



Upper Tonawanda Creek (0412010401)

Water Index Number

Ont 158-12 (portion 1)
 Ont 158-12 (portion 1a)
 Ont 158-12 (portion 3)
 Ont 158-12 (portion 4)
 Ont 158-12-20-P15
 Ont 158-12-28
 Ont 158-12-32
 Ont 158-12-32
 Ont 158-12-41
 Ont 158-12-46
 Ont 158-12-46-P20
 Ont 158-12-46-P20a
 Ont 158-12-66
 Ont 158-12-77
 Ont 158-12-77-3-P20b

Waterbody Segment

Tonawanda Creek, Lower, Main Stem (0102-0022)
 NYS Barge Canal (portion 1) (0102-0044)
 Tonawanda Creek, Middle, Main Stem (0102-0002)
 Tonawanda Creek, Upper, and minor tribs(0102-0003)
 Divers Lake (0102-0035)
 Bowen Brook and tribs (0102-0036)
 Little Tonawanda Creek, Lower, and tribs (0102-0001)
 Little Tonawanda Creek, Upper, and tribs (0102-0037)
 Tannery Brook and tribs (0102-0038)
 Crow Creek and tribs (0102-0023)
 Attica Reservoir (0102-0039)
 Attica Water Supply Reservoir (0102-0040)
 Stony Brook and tribs (0102-0041)
 East Fork and tribs (0102-0042)
 Faun Lake (0102-0043)

Category

Impaired Seg
 UnAssessed
Impaired Seg
MinorImpacts
 UnAssessed
Impaired Seg
MinorImpacts
NoKnownImpct
NoKnownImpct
Threatened
MinorImpacts
Threatened
NoKnownImpct
NoKnownImpct
NoKnownImpct

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: 11.9 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/Storm Runoff
Suspected: Other Sanitary Disch, Streambank Erosion
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

Overview

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 Advisories

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 elevated PCB levels. The source of this contamination is considered to be contaminated sediments attributed to inactive hazardous waste sites and historical discharges. The advisory for this lake was first issued prior to 1998-99. (2009-10 NYS DOH Health Advisories and DEC/DFWMR, Habitat, January 2010).

Water Quality Sampling

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 TonawandaCreek 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 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)

Section 303d Listing

This portion of Tonawanda Creek is included on the NYS 2010 Section 303(d) List of Impaired Waters. The stream is included on Part 2b of the List as a fish consumption water. This waterbody was first listed on the 1998 Section 303(d) List. (DEC/DOW, BWAM/WQAS, May 2010)

Segment Description

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 (0102-0002)

Impaired Seg

Waterbody Location Information

Revised: 04/06/2015

Water Index No: Ont 158-12 (portion 3)
Hydro Unit Code: 04120104/020 **Str Class:** C
Waterbody Type: River
Waterbody Size: 11.7 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),
Suspected: D.O./Oxygen Demand, Silt/Sediment
Possible: Metals, Pathogens

Source(s) of Pollutant(s)

Known: OTHER SANITARY DISCH, URBAN/STORM RUNOFF, Streambank Erosion
Suspected: Agriculture, Municipal (Batavia WWTP), On-Site/Septic 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
TMDL/303d Status: 3a (Waterbody Requiring Verification of Impairment)

Resolution Potential: Medium

Further Details

Overview

Aquatic life support and recreational uses in this portion of Tonawanda Creek are impacted by municipal/industrial inputs. Nutrient load is the primary source of impairment to aquatic life and recreational use. Silt/sediment loads and other inputs from streambank erosion, agricultural activity and other nonpoint sources also contribute to less severe water quality impacts.

Water Quality Sampling

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 be 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 at locations above and below this reach has been conducted at various times. The most recent of this data shows that total dissolved solids at the site below the reach in Rapids has decreased from an average of 530 mg/l to 430 mg/l and is now below the assessment

criteria of 500 mg/l. Sampling at the site above this reach in Earls shows TDS average of 266 mg/l, well below the criteria. (DOW/DEC, BWAM/SWAS, January 2011)

Source Assessment

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 its 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)

