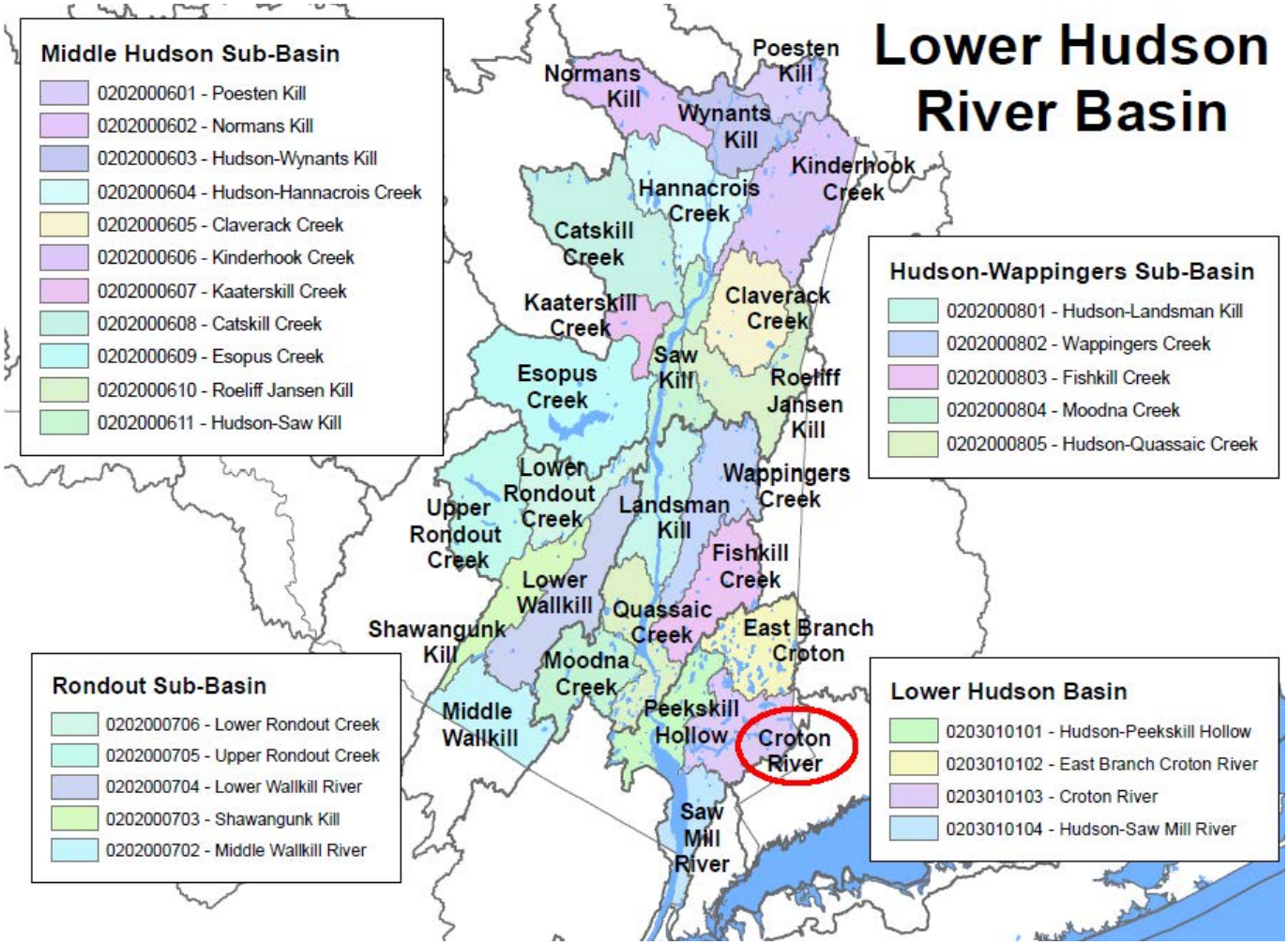

Croton River
(0203010103)

Water Index Number	Waterbody Name	Category
H- 31 (portion 1)	Croton River, Lower, Main Stem (1302-0064)	**NoKnownImpct**
H- 31 (portion 2)	Croton River, Lower, Main Stem (1302-0065)	**NoKnownImpct**
H- 31- 1 thru 6	Minor Tribs to Lower Croton River (1302-0066)	UnAssessed
H- 31- 2-P42b	Indian Brook Reservoir (1302-0067)	UnAssessed
H- 31-P44 (portion 1)	New Croton Reservoir (1302-0010)	**Impaired Seg**
H- 31-P44 (portion 2)	Muscoot/Upper New Croton Reservoir (1302-0042)	**Impaired Seg**
H- 31-P44- 1 thru 1a	Minor Tribs to New Croton Reservoir (1302-0068)	UnAssessed
H- 31-P44- 1-P45a/P45b	Twin Lakes (1302-0069)	UnAssessed
H- 31-P44- 1a-P45	Collaberg Pond (1302-0070)	UnAssessed
H- 31-P44- 1a..P45c/P45d	Dream and Blue Lakes (1302-0071)	UnAssessed
H- 31-P44- 2	Hunter Brook, Lower, and tribs (1302-0047)	**NoKnownImpct**
H- 31-P44- 2	Hunter Brook, Upper, and tribs (1302-0048)	**NoKnownImpct**
H- 31-P44- 2-P49a	Mill Pond (1302-0072)	UnAssessed
H- 31-P44- 2-P49a- 2	Unnamed Trib to Mill Pond/Hunter Brook(1302-0073)	UnAssessed
H- 31-P44- 2a thru 13	Minor Tribs to New Croton Reservoir (1302-0074)	UnAssessed

H- 31-P44-14	Muscoot River, Lower, and minor tribs (1302-0049)	**Impaired Seg**
H- 31-P44-14	Muscoot River, Upper, and tribs (1302-0050)	**NoKnownImpct**
H- 31-P44-14- 1	Hallocks Mill Brook, Upper, and tribs (1302-0052)	UnAssessed
H- 31-P44-14- 1- 6- 1- 1-P47a	Sparkle Lake (1302-0076)	UnAssessed
H- 31-P44-14- 1-P48	Crom Pond (1302-0077)	UnAssessed
H- 31-P44-14- 1-P48- 3-P49	Mohansic Lake (1302-0078)	UnAssessed
H- 31-P44-14- 4-P51	Secor Lake (1302-0079)	UnAssessed
H- 31-P44-14- 7-P52	Kirk Lake (1302-0080)	**MinorImpacts**
H- 31-P44-14- 7-P52- and 4-P51-	Tribs of Secor and Kirk Lakes (1302-0081)	UnAssessed
H- 31-P44-14-P50	Amawalk Reservoir (1302-0044)	**Impaired Seg**
H- 31-P44-14-P50-	Minor Tribs to Amawalk Reservoir (1302-0082)	UnAssessed
H- 31-P44-14-P50- 2- P50a	Lake Shenorock (1302-0083)	**Impaired Seg**
H- 31-P44-14-P53	Lake Mahopac (1302-0007)	**NoKnownImpct**
H- 31-P44-14-P53- 1	Tribs of Lake Mahopac (1302-0084)	UnAssessed
H- 31-P44-14-P53- 1-P54	Wixon Lake (1302-0085)	UnAssessed
H- 31-P44-15 thru 16a	Minor Tribs to New Croton Reservoir (1302-0086)	**NoKnownImpct**
H- 31-P44-17	Plum Brook, Lower, and tribs (1302-0087)	**NoKnownImpct**
H- 31-P44-17	Plum Brook, Upper, and tribs (1302-0088)	**NoKnownImpct**
H- 31-P44-17- 5-P57a	Lake Lincolndale (1302-0089)	**Impaired Seg**
H- 31-P44-17- 6a-P57c	Teakettle Sprout Lake (1302-0090)	UnAssessed
H- 31-P44-18 thru 22	Minor Tribs to New Croton Reservoir (1302-0091)	UnAssessed
H- 31-P44-25 thru 33	Minor Tribs to New Croton Reservoir (1302-0134)	UnAssessed
H- 31-P44-26	Titicus River, Lower (1302-0034)	UnAssessed
H- 31-P44-26/P103	Titicus Reservoir (1302-0035)	**Impaired Seg**
H- 31-P44-26/P103-	Tribs to Titicus Reservoir (1302-0135)	**NoKnownImpct**
H- 31-P44-31- 3-P107a	Lake Katonah (1302-0136)	**MinorImpacts**
H- 31-P44-35	Cross River, Lower (1302-0137)	**NoKnownImpct**
H- 31-P44-35-P109	Cross River Reservoir (1302-0005)	**Impaired Seg**
H- 31-P44-35-P109-	Minor Tribs to Cross River Reservoir (1302-0138)	UnAssessed
H- 31-P44-35-P109- 6	Upper Cross/Waccabuc River and tribs(1302-0139)	**NoKnownImpct**
H- 31-P44-35-P109- 6- 7-P114	Lake Kitchawan (1302-0002)	**MinorImpacts**
H- 31-P44-35-P109- 6-13-P115a	Truesdale Lake (1302-0054)	**Impaired Seg**
H- 31-P44-35-P109- 6-P117	Lake Waccabuc (1302-0140)	**NoKnownImpct**
H- 31-P44-35-P109- 6..P118,P119	Lake Oscaleta, Lake Rippowam (1302-0141)	**MinorImpacts**
H- 31-P44-35-P109-11-P120	Pea Pond (1302-0142)	UnAssessed
H- 31-P44-36	Stone Hill River, Lower, and tribs (1302-0059)	**Need Verific**
H- 31-P44-36	Stone Hill River, Upper, and tribs (1302-0143)	UnAssessed
H- 31-P44-36-11-P122a	Blue Heron Lake (1302-0144)	**NoKnownImpct**
H- 31-P44-36-P124h	Gilmore Pond (1302-0145)	UnAssessed
H- 31-P44-37 thru 42	Minor Tribs to New Croton Reservoir(1302-0146)	UnAssessed
H- 31-P44-43	Kisco River, Lower, and tribs (1302-0060)	**NoKnownImpct**
H- 31-P44-43	Kisco River, Upper, and tribs (1302-0061)	**Impaired Seg**
H- 31-P44-43-P127	Howlands Lake (1302-0147)	UnAssessed
H- 31-P44-44 thru 55	Minor Tribs to New Croton Reservoir(1302-0148)	**NoKnownImpct**
H- 31-P44-51-P128e	Journeys End Lake (1302-0149)	UnAssessed
H- 31-P44-54-P128a	Teatown Lake (1302-0150)	**Impaired Seg**
H- 31-P44-54-P128i,P128j	Vernay Lake, Shadow Lake (1302-0151)	UnAssessed
H- 31-P44-55- 1-P128n	Frankerest Pond (1302-0152)	UnAssessed

