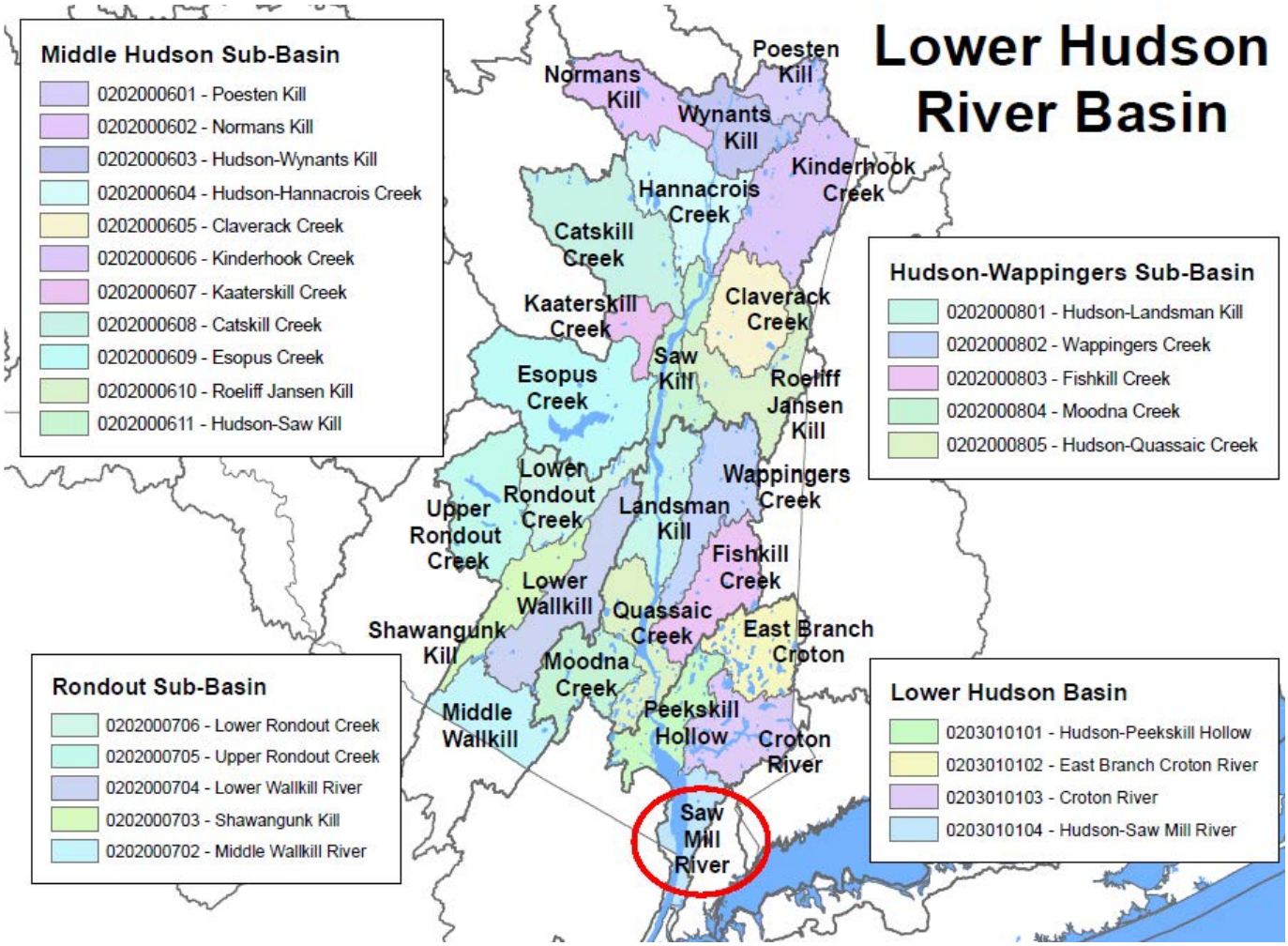

Saw Mill River – Hudson River (0203010104)