Water Quality Management

A very large Ag Nonpoint Source Program project was conducted in the Tonawanda Creek Watershed. This nearly \$2M effort was jointly funded by the Wyoming County SWCD and farmers and included implementation of 17 Best Management Practice Systems on 11 farms in Wyoming and Genesee Counties. The project reduces both nutrients and sediment/turbidity in Tonawanda Creek which serves as a supply for the City of Batavia. Two other farm projects in the Erie County portion of the Tonawanda Creek Watershed were also conducted by the Erie County SWCD and the farm owners at a total cost of \$88,700. These projects included implementation of barnyard water management system and milking center waste disposal systems to reduce the amount of nutrients and sediments entering the watershed from agricultural sources. (Ag & Markets, December 2011)

Section 303d Listing

This portion of Tonawanda Creek was included on the NYS 2010 Section 303(d) List of Impaired Waters due to elevated levels of silt/sediment and phosphorus. The stream was included on Part 3a of the List as an impaired waterbody for which TMDL development may be deferred due to a need to verify the impairment. However available monitoring data show declines in dissolved solids and that TDS now easily meet water quality standards at sites just above and just below this segment (sampling has not been conducted on the segment). Based on this assessment, the waterbody impairment for silt/sediment was delisted in the 2012 listing cycle. The phosphorus impairment to the stream, which was first listed on the 2004 Section 303(d) List, will continue to be listed. (DEC/DOW, BWAM/WQAS, April 2015)

Segment Description

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) Minor Impacts

Waterbody Location Information

Revised: 04/06/2015

Water Index No: Ont 158-12 (portion 4) **Drain Basin:** Lake Erie-Niagara River
Hydro Unit Code: 04120104/020 **Str Class:** A Niagara River
Waterbody Type: River **Reg/County:** 8/Genesee Co. (19)
Waterbody Size: 255.1 Miles **Quad Map:** BATAVIA SOUTH (J-08-1)
Seg Description: stream and selected tribs, above Batavia

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

Type of Pollutant(s)

Known: SILT/SEDIMENT, NUTRIENTS
Suspected: D.O./Oxygen Demand, Thermal Changes
Possible: Pathogens

Source(s) of Pollutant(s)

Known: AGRICULTURE, STREAMBANK EROSION
Suspected: Hydro Modification, Municipal (Attica WWTP), Other Sanitary Disch
Possible: On-Site/Septic Syst

Resolution/Management Information

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

Resolution Potential: Medium

Further Details

Overview

Water supply, recreational use and aquatic life in this portion of Tonawanda Creek is known to experience minor impacts due to elevated nutrient levels, silt/sedimentation loads and other nonpoint inputs from streambank erosion, agricultural activities. Minor impacts due to municipal discharges are also noted. Natural resources (fishery) and hydrologic impacts have also been cited as issues in the stream. Water supply use in Tonawanda Creek is also considered to experience stress/threats due to the susceptibility of the water supply to possible pathogen contamination and elevated nutrient loads from activities and sources in the watershed.

Water Quality Sampling

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. Biological 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 these minor 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. The only identified parameter of concern is iron, which is considered to be naturally occurring and not a source of water quality impacts. Dissolved solids, an indicator of silt/sediment loads in the stream, were found to be well below the water quality standard of 500 mg/l. Toxicity testing of the water column showed no 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. Based on the consensus of these established assessment indicators, overall water quality at this site shows that in spite of some concerns that should continue to be monitored, aquatic life and recreational uses are considered to be fully supported in the stream. (DEC/DOW, BWAM/RIBS, May 2010)

Source (Drinking) Water Assessment

A source water assessment of this reach of Tonawanda Creek found very high susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in an elevated potential for microbials, phosphorus, DBP precursors, and pesticides contamination. In addition, the moderate density of Concentration Animal Feeding Operations (CAFOs) in the assessment area may add to the potential for contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality, based on their density in the assessment area. However, it appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination (particularly for protozoa). This assessment was conducted through the NYSDOH Source Waters Assessment Program (SWAP) which compiles, organizes, and evaluates information regarding possible and actual threats to the quality of public water supply (PWS) sources. The information contained in SWAP assessment reports assists in the oversight and protection of public water systems. It is important to note that SWAP reports estimate the potential for untreated drinking water sources to be impacted by contamination and do not address the quality of treated finished potable tap water. This water supply source provides water to the City of Batavia. (NYSDOH, Source Water Assessment Program, 2005)