Croton River, Lower, Main Stem (1302-0064) NoKnownImpct

Waterbody Location Information

Revised: 03/28/2008

Water Index No: H- 31 (portion 1)
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 0.9 Miles
Quad Map: OSSINING (Q-25-2)
Seg Description: from tidal waters to Mount Airy

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 Croton River in Croton (at outlet) was conducted in 2000. Sampling results at this location just above the stream reach indicated slightly impacted water quality conditions. However, much of the impact is attributed to impoundment effects from the reservoir just above the site. Aquatic life support is considered to be fully supported in the stream, and there are no other apparent water quality impacts to designated uses. Sampling farther downstream (at Quaker Bridge Road) revealed moderate impacts that were largely the result of impoundment effects and poor sampling habitat. (DEC/DOW, BWAM/SBU, June 2005)

Segment Description

This segment includes the portion of the river from the tidal section near Paradise Island to unnamed trib (-3) near Mount Airy. The waters of this portion of the river are Class B. Lower tidal portions of the river are included with the Hudson Main Stem. The Upper Croton River is listed separately.

Croton River, Lower, Main Stem (1302-0065) NoKnownImpct

Waterbody Location Information

Revised: 04/02/2008

Water Index No: H- 31 (portion 2)
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: A(T)
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 1.4 Miles
Quad Map: OSSINING (Q-25-2)
Seg Description: from Mount Airy to New Croton Dam

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 Croton River in Croton (at outlet) was conducted in 2000. Sampling results indicated slightly impacted water quality conditions. However, much of the impact is attributed to impoundment effects from the reservoir just above the site. Aquatic life support is considered to be fully supported in the stream, and there are no other apparent water quality impacts to designated uses. Sampling farther downstream (at Quaker Bridge Road) revealed moderate impacts that were largely the result of impoundment effects and poor sampling habitat. (DEC/DOW, BWAM/SBU, June 2005)

Segment Description

This segment includes the portion of the river from unnamed trib (-3) near Mount Airy to the New Croton Dam . The waters of this portion of the river are Class A(T). The Lower Croton River is listed separately.

New Croton Reservoir (1302-0010) Impaired Seg

Waterbody Location Information

Revised: 04/04/2008

Water Index No:	H- 31-P44 (portion 1)			**Drain Basin:**	Lower Hudson River
Hydro Unit Code:	02030101/130	**Str Class:**	AA		Lower Hudson River
Waterbody Type:	Lake(R)			**Reg/County:**	3/Westchester Co. (60)
Waterbody Size:	1949.0 Acres			**Quad Map:**	OSSINING (Q-25-2)
Seg Description:	entire reservoir				

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
WATER SUPPLY	Impaired	Known

Type of Pollutant(s)

Known: NUTRIENTS (phosphorus)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: URBAN/STORM RUNOFF
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC **Resolution Potential:** Medium
TMDL/303d Status: 4a (TMDL Complete, Being Implemented, Not Listed)

Further Details

Overview
Water supply use of the New Croton Reservoir is considered to be impaired by phosphorus from urban runoff and other nonpoint sources.

Water Supply Use
The water supply use of the New Croton Reservoir is impaired by elevated phosphorus concentrations and the resulting eutrophication in the reservoir. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. This TMDL identified this reservoir as being water quality limiting for phosphorus due to concentration above the applicable 15 ug/l criterion established for source water reservoirs. Data from 2001-2005 show concentrations to be about 23 ug/l. An Nonpoint Source Implementation Plan for this TMDL is being developed; draft interim plans are completed. (DEC/DOW, BWAM/WQAS, July 2007)

New York City Watershed
The New Croton Reservoir is a part of the Croton System of New York City water supply reservoirs. The Croton System provides about 10% of New York City water supply, the other 90% is supplied by the Catskill/Delaware System. The Croton supply is a cascading system of twelve reservoirs and three controlled lakes in northern Westchester and Putnam Counties. Most of these reservoirs/lakes are impoundments of the Croton River, with the New Croton Reservoir being the downstream terminal reservoir. In order to protect the New York City water supply, a

comprehensive long-range watershed protection program is in place. These protections enable the city to receive a series of waivers from a federal requirement to filter water from the Catskill/Delaware supply. Although New York City has committed through a Consent Decree to construct a water filtration plant for the Croton supply, the City has considerable interest in efforts to protect the water quality in the Croton watershed. To that end a Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. These efforts focus on the specific water quality concerns such as increased nutrient loadings to reservoirs, risk of spill-related problems and pollution from stormwater runoff. The designation of the watershed as an MS4 municipal stormwater area - and the subsequent development of Stormwater Management Programs - will also reduce pollutant loadings. Separate Basin Reports for each of the Croton reservoirs watersheds have been prepared as part of the Croton Watershed Strategy. (NYCDEP, July 2006)

Reservoir Assessment/Water Quality Sampling

The New Croton Reservoir is the terminal reservoir for the Croton System. The Reservoir receives most of its water from upstream reservoirs, primarily Muscoot Reservoir. Inputs from its own basin are less significant. Outflow from New Croton Reservoir leaves the reservoir through a spillway and conservation release to the Croton River and through the Croton Aqueduct to New York City. An unusual feature of the New Croton Reservoir is a relic, presently submerged dam located between the 5CNC and 4 CNC sampling stations, which influences water movement in the reservoir. Water quality monitoring in the reservoir focuses on total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP monitoring finds median total phosphorus values to be consistently above applicable 15 ug/l criterion established for protection of NYC sources water reservoirs and generally at the NYS criterion of 20 ug/l for the protection of recreational uses. Higher individual results were observed upstream of the submerged dam; downstream stations exhibited a lower range of values probably as a result of the partial retention provided by this structure. Median values for dissolved oxygen, turbidity and pathogens (fecal coliform) were found to be in compliance with applicable standards. Surface samples for dissolved oxygen consistently met applicable criteria. However lower dissolved oxygen observations occur during summer stratification in samples taken at greater depths. Median fecal coliform values in the reservoir were well below applicable criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

Section 303(d) Listing

Though the New Croton Reservoir is considered to be impaired by phosphorus, a TMDL for this pollutant has been completed. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. Therefore a listing for this pollutant for the New Croton Reservoir is not included in the 2008 NYS Section 303(d) List of Impaired/TMDL Waters. (DEC/DOW, BWAM/WQAS, March 2008)

Segment Description

This segment is Class AA from the New Croton Dam to a point 1 mile above the New Croton Gate House, and Class A from that point to the Muscoot Reservoir Dam.

Muscoot/Upper New Croton Reservoir (1302-0042) Impaired Seg

Waterbody Location Information

Revised: 04/04/2008

Water Index No: H- 31-P44 (portion 2)
Hydro Unit Code: 02030101/130 **Str Class:** A
Waterbody Type: Lake(R)
Waterbody Size: 770.1 Acres
Seg Description: reservoir above ...

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: CROTON FALLS (P-26-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
WATER SUPPLY	Impaired	Known

Type of Pollutant(s)

Known: NUTRIENTS (phosphorus)
Suspected: - - -
Possible: Priority Organics (VOCs)

Source(s) of Pollutant(s)

Known: URBAN/STORM RUNOFF
Suspected: - - -
Possible: Landfill/Land Disp. (Katanah Municipal Well)

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC **Resolution Potential:** Medium
TMDL/303d Status: 4a (TMDL Complete, Being Implemented, Not Listed)

Further Details

Overview
Water supply use of the Muscoot/Upper New Croton Reservoir is considered to be impaired by phosphorus from urban runoff and other nonpoint sources.

Water Supply Use
The water supply use of the Muscoot/Upper New Croton Reservoir is impaired by elevated phosphorus concentrations and the resulting eutrophication in the reservoir. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. This TMDL identified this reservoir as being water quality limiting for phosphorus due to concentration above the applicable 15 ug/l criterion established for source water reservoirs. Data from 2001-2005 show concentrations to be about 30 ug/l. An Nonpoint Source Implementation Plan for this TMDL is being developed; draft interim plans are completed. (DEC/DOW, BWAM/WQAS, July 2007)

New York City Watershed
The Muscoot/Upper New Croton Reservoir is a part of the Croton System of New York City water supply reservoirs. The Croton System provides about 10% of New York City water supply, the other 90% is supplied by the Catskill/Delaware System. The Croton supply is a cascading system of twelve reservoirs and three controlled lakes in northern Westchester and Putnam Counties. Most of these reservoirs/lakes are impoundments of the Croton River,

with the New Croton Reservoir being the downstream terminal reservoir. In order to protect the New York City water supply, a comprehensive long-range watershed protection program is in place. These protections enable the city to receive a series of waivers from a federal requirement to filter water from the Catskill/Delaware supply. Although New York City has committed through a Consent Decree to construct a water filtration plant for the Croton supply, the City has considerable interest in efforts to protect the water quality in the Croton watershed. To that end a Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. These efforts focus on the specific water quality concerns such as increased nutrient loadings to reservoirs, risk of spill-related problems and pollution from stormwater runoff. The designation of the watershed as an MS4 municipal stormwater area - and the subsequent development of Stormwater Management Programs - will also reduce pollutant loadings. Separate Basin Reports for each of the Croton reservoirs watersheds have been prepared as part of the Croton Watershed Strategy. (NYCDEP, July 2006)