Category	Waterbody Name	Category
H (portion 1)	Hudson River (Class I) (1301-0006)	**Impaired Seg**
H (portion 2a)	Hudson River (Class SB), portion (1301-0005)	**Impaired Seg**
H (portion 2b)	Hudson River (Class SB), portion (1301-0094)	**Impaired Seg**
H- 4	Saw Mill River, Lower, and tribs (1301-0007)	**Impaired Seg**
H- 4	Saw Mill River, Middle, and tribs (1301-0100)	**Impaired Seg**
H- 4	Saw Mill River, Upper, and tribs (1301-0101)	**Impaired Seg**
H- 4-17-P15b	Tarrytown Reservoir (1301-0102)	UnAssessed
H- 4-P12	Woodlands Lake (1301-0103)	UnAssessed
H- 7 thru 18, EOH	Minor Tribs to East of Hudson (1301-0104)	UnAssessed
H- 8 thru 12, WOH	Minor Tribs to West of Hudson (1301-0105)	UnAssessed
H- 13	Sparkill Creek, Lower (1301-0088)	**Impaired Seg**
H- 13	Sparkill Creek, Upper, and minor tribs(1301-0106)	**Need Verific**
H- 13- 2 thru 3	Minor Tribs to Lower Sparkill Creek (1301-0107)	UnAssessed
H- 13- 6 thru 13	Minor Tribs to Upper Sparkill Creek (1301-0108)	UnAssessed
H- 20	Pocantico River, Lower, and tribs (1301-0109)	**MinorImpacts**

H- 20	Pocantico River, Middle, and tribs (1301-0110)	**Need Verific**
H- 20	Pocantico River, Upper, and tribs (1301-0111)	UnAssessed
H- 20- 9- 2a-P32a	Hardscrabble Lake (1301-0112)	UnAssessed
H- 20-11a-P32a	Campfire Lake (1301-0113)	UnAssessed
H- 20-P30	Pocantico Lake (1301-0114)	UnAssessed
H- 20-P33	Echo Lake (1301-0115)	UnAssessed
H- 21 thru 23, WOH	Minor Tribs to West of Hudson (1301-0116)	UnAssessed
H- 24 thru 27, EOH	Minor Tribs to East of Hudson (1301-0117)	UnAssessed
H- 28	Sing Sing Creek and tribs (1301-0118)	**MinorImpacts**

Hudson River (Class I) (1301-0006) Impaired Seg

Waterbody Location Information

Revised: 06/30/2008

Water Index No:	H (portion 1)			**Drain Basin:**	Lower Hudson River
Hydro Unit Code:	02030101/	**Str Class:**	I		Lower Hudson River
Waterbody Type:	Estuary			**Reg/County:**	2/New York Co. (31)
Waterbody Size:	6751.0 Acres			**Quad Map:**	CENTRAL PARK (R-25-4)
Seg Description:	from mouth at Battery Park to Harlem River				

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
Recreation	Stressed	Known
Habitat/Hydrolgy	Stressed	Suspected

Type of Pollutant(s)

Known:	METALS (cadmium), PRIORITY ORGANICS (PCBs), Aesthetics (floatables), Pathogens
Suspected:	Problem Species, Thermal Changes
Possible:	- - -

Source(s) of Pollutant(s)

Known:	TOX/CONTAM. SEDIMENT, Comb. Sewer Overflow, Urban/Storm Runoff
Suspected:	Habitat Modification, Power Generation
Possible:	Municipal

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/HREP **Resolution Potential:** Medium
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Overview

Fish consumption use in this portion of the Lower Hudson is impaired by elevated levels of priority organics (PCBs, dioxin), heavy metals (cadmium) and other toxics primarily the result of past industrial discharges. A significant decline in the Hudson River fisheries, most notably American shad, in recent years has resulted in concerted efforts to assess the possible causes of the decline the determine strategies to restore the fish stocks. The suspected causes of the decline include over-fishing, habitat loss and increased populations of predatory species. At the same time, increased recreational use of the Hudson River has spurred efforts to further improve water quality to support public bathing in the river.

