



Lower Walkkill River (0202000704)

Water Index Number

H-139-13 (portion 1)/P453a
 H-139-13 (portion 2)
 H-139-13- 2
 H-139-13- 3 thru 18
 H-139-13-10- 1
 H-139-13-11
 H-139-13-11- 4
 H-139-13-16
 H-139-13 (portion 3)
 H-139-13 (portion 4)
 H-139-13-20 thru 53

Waterbody Name

Sturgeon Pond (1306-0037)
[Walkkill River, Lower, Main Stem \(1306-0027\)](#)
 Swarte Kill and tribs (1306-0039)
 Minor Tribs to Lower Walkkill (1306-0040)
 Unnamed Trib to Walkkill, Upp, and tribs (1306-0041)
[Unnamed Trib to Walkkill, and mnr tribs \(1306-0042\)](#)
 Kleine Kill and tribs (1306-0043)
 Platte Kill and tribs (1306-0044)
 Walkkill River, Middle, Main Stem (1306-0038)
 Walkkill River, Upper, and minor tribs (1306-0017)
 Minor Tribs to Middle Walkkill (1306-0061)

Category

UnAssessed
Impaired
 UnAssessed
 UnAssessed
 UnAssessed
 Minor Impacts
 UnAssessed
NoKnownImpact
Impaired
Impaired
Impaired

H-139-13-24	Dwaar Kill, Lower, and tribs (1306-0062)	NoKnownImpet
H-139-13-24	Dwaar Kill, Middle and tribs (1306-0063)	UnAssessed
H-139-13-24	Dwaar Kill, Upper, and tribs (1306-0064)	UnAssessed
H-139-13-28	Latterette Creek, Upper, and tribs (1306-0065)	UnAssessed
H-139-13-31	Borden Creek, Upper, and tribs (1306-0066)	UnAssessed
H-139-13-31- 1a-P546	Lake Osiris Lake (1306-0067)	UnAssessed
H-139-13-33	Tin Brook, Lower, and tribs (1306-0068)	MinorImpacts
H-139-13-33	Tin Brook, Upper, and tribs (1306-0069)	UnAssessed
H-139-13-41	Mannayunk Kill and tribs (1306-0070)	NoKnownImpet
H-139-13-47	Milburn Creek, Upper, and tribs (1306-0071)	UnAssessed
H-139-13-51	Masonic Creek and tribs (1306-0072)	MinorImpacts
H-139-13-51-P579a	Silver Lake (1306-0073)	UnAssessed
H-139-13-52	Monhagen Brook and tribs (1306-0074)	Impaired Seg
H-139-13-52-P598	Monhagen Lake (1306-0075)	Threatened
H-139-13-53-P623	Goshen Reservoir (1306-0076)	UnAssessed

Wallkill River, Lower, Main Stem (1306-0027)

Impaired

Waterbody Location Information

Revised: 07/01/2018

Water Index No:	H-139-13 (portion 2)	Water Class:	B
Hydro Unit Code:	Lower Wallkill River (0202000704)	Drainage Basin:	Lower Hudson River
Water Type/Size:	River/Stream 17.1 Miles	Reg/County:	3/Ulster (56)
Description:	from Sturgeon Pond to Tuthill		

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Drinking Water Supply	N/A	-
Primary Contact Recreation	Unassessed	-
Secondary Contact Recreation	Impaired	Suspected
Fishing (<i>Aquatic Life</i>)	Impaired	Known
Fishing (<i>Fish Consumption</i>)	Unassessed	-

Type of Pollutant(s) (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)

Known:	NUTRIENTS (PHOSPHORUS)
Suspected:	---
Unconfirmed:	Pathogens

Source(s) of Pollutant(s)

Known:	AGRICULTURE, POINT SOURCE DISCHARGES, Urban/Storm Runoff
Suspected:	---
Unconfirmed:	---

Management Information

Management Status:	Restoration/Protection Strategy Needed
Lead Agency/Office:	DOW/BWAM
IR/305(b) Code:	Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

Wallkill River, Lower, Main Stem is assessed as an impaired waterbody fishing use that is known to be impaired by excessive nutrients from agricultural runoff and point source discharges.

Use Assessment

This portion of the Wallkill is a Class B waterbody required to support and protect the best usages of primary and secondary contact recreation and fishing.

Fishing use is evaluated based on standards and guidance values for the protection of aquatic life and the human consumers of fish. Aquatic life is impaired based on biological sampling that shows moderate impacts from nutrients. This sampling can also be used to infer that secondary contact recreation use may be impaired, although more specific sampling is necessary to confirm this is the case. Currently, there is inadequate data/information to evaluate primary contact recreation (public bathing) use in this waterbody. Fish consumption use is unassessed. There are no health advisories limiting the consumption of fish from this waterbody, beyond the general advice for all waters (NYS DOH Health Advisories 2018).