Reservoir Assessment/Water Quality Sampling

The Muscoot/Upper New Croton Reservoir is a source water reservoir; the reservoir basin is fairly small and receives most of its water from upstream reservoirs; inputs from its own basin are less significant. Water from the Diverting and Croton Falls Reservoirs enters the Muscoot Reservoir via the East and West Branches of the Croton River, respectively, from Amawalk Reservoir via the Muscoot River, from Cross River Reservoir via the Cross River, and from Titicus Reservoir via the Titicus River. Most of the water leaving Muscoot Reservoir discharges through a spillway directly into the New Croton Reservoir, though some is released through the dam as well. Water quality monitoring in the reservoir focuses on total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP monitoring finds median total phosphorus values to be consistently above both applicable 15 ug/l criterion established for protection of NYC sources water reservoirs and the NYS criterion of 20 ug/l for the protection of recreational uses. Median values for dissolved oxygen, turbidity and pathogens (fecal coliform) were found to be in compliance with applicable standards. Surface samples for dissolved oxygen consistently met applicable criteria. However lower dissolved oxygen observations occur during summer stratification in samples taken at greater depths. Median fecal coliform values in the reservoir were well below applicable criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

Other Concerns

In addition to the nutrient-related impairment, a National Priority (Superfund) Site, Katanah Municipal Well (Site No. 3-60-007, EPA ID NYD980780795) is located on a peninsula that extends into the Muscoot Reservoir. Contamination of the well by dry cleaning fluids (VOCs) was detected in 1979; cleanup of the site (an air stripping and disinfection facility) began in 1987. Pumping of the well prevents the movement of contaminated groundwater into the reservoir. Phase I and II investigations have been completed, as has an EPA funded RI/FS. This site has been delisted from the National Priorities List because an EPA consent order was signed for remedial design and construction of a high volume air stripper for removal of chlorinated solvents and maintenance of hydraulic control. (Environmental Site Remediation Database, DEC/DER, March 2008)

Section 303(d) Listing

Though the Muscoot/Upper New Croton Reservoir is considered to be impaired by phosphorus, a TMDL for this pollutant has been completed. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. Therefore a listing for this pollutant for the Muscoot Reservoir is not included in the 2008 NYS Section 303(d) List of Impaired/TMDL Waters. (DEC/DOW, BWAM/WQAS, March 2008)

Hunter Brook, Lower, and tribs (1302-0047) NoKnownImpct

Waterbody Location Information

Revised: 03/28/2008

Water Index No: H- 31-P44- 2
Hydro Unit Code: 02030101/130 **Str Class:** B(TS)
Waterbody Type: River
Waterbody Size: 2.9 Miles
Seg Description: stream and tribs, from mouth to Mill Pond

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: MOHEGAN LAKE (P-25-3)

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 Hunter Brook near Yorktown (at Crompond Road) was conducted in 2002 and 2003. Sampling results indicated slightly impacted water quality conditions. Urban runoff and nonpoint nutrient enrichment was indicated. However, nutrient biotic evaluation determined these effects on the fauna to be minor. Aquatic life support is considered to be fully supported in the stream. Areas of urban refuse have been noted along the stream, but there are no other apparent water quality impacts to designated uses. (DEC/DOW, BWAM/SBU, December 2004)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains water quality sampling stations on Hunter Brook. Results at these monitoring sites reveal median total phosphorus concentrations that are below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen levels in the streams met applicable criteria. Fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

New York City Watershed

The Hunter Brook Watershed is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the portion of the stream and all tribs from the mouth at New Croton Reservoir to Mill Pond. The waters of this portion of the stream are Class B(TS). Tribs to this reach/segment are Class B. Upper Hunter Brook is listed separately.

Hunter Brook, Upper, and tribs (1302-0048) NoKnownImpct

Waterbody Location Information

Revised: 03/28/2008

Water Index No: H- 31-P44- 2
Hydro Unit Code: 02030101/130 **Str Class:** C
Waterbody Type: River
Waterbody Size: 3.3 Miles
Seg Description: entire stream and tribs

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: MOHEGAN LAKE (P-25-3)

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 Hunter Brook near Yorktown (at Hunter Brook Road) was conducted in 2002 and 2003. Sampling results indicated slightly impacted water quality conditions. Nonpoint nutrient enrichment was indicated. However, nutrient biotic evaluation determined these effects on the fauna to be minor. 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, December 2004)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains water quality sampling stations on Hunter Brook. Results at these monitoring sites reveal median total phosphorus concentrations that are below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen levels in the streams met applicable criteria. Fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)
New York City Watershed
The Hunter Brook Watershed is tributary to the Croton System of New York City water supply reservoirs (see New

Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the portion of the stream and all tribs above Mill Pond. The waters of this portion of the stream are Class C,C(TS). Tribs to this reach/segment are also Class CC(TS). Lower Hunter Brook is listed separately.

Muscoot River, Lower, and minor tribs (1302-0049) Impaired Seg

Waterbody Location Information

Revised: 04/04/2008

Water Index No: H- 31-P44-14
Hydro Unit Code: 02030101/130 **Str Class:** A(TS)
Waterbody Type: River
Waterbody Size: 10.0 Miles
Seg Description: stream and select tribs, New Croton Res to Amawalk Res

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: CROTON FALLS (P-26-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
WATER SUPPLY	Impaired	Suspected
PUBLIC BATHING	Impaired	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known

Type of Pollutant(s)

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

Source(s) of Pollutant(s)

Known: MUNICIPAL (Yorktown Hghts WWTP)
Suspected: URBAN/STORM RUNOFF
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC **Resolution Potential:** High
TMDL/303d Status: 4b (Other Control(s) More Suitable than TMDL, Not Listed)

Further Details

Overview

Water supply, aquatic life and recreational uses in this reach are considered to be impaired by low dissolved oxygen, ammonia and other sewage inputs from municipal wastewater discharges. The impairments are primarily to Lower Hallocks Mill Brook; water quality in the Muscoot River appears to meet water quality criteria. Yorktown Heights is under consent order to upgrade the municipal WWTP to address the cause of these impairments. Construction is expected to be completed in 2008.

Water Quality Sampling

A biological (macroinvertebrate) assessment of this portion of Muscoot River in Yorktown (at Route 35) was conducted in 2000. Sampling results indicated moderately impacted water quality conditions. However, much of the impact is attributed to impoundment effects from the Amawalk Reservoir located just above the site. (DEC/DOW, BWAM/SBU, June 2005)

Biological (macroinvertebrate) assessments of the lower Hallocks Mill Brook were conducted in Yorktown Heights (at Pinesbridge Road) in 1999, 2000 and 2003 and just upstream in Amawalk (at Greeenwood Street) in 1998 and 2003.

Most recent sampling results indicated moderately impacted water quality conditions at the downstream site, just below the Yorktown Heights WWTP; earlier sampling reflected severe impacts. The fauna tolerant midges, worms and leeches, clearly reflecting the impacts of organic wastes. High ammonia values have also been documented and this site. The upstream site (above the WWTP discharge) reflected slightly impacted conditions, an improvement from moderate impacts in 1998. (DEC/DOW, BWAM/SBU, June 2005)

The NYCDEP also monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains multiple water quality sampling stations on both the Muscoot River and Hallocks Mills Brook. Results at the Hallocks Mill Brook sites reveal high median total phosphorus concentrations that are below USEPA recommended criteria of 50 ug/l for streams entering lakes. High ammonia levels have also been noted in the stream, attributed to the Yorktown Heights WWTP discharge. Elevated fecal coliform levels in the stream have also been reported. Median phosphorus, dissolved oxygen, coliform and turbidity levels at the Muscoot River sites were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2008)

Water Quality Management

A consent order requiring treatment plant improvements was issued to Yorktown Heights in 2005. The order stipulated that construction was to be completed by December 2007. However the Town was expected to request an extension to mid-2008. (DEC/DOW, Region 3, December 2006)

New York City Watershed

The Muscoot/Hallocks Mill Brook Watershed is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Section 303(d) Listing

Hallocks Mill Brook was included on the NYS 2004 Section 303(d) List of Impaired Waters, but was delisted in 2006. The stream was delisted as a Category 4b Water. Category 4b Waters are not included on the list because other required control measures, specifically a consent order to upgrade the WWTP, are expected to result in the restoration of the waterbody and a TMDL in not necessary.

Segment Description

This segment includes the portion of the stream and selected/smaller tribs from New Croton Reservoir to Amawalk Reservoir. The waters of this portion of the stream are Class A(TS). Tribs to this reach/segment are primarily Class C; Lower Hallocks Mill Brook is Class A(T). Upper Hallocks Mill Brook (-2) is listed separately.

Muscoot River, Upper, and tribs (1302-0050) NoKnownImpct

Waterbody Location Information

Revised: 03/28/2008

Water Index No: H- 31-P44-14
Hydro Unit Code: 02030101/130 **Str Class:** A(T)
Waterbody Type: River
Waterbody Size: 15.7 Miles
Seg Description: stream and tribs, above Amawalk Reservior

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: MOHEGAN LAKE (P-25-3)

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 this portion of the Muscoot River in Baldwin Place (at Mahopac Avenue) was conducted in 1998 and 2000. Sampling results indicated slightly impacted water quality conditions. Nonpoint source nutrient enrichment was indicated. However, nutrient biotic evaluation determined effects on the fauna to be minor. 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, June 2005)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains a water quality sampling station on the Upper Muscoot River. Results at these monitoring sites reveal median total phosphorus concentrations that are were below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen, fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)
New York City Watershed
Upper Muscoot River Watershed is tributary to the Croton System of New York City water supply reservoirs (see New

Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

New York City Watershed

The Muscoot River is tributary to the New Croton Reservoir and the New York City water supply system (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the entire stream and all tribs above the Amawalk Reservoir. The waters of this portion of the stream are Class A(T). Tribs to this reach/segment, including Secor Brook (4), are primarily Class C; Kirk Lake Outlet (-7) is Class A.

Kirk Lake (1302-0080) MinorImpacts

Waterbody Location Information

Revised: 04/03/2008

Water Index No: H- 31-P44-14- 7-P52
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: Lake
Reg/County: 3/Putnam Co. (40)
Waterbody Size: 123.5 Acres
Quad Map: OSCAWANA LAKE (P-25-2)
Seg Description: entire lake

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Recreation	Stressed	Suspected

Type of Pollutant(s)

Known: NUTRIENTS (phosphorus)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: URBAN/STORM RUNOFF
Suspected: - - -
Possible: - - -

Resolution/Management Information

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

Further Details

Overview

Recreational uses in Kirk Lake are thought to experience minor impacts due to elevated nutrient concentrations from urban runoff and other nonpoint sources.

