth to Got Creek

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: CLARENCE CENTER (I-06-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: D.O./OXYGEN DEMAND, PATHOGENS, Aesthetics (odors)
Suspected: Nutrients, Silt/Sediment
Possible: Ammonia

Source(s) of Pollutant(s)

Known: FAILING ON-SITE SYST (Clarence Hollow), PRIVATE/COMM/INST
Suspected: Urban Runoff
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** High
TMDL/303d Status: 1 (High Priority for TMDL Development by NYSDEC)

Further Details

Aquatic life support, recreational uses and aesthetics of this portion of Ransom Creek are impaired by residential sewage discharges from failing and/or inadequate on-site septic systems in the hamlet of Clarence Hollow.

This stream has a long history of impacts due to septic discharges. In 1975 the Erie County Dept. of Environmental Quality conducted an extensive survey of Ransom Creek and identified sewage discharges in the Hamlets of Clarence Hollow, Clarence Center and Swormville. Since then sewage systems have been built to resolve on-site septic system problems in all but the Hamlet of Clarence Hollow. In 1988 the residents of Clarence voted down a community sanitary sewer system. In July 1988, the County Dept. of Environment and Planning received a petition from 200 Clarence residents regarding the quality of the creek water. They asked for a comprehensive study to identify health hazards. In 1991, Regional Water staff conducted stream sampling as well as sanitary surveys of many household septic systems in Clarence Hollow. WQ standard violations were documented in the creek. A majority of the 500 homes and businesses were found to have unsatisfactory septic systems. The Town is under a DEC Consent Order to identify a cost-effective community-wide solution (sewers). The community was awarded $1.5 million in CW/CA Bond Act funding. Bids were recently received for the first phase of sanitary sewer construct, with construction to begin in 2003. Additional federal

funds were also awarded to this project. (DEC/DOW, Region 9, March 2003)

A biological (macroinvertebrate) assessment of Ransom Creek in Swormville (at Miles Road) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. Impact Source Determination indicated that organic and toxic inputs were the likely causes of impact. A site on Black Creek (-3) in Swormville (at Smith Road) was also sampled and assessed as moderately impacted, by municipal/industrial inputs. A few mayflies and caddisflies were found, but most of the fauna was dominated by pollution-tolerant crustaceans. Although these assessments are based on limited sampling, it appears that the previously documented impacts due to sewage inputs have not been entirely remediated. (DEC/DOW, BWAR/SBU, April 2003)

This segment is included on the NYS 2004 Section 303(d) List of Impaired Waters due to impacts from inadequate/failing on-site septic systems.

Source of information: Regional Water and Central Office This segment includes the portion of the stream and all tribs from the mouth to Got Creek (-4). The waters of the stream are Class C. Tribs to this reach/segment, including Black Creek (-3), are Class C. Got Creek is listed with the Upper Ransom Creek segment.

Ransom Creek, Upper, and tribs (0102-0027) Impaired Seg

Waterbody Location Information

Revised: 01/27/2005

Water Index No: Ont 158-12- 6
Hydro Unit Code: 04120104/070 **Str Class:** C(T)
Waterbody Type: River
Waterbody Size: 44.2 Miles
Seg Description: stream and tribs, above/including Got Creek

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: CLARENCE CENTER (I-06-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: D.O./OXYGEN DEMAND, PATHOGENS, Aesthetics (odors)
Suspected: Nutrients, Silt/Sediment
Possible: Ammonia

Source(s) of Pollutant(s)

Known: FAILING ON-SITE SYST (Clarence Hollow), PRIVATE/COMM/INST
Suspected: Urban Runoff
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** High
TMDL/303d Status: 1 (High Priority for TMDL Development by NYSDEC)

Further Details

Aquatic life support, recreational uses and aesthetics of this portion of Ransom Creek are impaired by residential sewage discharges from failing and/or inadequate on-site septic systems in the hamlet of Clarence Hollow.