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Hudson River Fisheries

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Water Quality Sampling

NYSDEC is participating with a number of other agencies and organizations in a new private/public partnership called the Hudson River Environmental Conditions Observing System (HRECOS). This collaborative monitoring network will use stations located throughout the Hudson to provide data and other information essential to the management of the estuary. Seven scientific monitoring stations have been established throughout the Hudson River at Schodack Island, Tivoli Bays North, Tivoli Bays South, Norrie Point, Piermont Pier, George Washington Bridge (NJ) and Castle Point (NJ). The network provides continuous information about the estuary's conditions including temperature, oxygen levels, salinity, weather, tides, and some types of pollution that have the potential to affect the health and well-being of the Hudson's ecosystem. (DEC/HREP, May 2008)

Urban Impacts

Surrounded by the intensely developed New York City metropolitan area, the lower reach of the Hudson River is impacted by a variety of other contaminant sources. These sources include combined sewer overflows and urban runoff, and municipal wastewater treatment plant (WWTP) discharges. A ban on swimming imposed by the NYC Department of Health remains in effect for the Hudson up to Riverdale (at the Bronx/Westchester County line). The ban is considered by NYC DOH to be an appropriate precaution in light of continuing impacts, particularly wet-weather discharges from city combined sewer overflows. (NYC DOH, February 2000)

Combined sewer overflows (CSOs), which route a combination of storm water and sanitary wastewater around limited capacity plants and directly into receiving waters during wet weather events, can have a significant impact on the estuary waters. In addition to raw sewage, CSOs convey accumulated oils, metals, and other contaminants from

streets, roofs, industrial sites into the waters. CSOs are primarily responsible for intermittent violation of bacteriological standards and wet-weather advisories, the presence of floatable materials, some toxicity, and nuisance conditions within/adjacent to tidal tributaries due to sediment mounds and associated sediment oxygen demand. A comprehensive citywide CSO Abatement Program is underway to address the 480 CSO outfalls. Abatement activities include implementation of EPA mandated "Nine Minimum Controls" to reduce floatables in the short-term and other floatables control devices at the outfalls over the long-term. Construction of equalization tanks that capture the excess wastewater and store it for treatment at city plants are also planned. Additional CSO control efforts in New Jersey are also being discussed. (DEC/DOW, Region 2, May 2008)

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Segment Description

Estuary area taken from NYSDEC GIS and includes river and tidal flats, and tidal tribs.

Hudson River (Class SB), portion (1301-0005) Impaired Seg

Waterbody Location Information

Revised: 06/30/2008

Water Index No:	H (portion 2a)			**Drain Basin:**	Lower Hudson River
Hydro Unit Code:	02030101/	**Str Class:**	SB		Lower Hudson River
Waterbody Type:	Estuary			**Reg/County:**	2/Bronx Co. (3)
Waterbody Size:	1662.0 Acres			**Quad Map:**	YONKERS (R-25-1)
Seg Description:	from Harlem River to Riverdale (Westch/Bronx Co line)				

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Public Bathing	Stressed	Suspected
FISH CONSUMPTION	Impaired	Known
Recreation	Stressed	Known
Habitat/Hydrolgy	Stressed	Suspected

Type of Pollutant(s)

Known: METALS (cadmium), PRIORITY ORGANICS (PCBs), Aesthetics (floatables)
Suspected: Pathogens, Problem Species, Thermal Changes
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT, Comb. Sewer Overflow, Urban/Storm Runoff
Suspected: Habitat Modification, Power Generation
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/HREP **Resolution Potential:** Medium
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Overview

Fish consumption use in this portion of the Lower Hudson is impaired by elevated levels of priority organics (PCBs, dioxin), heavy metals (cadmium) and other toxics primarily the result of past industrial discharges. A significant decline in the Hudson River fisheries, most notably American shad, in recent years has resulted in concerted efforts to assess the possible causes of the decline the determine strategies to restore the fish stocks. The suspected causes of the decline include over-fishing, habitat loss and increased populations of predatory species. At the same time, increased recreational use of the Hudson River has spurred efforts to further improve water quality to support public bathing in the river.