Water Quality Sampling

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed and Kirk Lake is a part. These monitoring efforts include fixed frequency surveys in some tributary lakes as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains a water quality sampling station in Kirk Lake. Results at these monitoring sites reveal median total phosphorus concentrations that are were slightly above New York State guidance value of 20 ug/l indicating impacted/stressed recreational uses. Dissolved oxygen, fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria for protection of recreational uses. Fecal coliform results were quite low, consistently below 10 /100ml. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

New York City Watershed

Kirk Lake is a control lake that is a part of the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Amawalk Reservoir (1302-0044) Impaired Seg

Waterbody Location Information

Revised: 04/03/2008

Water Index No:	H- 31-P44-14-P50			**Drain Basin:**	Lower Hudson River
Hydro Unit Code:	02030101/130	**Str Class:**	A		Lower Hudson River
Waterbody Type:	Lake(R)			**Reg/County:**	3/Westchester Co. (60)
Waterbody Size:	566.6 Acres			**Quad Map:**	MOHEGAN LAKE (P-25-3)
Seg Description:	entire reservoir				

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

Type of Pollutant(s)

Known: METALS (mercury), NUTRIENTS (phosphorus)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: ATMOSPH. DEPOSITION, URBAN/STORM RUNOFF
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC **Resolution Potential:** Medium
TMDL/303d Status: 4a (TMDL Complete, Being Implemented, Not Listed)

Further Details

Overview

Water supply use and fish consumption of the Amawalk Reservoir are considered to be impaired by phosphorus from urban runoff and other nonpoint sources, and by mercury assumed to be the result of atmospheric deposition.

Water Supply Use

The water supply use of the Amawalk Reservoir is impaired by elevated phosphorus concentrations and the resulting eutrophication in the reservoir. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. This TMDL identified this reservoir as being water quality limiting for phosphorus due to concentration above the 20 ug/l criterion established by NYS DEC. Data from 2001-2005 show concentrations to be about 24 ug/l. An Nonpoint Source Implementation Plan for this TMDL is being developed; draft interim plans are completed. (DEC/DOW, BWAM/WQAS, July 2007)

Fish Consumption Advisories

Fish consumption in the Amawalk Reservoir is impaired due to a NYSDOH health advisory that recommends eating no more than one meal per month of Largemouth bass and larger smallmouth bass (over 16 inches) because of elevated mercury levels. The source of mercury is considered to be atmospheric deposition, as there are not other apparent sources in the reservoir watershed. The advisory for this lake was first issued in 2003-04. (2006-07 NYSDOH Health

Advisories and DEC/DFWMR, Habitat, December 2006).

New York City Watershed

The Amawalk Reservoir is a part of the Croton System of New York City water supply reservoirs. The Croton System provides about 10% of New York City water supply, the other 90% is supplied by the Catskill/Delaware System. The Croton supply is a cascading system of twelve reservoirs and three controlled lakes in northern Westchester and Putnam Counties. Most of these reservoirs/lakes are impoundments of the Croton River, with the New Croton Reservoir being the downstream terminal reservoir. In order to protect the New York City water supply, a comprehensive long-range watershed protection program is in place. These protections enable the city to receive a series of waivers from a federal requirement to filter water from the Catskill/Delaware supply. Although New York City has committed through a Consent Decree to construct a water filtration plant for the Croton supply, the City has considerable interest in efforts to protect the water quality in the Croton watershed. To that end a Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. These efforts focus on the specific water quality concerns such as increased nutrient loadings to reservoirs, risk of spill-related problems and pollution from stormwater runoff. The designation of the watershed as an MS4 municipal stormwater area - and the subsequent development of Stormwater Management Programs - will also reduce pollutant loadings. Separate Basin Reports for each of the Croton reservoirs watersheds have been prepared as part of the Croton Watershed Strategy. (NYCDEP, July 2006)

Reservoir Assessment/Water Quality Sampling

The Amawalk Reservoir watershed is a headwater basin; the reservoir receives most of its flow from runoff of precipitation that falls in the watershed and enters the reservoir through the Upper Muscoot River. Outflow from the reservoir flows via the Muscoot River downstream into the Muscoot Reservoir. The Town of Yorktown draws water from the reservoir for a water supply. Water quality monitoring in the reservoir focuses on total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP monitoring finds median total phosphorus values to be slightly above NYS criteria of 20 ug/l. Median values for dissolved oxygen, turbidity and pathogens (fecal coliform) were found to be in compliance with applicable standards. Individual exceedences of dissolved oxygen and turbidity occur periodically. Low dissolved oxygen observations occur during summer stratification in samples taken at greater depths. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

Section 303(d) Listing

Though the Amawalk Reservoir is considered to be impaired by phosphorus and as a result of a health advisory for mercury, TMDLs for both of these pollutants have been completed. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. The mercury impairment was addressed in the Northeast Regional Mercury TMDL that was established in 2007. Therefore listings of these pollutants for the Amawalk Reservoir are not included in the 2008 NYS Section 303(d) List of Impaired/TMDL Waters. (DEC/DOW, BWAM/WQAS, March 2008)

Lake Shenorock (1302-0083) Impaired Seg

Waterbody Location Information

Revised: 04/30/2008

Water Index No: H- 31-P44-14-P50- 2- P50a
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: Lake
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 15.2 Acres
Quad Map: CROTON FALLS (P-26-4)
Seg Description: entire lake

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: ALGAL/WEED GROWTH, NUTRIENTS (phosphorus)
Suspected: D.O./Oxygen Demand
Possible: - - -

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION
Suspected: URBAN/STORM RUNOFF
Possible: Agriculture

Resolution/Management Information

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

Further Details

Overview

Recreational uses in Shenorock Lake are considered to be impaired due to algal growth and low water transparency. Elevated nutrient (phosphorus) loads attributed to nonpoint sources are the primary contributor to these impairments.

Water Quality Sampling

Shenorock Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 2004 and continuing through the present. An Interpretive Summary report of the findings of this sampling was published in 2008. These data indicate that the lake continues to be best characterized as eutrophic, or highly productive, based on low water transparency, and high nutrient (primarily phosphorus) and algae levels. Phosphorus levels in the lake consistently exceed (and often significantly exceed) the state phosphorus guidance value indicating impacted/stressed recreational uses. Corresponding transparency measurements rarely meet what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5. The lake water is moderately to highly colored, however color only influences transparency when algae levels are low. (DEC/DOW, BWAM/CSLAP, January 2008)

Recreational Assessment

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This most recent assessment

(2005) indicates recreational suitability of the lake to be highly unfavorable. The recreational suitability of the lake is described most frequently as "slightly" to "substantially" impacted for most recreational uses. The lake itself is most often described as having "definite algae greenness" to "severe algae levels," an assessment that is consistent with measured water quality characteristics. Assessments have noted that aquatic plants rarely grows to the lake surface. (DEC/DOW, BWAM/CSLAP, January 2008)

Lake Uses

This lake waterbody is designated class B, suitable for use as a public bathing beach, for general recreation and aquatic life support, but not as public water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

New York City Watershed

Shenorock lake is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Section 303(d) Listing

Shenorock Lake not is currently included on the NYS 2008 Section 303(d) List of Impaired Waters. However this updated assessment suggests it is appropriate to include this waterbody on the 2010 List. It is recommended that a listing for phosphorus be added to Part 1 of the List, indicating a waterbody with an impairment requiring TMDL development. (DEC/DOW, BWAM/WQAS, May 2008)

Lake Mahopac (1302-0007) NoKnownImpct

Waterbody Location Information

Revised: 04/25/2008

Water Index No: H- 31-P44-14-P53
Hydro Unit Code: 02030101/130 **Str Class:** A
Waterbody Type: Lake
Waterbody Size: 578.6 Acres
Seg Description: entire lake

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Putnam Co. (40)
Quad Map: LAKE CARMEL (P-26-1)

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
Lake Mahopac has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1986 and most recently in 2002. An Interpretive Summary report of the findings of this sampling was published in 2003. These data indicate that the lake continues to be best characterized as mesotrophic, or moderately productive. Water quality conditions have steadily improved throughout the late 1990s. Phosphorus levels in the lake typically exceed the state guidance values indicating impacted/stressed recreational uses, although this criterion was not exceeded in the most recent sampling year. Corresponding transparency measurements consistently meet what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5; occasional high pH levels do not appear to result in ecological impacts. The lake water is weakly colored, and color does not influence clarity of the lake. (DEC/DOW, BWAM/CSLAP, May 2003)

Recreational Assessment
Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This assessment indicates recreational suitability of the lake to be very favorable. The recreational suitability of the lake is described most frequently as "could not be nicer." The lake itself is most often described as either "crystal clear" or "not quite crystal clear," an assessment that is somewhat more favorable than expected based on measured water quality characteristics, but likely reflecting the continuation of overall water quality improvement in the lake in recent years. Assessments have noted that aquatic plants typically grow to the lake surface (though this did not occur in the most recent sampling

year) but do not appear to impact lake use. The stocking of grass carp may be responsible for reducing the impact of weed growth on the lake. (DEC/DOW, BWAM/CSLAP, May 2003)

Lake Uses

This lake waterbody is designated class A, suitable for use as a water supply, public bathing beach, general recreation and aquatic life support. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

New York City Watershed

Lake Mahopac is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Minor Tribs to New Croton Reservoir (1302-0086) NoKnownImpct

Waterbody Location Information

Revised: 03/28/2008

Water Index No: H- 31-P44-15 thru 16a
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: C(TS)
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 10.7 Miles
Quad Map: CROTON FALLS (P-26-4)
Seg Description: total length of select tribs, Muscoot R to Plum Brook

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 Angle Fly Brook in Somers (at Route 35) was conducted in 1998 and 2000. Sampling results indicated non-impacted to slightly impacted water quality conditions. The most recent assessment found slight impacts attributed to nonpoint sources of nutrient enrichment. However clean-water mayflies, stoneflies and caddisflies were present. Results from 1998 sampling indicated excellent water quality. Nutrient biotic evaluation determined effects on the fauna to be minor. 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, June 2005)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains a water quality sampling station on Angle Fly Brook. Results at these monitoring sites reveal median total phosphorus concentrations that are below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen levels in the streams met applicable criteria. Fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

New York City Watershed

The Angle Fly Brook Watershed is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the total length of all tribs to New Croton Reservoir from Muscoot River to Plum Brook. Tribs within this segment, including Angle Fly Brook (-15), are Class C,C(TS). Muscoot River and Plum Brook are listed separately.