This stream has a long history of impacts due to septic discharges. In 1975 the Erie County Dept. of Environmental Quality conducted an extensive survey of Ransom Creek and identified sewage discharges in the Hamlets of Clarence Hollow, Clarence Center and Swormville. Since then sewage systems have been built to resolve on-site septic system problems in all but the Hamlet of Clarence Hollow. In 1988 the residents of Clarence voted down a community sanitary sewer system. In July 1988, the County Dept. of Environment and Planning received a petition from 200 Clarence residents regarding the quality of the creek water. They asked for a comprehensive study to identify health hazards. In 1991, Regional Water staff conducted stream sampling as well as sanitary surveys of many household septic systems in Clarence Hollow. WQ standard violations were documented in the creek. A majority of the 500 homes and businesses were found to have unsatisfactory septic systems. The Town is under a DEC Consent Order to identify a cost-effective community-wide solution (sewers). The community was awarded $1.5 million in CW/CA Bond Act funding. Bids were recently received for the first phase of sanitary sewer construct, with construction to begin in 2003. Additional federal

funds were also awarded to this project. (DEC/DOW, Region 9, March 2003)

A biological (macroinvertebrate) assessment of Ransom Creek in Swormville (at Miles Road) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. Impact Source Determination indicated that organic and toxic inputs were the likely causes of impact. A site on Got Creek (-4) in Swormville (at North French Road) was also sampled and assessed as moderately impacted, likely by organic wastes. The fauna was heavily dominated by sewage-tolerant worms, and scuds. The substrate at this site was predominantly mud, and the data were analyzed using criteria for sandy streams and for soft sediments. Although these assessments are based on limited sampling, it appears that the previously documented impacts due to sewage inputs have not been entirely remediated. (DEC/DOW, BWAR/SBU, April 2003)

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network monitoring of Ransom Creek in Clarence, Erie County, (at Connor Road) was conducted in 1987-88. Sampling of the water column, sediments, and invertebrate tissues was conducted, as well as macroinvertebrate community analysis (see below). Water column sampling revealed total and fecal coliform, as well as dissolved oxygen and iron to be parameter(s) of concern. Macroinvertebrate sampling revealed moderately impacted conditions indicative of sewage discharges. Toxicity testing of the water column showed no significant mortality or reproductive impacts. (DEC/DOW, BWAR/RIBS, 1989)

This segment is included on the NYS 2004 Section 303(d) List of Impaired Waters due to impacts from inadequate/failing on-site septic systems.

This segment includes the portion of the stream and all tribs above and including Got Creek (-4). The waters of the stream are Class C(T). Tribs to this reach/segment, including Got Creek (-4), are Class C(T).

Mud Creek and tribs (0102-0029) NoKnownImpct

Waterbody Location Information

Revised: 01/27/2005

Water Index No: Ont 158-12- 8
Hydro Unit Code: 04120104/060 **Str Class:** C
Waterbody Type: River
Waterbody Size: 113.4 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Niagara Co. (32)
Quad Map: CLARENCE CENTER (I-06-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
NO USE IMPAIRMNT		

Type of Pollutant(s)
Known: - - -
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)
Known: - - -
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 8 (No Known Use Impairment)
Verification Status: (Not Applicable for Selected RESOLVABILITY)
Lead Agency/Office: n/a **Resolution Potential:**
TMDL/303d Status: n/a ()

Further Details

A biological (macroinvertebrate) assessment of Mud Creek in Millersport (at Transit Road) was conducted in 2000. Sampling results indicated slightly impacted water quality conditions. No riffle habitat was available to sample, but some caddisflies and mayflies were found to be present. The sample was field-assessed and not further processed in the laboratory. Despite these conditions, aquatic life is considered to be fully supported in the stream, and there are no other apparent water quality impacts to designated uses. (DEC/DOW, BWAR/SBU, April 2003)

This segment includes the entire stream and all tribs. The waters of the stream are Class C. Tribs to this reach/segment are primarily Class C; with two tribs (-1, -2) designated Class B.

Beeman Creek and tribs (0102-0030) Impaired Seg

Waterbody Location Information

Revised: 05/07/2003

Water Index No: Ont 158-12- 9
Hydro Unit Code: 04120104/050 **Str Class:** C
Waterbody Type: River
Waterbody Size: 43.7 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: WOLCOTTSVILLE (I-06-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known

Type of Pollutant(s)

Known: - - -
Suspected: D.O./OXYGEN DEMAND, NUTRIENTS (phosphorus), PATHOGENS
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: FAILING ON-SITE SYST

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 3b ()

Further Details

Aquatic life support and recreational uses are impaired in Beeman Creek. Additional sampling is necessary to determine the specific source of the problems. Failing and/or inadequate on-site septic systems are a possible cause. Such problems have been documented in other similar nearby streams (Ransom Creek).