Water Quality Information

A biological (macroinvertebrate) survey was conducted on this portion of the Wallkill River as part of enhanced monitoring for clean water planning in 2017. Sampling results reflect moderately impacted (poor) water quality, with

sensitive taxa reduced, and the distribution of major taxonomic groups significantly different from what is naturally expected. Samples are dominated by more tolerant species. The nutrient biotic index indicates highly elevated enrichment.

Water quality chemistry samples were collected in parallel with the macroinvertebrates. The water chemistry samples showed phosphorus above concentrations typically associated with impacts to aquatic life.

Source Assessment

Based on NYSDEC's Loading Estimator of Nutrient Sources (LENS)¹, point source discharges and agricultural activities are a major contributing source of pollution to this waterbody.

Management Actions

NYSDEC Division of Water, Stream Monitoring and Assessment Section conducted enhanced monitoring for clean water planning at multiple sites on the Wallkill River in 2017, and will continue in 2018. The purpose of this special study is to better understand the cause/pollutant/source of impairment of the Wallkill.

Section 303(d) Listing

Lower Wallkill River is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. However, this updated assessment suggests it is appropriate to include this waterbody on the next list. This waterbody will be added to Part 3c of the 2018 Section 303(d) List as an impaired waterbody for which TMDLs are deferred pending development/implementation/evaluation of other restoration measures.

Segment Description

This segment includes the main stem of the Wallkill River from the inlet of Sturgeon Pond (P453a) to the Shawangunk Kill (-19) in Tuthill. The waters of this portion of the stream are Class B. Middle/Upper Wallkill River are listed separately.

¹ It should be noted that NYSDEC's LENS screening tool is intended to be used to assess land use and relative load contributions by source to help determine the most appropriate watershed management approach and support prioritization of projects. The LENS tool does not include all the data requirements for detailed watershed load analysis that would be completed for a TMDL or Nine Element Plan and does not take into consideration existing best management practices and other nutrient reduction measures.

Unnamed Trib to Wallkill, and minor tribs (1306-0042) Minor Impacts

Waterbody Location Information

Revised: 07/01/2018

Water Index No:	H-139-13-11	Water Class:	C
Hydro Unit Code:	Lower Wallkill River (0202000704)	Drainage Basin:	Lower Hudson River
Water Type/Size:	River/Stream 14.7 Miles	Reg/County:	3/Ulster (56)
Description:	entire stream and select tribs		

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Drinking Water Supply	N/A	-
Primary Contact Recreation	N/A	-
Secondary Contact Recreation	Stressed	Suspected
Fishing (<i>Aquatic Life</i>)	Stressed	Known
Fishing (<i>Fish Consumption</i>)	Unassessed	-

Type of Pollutant(s) (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)

Known: Nutrients (phosphorus)
Suspected: ---
Unconfirmed: ---

Source(s) of Pollutant(s)

Known: Agriculture, Point Source Discharges
Suspected: ---
Unconfirmed: ---

Management Information

Management Status: Assessment/Reassessment Scheduled
Lead Agency/Office: DOW/BWAM
IR/305(b) Code: Water Attaining Some Standards (IR Category 2)

Further Details

Overview

This portion of the Wallkill River is assessed as having minor impacts to fishing use due to elevated nutrients (phosphorus) from agricultural runoff and point source discharges.

Use Assessment

This segment is a Class C waterbody required to support and protect secondary contact recreation and fishing use.

Fishing use is evaluated based on standards and guidance values for the protection of aquatic life and the human consumers of fish. Aquatic life is considered to be supported but stressed based on biological sampling that shows slight impacts from nutrients. This sampling can also be used to infer that secondary contact recreation use may be impaired, although more specific sampling is necessary to confirm this is the case. Fish consumption use is unassessed. There are no health advisories limiting the consumption of fish from this waterbody, beyond the general advice for all waters (NYS DOH Health Advisories 2018).

Water Quality Information

A biological (macroinvertebrate) assessment of Unnamed Trib to Wallkill was conducted as part of enhanced monitoring for clean water planning in 2017. Sampling results reflect fair water quality, with the macroinvertebrate community altered from what is expected under natural conditions. Some expected sensitive species are not present and overall macroinvertebrate species richness is lower than expected. Some changes in community compositions

have occurred due to replacement of sensitive ubiquitous taxa by more tolerant taxa, but overall there is still balanced distribution of all expected taxa. In spite of these minor impacts, aquatic life is considered to be supported.