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Water Quality Sampling

NYSDEC is participating with a number of other agencies and organizations in a new private/public partnership called the Hudson River Environmental Conditions Observing System (HRECOS). This collaborative monitoring network will use stations located throughout the Hudson to provide data and other information essential to the management of the estuary. Seven scientific monitoring stations have been established throughout the Hudson River at Schodack Island, Tivoli Bays North, Tivoli Bays South, Norrie Point, Piermont Pier, George Washington Bridge (NJ) and Castle Point (NJ). The network provides continuous information about the estuary's conditions including temperature, oxygen levels, salinity, weather, tides, and some types of pollution that have the potential to affect the health and well-being of the Hudson's ecosystem. (DEC/HREP, May 2008)

Swimmable Hudson

In response to the improvement in Hudson River water quality since the 1970s, there has been a rise in recreational use and a public call for increased swimming opportunities. Currently swimming occurs in popular anchoring spots along the shore, including areas not designated for swimming. However, in spite of growing use publicly available swimming areas in the Hudson remain limited. To reach the goal of a swimmable Hudson River, the NYSDEC Hudson River Estuary Program: and Division of Water are focusing on four primary areas of water quality impact
1) the need for seasonal disinfection of municipal and other wastewater discharges, 2) the reduction of CSO impacts through appropriate control strategies, 3) implementation and compliance with Phase II Stormwater permit program, and 4) continued support of a vessel No Discharge Zone in the Hudson. (DEC/HREP and DEC/DOW, BWAM, May 2008)

Bacteriological Monitoring

A bacteriological sampling effort was conducted by Lamont-Doherty Earth Observatory of Columbia University in 2006-07. The aim of this collaborative project between Columbia University an the Hudson Riverkeeper was to evaluate the need for large-scale monitoring of the Hudson Estuary, evaluate spatial and temporal trends in the data to identify patterns that could inform restoration and protection efforts and enhance predictive capabilities, and increase sampling coverage in areas with little previous monitoring (i.e., north of New York City). This increase in coverage will also be valuable in providing a baseline measurement of water quality against which to evaluate progress toward achieving the goals of the Swimmable Hudson: initiative. (Hudson Riverkeeper, May 2008)

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Segment Description

Estuary area taken from NYSDEC GIS and includes river and tidal flats, and tidal tribs (equal to 0% of total area).

Hudson River (Class SB), portion (1301-0094) Impaired Seg

Waterbody Location Information

Revised: 06/30/2008

Water Index No:	H (portion 2b)			**Drain Basin:**	Lower Hudson River
Hydro Unit Code:	02030101/	**Str Class:**	SB		Lower Hudson River
Waterbody Type:	Estuary			**Reg/County:**	3/Westchester Co. (60)
Waterbody Size:	31593.0 Acres			**Quad Map:**	YONKERS (R-25-1)
Seg Description:	from Riverdale (Westch/Bronx Co line) to Bear Mt Brdg				

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Public Bathing	Stressed	Suspected
FISH CONSUMPTION	Impaired	Known
Recreation	Stressed	Known
Habitat/Hydrolgy	Stressed	Suspected

Type of Pollutant(s)

Known: METALS (cadmium), PRIORITY ORGANICS (PCBs)
Suspected: Pathogens, Problem Species, Thermal Changes
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT, Comb. Sewer Overflow, Urban/Storm Runoff
Suspected: Habitat Modification, Power Generation
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/HREP **Resolution Potential:** Medium
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Overview

Fish consumption use in this portion of the Lower Hudson is impaired by elevated levels of priority organics (PCBs, dioxin), heavy metals (cadmium) and other toxics primarily the result of past industrial discharges. A significant decline in the Hudson River fisheries, most notably American shad, in recent years has resulted in concerted efforts to assess the possible causes of the decline the determine strategies to restore the fish stocks. The suspected causes of the decline include over-fishing, habitat loss and increased populations of predatory species. At the same time, increased recreational use of the Hudson River has spurred efforts to further improve water quality to support public bathing in the river.

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Segment Description

Estuary area taken from NYSDEC GIS and includes river and tidal flats, and tidal tribs (equal to <1% of total area).

Saw Mill River, Lower, and tribs (1301-0007) Impaired Seg

Waterbody Location Information

Revised: 06/06/2008

Water Index No:	H- 4			**Drain Basin:**	Lower Hudson River
Hydro Unit Code:	02030101/150	**Str Class:**	C		Lower Hudson River
Waterbody Type:	River			**Reg/County:**	3/Westchester Co. (60)
Waterbody Size:	2.9 Miles			**Quad Map:**	YONKERS (R-25-1)
Seg Description:	stream, from mouth to near Yonkers				

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
HABITAT/HYDROLGY	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: AESTHETICS (floatable, refuse), D.O./OXYGEN DEMAND, PRIORITY ORGANICS (PAHs, PCBs), PESTICIDES (chlordane), UNKNOWN TOXICITY, Oil and Grease