Plum Brook, Lower, and tribs (1302-0087) NoKnownImpct

Waterbody Location Information

Revised: 03/28/2008

Water Index No: H- 31-P44-17 **Drain Basin:** Lower Hudson River
Hydro Unit Code: **Str Class:** B(TS)
Waterbody Type: River **Reg/County:** 3/Westchester Co. (60)
Waterbody Size: 8.3 Miles **Quad Map:** CROTON FALLS (P-26-4)
Seg Description: stream and tribs, from mouth to Lincolndale

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 Plum Brook in Lincolndale (at Krystal Drive) was conducted in 2000 and 2001. Sampling results indicated slightly impacted water quality conditions. However, much of the impact is attributed to impoundment effects from a lake located just above the site. Nutrient biotic evaluation determined effects on the fauna to be minor. 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, June 2005)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains a water quality sampling station on Plum Brook. Results at these monitoring sites reveal median total phosphorus concentrations that are below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen levels in the streams met applicable criteria. Fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)
New York City Watershed
The Plum Brook Watershed is tributary to the Croton System of New York City water supply reservoirs (see New

Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the portion of the stream and all tribs from the mouth at New Croton Reservoir to/including unnamed trib (-4) in Lincolndale. The waters of this portion of the stream are Class B(TS). Tribs to this reach/segment are Class C. Upper Plum Brook is listed separately.

Plum Brook, Upper, and tribs (1302-0088) NoKnownImpct

Waterbody Location Information

Revised: 03/28/2008

Water Index No: H- 31-P44-17
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: C
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 6.3 Miles
Quad Map: CROTON FALLS (P-26-4)
Seg Description: stream and tribs, above Lincolndale

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 Plum Brook in Lake Lincolndale (at Brookside Avenue) was conducted in 2001. Sampling results indicated slightly impacted water quality conditions. However, much of the impact is attributed to poor habitat. Nutrient biotic evaluation determined effects on the fauna to be minor. 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, June 2005)

Segment Description

This segment includes the portion of the stream and all tribs above unnamed trib (-4) in Lincolndale. The waters of this portion of the stream are Class C,C(TS). Tribs to this reach/segment are Class C. Lower Plum Brook is listed separately.

Lake Lincolndale (1302-0089) Impaired Seg

Waterbody Location Information

Revised: 05/01/2008

Water Index No: H- 31-P44-17- 5-P57a
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: Lake
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 20.9 Acres
Quad Map: CROTON FALLS (P-26-4)
Seg Description: entire lake

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: ALGAL/WEED GROWTH, NUTRIENTS (phosphorus)
Suspected: - - -
Possible: D.O./Oxygen Demand

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION
Suspected: ON-SITE/SEPTIC SYST, URBAN/STORM RUNOFF
Possible: - - -

Resolution/Management Information

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

Further Details

Overview

Recreational uses in Lake Lincolndale are considered to be impaired due to algal growth and low water transparency. Elevated nutrient (phosphorus) loads attributed to nonpoint sources are the primary contributor to recreational and aesthetic impacts. Urban/storm runoff and on-site (septic) systems are thought to be sources of these pollutants.

Water Quality Sampling

Lake Lincolndale has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1995 and continuing through 2005. An Interpretive Summary report of the findings of this sampling was published in 2006. These data indicate that the lake continues to be best characterized as eutrophic, or highly productive, based on low water transparency, and high nutrient (primarily phosphorus) and algae levels. Phosphorus levels in the lake consistently exceed (and often significantly exceed) the state phosphorus guidance value indicating impacted/stressed recreational uses. Corresponding transparency measurements rarely meet what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5. The lake water is moderately colored, however color does not influence transparency. (DEC/DOW, BWAM/CSLAP, March 2006)

Recreational Assessment

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This most recent assessment (2005) indicates recreational suitability of the lake to be somewhat favorable. The recreational suitability of the lake is described most frequently as "excellent" to "slightly" impacted for most recreational uses. The lake itself is most often described as having "definite algae greenness," an assessment that is more favorable that expected based on measured water quality characteristics. Assessments have noted that aquatic plants rarely grows to the lake surface. (DEC/DOW, BWAM/CSLAP, March 2006)

Lake Uses

This lake waterbody is designated class B, suitable for use as a public bathing beach, for general recreation and aquatic life support, but not as public water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

New York City Watershed

Lake Lincolndale is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Section 303(d) Listing

Lake Lincolndale is currently included on the NYS 2008 Section 303(d) List of Impaired Waters. The lake is included on Part 3a of the List as a Water Requiring Verification of Impairment, however this updated assessment suggests that the suspected impairments to water quality and uses are verified and it is recommended that this listing for phosphorus in the lake be moved to Part 1 of the List, indicating a waterbody with an impairment requiring TMDL development. (DEC/DOW, BWAM/WQAS, May 2008)

Titicus Reservoir (1302-0035) Impaired Seg

Waterbody Location Information

Revised: 04/03/2008

Water Index No:	H- 31-P44-26/P103			**Drain Basin:**	Lower Hudson River
Hydro Unit Code:	02030101/130	**Str Class:**	AA		Lower Hudson River
Waterbody Type:	Lake(R)			**Reg/County:**	3/Westchester Co. (60)
Waterbody Size:	672.3 Acres			**Quad Map:**	CROTON FALLS (P-26-4)
Seg Description:	entire reservoir				

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

Type of Pollutant(s)

Known: METALS (mercury), NUTRIENTS (phosphorus)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: ATMOSPH. DEPOSITION, URBAN/STORM RUNOFF
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC **Resolution Potential:** Medium
TMDL/303d Status: 4a (TMDL Complete, Being Implemented, Not Listed)

Further Details

Overview

Water supply use and fish consumption of the Titicus Reservoir are considered to be impaired by phosphorus from urban runoff and other nonpoint sources, and by mercury assumed to be the result of atmospheric deposition.

Water Supply Use

The water supply use of the Titicus Reservoir is impaired by elevated phosphorus concentrations and the resulting eutrophication in the reservoir. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. This TMDL identified this reservoir as being water quality limiting for phosphorus due to concentration above the 20 ug/l criterion established by NYS DEC. Data from 2001-2005 show concentrations to be about 27 ug/l. An Nonpoint Source Implementation Plan for this TMDL is being developed; draft interim plans are completed. (DEC/DOW, BWAM/WQAS, July 2007)

Fish Consumption Advisories

Fish consumption in the Titicus Reservoir is impaired due to a NYSDOH health advisory that recommends eating no more than one meal per month of white perch because of elevated mercury levels. The source of mercury is considered to be atmospheric deposition, as there are not other apparent sources in the reservoir watershed. The advisory for this lake was first issued in 2003-04. (2006-07 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December

2006).

New York City Watershed

The Titicus Reservoir is a part of the Croton System of New York City water supply reservoirs. The Croton System provides about 10% of New York City water supply, the other 90% is supplied by the Catskill/Delaware System. The Croton supply is a cascading system of twelve reservoirs and three controlled lakes in northern Westchester and Putnam Counties. Most of these reservoirs/lakes are impoundments of the Croton River, with the New Croton Reservoir being the downstream terminal reservoir. In order to protect the New York City water supply, a comprehensive long-range watershed protection program is in place. These protections enable the city to receive a series of waivers from a federal requirement to filter water from the Catskill/Delaware supply. Although New York City has committed through a Consent Decree to construct a water filtration plant for the Croton supply, the City has considerable interest in efforts to protect the water quality in the Croton watershed. To that end a Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. These efforts focus on the specific water quality concerns such as increased nutrient loadings to reservoirs, risk of spill-related problems and pollution from stormwater runoff. The designation of the watershed as an MS4 municipal stormwater area - and the subsequent development of Stormwater Management Programs - will also reduce pollutant loadings. Separate Basin Reports for each of the Croton reservoirs watersheds have been prepared as part of the Croton Watershed Strategy. (NYCDEP, July 2006)

Reservoir Assessment/Water Quality Sampling

The Titicus Reservoir watershed is a headwater basin; the reservoir receives most of its flow from runoff of precipitation that falls in the watershed and enters the reservoir through the Upper Titicus River. Outflow from the reservoir flows via the Titicus River downstream into Muscoot Reservoir. Water quality monitoring in the reservoir focuses on total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP monitoring finds median total phosphorus values to be above NYS criteria of 20 ug/l. Median values for dissolved oxygen, turbidity and pathogens (fecal coliform) were found to be in compliance with applicable standards. Individual exceedences of dissolved oxygen and turbidity occur periodically. Low dissolved oxygen observations occur during summer stratification in samples taken at greater depths. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

Section 303(d) Listing

Though the Titicus Reservoir is considered to be impaired by phosphorus and as a result of a health advisory for mercury, TMDLs for both of these pollutants have been completed. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. The mercury impairment was addressed in the Northeast Regional Mercury TMDL that was established in 2007. Therefore listings of these pollutants for the Titicus Reservoir are not included in the 2008 NYS Section 303(d) List of Impaired/TMDL Waters. (DEC/DOW, BWAM/WQAS, March 2008)

Tribs to Titicus Reservoir (1302-0135) NoKnownImpct

Waterbody Location Information

Revised: 03/27/2008

Water Index No: H- 31-P44-26/P103-
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: C
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 30.5 Miles
Quad Map: PEACH LAKE (P-26-3)
Seg Description: total length of all tribs

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 Upper Titicus River in North Salem (at June Road) was conducted in 2000. Sampling results indicated slightly impacted water quality conditions. Evidence of nonpoint nutrient enrichment was noted. However, nutrient biotic evaluation determined these effects on the fauna to be minor. Aquatic life support is considered to be fully supported in the stream, and there are no other apparent water quality impacts to designated uses. A biological (macroinvertebrate) assessment of Crook Brook in Salem Center (at Turkey Hill Road) was also conducted in 2000. Sampling results indicated non-impacted water quality conditions. A high diversity of clean-water mayflies was found in the sample. Evidence on nonpoint nutrients and siltation was noted, but these impact were minor. (DEC/DOW, BWAM/SBU, June 2005)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains a water quality sampling station on the Upper Titicus River. Results at these monitoring sites reveal median total phosphorus concentrations that are were below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen levels, fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report,

NYCDEP, March 2003)

New York City Watershed

Upper Titicus River Watershed is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the total length of all tribs to Titicus Reservoir. Tribs within this segment, including Upper Titicus River, Crook Brook (-3), and Mopus Brook (-13) are Class C,C(T).