A biological (macroinvertebrate) assessment of Beeman Creek in Wolcottsburg (at Rapids Road) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. Impact Source Determination indicated municipal/industrial inputs to be the likely source. The fauna was dominated by caddisflies and scuds. (DEC/DOW, BWAR/SBU, April 2003)

This segment is included on Part 3b (needing verification of cause/pollutants) of the NYS 2004 Section 303(d) List of Impaired Waters due to suspected impacts from inadequate/failing on-site septic systems.

This segment includes the entire stream and all tribs. The waters of the stream are Class C. Tribs to this reach/segment are Class C.

Ledge Creek and minor tribs (0102-0012) Need Verific

Waterbody Location Information

Revised: 05/07/2003

Water Index No: Ont 158-12-11
Hydro Unit Code: 04120104/040 **Str Class:** C(T)
Waterbody Type: River
Waterbody Size: 28.2 Miles
Seg Description: entire stream and selected tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: WOLCOTTSVILLE (I-06-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible

Type of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: NUTRIENTS, SILT/SEDIMENT, Pathogens

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: AGRICULTURE, STREAMBANK EROSION, Roadbank Erosion

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 1 (Waterbody Nominated, Problem Not Verified)
Lead Agency/Office: DOW/BWAR **Resolution Potential:** Medium
TMDL/303d Status: n/a ()

Further Details

Aquatic life support in Ledge Creek may by affected by various nonpoint sources. Agricultural activity, roadway runoff and streambank erosion are possible sources of silt/sediment loads and other inputs. The county is working with the owner of a small farm in the watershed to address wet-weather runoff issues. (Genesee County WQCC/SWCD, May 2002)

These possible impacts need to be verified.

This segment includes the entire stream and selected/smaller tribs. The waters of the stream are Class C(T). Tribs to this reach/segment, including Quarry Spring Run (-2), are Class C(T). Murder Creek (-1) is listed separately.

Murder Creek, Lower, and tribs (0102-0031) Impaired Seg

Waterbody Location Information

Revised: 01/27/2005

Water Index No: Ont 158-12-11-1
Hydro Unit Code: 04120104/040 **Str Class:** C*
Waterbody Type: River
Waterbody Size: 76.2 Miles
Seg Description: stream and tribs, from mouth to Corfu

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: WOLCOTTSVILLE (I-06-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known

Type of Pollutant(s)

Known: - - -
Suspected: D.O./OXYGEN DEMAND, NUTRIENTS (phosphorus), PATHOGENS
Possible: Salts, Silt/Sediment

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: FAILING ON-SITE SYST, Agriculture, Deicing (stor/appl), Streambank Erosion

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 3b ()

Further Details

Aquatic life support and recreational uses are impaired in this portion of Murder Creek. Additional sampling is necessary to determine the specific source of the problems. Failing and/or inadequate on-site septic systems are a possible cause. Such problems have been documented in other similar nearby streams (Ransom Creek).

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network monitoring of Murder Creek in Newstead, Erie County, (at Route 93) was conducted in 2001. This sampling location is 4.2 miles above the confluence with Ledge Creek. Sampling of the water column, sediments, and invertebrate tissues was conducted, as well as macroinvertebrate community analysis (see below). Water column sampling revealed total dissolved solids to be the only parameter of concern. Toxicity testing of the water column showed no statistically significant mortality or reproductive impacts. However one sample (August 16, 2001) showed very low reproduction and only 50% survival. Bottom sediment sampling results revealed some metals (cadmium, zinc), PAHs and PCBs to be exceeding the Threshold Effects level - levels at which adverse impacts occasionally occur. (DEC/DOW, BWAR/RIBS, January 2005)

Biological (macroinvertebrate) assessments of Lower Murder Creek were conducted in 2000 and 2001. Water quality was assessed as moderately-impacted at a site in Pembroke, based on 2000 macroinvertebrate sampling. Impact Source