Suspected: Nutrients, Pathogens

Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT, URBAN/STORM RUNOFF, Habitat Modification, Other Sanitary Disch

Suspected: Comb. Sewer Overflow

Possible: Chemical Leak/Spill

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))

Verification Status: 4 (Source Identified, Strategy Needed)

Lead Agency/Office: DOW/Reg3 **Resolution Potential:** Medium

TMDL/303d Status: 1,2b (Individual Waterbody Impairment Requiring a TMDL, more)

Further Details

Overview

Aquatic life, recreational uses and fish consumption in this portion of the Saw Mill River are known to be impaired by toxics and organic and nutrient loadings that impact dissolved oxygen levels in the stream. Floatables and other aesthetic impacts are also present. Sources of these pollutants and impacts are common to urban waterways: urban runoff, storm sewer outflows, roadway drainage (Saw Mill Parkway) and dumping of debris. Urban refuse (tires, bottles, cans, etc.) lines much of the lower river. Oil/gasoline slicks are regularly observed along this segment. The channelized section of the river and other sections that travel underground represent significant habitat and hydrologic modifications that limit aquatic life support.

Water Quality Sampling

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network monitoring of Saw Mill River in Yonkers, Westchester County, (at Court Street) was conducted in 2003. Intensive Network sampling typically includes

macroinvertebrate community analysis, water column chemistry, sediment and invertebrate tissues analysis and toxicity evaluation. During this sampling the biological (macroinvertebrate) sampling results indicated moderately impacted water quality conditions. Municipal/industrial sources were identified as influencing the sample. Water column sampling revealed coliform, total dissolved solids, iron and pH to be parameters of concern. Bottom sediment sampling results revealed lead and several PAHs to be exceeding the Probable Effects Level - a level at which adverse impacts are expected. Other metals (copper, zinc) were found to be above the Threshold Effects level - levels at which adverse impacts occasionally occur. Toxicity testing of the water column showed no significant mortality or reproductive impacts. Based on the consensus of these established assessment methods, overall water quality at this site results in an impaired waterbody that is not s supportive of aquatic life or recreational use. (DEC/DOW, BWAM/RIBS, January 2005)

A biological (macroinvertebrate) assessment of Saw Mill River at this site was also conducted in 2002 during the Biological Screening effort in the basin. Sampling results also indicated moderately impacted water quality conditions, with evidence of municipal/industrial sources. (DEC/DOW, BWAM/SBU, September 2005)

Bacteriological sampling conducted by Lamont-Doherty Earth Observatory of Columbia University in 2006-07 found consistently elevated enterococci values at a tributary site on at the Saw Mill River. (Hudson Riverkeeper, May 2008)

Previous Sampling

A 1992 biological (macroinvertebrate) survey of the Saw Mill River found that impacts increased as one moved downstream into the more urban areas. Severe toxic and organic impacts were indicated at the most downstream site in Yonkers. From Elmsford to Nepera Park the impacts were characterized as moderate. Farther upstream at Pleasantville water quality was slightly impacted, probably by nutrient and/or organic enrichment. (Saw Mill River Biological Assessment, Bode et al, DOW/BWAM, April 1993) Follow-up sampling at the Yonkers site in 1997 and 1998 revealed moderately impacted water quality. Elevated levels of PAHs were also documented, and likely contribute to the impact. (DEC/DOW, BWAM, SBU, December 1999)

Fish Consumption Advisories

Fish consumption in the Saw Mill River is impaired due to a NYSDOH health advisory that recommends eating no more than one meal per month of American eel because of elevated pesticide (chlordane) levels. The source of pesticides is primarily contaminated sediment in the river. The advisory for the river was first issued prior to 1998-99. (2006-07 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2006).

Section 303(d) Listing

This portion of Saw Mill River is included on the NYS 2008 Section 303(d) List of Impaired Waters. The lake is included on Part 1 of the List as a waterbody segment requiring the development of a TMDL or other strategy to attain water quality standards for floatables and is also included on Part 2b as a Fish Consumption Water. This updated assessment suggests that it is appropriate to add nutrients (phosphorus), D.O./oxygen demand, pathogens and unknown toxicity as pollutants to the Part 1 listing for Saw Mill River.

