



Murder Creek (0412010402)

Water Index Number

Ont 158-12-11
 Ont 158-12-11-1
 Ont 158-12-11-1
 Ont 158-12-11-1-P13
 Ont 158-12-11-1-P13-

Waterbody Segment

Ledge Creek and minor tribs (0102-0012)
 Murder Creek, Lower, and tribs(0102-0031)
 Murder Creek, Upper, and tribs (0102-0032)
 Akron Reservoir (0102-0033)
 Tribs to Akron Reservoir (0102-0034)

Category

MinorImpacts
 Need Verific
 Need Verific
 NoKnownImpct
 NoKnownImpct

Ledge Creek and minor tribs (0102-0012)

MinorImpacts

Waterbody Location Information

Revised: 05/06/2010

Water Index No:	Ont 158-12-11	Drain Basin:	Lake Erie-Niagara River
Hydro Unit Code:	04120104/040	Str Class:	C(T)
Waterbody Type:	River	Reg/County:	9/Erie Co. (15)
Waterbody Size:	28.9 Miles	Quad Map:	WOLCOTTSVILLE (I-06-3)
Seg Description:	entire stream and selected tribs		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

Type of Pollutant(s)

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

Source(s) of Pollutant(s)

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

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

Overview

Aquatic life support in Ledge Creek is thought to experience impacts from silt/sediment and perhaps other pollutants due to nonpoint sources. Agricultural activity, roadway runoff and streambank erosion are possible sources.

Water Quality Sampling

A biological (macroinvertebrate) assessment of Ledge Creek in Akron (at Martin Road) was conducted as part of the RIBS biological screening effort in 2005. Sampling results indicated the lower range of slightly impacted conditions. In such samples some replacement of sensitive ubiquitous species by more tolerant species occurs, although the sample also includes a balanced distribution of all expected species. Aquatic life is considered to be fully supported in the stream, however the community composition and nutrient biotic evaluation suggest conditions and levels of enrichment are sufficient to cause some stress to aquatic life. Impact source determination found the fauna to be most similar to communities influenced by silt and sediment loadings and impoundment effect. (DEC/DOW, BWAM/SBU, May 2010)

Watershed Management

Local/county agencies are working with area farmers in the watershed to address wet-weather runoff issues. (Genesee County WQCC/SWCD, May 2002)

Segment Description

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)

Need Verific

Waterbody Location Information

Revised: 06/21/2010

Water Index No: Ont 158-12-11-1
Hydro Unit Code: 04120104/040 **Str Class:** C*
Waterbody Type: River
Waterbody Size: 75.5 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	Suspected
Recreation	Stressed	Known

Type of Pollutant(s)

Known: SILT/SEDIMENT
Suspected: Nutrients (phosphorus)
Possible: Pathogens, Salts

Source(s) of Pollutant(s)

Known: STREAMBANK EROSION
Suspected: Agriculture, On-Site/Septic Syst
Possible: Deicing (stor/appl)

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg9
TMDL/303d Status: 3b->n/a?

Resolution Potential: Medium

Further Details

Overview

Aquatic life support and recreational uses in this portion of Murder Creek are known to experience impacts due to silt/sedimentation from streambank erosion and other nonpoint sources. Inadequate onsite septic systems are also a possible source. This segment was previously assessed as having impaired uses, however that assessment appears to actually apply to the upper reach of the stream.

Water Quality Sampling

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. Biological (macroinvertebrate) sampling indicated moderately impacted at a nearby 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. 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)

Source Assessment

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)

Section 303d Listing

This portion of Murder Creek is included on the NYS 2010 Section 303(d) List of Impaired Waters. The stream is included on Part 3b of the List as an impaired for which TMDL development may be deferred due to a need to verify the pollutant. However updated assessments for the lower and upper reaches of the stream suggest that the lower reach might have been listed in error and the upper reach should be listed. This correction to the listings should be considered during the next updating of the Section 303(d) List. (DEC/DOW, BWAM/WQAS, May 2010)

Segment Description

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: 05/06/2010

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	Impaired	Suspected

Type of Pollutant(s)

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

Source(s) of Pollutant(s)

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

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg9
TMDL/303d Status: n/a->3b?

Resolution Potential: Medium

Further Details

Overview

Aquatic life support in this portion of Murder Creek may experience impacts/impairments due to nutrient and silt/sediment loadings from various nonpoint sources. Agricultural activity and streambank erosion are likely sources of silt/sediment loads and other inputs.