While Tonawanda Creek has provided an adequate quantity and quality of water to the City of Batavia and other area municipalities for more than 90 years, this surface water supply has been susceptible to periodic increases in turbidity during wet-weather. As a result, the City recently switched its primary source to groundwater wells. Tonawanda Creek is used to supplement the well supply as needed and as an emergency supply. (Annual Water Quality report, City of Batavia, 2009)

Class A surface waters of the state that serve as the source of potable water for significant populations are often categorized as potentially threatened. However the very high susceptibility to contamination, as determined by the NYSDOH Source Water Protection Program (SWAP), results in an assessment of the waterbody as stressed. (DEC/DOW, BWAM/WQAS, December 2011)

Source Assessment

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. (DEC/DOW and DFWMR, Region 8, 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)

Water Quality Management

A very large Ag Nonpoint Source Program project was conducted in the Tonawanda Creek Watershed. This nearly \$2M efforts was jointly funded by the Wyoming County SWCD and farmers and included implementation of 17 Best Management Practice Systems on 11 farms in Wyoming and Genesee Counties. The project reduces both nutrients and sediment/turbidity in Tonawanda Creek which serves as a supply for the City of Batavia. Two other farm projects in the Erie County portion of the Tonawanda Creek Watershed were also conducted by the Erie County SWCD and the farm owners at a total cost of \$88,700. These projects included implementation of barnyard water management system and milking center waste disposal systems to reduce the amount of nutrients and sediments entering the watershed from agricultural sources. (Ag & Markets, December 2011)

Section 303d Listing

This portion of Tonawanda Creek was included on the NYS 2010 Section 303(d) List of Impaired Waters due to elevated levels of silt/sediment. The stream was included on Part 3a of the List as an impaired for which TMDL development may be deferred due to a need to verify the impairment. However available monitoring results show dissolved solids to be easily meeting water quality standards and there are no other sampling results that reach the threshold of an impairment to the waterbody. Therefore the waterbody impairment for silt/sediment was delisted in the 2012 listing cycle. (DEC/DOW, BWAM/WQAS, April 2015)

Segment Description

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.

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: 60.6 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: ON-SITE/SEPTIC SYST

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/Reg8
TMDL/303d Status: 3b (Waterbody Requiring Verification of Cause/Pollutant)

Resolution Potential: Medium

Further Details

Overview

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).

Water Quality Sampling

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)

Section 303(d) Listing

This segment is included on Part 3b (needing verification of cause/pollutants) of the NYS 2010 Section 303(d) List of Impaired Waters due to suspected impacts from inadequate/failing on-site septic systems.

Segment Description

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) Minor Impacts

Waterbody Location Information

Revised: 04/06/2015

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	Stressed	Known
Public Bathing	Stressed	Known
Recreation	Stressed	Known

Type of Pollutant(s)

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

Source(s) of Pollutant(s)

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

Resolution/Management Information

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

Resolution Potential: Medium

Further Details

Overview

Water supply use in Little Tonawanda Creek is considered to be stressed due to silt/sediment loads and occasional high turbidity. Various nonpoint sources such as streambank erosion and agricultural activity also cause minor impacts to other uses of this portion of the stream, although there are not significant impairments. 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. Water supply use in Tonawanda Creek is also known to experience stress/threats due to the susceptibility of the water supply to possible pathogen contamination and elevated nutrient loads from activities and sources in the watershed.

Water Quality Sampling

NYSDEC Rotating Integrated Basin Studies (RIBS) Intensive Network monitoring of Little Tonawanda Creek in East Alexander (at Creek Road) was conducted in 2005 and 2006. Intensive Network sampling typically includes macroinvertebrate community analysis, water column chemistry, toxicity testing, sediment assessment and macroinvertebrate tissue analysis. Biological (macroinvertebrate) sampling indicated non-impacted conditions. Such samples are dominated by clean-water species and are most similar to a natural community with minimal human impacts. Some additional species, including sensitive non-native species, and additional biomass may be present; the samples reveal no, or only incidental, anomalies. Aquatic life community is fully supported. Water column chemistry indicates no significant contaminants to be present at levels that constitute parameters of concern. Dissolved solids, an indicator of silt/sediment loads in the stream, were found to be well below the water quality standard of 500 mg/l. Toxicity testing using water from this location detected no significant mortality or reproductive effects on the test organism. Sediment screening for acute toxicity indicated some possible sediment toxicity and no porewater toxicity was indicated. Bottom sediments analysis based on sediment quality guidelines developed for freshwater ecosystems revealed overall sediment quality is not likely to cause chronic toxicity to sediment-dwelling organisms. Based on the consensus of these established assessment indicators, overall water quality at this site shows that, aquatic life and recreational uses are considered to be fully supported in the stream. (DEC/DOW, BWAM/RIBS, May 2010)