Water quality chemistry samples were collected in parallel with the macroinvertebrates. The water chemistry samples showed phosphorus above concentrations typically associated with impacts to aquatic life.

Source Assessment

Based on NYSDEC's Loading Estimator of Nutrient Sources (LENS)¹, point source discharges are a major contributing source of pollutants to this waterbody.

Management Action

NYSDEC Division of Water, Stream Monitoring and Assessment Section conducted enhanced monitoring for clean water planning at multiple sites on the Wallkill River in 2017, and will continue in 2018. The purpose of this special study is to better understand the cause/pollutant/source of impairment of the Wallkill River.

Section 303(d) List

This waterbody is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. There are no impairments that would justify the listing of this waterbody.

Segment Description

This segment includes the entire stream and selected/smaller tribs. The waters of the stream are Class C from the mouth to unnamed trib (-6) and Class AA for the remainder of the reach. Tribs to this reach/segment are Class C, AA. Kleine Kill (-4) is listed separately.

¹ It should be noted that NYSDEC's LENS screening tool is intended to be used to assess land use and relative load contributions by source to help determine the most appropriate watershed management approach and support prioritization of projects. The LENS tool does not include all the data requirements for detailed watershed load analysis that would be completed for a TMDL or Nine Element Plan and does not take into consideration existing best management practices and other nutrient reduction measures.

Wallkill River, Middle, Main Stem (1306-0038)

Impaired

Waterbody Location Information

Revised: 07/01/2018

Water Index No:	H-139-13 (portion 3)	Water Class:	B
Hydro Unit Code:	Lower Wallkill River (0202000704)	Drainage Basin:	Lower Hudson River
Water Type/Size:	River/Stream 28 Miles	Reg/County:	3/Orange (36)
Description:	from Tuthill to Middletown		

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Drinking Water Supply	N/A	-
Primary Contact Recreation	Unassessed	-
Secondary Contact Recreation	Impaired	Suspected
Fishing (<i>Aquatic Life</i>)	Impaired	Known
Fishing (<i>Fish Consumption</i>)	Unassessed	-

Type of Pollutant(s) (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)

Known:	NUTRIENTS (PHOSPHORUS)
Suspected:	---
Unconfirmed:	Pathogens

Source(s) of Pollutant(s)

Known:	AGRICULTURE, POINT SOURCE DISCHARGES, Urban/Storm Runoff
Suspected:	---
Unconfirmed:	---

Management Information

Management Status:	Restoration/Protection Strategy Needed
Lead Agency/Office:	DOW/BWAM
IR/305(b) Code:	Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

Wallkill River, Middle, Main Stem is assessed as an impaired waterbody due to fishing use that is known to be impaired by excessive nutrients from agricultural runoff and point source discharges.

Use Assessment

This portion of the Wallkill River is a Class B waterbody required to support and protect primary and secondary contact recreation use and fishing use.

Fishing use is evaluated based on standards and guidance values for the protection of aquatic life and the human consumers of fish. Aquatic life is impaired based on biological sampling that shows moderate impacts from nutrients. This sampling can also be used to infer that secondary contact recreation use may be impaired, although more specific sampling is necessary to confirm this is the case. Currently, there is inadequate data/information to evaluate primary contact recreation (public bathing) use in this waterbody. Fish consumption use is unassessed. There are no health advisories limiting the consumption of fish from this waterbody, beyond the general advice for all waters (NYS DOH Health Advisories 2018).

Water Quality Information

A biological (macroinvertebrate) survey was conducted on this portion of the Wallkill River as part of enhanced monitoring for clean water planning in 2017. Sampling results reflect moderately impacted water quality, with sensitive

taxa reduced, and the distribution of major taxonomic groups significantly different from what is naturally expected. Samples are dominated by more tolerant species. The nutrient biotic index indicates highly elevated enrichment.

Water quality chemistry samples were collected in parallel with the macroinvertebrates. The water chemistry samples showed phosphorus above concentrations typically associated with impacts to aquatic life.

Source Assessment

Based on NYSDEC's Loading Estimator of Nutrient Sources (LENS)¹, point source discharges and agriculture activities are a major contributing source of pollutants to this waterbody.

Management Actions

NYSDEC Division of Water, Stream Monitoring and Assessment Section conducted enhanced monitoring for clean water planning at multiple sites on the Wallkill River in 2017, and will continue in 2018. The purpose of this special study is to better understand the cause/pollutant/source of impairment of the Wallkill.