Lake Katonah (1302-0136) MinorImpacts

Waterbody Location Information

Revised: 05/01/2008

Water Index No: H- 31-P44-31- 3-P107a
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: Lake
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 23.0 Acres
Quad Map: CROTON FALLS (P-26-4)
Seg Description: entire lake

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

Type of Pollutant(s)

Known: ALGAL/WEED GROWTH, NUTRIENTS (phosphorus)
Suspected: - - -
Possible: D.O./Oxygen Demand

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION
Suspected: URBAN/STORM RUNOFF
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/BWAM
Resolution Potential: Medium
TMDL/303d Status: ?

Further Details

Overview

Recreational uses in Lake Katonah are considered to be impaired due to algal growth and low water transparency. Elevated nutrient (phosphorus) loads attributed to nonpoint sources are the primary contributor to these impairments.

Water Quality Sampling

Lake Katonah has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 2006 and continuing through the present. An Interpretive Summary report of the findings of this sampling was published in 2008. These data indicate that the lake continues to be best characterized as eutrophic, or highly productive, based on low water transparency, and high nutrient (primarily phosphorus) and algae levels. Phosphorus levels in the lake consistently exceed (and often significantly exceed) the state phosphorus guidance value indicating impacted/stressed recreational uses. Corresponding transparency measurements rarely meet what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5. (DEC/DOW, BWAM/CSLAP, January 2008)

Recreational Assessment

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This most recent assessment

indicates recreational suitability of the lake to be somewhat favorable. The recreational suitability of the lake is described most frequently as "excellent" to "slightly" impacted for most recreational uses. The lake itself is most often described as "not quite crystal clear" to having "definite algae greenness," an assessment that is more favorable than expected based on measured water quality characteristics. Assessments have noted that aquatic plants do not grow to the lake surface and do not influence recreational use. (DEC/DOW, BWAM/CSLAP, January 2008)

Lake Uses

This lake waterbody is designated class B, suitable for use as a public bathing beach, for general recreation and aquatic life support, but not as public water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

Section 303(d) Listing

Lake Katonak not is currently included on the NYS 2008 Section 303(d) List of Impaired Waters. However this updated assessment suggests it may be appropriate to consider the waterbody for listing in 2010 due to phosphorus. However additional and more recent CSLAP sampling data should be evaluated to verify whether a listing at that time is warranted. (DEC/DOW, BWAM/WQAS, May 2008)

Cross River, Lower (1302-0137) NoKnownImpct

Waterbody Location Information

Revised: 03/27/2008

Water Index No: H- 31-P44-35 **Drain Basin:** Lower Hudson River
Hydro Unit Code: **Str Class:** A(T)
Waterbody Type: River **Reg/County:** 3/Westchester Co. (60)
Waterbody Size: 0.3 Miles **Quad Map:** CROTON FALLS (P-26-4)
Seg Description: stream, from mouth to Cross River Reservoir

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 Cross River in Ward Pound Ridge (at reservation bridge) was conducted in 2002 and 2003. Sampling results indicated non-impacted water quality conditions. Excellent water quality was reflected by a diversity of clean-water mayflies, stoneflies and caddisflies. Nonpoint sources of nutrient enrichment were suggested, but these impacts were minor. Results were similar to sampling conducted in 2000 and 2001. (DEC/DOW, BWAM/SBU, June 2005)

Segment Description
This segment includes the portion of the stream from the mouth at the New Croton Reservoir to the Cross River Reservoir (P109). The waters of this portion of the stream are Class A(T). There are no tribs included in this reach/segment.

Cross River Reservoir (1302-0005) Impaired Seg

Waterbody Location Information

Revised: 04/01/2008

Water Index No: H- 31-P44-35-P109
Hydro Unit Code: 02030101/130 **Str Class:** AA(T)
Waterbody Type: Lake(R)
Waterbody Size: 898.6 Acres
Seg Description: entire reservoir

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: CROTON FALLS (P-26-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Water Supply	Threatened	Suspected
FISH CONSUMPTION	Impaired	Known

Type of Pollutant(s)

Known: METALS (mercury)
Suspected: NUTRIENTS (phosphorus)
Possible: - - -

Source(s) of Pollutant(s)

Known: ATMOSPH. DEPOSITION
Suspected: URBAN/STORM RUNOFF
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC **Resolution Potential:** Medium
TMDL/303d Status: 4a (TMDL Complete, Being Implemented, Not Listed)

Further Details

Overview

Fish consumption use of the Cross River Reservoir is considered to be impaired by mercury assumed to be the result of atmospheric deposition. In addition, water supply uses are considered to be threatened by nutrients and other pollutants from various nonpoint sources.

Fish Consumption Advisories

Fish consumption in the Cross River Reservoir is impaired due to a NYSDOH health advisory that recommends eating no more than one meal per month of largemouth bass and larger smallmouth bass (over 16 inches) because of elevated mercury levels. The source of mercury is considered to be atmospheric deposition, as there are not other apparent sources in the reservoir watershed. The advisory for this lake was first issued in 2002-03. (2006-07 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2006).

New York City Watershed

The water supply use of the Cross River Reservoir is threatened by potential for elevated phosphorus concentrations and possible eutrophication in the reservoir. A Phase II Phosphorus Total Maximum Daily Load (TMDL) for Reservoirs in the New York City Water Supply Watershed was established in June 2000. This TMDL did not identify Cross River Reservoir as being water quality limiting for phosphorus; concentrations of phosphorus were found at the

time to be near but below the applicable 15 ug/l criterion established for source water reservoirs. More recent sampling finds median values to be above 15 but below the New York State criterion of 20 ug/l. The designation of this waterbody as a threatened water is reflective of a need to protect its particular resource value as a source of drinking water for a large population. An Nonpoint Source Implementation Plan for this TMDL is being developed to address potential threats to water quality; draft interim plans are completed.. (DEC/DOW, BWAM/WQAS, July 2007)

New York City Watershed

The Cross River Reservoir is a part of the Croton System of New York City water supply reservoirs. The Croton System provides about 10% of New York City water supply, the other 90% is supplied by the Catskill/Delaware System. The Croton supply is a cascading system of twelve reservoirs and three controlled lakes in northern Westchester and Putnam Counties. Most of these reservoirs/lakes are impoundments of the Croton River, with the New Croton Reservoir being the downstream terminal reservoir. In order to protect the New York City water supply, a comprehensive long-range watershed protection program is in place. These protections enable the city to receive a series of waivers from a federal requirement to filter water from the Catskill/Delaware supply. Although New York City has committed through a Consent Decree to construct a water filtration plant for the Croton supply, the City has considerable interest in efforts to protect the water quality in the Croton watershed. To that end a Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. These efforts focus on the specific water quality concerns such as increased nutrient loadings to reservoirs, risk of spill-related problems and pollution from stormwater runoff. The designation of the watershed as an MS4 municipal stormwater area - and the subsequent development of Stormwater Management Programs - will also reduce pollutant loadings. Separate Basin Reports for each of the Croton reservoirs watersheds have been prepared as part of the Croton Watershed Strategy. (NYCDEP, July 2006)

Reservoir Assessment/Water Quality Sampling

The Cross River Reservoir watershed is a headwater basin; the reservoir receives water from runoff of precipitation that falls in the watershed and enters the reservoir through primarily Cross River. Outflow from the reservoir flows via Lower Cross River downstream into Muscoot Reservoir. During drought conditions reservoir flow may be directed through a pump station to the Delaware Aqueduct. Water quality monitoring in the reservoir focuses on total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP monitoring finds median Total Phosphorus values to be below NYS criteria of 20 ug/l but above the 15 ug/l target for New York City source water reservoirs. Median values for dissolved oxygen were found to be in compliance with applicable standards. Individual exceedences of dissolved oxygen occur periodically. Low dissolved oxygen observations occur during summer stratification in samples taken at lower depths. Sampling values for turbidity and fecal coliform were found to be below applicable criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

Section 303(d) Listing

Though the Cross River Reservoir is considered to be impaired as a result of a health advisory for mercury, a TMDLs for this pollutants has been completed. Mercury impairment was addressed in the Northeast Regional Mercury TMDL that was established in 2007. Therefore a listing of this pollutant for the Cross River Reservoir is not included in the 2008 NYS Section 303(d) List of Impaired/TMDL Waters. (DEC/DOW, BWAM/WQAS, March 2008)

Upper Cross/Waccabuc River and tribs (1302-0139) NoKnownImpct

Waterbody Location Information

Revised: 04/01/2008

Water Index No: H- 31-P44-35-P109- 6
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: A(T)
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 25.4 Miles
Quad Map: PEACH LAKE (P-26-3)
Seg Description: stream and tribs

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

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains water quality sampling stations on Upper Cross River. Results at these monitoring sites reveal median total phosphorus concentrations that are were below USEPA recommended criteria of 50 ug/l for streams entering lakes. Dissolved oxygen levels and turbidity values in the stream met applicable criteria. Fecal coliform results typically met water quality standards; occasional elevated values, often coinciding with high runoff events, were also noted. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

New York City Watershed

Upper Cross River and Waccabuc River are tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the portion of the stream and all tribs above the Cross River Reservoir. The waters of this portion of the stream are Class A(T),A(TS). Tribs to this reach/segment, including Truesdale Stream (-13), are Class C.

