



Buffalo Creek (0412010302)

Water Index Number
 Ont 158..E- 1*
 Ont 158..E- 1*
 Ont 158..E- 1*-55-P??

Waterbody Segment
 Buffalo Creek, Lower, and minor tribs (0103-0003)
 Buffalo Creek, Upper, and minor tribs (0103-0004)
 Beaver Meadow Pond (0103-0010)

Category
 MinorImpacts
 NoKnownImpct
 UnAssessed

Buffalo Creek, Lower, and minor tribs (0103-0003)

MinorImpacts

Waterbody Location Information

Revised: 05/11/2010

Water Index No: Ont 158..E- 1*
Hydro Unit Code: 04120103/050 **Str Class:** B
Waterbody Type: River
Waterbody Size: 63.5 Miles
Seg Description: stream and tribs, from mouth to trib -18

Drain Basin: Lake Erie-Niagara River
Buffalo/Eighteenmile
Reg/County: 9/Erie Co. (15)
Quad Map: ORCHARD PARK (J-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, Pathogens
Possible: Thermal Changes

Source(s) of Pollutant(s)

Known: STREAMBANK EROSION, URBAN/STORM RUNOFF
Suspected: AGRICULTURE
Possible: On-Site/Septic Syst, 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
TMDL/303d Status: n/a

Resolution Potential: Medium

Further Details

Overview

Aquatic life support in Buffalo Creek is thought to experience minor impacts due to elevated silt/sediment loads from urban runoff, streambank erosion and other nonpoint source inputs. In spite of some/these minor impacts, aquatic life is considered to be fully supported in the stream, and there are no other apparent water quality impacts.

Water Quality Sampling

NYSDEC Rotating Integrated Basin Studies (RIBS) Intensive Network monitoring of Buffalo Creek in Gardenville (at Route 277) 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 the upper range of slightly impacted conditions. In such samples the community is slightly altered from natural conditions. Some sensitive species are not present and the overall abundance of macroinvertebrates is lower. However, the effects on the fauna appear to be relatively 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 communities influenced by silt and sediment loadings and nonpoint nutrient sources. Water column chemistry indicates coliform as well as iron and manganese to be present at levels that constitute parameters of concern, although iron and manganese are considered to be naturally occurring and not a source of water quality impacts.

Additional monitoring of coliform is needed to determine if water quality standards are exceeded. 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 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, January 2010)

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network (mini-study) monitoring of Buffalo Creek in Gardenville was also conducted in 2001. 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. Biological sampling results indicated mostly slightly impacted water quality conditions, similar to assessments from 1976-1988. When sampled during high-flow years (1994, 2000) water quality was assessed as non-impacted, while samples collected during low-flow years (1993, 2001) result in assessments of slight impact. Siltation has been indicated to be a factor at the Gardenville site. Water column sampling revealed no parameters of concern. Toxicity testing of the water column showed no significant mortality or reproductive impacts. Bottom sediment sampling results revealed cadmium and 6 PAHs to be exceeding the Threshold Effects level - levels at which adverse impacts occasionally occur. (DEC/DOW, BWAR/RIBS, January 2005)

A biological assessment of Pond Brook, a trib to Buffalo Creek, was also conducted in Elma (at Bullis Road) as part of the RIBS biological screening effort in 2005. Sampling results indicated the upper range of slightly impacted conditions. In such samples the community is slightly altered from natural conditions. Some sensitive species are not present and the overall abundance of macroinvertebrates is lower. However, the effects on the fauna appear to be relatively 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 nonpoint nutrients and agricultural sources. 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 portion of the stream and all tribs from the mouth at Cayuga Creek to trib -18 near East Elma. The waters of this portion of the stream are Class B. Tribs to this reach/segment, including Pond Brook (-15), are primarily Class B; with some tribs designated Class C.

Buffalo Creek, Upper, and minor tribs (0103-0004)

NoKnownImpct

Waterbody Location Information

Revised: 05/05/2010

Water Index No: Ont 158..E- 1*
Hydro Unit Code: 04120103/050 **Str Class:** A
Waterbody Type: River
Waterbody Size: 285.1 Miles
Seg Description: stream and tribs, above East Elma

Drain Basin: Lake Erie-Niagara River
Buffalo/Eighteenmile
Reg/County: 9/Erie Co. (15)
Quad Map: EAST AURORA (J-06-3)

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 Buffalo Creek in Wales Center (at Route 20A) was conducted in 2000. Sampling results indicate non-impacted water quality conditions. The 2000 macroinvertebrate sample was field-assessed as passing screening, and the sample was not laboratory-processed. Siltation has been indicated to be a factor influencing slightly impacted conditions at the Gardenville site. (DEC/DOW, BWAR/SBU, April 2003)

A biological assessment of Beaver Meadow Creek in Java (at Route 78) 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, January 2010)

Biological (macroinvertebrate) assessments of two other Buffalo Creek tribs were also conducted in 2000. In both Hunter Creek in Wales Center and Sheldon/Hollow Creek near Strykersville sampling results indicate non-impacted water quality conditions. These samples were field-assessed as passing screening criteria, and the sample was not laboratory-processed. (DEC/DOW, BWAR/SBU, April 2003)

Previous Assessment

Although water quality in the waterbody currently supports uses, concerns have been raised by local agencies during previous assessment efforts regarding the loss of riparian vegetation and stream cover and resulting increases in stream temperature. Other poor agricultural practices, such as cattle access to the streams, exacerbate streambank erosion and silt/sediment loads. Over the years, many streambank erosion problems have been addressed by installing rip-rap but problems still exist. Operation of on-site septic systems have also been a past concern. However more recent sampling and assessments suggest these threats are not atypical of those common many other streams in the state, and uses in the stream are fully supported.

Segment Description

This segment includes the portion of the stream and all tribs above/including trib -18 near East Elma. The waters of this portion of the stream are Class A. Tribs to this reach/segment, including Belowe Creek (-22), Ellis Brook (-23), Hunter Creek (-30), Hollow Creek (-40), Glade Creek (-45), Beaver Meadow Creek (-55) and Plato Creek (-59), are primarily Class C, C(T); with some tribs designated Class B, B(T) and D.