Section 303(d) Listing

Middle Wallkill River is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. However, this updated assessment suggests it is appropriate to include this waterbody on the next list. This waterbody will be added to Part 3c of the 2018 Section 303(d) List as an impaired waterbody for which TMDLs are deferred pending development/implementation/evaluation of other restoration measures.

Segment Description

This segment includes the main stem of the Wallkill River from the Shawangunk Kill (-19) in Tuthill to Rio Grande (-

53) near Middletown. The waters of this portion of the stream are Class B. Lower/Upper Wallkill River are listed separately.

¹ It should be noted that NYSDEC's LENS screening tool is intended to be used to assess land use and relative load contributions by source to help determine the most appropriate watershed management approach and support prioritization of projects. The LENS tool does not include all the data requirements for detailed watershed load analysis that would be completed for a TMDL or Nine Element Plan and does not take into consideration existing best management practices and other nutrient reduction measures.

Wallkill River, Upper, and minor tribs (1306-0017)

Impaired

Waterbody Location Information

Revised: 07/01/2018

Water Index No:	H-139-13 (portion 4)	Water Class:	C
Hydro Unit Code:	Middle Wallkill River (0202000702)	Drainage Basin:	Lower Hudson River
Water Type/Size:	River/Stream 59.7 Miles	Reg/County:	3/Orange (36)
Description:	stream and select tribs, above Middletown		

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Drinking Water Supply	N/A	-
Primary Contact Recreation	N/A	-
Secondary Contact Recreation	Impaired	Suspected
Fishing (<i>Aquatic Life</i>)	Impaired	Known
Fishing (<i>Fish Consumption</i>)	Unassessed	-

Type of Pollutant(s)	(CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)
Known:	NUTRIENTS (PHOSPHORUS)
Suspected:	---
Unconfirmed:	Pathogens

Source(s) of Pollutant(s)	
Known:	AGRICULTURE, POINT SOURCE DISCHARGES, Urban/Storm Runoff
Suspected:	---
Unconfirmed:	---

Management Information

Management Status:	Restoration/Protection Strategy Needed
Lead Agency/Office:	DOW/BWAM
IR/305(b) Code:	Water Attaining Some Standards (IR Category 5)

Further Details

Overview

Wallkill River, Upper, and minor tribs is assessed as an impaired waterbody due to fishing use that is known to be impaired by excessive nutrients from agricultural runoff and point source discharges.

Use Assessment

Wallkill River, upper and minor tribs is a Class C waterbody required to support and protect the best uses of secondary contact recreation use and fishing use.

Fishing use is evaluated based on standards and guidance values for the protection of aquatic life and the human consumers of fish. Aquatic life is impaired based on biological sampling that shows moderate impacts from nutrients. This sampling can also be used to infer that secondary contact recreation use may be impaired, although more specific sampling is necessary to confirm this is the case. Fish consumption is unassessed. There are no health advisories limiting the consumption of fish from this waterbody, beyond the general advice for all waters (NYS DOH Health Advisories 2018).

Water Quality Sampling

A biological (macroinvertebrate) assessment of the Wallkill River was conducted as part of enhanced monitoring for clean water planning in 2017. Sampling results indicate moderately impacted water quality conditions with sensitive taxa reduced, and the distribution of major taxonomic groups is significantly different from what is naturally expected.

Samples are dominated by more tolerant species. The nutrient biotic index indicates highly elevated enrichment.

Water quality chemistry samples were collected in parallel with the macroinvertebrates. The water chemistry samples showed phosphorus above concentrations typically associated with impacts to aquatic life.

Source Assessment

Based on NYSDEC's Loading Estimator of Nutrient Sources (LENS)¹, agriculture activities and point source discharges are a major contributing source of pollution to this waterbody.

Elevated concentrations of nutrients are a result of the extensive agricultural activities in the watershed. Stream channelization and other channel modifications to support agricultural operations also effect water quality and use support. This area of the Wallkill watershed consists of a former lake bottom that was drained by canals and ditches to form the truck-farming region (primarily onions) generally referred to as the "black dirt" area. Within New York State, the region extends from the NY/NJ state border to the Pelletts Island area, just southeast of Middletown. The area has historically contributed considerable turbidity and sediment to the river. During periods of flooding/high flow, plant nutrients, fertilizers, and pesticides also likely enter the river.

Management Actions

NYSDEC Division of Water, Stream Monitoring and Assessment Section conducted enhanced monitoring for clean water planning at multiple sites on the Wallkill River in 2017 and will continued in 2018. The purpose of this special study is to better understand the impairment of the Wallkill.