Water Quality Sampling

A biological (macroinvertebrate) assessment of Murder Creek in Corfu (at Route 33) was conducted as part of the RIBS biological screening effort in 2005. Sampling results indicated moderately impacted conditions. In such samples sensitive species are markedly reduced or missing and the distribution of major groups is significantly unbalanced relative to what would be expected. Samples are dominated by more tolerant species. The nutrient biotic index indicates elevated enrichment and impact source determination reveals the fauna to be most similar to communities influenced by silt and sediment loadings and some possible impoundment effects. Water quality is considered to be poor and aquatic life does not appear to be fully supported in the stream. (DEC/DOW, BWAM/SBU, May 2010)

Previous Assessment

The county has identified several dairy operations (some CAFOs) as having inadequate waste storage capability and/or runoff control. The sampling noted above appears to verify impacts to the stream that are consistent with such sources.

(Genesee County WQCC/SWCD, May 2002)

Section 303(d) Listing

This portion of Murder Creek is not currently included on the NYS 2010 Section 303(d) List of Impaired/TMDL Waters. However this updated assessment suggests it is appropriate to consider this waterbody for inclusion on the next List. The current List does include Lower Murder Creek, but it appears that there may have been a listing error and the incorrect portion of this stream was Listed. Until such a determination is made, the waterbody will be assessed as having minor impacts to uses, but specific uses may be noted as suspected of being impaired. (DEC/DOW, BWAM/WQAS, May 2010)

Segment Description

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.

Akron Reservoir (0102-0033)

NoKnownImpct

Waterbody Location Information

Revised: 05/10/2010

Water Index No: Ont 158-12-11-1-P13
Hydro Unit Code: 04120104/040 **Str Class:** A
Waterbody Type: Lake(R)
Waterbody Size: 47.4 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	Possible

Type of Pollutant(s)

Known: ---
Suspected: ---
Possible: OTHER POLLUTANTS

Source(s) of Pollutant(s)

Known: ---
Suspected: ---
Possible: OTHER SOURCE

Resolution/Management Information

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

Resolution Potential: High

Further Details

Source (Drinking) Water Assessment

A source water assessment of Akron Reservoir found an elevated susceptibility to contamination for this source of drinking water. This level of susceptibility is typical of many water supplies that experience no impacts to water supply use and reflects the need to protect the resource. The amount of pasture in the assessment area results in an elevated potential for pesticide, DBP precursor, phosphorus and microbial 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. (NYSDOH, Source Water Assessment Program, 2005)

Although there are no specific water quality impacts, the segment is considered a highly valued water resource due to its drinking water supply classification and the need to provide additional protection, which may result in an assessment of threatened (possible) for drinking water use. But in spite of this possible threat, it is appropriate to consider the waterbody to have No Known Impacts. (DEC/DOW, BWAM/WQAS, May 2010)

Water Quality Sampling

Akron 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 2006. Nutrient, chlorophyll and clarity measurements taken at that time revealed (the lake was best characterized as mesoeutrophic, or moderately to highly productive. Phosphorus levels in the lake are at but typically exceed the state guidance values indicating stressed recreational uses. Corresponding transparency measurements typically meet the recommended minimum for swimming beaches. Chlorophyll a measurements were typical of mesoeutrophic lakes. The pH of the lake typically falls within the state water quality range of 6.5 to 8.5. The lake water is slightly colored, but color does not appear to limit water transparency. The recreational use of this water supply reservoir is not allowed, but conditions do not appear to restrict these uses. (DEC/DOW, BWAM/RIBS, August 2010)

Tribs to Akron Reservoir (0102-0034)

NoKnownImpct

Waterbody Location Information

Revised: 05/10/2010

Water Index No: Ont 158-12-11-1-P13-
Hydro Unit Code: 04120104/040 **Str Class:** A
Waterbody Type: River
Waterbody Size: 5.5 Miles
Seg Description: total length of all tribs to Akron Reservoir

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
Water Supply	Threatened	Possible

Type of Pollutant(s)

Known: ---
Suspected: ---
Possible: OTHER POLLUTANTS

Source(s) of Pollutant(s)

Known: ---
Suspected: ---
Possible: OTHER SOURCE

Resolution/Management Information

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

Resolution Potential: High

Further Details

Source (Drinking) Water Assessment

A source water assessment of Akron Reservoir found an elevated susceptibility to contamination for this source of drinking water. This level of susceptibility is typical of many water supplies that experience no impacts to water supply use and reflects the need to protect the resource. The amount of pasture in the assessment area results in an elevated potential for pesticide, DBP precursor, phosphorus and microbial 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. (NYSDOH, Source Water Assessment Program, 2005)

Although there are no specific water quality impacts, the segment is considered a highly valued water resource due to its drinking water supply classification and the need to provide additional protection, which may result in an assessment of threatened (possible) for drinking water use. But in spite of this possible threat, it is appropriate to consider the waterbody to have No Known Impacts. (DEC/DOW, BWAM/WQAS, May 2010)

Segment Description

This segment includes the total length of all tribs to Akron Reservoir. Tribs within this segment are Class A.