Lake Kitchawan (1302-0002) MinorImpacts

Waterbody Location Information

Revised: 05/28/2008

Water Index No: H- 31-P44-35-P109- 6- 7-P114
Hydro Unit Code: 02030101/130 **Str Class:** B
Waterbody Type: Lake
Waterbody Size: 96.6 Acres
Seg Description: entire lake

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: POUND RIDGE (Q-26-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Water Supply	Stressed	Suspected
Recreation	Stressed	Suspected

Type of Pollutant(s)

Known: Algal/Weed Growth (algal blooms, vegetation)
Suspected: NUTRIENTS (phosphorus)
Possible: Pathogens

Source(s) of Pollutant(s)

Known: - - -
Suspected: URBAN/STORM RUNOFF, Habitat Modification, On-Site/Septic Syst
Possible: - - -

Resolution/Management Information

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

Further Details

Overview

Water supply and recreational uses in Lake Kitchawan may experience minor impacts due to elevated nutrient concentrations from urban runoff and other nonpoint sources. Due to the lack of any current information, conditions in the lake need to be verified.

New York City Watershed

Lake Kitchawan is a control lake that is a part of the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Previous Assessment

The recreational use (swimming) and aesthetics in Lake Kitchawan were thought to be limited by algal blooms and excessive aquatic vegetation in the lake. Failing and/or inadequate on-site septic systems serving homes along the lake shore and other runoff from urban/suburban development in the watershed are considered likely sources of pollutants. (Westchester County WQCC, 1996)

Truesdale Lake (1302-0054) Impaired Seg

Waterbody Location Information

Revised: 04/30/2008

Water Index No: H- 31-P44-35-P109- 6-13-P115a
Hydro Unit Code: 02030101/130 **Str Class:** B
Waterbody Type: Lake
Waterbody Size: 82.4 Acres
Seg Description: entire lake

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: PEACH LAKE (P-26-3)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: ALGAL/WEED GROWTH (algal blooms, vegetation)
Suspected: - - -
Possible: Pathogens

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION
Suspected: URBAN/STORM RUNOFF, On-Site/Septic Syst
Possible: Agriculture

Resolution/Management Information

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

Further Details

Overview
Recreational uses in Truesdale Lake are considered to be impaired due to algal growth and low water transparency. Elevated nutrient (phosphorus) loads attributed to nonpoint sources are the primary contributor to these impairments.

Water Quality Sampling
Truesdale Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1999 and continuing through 2006. An Interpretive Summary report of the findings of this sampling was published in 2007. These data indicate that the lake continues to be best characterized as eutrophic, or highly productive, based on low water transparency, and high nutrient (primarily phosphorus) and algae levels. Phosphorus levels in the lake consistently exceed (and often significantly exceed) the state phosphorus guidance value indicating impacted/stressed recreational uses. Corresponding transparency measurements rarely meet what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5; occasionally high pH does not appear to impact aquatic life in the lake. The lake water is moderately to highly colored, and may influence transparency when algae levels are low. (DEC/DOW, BWAM/CSLAP, October 2007)
Recreational Assessment
Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This most recent assessment

indicates recreational suitability of the lake to be somewhat favorable. The recreational suitability of the lake is described most frequently as "slightly" impacted for most recreational uses. The lake itself is most often described as having "definite algae greenness," an assessment that is more favorable than expected based on measured water quality characteristics. Assessments have noted that aquatic plants rarely grows to the lake surface, likely a result of active weed management (herbicide). (DEC/DOW, BWAM/CSLAP, October 2007)

Lake Uses

This lake waterbody is designated class B, suitable for use as a public bathing beach, for general recreation and aquatic life support, but not as public water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

New York City Watershed

Truesdale Lake is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Section 303(d) Listing

Truesdale Lake not is currently included on the NYS 2008 Section 303(d) List of Impaired Waters. However this updated assessment suggests it is appropriate to include this waterbody on the 2010 List. It is recommended that a listing for phosphorus be added to Part 1 of the List, indicating a waterbody with an impairment requiring TMDL development. (DEC/DOW, BWAM/WQAS, May 2008)

The recreational use (swimming) and aesthetics in Truesdale Lake are thought to be limited by algal blooms, excessive aquatic vegetation and eutrophication. Chemical treatment of the lake to control weed growth has been used in the past. Failing and/or inadequate on-site septic systems serving lake shore residences and other runoff from urban/suburban development in the watershed are considered likely sources of pollutants. (Putnam County WQCC, 1996)

Truesdale Lake is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. NYCDEP is currently developing a phosphorus TMDL for Croton System Watershed to aid in the management of this nutrient. (NYCDEP, July 1999)

Lake Waccabuc (1302-0140) NoKnownImpct

Waterbody Location Information

Revised: 04/25/2008

Water Index No: H- 31-P44-35-P109- 6-P117
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: A
Waterbody Type: Lake
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 133.1 Acres
Quad Map: PEACH LAKE (P-26-3)
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

Lake Waccabuc has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1986 through 1996 and again most recently in 2006. An Interpretive Summary report of the findings of this sampling was published in 2007. These data indicate that the lake continues to be best characterized as mesotrophic, or moderately productive. Phosphorus levels in the lake occasionally exceed the state guidance values indicating impacted/stressed recreational uses. Corresponding transparency measurements typically meet what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5; occasional high pH does not appear to cause any ecological impacts. The lake water is weakly to moderately colored, but not likely high enough to influence clarity of the lake. (DEC/DOW, BWAM/CSLAP, September 2007)

Recreational Assessment

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This assessment indicates recreational suitability of the lake to be favorable since the lake was first evaluated and continuing through the most recent assessment. The recreational suitability of the lake is described most frequently as "excellent" to "slightly" impacted. The lake itself is most often described as "not quite crystal clear" or having "definite algal greenness," assessments that are somewhat more favorable given measured water quality characteristics. The more favorable assessment may be influenced by the lack of impact from aquatic weed growth. Assessments have noted that aquatic plants growth reaches the lake surface but does not impact lake use. (DEC/DOW, BWAM/CSLAP, September 2007)

Lake Uses

This lake waterbody is designated class B, suitable for use as a public bathing beach, general recreation and aquatic life support, but not as a water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess public bathing use is generally the responsibility of state and/or local health departments.

Lake Oscaleta, Lake Rippowam (1302-0141) MinorImpacts

Waterbody Location Information

Revised: 04/25/2008

Water Index No: H- 31-P44-35-P109- 6..P118,P119
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: Lake
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 93.6 Acres
Quad Map: PEACH LAKE (P-26-3)
Seg Description: total area of both lakes

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Recreation	Stressed	Suspected

Type of Pollutant(s)

Known: ALGAL/WEED GROWTH, NUTRIENTS (phosphorus)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: OTHER SOURCE (nutrient recycling), URBAN/STORM RUNOFF
Possible: - - -

Resolution/Management Information

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

Further Details

Overview

Recreational uses in Snyders Lake are thought to experience minor impacts due to aquatic weed growth and occasional algal blooms related to seasonal phosphorus releases from lake bottom sediments.

Water Quality Sampling

Lake Oscaleta and Lake Rippowam have been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 2006. An Interpretive Summary report of the findings of this sampling was published in 2007. These data indicate that the lake continues to be best characterized as eutrophic, or highly productive. Phosphorus levels in the lake regularly exceed the state guidance values indicating impacted/stressed recreational uses. However, corresponding transparency measurements rarely fail to meet what is the recommended minimum for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5; occasional high pH does not appear to result in ecological impacts. The lake water is moderately colored, likely reflecting natural conditions, but color does not limit water transparency. (DEC/DOW, BWAM/CSLAP, September 2007)

Recreational Assessment

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This assessment indicates recreational suitability of the lake to be generally favorable. The recreational suitability of Lake Rippowam is described most frequently as "excellent." The lake itself is most often described as "not quite crystal clear."

Recreational suitability in Lake Oscaleta was described most frequently as "slightly" impacted with the lake typically described as having "definite algal greenness." Assessments have noted that aquatic plants and algal growth have occasional impact on uses. (DEC/DOW, BWAM/CSLAP, September 2007)

Lake Uses

This lake waterbody is designated class B, suitable for use as a public bathing beach, general recreation and aquatic life support, but not as a water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess public bathing use is generally the responsibility of state and/or local health departments.

New York City Watershed

Lake Oscaleta and Lake Rippowam are tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Stone Hill River, Lower, and tribs (1302-0059) Need Verific

Waterbody Location Information

Revised: 03/27/2008

Water Index No: H- 31-P44-36
Hydro Unit Code: 02030101/130 **Str Class:** C(T)
Waterbody Type: River
Waterbody Size: 45.3 Miles
Seg Description: stream and tribs, from mouth to near Pound Ridge

Drain Basin: Lower Hudson River
Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: POUND RIDGE (Q-26-2)

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: D.O./OXYGEN DEMAND, NUTRIENTS, Pathogens, Salts
Possible: Silt/Sediment

Source(s) of Pollutant(s)

Known: - - -
Suspected: PRIVATE/COMM/INST (Taconic Correction), URBAN/STORM RUNOFF, Other Source (wildlife)
Possible: - - -

Resolution/Management Information

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

Further Details

Overview
Aquatic life uses in this portion of Stone Hill River (also known as Beaverdam Brook) may experience impacts due to municipal sewage inputs. These possible impacts were identified in tribs to the stream and follow-up monitoring is recommended.

Water Quality Sampling
Biological (macroinvertebrate) assessments of Stone Hill River at multiple sites near Bedford Hills were conducted in 2002, 2003 and 2004. Sampling results indicated non-impacted to slightly impacted water quality conditions. The upstream site revealed excellent water quality with an abundance of clean-water mayflies, stoneflies and caddisflies. Metrics declined only slightly at other sites on the stream. These declines were attributed to impoundment effects at one site and perhaps influence from a trib (Broad Brook) at another site. Water quality was found to be moderately impacted on two tribs to Stone Hill River. Impacts on Broad Brook are thought to be the result of discharge from the Taconic State Correctional Facility. Impacts on Davids Brook suggest municipal/industrial organic inputs; herbicide inputs may also impact water quality. The results of all river and trib sites are similar to findings outlined in a 2001 Biological Survey of the stream. (DEC/DOW, BWAM/SBU, June 2005)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the

reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains a water quality sampling stations on Stone Hill River . Results at these monitoring sites reveal median total phosphorus concentrations that are below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen levels in the streams met applicable criteria. Fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

New York City Watershed

The Stone Hill River Watershed is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the portion of the stream and all tribs from the mouth at New Croton Reservoir to/incl unnamed tribs (-16a) near Pound Ridge. The waters of this portion of the stream are Class C(T). Tribs to this reach/segment, including Broad Brook (-2) and Davids Brook (-6), are Class C,C(TS). Upper Stone Hill River is listed separately.