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

Source (Drinking) Water Assessment

A source water assessment of Upper Tonawanda Creek including Little Tonawanda Creek found very high susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in an elevated potential for microbials, phosphorus, DBP precursors, and pesticides contamination. In addition, the moderate density of Concentration Animal Feeding Operations (CAFOs) in the assessment area may add to the potential for contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality, based on their density in the assessment area. However, it appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination (particularly for protozoa). This assessment was conducted through the NYSDOH Source Waters Assessment Program (SWAP) which compiles, organizes, and evaluates information regarding possible and actual threats to the quality of public water supply (PWS) sources. The information contained in SWAP assessment reports assists in the oversight and protection of public water systems. It is important to note that SWAP reports estimate the potential for untreated drinking water sources to be impacted by contamination and do not address the quality of treated finished potable tap water. This water supply source provides water to the City of Batavia. (NYSDOH, Source Water Assessment Program, 2005)

While Tonawanda Creek has provided an adequate quantity and quality of water to the City of Batavia and other area municipalities for more than 90 years, this surface water supply has been susceptible to periodic increases in turbidity during wet-weather. As a result, the City recently switched its primary source to groundwater wells. Tonawanda Creek is used to supplement the well supply as needed and as an emergency supply. (Annual Water Quality report, City of Batavia, 2009)

Class A surface waters of the state that serve as the source of potable water for significant populations are often categorized as potentially threatened. However the very high susceptibility to contamination, as determined by the NYSDOH Source Water Protection Program (SWAP), results in an assessment of the waterbody as stressed. (DEC/DOW, BWAM, December 2011)

Source Assessment

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. (DEC/DOW and DFWMR, Region 8, April

2003)

Water Quality Management

A very large Ag Nonpoint Source Program project was conducted in the Tonawanda Creek Watershed. This nearly \$2M effort was jointly funded by the Wyoming County SWCD and farmers and included implementation of 17 Best Management Practice Systems on 11 farms in Wyoming and Genesee Counties. The project reduces both nutrients and sediment/turbidity in Tonawanda Creek which serves as a supply for the City of Batavia. Two other farm projects in the Erie County portion of the Tonawanda Creek Watershed were also conducted by the Erie County SWCD and the farm owners at a total cost of \$88,700. These projects included implementation of barnyard water management system and milking center waste disposal systems to reduce the amount of nutrients and sediments entering the watershed from agricultural sources. (Ag & Markets, December 2011)

Section 303d Listing

This portion of Little Tonawanda Creek was included on the NYS 2010 Section 303(d) List of Impaired Waters due to elevated levels of silt/sediment. The stream was included on Part 3a of the List as an impaired waterbody for which TMDL development may be deferred due to a need to verify the impairment. However available monitoring results show dissolved solids to be easily meeting water quality standards and there are no other sampling results that reach the threshold of an impairment to the waterbody. Therefore the waterbody impairment for silt/sediment was delisted in the 2012 listing cycle. (DEC/DOW, BWAM, April 2015)

Segment Description

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.

Little Tonawanda Creek, Upper, and tribs (0102-0037) NoKnownImpct

Waterbody Location Information

Revised: 05/07/2010

Water Index No: Ont 158-12-32
Hydro Unit Code: 04120104/020 **Str Class:** A(T)
Waterbody Type: River
Waterbody Size: 54.8 Miles
Seg Description: stream and tribs, above Linden

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 8/Genesee Co. (19)
Quad Map: DALE (J-08-4)

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:** n/a
TMDL/303d Status: n/a

Further Details

Water Quality Sampling

A biological (macroinvertebrate) assessment of Little Tonawanda Creek in Linden (at Silver Road) was conducted as part of the RIBS biological screening effort in 2005. Sampling results indicated non-impacted conditions. Such samples are dominated by clean-water species and are most similar to a natural community with minimal human impacts. Some additional species, including sensitive non-native species, and additional biomass may be present; the samples reveal no, or only incidental, anomalies. Aquatic life community is fully supported. (DEC/DOW, BWAM/SBU, May 2010)

Segment Description

This segment includes the portion of the stream and all tribs above/including the small unnamed pond (P16d) in Linden. The waters of this portion of the stream are Class A(T). Tribs to this reach/segment, including Middlebury Creek (-8), are Class A,A(T).