Determination indicated that municipal/industrial inputs of a toxic nature were the likely cause of impact. Further downstream at Swifts Mills, slightly impacted water quality was assessed for this site, based on macroinvertebrate sampling in 1994, 2000, and 2001. An earlier sampling at this site in 1993 indicated moderate impact from nonpoint source nutrient enrichment and municipal/industrial inputs, but the current assessment for this site is slightly impacted. (DEC/DOW, BWAR/SBU, April 2003)

Homes in the hamlet of Pembroke are served by on-site septic systems. Other possible sources of impacts include agricultural activity, streambank erosion, and roadway runoff. The town of Pembroke maintains an uncovered salt/sand storage facility that drains into a trib of the creek. Development along the Pembroke Thruway interchange is also a concern. (Genesee County, WQCC/SWCD, May 2002)

This segment is included on Part 3b (needing verification of cause/pollutants) of the NYS 2004 Section 303(d) List of Impaired Waters due to suspected impacts from inadequate/failing on-site septic systems.

This segment includes the portion of the stream and all tribs from the mouth to/including trib -7 in Corfu. The waters of this portion of the stream are Class C. Tribs to this reach/segment, including Beaver Meadow Brook (-1), are primarily Class C; with some tribs (-3, -7) designated Class B.

Murder Creek, Upper, and tribs (0102-0032) Need Verific

Waterbody Location Information

Revised: 05/07/2003

Water Index No: Ont 158-12-11-1
Hydro Unit Code: 04120104/040 **Str Class:** C*
Waterbody Type: River
Waterbody Size: 106.2 Miles
Seg Description: stream and tribs, above Corfu

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 8/Genesee Co. (19)
Quad Map: CORFU (J-07-1)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible

Type of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: NUTRIENTS, SILT/SEDIMENT, Pathogens

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: AGRICULTURE, STREAMBANK EROSION, Roadbank Erosion

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 1 (Waterbody Nominated, Problem Not Verified)
Lead Agency/Office: DOW/BWAR **Resolution Potential:** Medium
TMDL/303d Status: n/a ()

Further Details

Aquatic life support in this portion of Murder Creek may by affected by various nonpoint sources. Agricultural activity, roadway runoff and streambank erosion are possible sources of silt/sediment loads and other inputs. The county has identified several dairy operations (some CAFOs) as having inadequate waste storage capability and/or runoff control. (Genesee County WQCC/SWCD, May 2002)

These possible impacts need to be verified.

This segment includes the portion of the stream and all tribs above trib -7 in Corfu. The waters of this portion of the stream are Class C. Tribs to this reach/segment, including Huron Creek (-9), are primarily Class C; with some tribs (-14, -15) designated Class B.

Bowen Brook and tribs (0102-0036) Impaired Seg

Waterbody Location Information

Revised: 05/07/2003

Water Index No: Ont 158-12-28
Hydro Unit Code: 04120104/020 **Str Class:** C*
Waterbody Type: River
Waterbody Size: 60.8 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 8/Genesee Co. (19)
Quad Map: ALEXANDER (J-07-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known

Type of Pollutant(s)

Known: - - -
Suspected: D.O./OXYGEN DEMAND, NUTRIENTS (phosphorus), Pathogens
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: FAILING ON-SITE SYST

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/Reg8 **Resolution Potential:** Medium
TMDL/303d Status: 3b ()

Further Details

Aquatic life support and recreational uses are impaired in this portion of Bowen Brook. Additional sampling is necessary to determine the specific source of the problems. Failing and/or inadequate on-site septic systems are a possible cause. Such problems have been documented in other similar nearby streams (Ransom Creek).

A biological (macroinvertebrate) assessment of Bowen Brook in Alexander (at Pike Road) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. Organic wastes were the likely source of impact, as determined by Impact Source Determination. The fauna was heavily dominated by pollution-tolerant sowbugs. (DEC/DOW, BWAR/SBU, April 2003)

This segment is included on Part 3b (needing verification of cause/pollutants) of the NYS 2004 Section 303(d) List of Impaired Waters due to suspected impacts from inadequate/failing on-site septic systems.

This segment includes the entire stream and all tribs. The waters of the stream are Class C. Tribs to this reach/segment are primarily Class C; with some tribs (-1, -5) designated Class B.