Section 303(d) Listing

Upper Wallkill River is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. However, this updated assessment suggests it is appropriate to include this waterbody on the next List. It is recommended that this waterbody be added to Part 3c of the List as an impaired waterbody for which TMDLs are deferred pending development/implementation/evaluation of other restoration measures.

Segment Description

This segment includes the portion of the stream and selected/smaller tribs above Rio Grande (-53) near Middletown. The waters of this portion of the stream are Class C. Tribs to this reach/segment, including Rio Grande, are also Class C. Quaker Creek (-59), Pochuck Creek (-61), Rutgers Creek (-62) and Lower/Middle Wallkill River are listed separately.

¹ It should be noted that NYSDEC's LENS screening tool is intended to be used to assess land use and relative load contributions by source to help determine the most appropriate watershed management approach and support prioritization of projects. The LENS tool does not include all the data requirements for detailed watershed load analysis that would be completed for a TMDL or Nine Element Plan and does not take into consideration existing best management practices and other nutrient reduction measures.

Minor Tribs to Middle Walkill (1306-0061)

Impaired

Waterbody Location Information

Revised: 07/01/2018

Water Index No: H-139-13-20 thru 53
Hydro Unit Code: Lower Walkill River (0202000704)
Water Type/Size: River/Stream 88.8 Miles
Description: total length of select tribs, fr Tuthill to Middletown

Water Class: C
Drainage Basin: Lower Hudson River
Reg/County: 3/Orange (36)

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Drinking Water Supply	N/A	-
Primary Contact Recreation	N/A	-
Secondary Contact Recreation	Impaired	Suspected
Fishing (<i>Aquatic Life</i>)	Impaired	Known
Fishing (<i>Fish Consumption</i>)	Unassessed	-

Type of Pollutant(s) (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)
Known: NUTRIENTS (PHOSPHORUS)
Suspected: ---
Unconfirmed: ---

Source(s) of Pollutant(s)
Known: POINT SOURCE DISCHARGES
Suspected: ---
Unconfirmed: ---

Management Information

Management Status: Restoration/Protection Strategy Needed
Lead Agency/Office: DOW/BWAM
IR/305(b) Code: Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

Minor Tribs to Walkill is assessed as an impaired waterbody due to fishing use that is known to be impaired by excessive nutrients (phosphorus) from point source discharges.

Use Assessment

This waterbody segment is a Class C waterbody required to support and protect secondary contact recreation use and fishing use.

Fishing use is evaluated based on standards and guidance values for the protection of aquatic life and the human consumers of fish. Aquatic life is impaired based on biological sampling that shows moderate impacts from nutrients. This sampling can also be used to infer that secondary contact recreation use may be impaired, although more specific sampling is necessary to confirm this is the case. Fish consumption use is unassessed. There are no health advisories limiting the consumption of fish from this waterbody, beyond the general advice for all waters (NYS DOH Health Advisories 2018).

Water Quality Information

A biological (macroinvertebrate) assessment of Minor Tribs to Middle Walkill was conducted as part of enhanced monitoring for clean water planning in 2017. Sampling results reflect moderately impacted (poor) water quality, with sensitive taxa reduced, and the distribution of major taxonomic groups significantly different from what is naturally

expected. Samples are dominated by more tolerant species. The nutrient biotic index indicates highly elevated enrichment.

Water quality chemistry samples were collected in parallel with the macroinvertebrates. The water chemistry samples showed phosphorus above concentrations typically associated with impacts to aquatic life.

Source Assessment

Based on NYSDEC's Loading Estimator of Nutrient Sources (LENS)¹, point source discharges are the major contributing sources of pollution to this waterbody.

Management Actions

NYSDEC Division of Water, Stream Monitoring and Assessment Section conducted enhanced monitoring for Clean Water Planning at multiple sites on the Wallkill River in 2017, and will continue in 2018. The purpose of this special study is to better understand the cause/pollutant/source of impairment of the Wallkill River.

Section 303(d) Listing

This tributary waterbody is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. However, this updated assessment suggests it is appropriate to include this waterbody on the next list. This waterbody will be added to Part 3c of the 2018 Section 303(d) List as an impaired waterbody for which TMDLs are deferred pending development/implementation/evaluation of other restoration measures.

Segment Description

This segment includes the total length of selected/smaller tributaries to the Wallkill River between Shawangunk Kill in Tuthill to/including the Cheechunk Canal and Rio Grande (-53) near Middletown. Tributaries within this segment, including Muddy Kill (-38), are Class C,C(T). Dwaar Kill (-24), upper unnamed tributary (-28), Upper Borden Creek (-31), Tin Brook (-33), Mannayunk Kill (-41) and Upper Milburn Creek (-47), are listed separately.