Tannery Brook and tribs (0102-0038)

NoKnownImpct

Waterbody Location Information

Revised: 05/05/2010

Water Index No: Ont 158-12-41
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: River
Waterbody Size: 14.7 Miles
Seg Description: entire stream and tribs

Drain Basin: Lake Erie-Niagara River
Niagara River
Reg/County: 8/Genesee Co. (19)
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:** n/a
TMDL/303d Status: n/a

Further Details

Water Quality Sampling

A biological (macroinvertebrate) assessment of Tannery Brook in Attica (at Route 98) was conducted as part of the RIBS biological screening effort in 2005. Sampling results indicated non-impacted conditions. Such samples are dominated by clean-water species and conditions that reflect a natural community with minimal, if any, human impacts. Aquatic life community is clearly fully supported. (DEC/DOW, BWAM/SBU, January 2010)

Segment Description

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.

Crow Creek and tribs (0102-0023)

Threatened

Waterbody Location Information

Revised: 05/10/2010

Water Index No: Ont 158-12-46
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: River
Waterbody Size: 20.3 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
Water Supply	Threatened	Suspected

Type of Pollutant(s)

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

Source(s) of Pollutant(s)

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

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/WQCC
TMDL/303d Status: n/a

Resolution Potential: High

Further Details

Overview

Water supply use of Crow Creek is considered to be threatened by contaminants from various sources. The designation of this waterbody as a threatened water is reflective of a need to protect its particular resource value, rather than specifically identified threats.

Source (Drinking) Water Assessment

A source water assessment of Crow Creek, a tributary to Attica Reservoir, found an elevated susceptibility to contamination for this source of drinking water. The amount of pasture in the assessment area results in a high potential for protozoa contamination. No permitted discharges are found in the assessment area. There are no noteworthy contamination threats associated with other discrete contaminant sources. This assessment was conducted through the NYSDOH Source Waters Assessment Program (SWAP) which compiles, organizes, and evaluates information regarding possible and actual threats to the quality of public water supply (PWS) sources. The information contained in SWAP assessment reports assists in the oversight and protection of public water systems. It is important to note that SWAP reports estimate the potential for untreated drinking water sources to be impacted by contamination and do not address the quality of treated finished potable tap water. This water supply source provides water to the Village of Attica. (NYSDOH, Source Water Assessment Program, 2005)

Segment Description

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)

Minor Impacts

Waterbody Location Information

Revised: 09/22/2010

Water Index No: Ont 158-12-46-P20
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: Lake(R)
Waterbody Size: 11.3 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	Threatened	Suspected
Public Bathing	Stressed	Suspected
Recreation	Stressed	Suspected

Type of Pollutant(s)

Known: NUTRIENTS (phosphorus), Problem Species (Eurasian milfoil)
Suspected: ALGAL/WEED GROWTH, Pathogens
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
TMDL/303d Status: n/a

Resolution Potential: Medium

Further Details

Overview

Public bathing, and recreational (fishing, boating) uses in Attica Reservoir are thought to experience impacts and threats due to elevated nutrient levels and resulting weed and algal growth. Sources of nutrients and other nonpoint source inputs are thought to be related to agricultural activity in the watershed. Water supply use of the reservoir is considered to be threatened by contaminants from various sources. The designation of this waterbody as a threatened water is reflective of a need to protect its particular resource value, rather than specifically identified threats.

Source (Drinking) Water Assessment

A source water assessment of Attica Reservoir found an elevated susceptibility to contamination for this source of drinking water. The amount of pasture in the assessment area results in a high potential for protozoa contamination. No permitted discharges are found in the assessment area. There are no noteworthy contamination threats associated with other discrete contaminant sources. This assessment was conducted through the NYSDOH Source Waters Assessment Program (SWAP) which compiles, organizes, and evaluates information regarding possible and actual threats to the quality of public water supply (PWS) sources. The information contained in SWAP assessment reports assists in the oversight and protection of public water systems. It is important to note that SWAP reports estimate the potential for untreated drinking water

sources to be impacted by contamination and do not address the quality of treated finished potable tap water. This water supply source provides water to the Village of Attica. (NYSDOH, Source Water Assessment Program, 2005)