Little Tonawanda Creek, Lower, and tribs (0102-0001) Impaired Seg

Waterbody Location Information

Revised: 05/07/2003

Water Index No: Ont 158-12-32
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: River
Waterbody Size: 52.8 Miles
Seg Description: stream and tribs, from mouth to Linden

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 8/Genesee Co. (19)
Quad Map: BATAVIA SOUTH (J-08-1)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
WATER SUPPLY	Impaired	Known
Public Bathing	Stressed	Known
Recreation	Stressed	Known

Type of Pollutant(s)

Known: SILT/SEDIMENT, Nutrients
Suspected: D.O./Oxygen Demand
Possible: Salts

Source(s) of Pollutant(s)

Known: AGRICULTURE, STREAMBANK EROSION
Suspected: - - -
Possible: Failing On-Site Syst

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg8 **Resolution Potential:** Medium
TMDL/303d Status: 3a ()

Further Details

Water supply use is impaired and public bathing and other recreational uses in Little Tonawanda Creek are affected by silt/sediment loads and occasional high turbidity. While various nonpoint sources such as streambank erosion and agricultural activity in the area are of some concern, there are no significant specific impairments to water uses of this portion of the stream. As is the case in much of this watershed, elevated silt and sediment loads in the creek are common (particularly after rain events) and can impact aquatic habitat and recreational uses to some degree. However, much of the sediment loading is considered to be natural, a result of highly erodible soils throughout the basin.

The water supply for Batavia is normally withdrawn from Tonawanda Creek, just below this trib. However, during wet weather the creek becomes very turbid and the City then switches to a groundwater well until the creek clears up. Agricultural practices and streambank erosion are the source of the silt/sediment loads. Riparian vegetation has been removed through natural streambank erosion, and has also resulted in a general warming of the stream. DEC Fisheries staff indicate that the stream supports a very limited warm water fishery; but trout are no longer supported. (DEC/DOW and DFWMR, Region 8, April 2003)

A biological (macroinvertebrate) assessment of Little Tonawanda Creek in East Alexander (at Creek Road) was conducted in 2000. Sampling results indicated slightly impacted water quality conditions. Nonpoint source nutrient enrichment was the likely source of impact. (DEC/DOW, BWAR/SBU, April 2003)

This segment is included on Part 3a (needing verification of impairment) of the NYS 2004 Section 303(d) List of Impaired Waters.

This segment includes the portion of the stream and all tribs from the mouth to the small unnamed pond (P16d) in Linden. The waters of this portion of the stream are Class A,A(T). Tribs to this reach/segment are Class A.

Crow Creek and tribs (0102-0023) NoKnownImpct

Waterbody Location Information

Revised: 05/07/2003

Water Index No: Ont 158-12-46
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: River
Waterbody Size: 22.3 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Wyoming Co. (61)
Quad Map: ATTICA (J-07-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
NO USE IMPAIRMNT		

Type of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 8 (No Known Use Impairment)
Verification Status: (Not Applicable for Selected RESOLVABILITY)
Lead Agency/Office: n/a **Resolution Potential:**
TMDL/303d Status: n/a ()

Further Details

Crow Creek and its three reservoirs serve as the public water supply for the Village of Attica. The village has monitored water quality and no serious problems currently exist.

This segment includes the entire stream and all tribs. The waters of the stream are Class A. Tribs to this reach/segment are also Class A. The Attica Reservoirs (P20, P20a) are listed separately.

Attica Reservoir (0102-0039) MinorImpacts

Waterbody Location Information

Revised: 01/12/2004

Water Index No: Ont 158-12-46-P20
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: Lake(R)
Waterbody Size: 12.8 Acres
Seg Description: entire reservoir

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Wyoming Co. (61)
Quad Map: ATTICA (J-07-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Water Supply	Stressed	Possible
Public Bathing	Stressed	Known
Recreation	Stressed	Known

Type of Pollutant(s)

Known: ALGAL/WEED GROWTH, NUTRIENTS (phosphorus), Problem Species (Eurasian milfoil)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: AGRICULTURE
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: n/a ()

Further Details

Drinking water supply, public bathing, and recreational (fishing, boating) uses in Attica reservoir are affected by excessive weed growth and algal growth. Sources of nutrients and other nonpoint source inputs are thought to be related to agricultural activity in the watershed.