¹ It should be noted that NYSDEC's LENS screening tool is intended to be used to assess land use and relative load contributions by source to help determine the most appropriate watershed management approach and support prioritization of projects. The LENS tool does not include all the data requirements for detailed watershed load analysis that would be completed for a TMDL or Nine Element Plan and does not take into consideration existing best management practices and other nutrient reduction measures.

Dwaar Kill, Lower, and tribs (1306-0062)

NoKnownImpct

Waterbody Location Information

Revised: 12/20/2007

Water Index No: H-139-13-24 **Drain Basin:** Lower Hudson River
Hydro Unit Code: **Str Class:** C
Waterbody Type: River **Reg/County:** 3/Ulster Co. (56)
Waterbody Size: 24.5 Miles **Quad Map:** WALDEN (O-24-4)
Seg Description: stream and tribs, from mouth to near Co Route 89

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 Dwaar Kill near Walkkill (at Bates Road) was conducted in 2002. Sampling results indicated non-impacted water quality conditions. The fauna was diverse and all screening criteria for waters having no known impacts were met. The sample was sorted in the lab to family level and results were found to support the field assessment. (DEC/DOW, BWAM/SBU, December 2004)

Segment Description

This segment includes the portion of the stream and all tribs from the mouth to a point 0.5 mile below unnamed trib (-9) near County Route 89. The waters of this portion of the stream are Class C. Tribs to this reach/segment are also Class C. Middle/Upper Dwaar Kill are listed separately.

Tin Brook, Lower, and tribs (1306-0068)

MinorImpacts

Waterbody Location Information

Revised: 12/20/2007

Water Index No: H-139-13-33 **Drain Basin:** Lower Hudson River
Hydro Unit Code: **Str Class:** A
Waterbody Type: River **Reg/County:** 3/Orange Co. (36)
Waterbody Size: 11.4 Miles **Quad Map:** WALDEN (O-24-4)
Seg Description: stream and tribs, from mouth to Walden

Water Quality Problem/Issue Information (CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

Type of Pollutant(s)

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

Source(s) of Pollutant(s)

Known: ---
Suspected: MUNICIPAL, URBAN/STORM RUNOFF
Possible: Industrial

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/Reg3 **Resolution Potential:** Medium
TMDL/303d Status: n/a

Further Details

Overview

Aquatic life support in Tin Brook is thought to experience minor impacts/threats due to nutrient and organic inputs and siltation from point discharges and nonpoint urban runoff sources.

Water Quality Sampling

A biological (macroinvertebrate) assessment of Tin Brook in Walden (at Route 52) was conducted in 2002. Sampling results indicated slightly impacted water quality conditions. The fauna was dominated by facultative midges and scuds and Impact Source Determination indicated that municipal/industrial inputs and siltation were the most likely cause of the impacts. Although aquatic life is supported in the stream, nutrient biotic evaluation indicates the level of eutrophication is sufficient to threaten aquatic life support. (DEC/DOW, BWAM/SBU, June 2005)

Segment Description

This segment includes the portion of the stream from the mouth to/including unnamed trib (-3) above Walden. The waters of this portion of the stream are Class C to the Walden STP pumping station overflow, and Class A for the remainder of the reach. Tribs to this reach/segment are Class B,C(T). Upper Tin Brook is listed separately.

Masonic Creek and tribs (1306-0072)

MinorImpacts

Waterbody Location Information

Revised: 12/18/2007

Water Index No: H-139-13-51 **Drain Basin:** Lower Hudson River
Hydro Unit Code: **Str Class:** B
Waterbody Type: River **Reg/County:** 3/Orange Co. (36)
Waterbody Size: 23.2 Miles **Quad Map:** MIDDLETOWN (P-23-1)
Seg Description: entire stream and tribs

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

Type of Pollutant(s)

Known: ---
Suspected: NUTRIENTS, UNKNOWN TOXICITY, Silt/Sediment
Possible: ---

Source(s) of Pollutant(s)

Known: ---
Suspected: AGRICULTURE, URBAN/STORM RUNOFF, Streambank Erosion
Possible: ---

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 2 (Problem Verified, Cause Unknown)
Lead Agency/Office: ext/WQCC **Resolution Potential:** Medium
TMDL/303d Status: n/a

Further Details

Overview

Aquatic life support in Masonic Creek are known to experience minor impacts due to nutrients and silt/sediment from nonpoint sources. Toxicity was also noted at the sampling site.