Blue Heron Lake (1302-0144) NoKnownImpct

Waterbody Location Information

Revised: 04/14/2008

Water Index No: H- 31-P44-36-11-P122a
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: Lake
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 42.3 Acres
Quad Map: POUND RIDGE (Q-26-2)
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

Blue Heron Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 2005 and 2006. An Interpretive Summary report of the findings of this sampling was published in 2007. These data indicate that the lake continues to be best characterized as mesotrophic, or moderately unproductive. Readings for trophic indicators were stable, except when influenced by heavy rains. Phosphorus levels in the lake only occasionally exceed the state guidance values indicating impacted/stressed recreational uses. Corresponding transparency measurements the typically exceed what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5. The lake water is slightly colored, which is considered natural and only influences lake clarity when algal levels are very low. (DEC/DOW, BWAM/CSLAP, October 2007)

Recreational Assessment

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This assessment indicates recreational suitability of the lake to be very favorable since the lake was first evaluated and continuing through the most recent assessment. The recreational suitability of the lake is described most frequently as "could not be nicer" or "excellent." The lake itself is most often described as "not quite crystal clear," an assessment that is consistent with the perceived water quality conditions in the lake and its measured water quality characteristics. Assessments have noted that aquatic plants regularly grow to the lake surface, but do not appear to impact recreational uses. (DEC/DOW, BWAM/CSLAP, October 2007)

Lake Uses

Blue Heron Lake is designated Class B, suitable for use as a public bathing beach, general recreation and aquatic life support, but not as a water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

Kisco River, Lower, and tribs (1302-0060) NoKnownImpct

Waterbody Location Information

Revised: 03/27/2008

Water Index No: H- 31-P44-43 **Drain Basin:** Lower Hudson River
Hydro Unit Code: 02030101/130 **Str Class:** B(TS) Lower Hudson River
Waterbody Type: River **Reg/County:** 3/Westchester Co. (60)
Waterbody Size: 6.2 Miles **Quad Map:** MOUNT KISCO (Q-26-1)
Seg Description: stream and tribs, from mouth to below Mount Kisco

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 Kisco River in Mount Kisco (at Nitra-Yeshiva Road) was conducted in 2002, 2003 and 2004. Sampling results indicated slightly impacted water quality conditions in all years. These results reflect improvements from conditions in the Upper Kisco River. Nutrient biotic evaluation determined these effects on the fauna to be minor. 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, June 2005)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains water quality sampling stations on Kisco River. Results at these monitoring sites reveal median total phosphorus concentrations that are below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen levels in the streams met applicable criteria. Fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)
New York City Watershed
The Kisco River Watershed is tributary to the Croton System of New York City water supply reservoirs (see New

Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the portion of the stream and all tribs from the mouth at New Croton Reservoir to/including unnamed trib (-5) near Mount Kisco. The waters of this portion of the stream are Class B(TS). Tribs to this reach/segment are Class C. Upper Kisco River is listed separately.

Kisco River, Upper, and tribs (1302-0061) Impaired Seg

Waterbody Location Information

Revised: 03/31/2008

Water Index No: H- 31-P44-43
Hydro Unit Code: 12030101/130 **Str Class:** C(T)
Waterbody Type: River
Waterbody Size: 31.7 Miles
Seg Description: stream and tribs, above Mount Kisco

Drain Basin: Lower Hudson River
Reg/County: 3/Westchester Co. (60)
Quad Map: MOUNT KISCO (Q-26-1)

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: D.O./OXYGEN DEMAND, NUTRIENTS (phosphorus)
Suspected: Pathogens, Unknown Toxicity
Possible: Silt/Sediment

Source(s) of Pollutant(s)

Known: - - -
Suspected: URBAN/STORM RUNOFF, Other Source (wildlife), Other Sanitary Disch
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: ext/NYC **Resolution Potential:** n/a
TMDL/303d Status: 4a (TMDL Complete, Being Implemented, Not Listed)

Further Details

Overview
Aquatic life use in this portion of the Kisco River thought to be impaired by toxic and organic pollutants attributed to municipal/industrial discharges and urban/storm runoff. Recreational uses are also considered to be stressed.

Water Quality Sampling
A biological (macroinvertebrate) assessment of Kisco River in Mount Kisco (at Route 133) was conducted in 2001. Sampling results indicated moderately impacted water quality conditions. The macroinvertebrate fauna of caddisflies and riffle beetles indicate municipal/industrial sources. Urban runoff is also thought to contribute to the impacts. Sampling of three tributaries also found impacts from organic wastes and toxic stressors. Waterfowl impacts are also thought to contribute to the nutrient/organic loads. Wetland conditions may also influence the water quality sampling results to some degree. These results were similar to findings during a stream survey conducted in 1999. (DEC/DOW, BWAM/SBU, June 2005 and Kisco River Biological Assessment Report, DEC/DOW, BWAM/SBU, December 1999)

The NYCDEP monitors water quality throughout the New York City water supply system, of which the Croton Watershed is a part. These monitoring efforts include fixed frequency surveys in watershed streams as well as the reservoirs themselves to record current conditions and provide a long-term record for trend analysis. This monitoring

focuses on measurement of total phosphorus, dissolved oxygen, turbidity, and pathogens as measured by fecal coliform levels. NYCDEP maintains water quality sampling stations on Kisco River. Results at these monitoring sites reveal median total phosphorus concentrations that are below USEPA recommended criteria of 50 ug/l for streams entering lakes. Median dissolved oxygen levels in the streams met applicable criteria. Fecal coliform and turbidity results in the streams were found to consistently meet water quality criteria. (Croton Watershed Strategy - East Branch Basin Report, NYCDEP, March 2003)

New York City Watershed

The Kisco River Watershed is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Segment Description

This segment includes the portion of the stream and all tribs above unnamed trib (-5) near Mount Kisco. The waters of this portion of the stream are Class C,C(TS). Tribs to this reach/segment, including Branch Brook (-8) and Chappaqua Brook (-9) are Class C,C(T). Lower Kisco River is listed separately.

Minor Tribs to New Croton Reservoir (1302-0148) NoKnownImpct

Waterbody Location Information

Revised: 03/26/2008

Water Index No: H- 31-P44-44 thru 55
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 20.9 Miles
Quad Map: OSSINING (Q-25-2)
Seg Description: total length of select tribs, from Kisco R to Croton R

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
Biological (macroinvertebrate) assessments of Cornell Brook in Millwood (at Route 100) and of Gedney Brook n Millwood (at Seven Bridges Road) were conducted in 2002. Sampling results indicated slightly impacted water quality conditions in both streams. In Cornell Brook, nonpoint source nutrient enrichment was identified as the primary source of impacts, but clean-water mayflies, stoneflies and caddisflies were represented in the sample. In gedney Brook the fauna was thought to be influenced by headwater and wetland effects. Nutrient biotic evaluation determined the effects on the fauna to be minor. 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, December 2004)

Segment Description
This segment includes the total length of selected/smaller tribs to the New Croton Reservoir between Kisco River (-43) and the New Croton Dam. Tribs within this segment, including Gedney Brook (-45), Cornell Brook (-46) and Bailey Brook (-54), are primarily Class B with some portions designated as Class C. Kisco River is listed separately.

Teatown Lake (1302-0150) Impaired Seg

Waterbody Location Information

Revised: 04/30/2008

Water Index No: H- 31-P44-54-P128a
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B
Waterbody Type: Lake
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 40.2 Acres
Quad Map: OSSINING (Q-25-2)
Seg Description: entire lake

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: ALGAL/WEED GROWTH, NUTRIENTS (phosphorus)
Suspected: - - -
Possible: D.O./Oxygen Demand

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION
Suspected: URBAN/STORM RUNOFF
Possible: Agriculture

Resolution/Management Information

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

Further Details

Overview

Recreational uses in Teatown Lake are considered to be impaired due to aquatic weed, algal growth and low water transparency. Elevated nutrient (phosphorus) loads attributed to nonpoint sources are the primary contributor to these impairments.

Water Quality Sampling

Teatown Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1997 and continuing through 2006. An Interpretive Summary report of the findings of this sampling was published in 2007. These data indicate that the lake continues to be best characterized as eutrophic, or highly productive, based on low water transparency, and high nutrient (primarily phosphorus) and algae levels. Phosphorus levels in the lake consistently exceed (and often significantly exceed) the state phosphorus guidance value indicating impacted/stressed recreational uses. Corresponding transparency measurements often fail to meet what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5. The lake water is moderately, and lake color may influence transparency. (DEC/DOW, BWAM/CSLAP, October 2007)

Recreational Assessment

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This most recent assessment

(2005) indicates recreational suitability of the lake to be unfavorable. The recreational suitability of the lake is described most frequently as "substantially" impacted for most recreational uses. The lake itself is most often described as having "definite algae greenness," an assessment that is somewhat higher than expected based on measured water quality characteristics. Assessments have noted that aquatic plants regularly grow to the lake surface and are frequently dense, affecting recreational use. (DEC/DOW, BWAM/CSLAP, October 2007)

Lake Uses

This lake waterbody is designated class B, suitable for use as a public bathing beach, for general recreation and aquatic life support, but not as public water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

New York City Watershed

Teatown Lake is tributary to the Croton System of New York City water supply reservoirs (see New Croton Reservoir, Segment 1302-0010). A Watershed Agreement is in place between NYCDEP and the Croton Watershed communities which sets forth programs and funding for watershed protection. In addition, NYCDEP has developed a phosphorus TMDL for the entire Croton System Watershed to aid in the management of nutrients. An Implementation Plan for this TMDL is being developed. (NYCDEP, July 2006)

Section 303(d) Listing

Teatown Lake not is currently included on the NYS 2008 Section 303(d) List of Impaired Waters. However this updated assessment suggests it is appropriate to include this waterbody on the 2010 List. It is recommended that a listing for phosphorus be added to Part 1 of the List, indicating a waterbody with an impairment requiring TMDL development. (DEC/DOW, BWAM/WQAS, May 2008)