Attica Reservoir was included in the 2001 Lake Classification and Inventory study effort. Results of this study indicate elevated phosphorus levels that are likely to impact bathing/recreation uses. There was insufficient data to evaluate the impact of these conditions on the drinking water supply use. Rooted aquatic plants that grow to the surface of the lake were noted. Cornell University researchers have documented Eurasian milfoil in the lake. (DEC/DOW, BWM/Lake Services, April 2003)

East Fork and tribs (0102-0042) NoKnownImpct

Waterbody Location Information

Revised: 05/07/2003

Water Index No: Ont 158-12-77
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: River
Waterbody Size: 49.3 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Wyoming Co. (61)
Quad Map: JOHNSONBURG (K-07-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
NO USE IMPAIRMNT		

Type of Pollutant(s)
Known: - - -
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)
Known: - - -
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 8 (No Known Use Impairment)
Verification Status: (Not Applicable for Selected RESOLVABILITY)
Lead Agency/Office: n/a **Resolution Potential:**
TMDL/303d Status: n/a ()

Further Details

A biological (macroinvertebrate) assessment of East Fork of Tonawanda Creek in Johnsonburg (at Route 98) was conducted in 2000. Sampling results indicated non-impacted water quality conditions. The fauna was dominated by clean-water mayflies and caddisflies. (DEC/DOW, BWAR/SBU, April 2003)

This segment includes the entire stream and all tribs. The waters of the stream are Class A from the mouth to Engine Creek (-2), and Class A(TS) for the remainder of the reach. Tribs to this reach/segment, including Engine Creek (-2), are Class A, A(T), A(TS).

Faun Lake (0102-0043) NoKnownImpct

Waterbody Location Information

Revised: 05/07/2003

Water Index No: Ont 158-12-77-3-P20b
Hydro Unit Code: 04120104/020 **Str Class:** C
Waterbody Type: Lake
Waterbody Size: 44.7 Acres
Seg Description: entire lake

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Wyoming Co. (61)
Quad Map: JOHNSONBURG (K-07-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
NO USE IMPAIRMNT		

Type of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 8 (No Known Use Impairment)
Verification Status: (Not Applicable for Selected RESOLVABILITY)
Lead Agency/Office: n/a **Resolution Potential:**
TMDL/303d Status: n/a ()

Further Details

Faun Lake was included in the 2001 Lake Classification and Inventory study effort. Results of this study indicate no evidence of water quality problems and conditions appear to be adequate to support recreational uses of the lake. (DEC/DOW, BWM/Lake Services, April 2003)

Two Mile Creek and tribs (0101-0005) Impaired Seg

Waterbody Location Information

Revised: 05/08/2003

Water Index No: Ont 158-13
Hydro Unit Code: 04120104/010 **Str Class:** B
Waterbody Type: River
Waterbody Size: 7.3 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: TONAWANDA WEST (I-05-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
PUBLIC BATHING	Impaired	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: AESTHETICS (odors, floatables), D.O./OXYGEN DEMAND, PATHOGENS
Suspected: Nutrients, Priority Organics
Possible: - - -

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, MUNICIPAL (Kenmore, Tonawanda(T)), Urban Runoff
Suspected: Industrial, Tox/Contam. Sediment, Storm Sewers
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 1 (High Priority for TMDL Development by NYSDEC)

Further Details

Public bathing, aquatic life support, recreational uses and aesthetics of Two Mile Creek are impaired by wet weather overflows from inadequate sewer collection systems and CSOs and resulting low dissolved oxygen, odors and floatables. Industrial inputs, oil spills, urban and stormwater runoff also contribute to poor water quality of the stream.

A biological (macroinvertebrate) assessment of Two Mile Creek in Tonawanda (at Fletcher Road) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. Organic wastes were the likely cause of impact. The fauna was dominated by midges and sewage-tolerant black flies, and a dissolved oxygen level of 3.8 mg/l was measured. (DEC/DOW, BWAR/SBU, April 2003)

The Village of Kenmore and Town of Tonawanda are both under Consent Orders to correct sewer system inadequacies. Kenmore has a sump pump program to inspect and disconnect flow from the sanitary sewer in place. The Village is moving ahead on SSO abatement projects. Tonawanda has a large number of SSOs. The date for their submitting of an action plan to address SSOs has been extended to May 2005. (DEC/DOW, BWC and Region 9, February 2005)

Sediment contamination was noted in the Niagara River Toxics Management Plan reports. (DEC/DOW, Reg 9, April 2003)

This segment is included on the NYS 2004 Section 303(d) List of Impaired Waters due to CSOs and municipal sources.