Water Quality Sampling

A biological (macroinvertebrate) assessment of Masonic Creek in Middletown (at Mud Mills Road) was conducted in 2002. Sampling results indicated slightly impacted water quality conditions. The fauna was heavily dominated by facultative midges and the stream contained significant amounts of silt-laden filamentous algae. Impact Source Determination suggested toxicity was the primary source of impact. Although aquatic life is supported in the stream, nutrient biotic evaluation indicates the level of eutrophication is sufficient to stress aquatic life support. (DEC/DOW, BWAM/SBU, June 2005)

Segment Description

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

Monhagen Brook and tribs (1306-0074)

Impaired

Waterbody Location Information

Revised: 07/01/2018

Water Index No: H-139-13-52
Hydro Unit Code: Lower Wallkill River (0202000704)
Water Type/Size: River/Stream 25.9 Miles
Description: entire stream and tribs

Water Class: C
Drainage Basin: Lower Hudson River
Reg/County: 3/Orange (36)

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Drinking Water Supply	N/A	-
Primary Contact Recreation	N/A	-
Secondary Contact Recreation	Stressed	Known
Fishing (<i>Aquatic Life</i>)	Impaired	Known
Fishing (<i>Fish Consumption</i>)	Unassessed	-

Type of Pollutant(s) (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)
Known: NUTRIENTS (PHOSPHORUS)
Suspected: ---
Unconfirmed: ---

Source(s) of Pollutant(s)
Known: POINT SOURCE DISCHARGES, Urban Storm/Runoff
Suspected: ---
Unconfirmed: ---

Management Information

Management Status: Verification of Problem Severity Needed
Lead Agency/Office: DOW/BWAM
IR/305(b) Code: Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

Monhagen Brook is assessed as an impaired waterbody due to fishing use that is evaluated as impaired by excessive nutrients from point source discharges.

Use Assessment

Monhagen Brook is a Class C waterbody, required to support and protect the best uses of secondary contact recreation and fishing.

Fishing use is evaluated based on standards and guidance values for the protection of aquatic life and the human consumers of fish. Fishing use was previously impaired, however recent biological monitoring shows slight impact and indicates that fishing use is supported. However, further biological sampling is needed to confirm use support. Fish consumption use is unassessed. There are no health advisories limiting the consumption of fish from this waterbody, beyond the general advice for all waters (NYS DOH Health Advisories 2018).

Water Quality Information

A biological (macroinvertebrate) assessment of Monhagen Brook in Middletown (at Golf Links Rd.) was conducted in 2017. Sampling results reflect fair water quality, with the macroinvertebrate community altered from what is expected under natural conditions. Some expected sensitive species are not present and overall macroinvertebrate species richness is lower than expected. Some changes in community composition have occurred due to replacement of sensitive ubiquitous taxa by more tolerant taxa, but overall there is still balanced distribution of all expected taxa. In

spite of these minor impacts, aquatic life is considered to be supported, and seems to be improving since the 2004 survey.

Water quality chemistry samples were collected in parallel with the macroinvertebrates. The water chemistry samples showed phosphorus solids above concentrations typically associated with impacts to aquatic life.

Source Assessment

Based on NYSDEC's Loading Estimator of Nutrient Sources (LENS)¹, point source discharges are the major contributing sources of pollutants to this waterbody.

Management Actions

NYSDEC Division of Water, Stream Monitoring and Assessment Section conducted enhanced monitoring for Clean Water Planning at multiple sites on the Wallkill River in 2017, and will continue in 2018. The purpose of this special study is to better understand the cause/pollutant/source of impairment of the Wallkill River.

The Orange County Water Authority and Orange County Soil & Water Conservation District is working with NYSDEC to develop a nine element watershed plan focused on phosphorus reduction.

Section 303(d) Listing

Monhagen Brook is included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody is included on Part 1 of the List as an impaired waterbody requiring development of a TMDL for phosphorus. However, this updated assessment suggests that the suspected impacts to water quality and uses may not be sufficient to warrant continued listing. Additional sampling is needed to confirm use support.

Segment Description

This segment includes the entire stream and all tribs. The waters of the stream are Class C. Tribs to this reach/segment, including Draper Brook (-5), are primarily Class C; with unnamed trib (-2) designated Class B.

¹ It should be noted that NYSDEC's LENS screening tool is intended to be used to assess land use and relative load contributions by source to help determine the most appropriate watershed management approach and support prioritization of projects. The LENS tool does not include all the data requirements for detailed watershed load analysis that would be completed for a TMDL or Nine Element Plan and does not take into consideration existing best management practices and other nutrient reduction measures.