Water Quality Sampling

Attica Reservoir was sampled as part of the NYSDEC Lake Classification and Inventory (LCI) sampling effort, a component of the Rotating Intensive Basin Studies (RIBS) Program, in 2005. Nutrient measurements taken at that time revealed the lake was best characterized as eutrophic. Phosphorus levels in the lake were found to be at the state guidance values indicating impacted/stressed recreational uses. Chlorophyll a measurements indicated eutrophic conditions. An assessment of aquatic plants was not conducted. Additional water quality data should be collected in the lake to better evaluate water quality conditions and whether the designated uses of the lake are supported. (DEC/DOW, BWAM/RIBS, May 2010)

These results are consistent with previous sampling on 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)

Attica Water Supply Reservoir (0102-0040)

Threatened

Waterbody Location Information

Revised: 05/10/2010

Water Index No:	Ont 158-12-46-P20a	Drain Basin:	Lake Erie-Niagara River
Hydro Unit Code:	04120104/020	Str Class:	A
Waterbody Type:	Lake(R)	Reg/County:	9/Wyoming Co. (61)
Waterbody Size:	173.4 Acres	Quad Map:	DALE (J-08-4)
Seg Description:	entire reservoir		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Water Supply	Threatened	Suspected

Type of Pollutant(s)

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

Source(s) of Pollutant(s)

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

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/WQCC
TMDL/303d Status: n/a

Resolution Potential: High

Further Details

Overview

Water supply use of Attica Reservoirs is considered to be threatened by contaminants from various sources. The designation of this waterbody as a threatened water is reflective of a need to protect its particular resource value, rather than specifically identified threats.

Source (Drinking) Water Assessment

A source water assessment of the Attica Reservoirs found an elevated susceptibility to contamination for this source of drinking water. The amount of pasture in the assessment area results in a high potential for protozoa contamination. No permitted discharges are found in the assessment area. There are no noteworthy contamination threats associated with other discrete contaminant sources. This assessment was conducted through the NYSDOH Source Waters Assessment Program (SWAP) which compiles, organizes, and evaluates information regarding possible and actual threats to the quality of public water supply (PWS) sources. The information contained in SWAP assessment reports assists in the oversight and protection of public water systems. It is important to note that SWAP reports estimate the potential for untreated drinking water sources to be impacted by contamination and do not address the quality of treated finished potable tap water. This water supply source provides water to the Village of Attica. (NYSDOH, Source Water Assessment Program, 2005)

Stony Brook and tribs (0102-0041)

NoKnownImpct

Waterbody Location Information

Revised: 05/07/2010

Water Index No: Ont 158-12-66
Hydro Unit Code: 04120104/020 **Str Class:** A
Waterbody Type: River
Waterbody Size: 25.0 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:** n/a
TMDL/303d Status: n/a

Further Details

Water Quality Sampling

A biological (macroinvertebrate) assessment of Stony Brook Creek in Varysburg (abv dam at Route 20A) was conducted as part of the RIBS biological screening effort in 2005. Sampling results indicated the upper range of slightly impacted conditions, very nearly non-impacted. In such samples the community is only slightly altered from natural conditions. Some sensitive species may be missing and the overall abundance of macroinvertebrates is somewhat lower. However, the effects on the fauna appear to be insignificant and water quality is considered to be good. The nutrient biotic index and impact source determination indicate some enrichment in the stream and fauna that is most similar to natural communities influenced by impoundment effects. Aquatic life support is considered to be fully supported in the stream, and there are no other apparent water quality impacts to designated uses. (DEC/DOW, BWAM/SBU, May 2010)

Segment Description

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.

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: 48.5 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:** n/a
TMDL/303d Status: n/a

Further Details

Water Quality Sampling

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)

Segment Description

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	Drain Basin:	Lake Erie-Niagara River
Hydro Unit Code:	04120104/020	Str Class:	C
Waterbody Type:	Lake	Reg/County:	9/Wyoming Co. (61)
Waterbody Size:	44.3 Acres	Quad Map:	JOHNSONBURG (K-07-2)
Seg Description:	entire lake		

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: n/a
TMDL/303d Status:	n/a	

Further Details

Water Quality Sampling

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)