This segment includes the entire stream and all tribs. The waters of the stream are Class B. Tribs to this reach/segment are also Class B.

Scajaquada Creek, Lower, and tribs (0101-0023) Impaired Seg

Waterbody Location Information

Revised: 05/08/2003

Water Index No: Ont 158-15
Hydro Unit Code: 04120104/010 **Str Class:** B
Waterbody Type: River
Waterbody Size: 3.2 Miles
Seg Description: stream and tribs, from mouth to Main Street in Buffalo

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: BUFFALO NORTHWEST (J-05-1)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
PUBLIC BATHING	Impaired	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Habitat/Hydrolgy	Stressed	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: AESTHETICS (odors, floatables), D.O./OXYGEN DEMAND, PATHOGENS, Silt/Sediment
Suspected: Nutrients, Priority Organics
Possible: Salts

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, URBAN RUNOFF, Habitat Modification
Suspected: Hydro Modification, Tox/Contam. Sediment, Storm Sewers
Possible: Chemical Leak/Spill, Landfill/Land Disp., Streambank Erosion

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg9 **Resolution Potential:** Medium
TMDL/303d Status: 1 (High Priority for TMDL Development by NYSDEC)

Further Details

Public bathing, aquatic life support, recreational uses and aesthetics of Scajaquada Creek are impaired by CSOs, wet weather sewer collection systems overflows and resulting low dissolved oxygen, odors and floatables. Industrial inputs, hazardous waste site impacts, roadway runoff, urban and stormwater runoff also contribute to poor water quality of the stream.

A biological (macroinvertebrate) assessment of Scajaquada Creek in Buffalo (at West Avenue) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. The fauna was heavily dominated by sewage-tolerant worms, snails, and scuds. Municipal/industrial inputs were the likely cause of the impact. The substrate at this site was predominantly mud, and sandy stream criteria were used to evaluate the data. The fauna was dominated by tolerant worms, snails, scuds, and midges. Zebra mussels were also found at this site. (DEC/DOW, BWAR/SBU, April 2003)

Sludge banks along the creek impact aesthetics and recreational (fishing) uses. Hydrologic and habitat modification (i.e. channelization) of the stream also impacts wildlife and fishery resources. Sediment contamination was noted in the Niagara River Toxics Management Plan reports. (DEC/DOW, Region 9, April 2003)

This segment is included on the NYS 2004 Section 303(d) List of Impaired Waters due to CSOs and urban runoff sources.

This segment includes the portion of the stream and all tribs from the mouth to Main Street in Buffalo. The waters of this portion of the stream are Class B. There are no identified tribs to this reach. Delaware Park Pond (P25) is listed separately.

Delaware Park Pond (0101-0026) Impaired Seg

Waterbody Location Information

Revised: 05/08/2003

Water Index No: Ont 158-15-P25
Hydro Unit Code: 04120104/010 **Str Class:** B
Waterbody Type: Lake
Waterbody Size: 32.1 Acres
Seg Description: entire pond

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 9/Erie Co. (15)
Quad Map: BUFFALO NORTHWEST (J-05-1)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known

Type of Pollutant(s)

Known: PRIORITY ORGANICS (PCBs)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT
Suspected: Urban Runoff
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DEC/FWMR **Resolution Potential:** Low
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Fish consumption in Delaware Park Lake is impaired due to a NYS DOH health advisory that recommends eating no more than one meal per month of carp because of elevated PCB levels. The sources of PCBs are attributed to contaminated sediments in the lake. (2002-03 NYS DOH Health Advisories and DEC/FWMR, Habitat, October 2002).

This segment is included on Part 2b (fish consumption) of the NYS 2004 Section 303(d) List of Impaired Waters.

The lake was the focus of a Clean Lakes project that was completed in 1985. The lake restoration effort included the diversion of the incoming stream (Scajaquada Creek) around the lake, rerouting of storm sewers, and dredging to remove accumulated sediment. Despite the restrictions of fish consumption, this city park lake is used for fishing, boating and recreational enjoyment. (DEC/DOW, BWM/Lakes, October 2002)

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