Monhagen Lake (1306-0075)

Threatened

Waterbody Location Information

Revised: 05/01/2018

Water Index No: H-139-13-52-P598
Hydro Unit Code: Lower Wallkill River (0202000704)
Water Type/Size: Lake/Reservoir 63.5 Acres
Description: entire lake

Water Class: AA
Drainage Basin: Lower Hudson River
Reg/County: 3/Orange (36)

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Water Supply	Threatened	Known
Public Bathing	Stressed	Unconfirmed
Recreation	Stressed	Unconfirmed
Aquatic Life	Stressed	Unconfirmed
Fish Consumption	Unassessed	-
Conditions Evaluated		
Habitat/Hydrology	Unknown	
Aesthetics	Poor	

Type of Pollutant(s) (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)

Known: ---
Suspected: Nutrients (Phosphorus), Algal/Weed Growth
Unconfirmed: ---

Source(s) of Pollutant(s)

Known: ---
Suspected: ---
Unconfirmed: Other Source

Management Information

Management Status: Verification of Problem Severity Needed
Lead Agency/Office: DEC/Reg3
IR/305(b) Code: Water with Insufficient Data (IR Category 3)

Further Details

Overview

Monhagen Lake is assessed as a threatened waterbody segment due to drinking water uses that are threatened.

Use Assessment

Monhagen Lake is a Class AA waterbody, required to support and protect the best uses of: a water supply source for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing.

Evaluation of the use of this lake for public water supply includes conditions of the lake water prior to treatment, not the quality of water distributed for use after treatment. Monitoring of water quality at the tap is conducted by local water suppliers and public health agencies. Water supply use in the waterbody is considered to be threatened by elevated nutrient and chlorophyll levels in the lake that result in increased risk of disinfection by-products (DBPs) formation in finished potable water and make treatment to meet drinking water standards more difficult. DBPs are formed when disinfectants such as chlorine used in water treatment plants react with natural organic matter (i.e., decaying vegetation) present in the source water. Prolonged exposure to DBPs may increase the risk of certain health effects. The lake also requires routine use of algacides to reduce filtration and other water treatment costs. However, water quality data sources are old and it is not known if conditions measured in the early 2000s are still present today (DEC/DOW, BWAM, April

2018)

Primary and secondary contact recreational uses may be stressed by elevated nutrients (phosphorus), excessive algae and poor water clarity, but these uses are not presently allowed in Monhagen Lake. (DEC/DOW, BWAM/CSLAP, April 2018)

There are no known impacts to fishing use, but due to periodically elevated pH, aquatic life may be stressed. (DEC/DOW, BWAM, April 2018)

Fish consumption use is considered to be unassessed. There are no health advisories limiting the consumption of fish from this waterbody (beyond the general advice for all waters). However due to the uncertainty as to whether the lack of a waterbody-specific health advisory is based on actual sampling, fish consumption use is noted as unassessed. (NYS DOH Health Advisories and DEC/DOW, BWAM, April 2018)

Water Quality Information

Water quality sampling of Monhagen Lake was conducted through the Citizens Statewide Lake Assessment Program (CSLAP) from 2003 through 2009. Results of this sampling indicate the lake is best characterized as mesoeutrophic, or moderately to highly productive. Chlorophyll-a levels in this study exceeded the DEC criteria indicating impaired conditions for potable water supplies, due to a high likelihood of producing potential carcinogens (based on chlorophyll a levels greatly exceeding 4 ug/l) during chlorination of raw water. However, it is not known if this older data is representative of present conditions in the lake. (DEC/DOW, BWAM/LMAS, April 2018)

Chlorophyll/algae levels often exceed criteria corresponding to stressed recreational uses, while phosphorus concentrations are typically moderately high. Lake clarity measurements indicate water transparency typically meet the recommended minimum criteria for swimming beaches, although swimming is not allowed in this drinking water reservoir. Readings of pH occasionally exceed the range established in state water quality standards for protection of aquatic life. The elevated pH is most likely a response to algae levels. (DEC/DOW, BWAM/LMAS, April 2018)

Source Assessment

Specific sources of pollutants to the waterbody have not been identified.

Management Actions

This waterbody is considered a highly-valued water resource due to its drinking water supply classification. On December 21, 2017, New York State Governor Andrew Cuomo announced a \$65 million initiative to combat harmful algal blooms in Upstate New York. Monhagen Lake was identified for inclusion in this initiative as it is vulnerable to HABs and is a drinking water source.

Section 303(d) Listing

Monhagen Lake is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. There appear to be no impacts/impairments that would justify the listing of this waterbody. (DEC/DOW, BWAM/WQAS, April 2018)

Segment Description

This segment includes the entire area of Monhagen Lake (P598)