Segment Description

This segment includes the non-tidal portion of the stream from a point about 1100 feet above the mouth to the Yonkers water supply dam near Yonkers. The waters of this portion of the stream are Class C. There are no tribs to this reach/segment. Middle, Upper Saw Mill River are listed separately. Lower tidal portions of the stream are included with the Hudson Main Stem.

Saw Mill River, Middle, and tribs (1301-0100) Impaired Seg

Waterbody Location Information

Revised: 05/30/2008

Water Index No: H- 4 **Drain Basin:** Lower Hudson River
Hydro Unit Code: **Str Class:** A
Waterbody Type: River **Reg/County:** 3/Westchester Co. (60)
Waterbody Size: 5.1 Miles **Quad Map:** MOUNT VERNON (R-25-2)
Seg Description: stream and tribs, from near Yonkers to Woodlands

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
PUBLIC BATHING	Impaired	Known
FISH CONSUMPTION	Impaired	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Habitat/Hydrolgy	Stressed	Known

Type of Pollutant(s)

Known: AESTHETICS (floatables), D.O./OXYGEN DEMAND, PRIORITY ORGANICS (PAHs, PCBs), PESTICIDES (chlordane), UNKNOWN TOXICITY
Suspected: PATHOGENS, Nutrients (phosphorus)
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT, OTHER SANITARY DISCH, URBAN/STORM RUNOFF, Habitat Modification
Suspected: Comb. Sewer Overflow
Possible: Chemical Leak/Spill

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DEC/Reg2 **Resolution Potential:** Medium
TMDL/303d Status: n/a->1*,2b*

Further Details

Overview
Aquatic life, recreational uses and fish consumption in this portion of the Saw Mill River are known to be impaired by toxics and organic and nutrient loadings that impact dissolved oxygen levels in the stream. Floatables and other aesthetic impacts are also present. Sources of these pollutants and impacts are common to urban waterways: urban runoff, storm sewer outflows, roadway drainage (Saw Mill Parkway) and dumping of debris. Urban refuse (tires, bottles, cans, etc.) lines much of the lower river. Oil/gasoline slicks are regularly observed along this segment.

Water Quality Sampling
A biological (macroinvertebrate) assessment of Saw Mill River in Nepera Park (at Tompkins Avenue) was conducted in 1999. Sampling results indicated moderately impacted water quality conditions. The fauna was dominated by filter-feeding caddisflies and indicated nutrient and/or organic enrichment. PAHs, found in elevated levels in macroinvertebrate tissue at sites along the Saw Mill River, are also thought to contribute to impacts. (DEC/DOW,

BWAM/SBU, June 2005)

Previous Sampling

A 1992 biological (macroinvertebrate) survey of the Saw Mill River found that impacts increased as one moved downstream into the more urban areas. Severe toxic and organic impacts were indicated at the most downstream site in Yonkers. From Elmsford to Nepera Park the impacts were characterized as moderate. Farther upstream at Pleasantville water quality was slightly impacted, probably by nutrient and/or organic enrichment. (Saw Mill River Biological Assessment, Bode et al, DOW/BWAM, April 1993) Follow-up sampling at the Yonkers site in 1997 and 1998 revealed moderately impacted water quality. Elevated levels of PAHs were also documented, and likely contribute to the impact. (DEC/DOW, BWAM, SBU, December 1999)

Fish Consumption Advisories

Fish consumption in the Saw Mill River is impaired due to a NYSDOH health advisory that recommends eating no more than one meal per month of American eel because of elevated pesticide (chlordane) levels. The source of pesticides is primarily contaminated sediment in the river. The advisory for the river was first issued prior to 1998-99. (2006-07 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2006).

Section 303(d) Listing

This lower portion of Saw Mill River is included on the NYS 2008 Section 303(d) List of Impaired Waters. The river is included on Part 1 of the List as a waterbody segment requiring the development of a TMDL or other strategy to attain water quality standards for floatables and is also included on Part 2b as a Fish Consumption Water. This updated assessment suggests that it is appropriate to add a Part 1 Listing for this middle reach of the river for nutrients (phosphorus), D.O./oxygen demand, pathogens and unknown toxicity; and a Part 2b listing to reflect the fish consumption impairment. (DEC/DOW, BWAM, May 2008)

Segment Description

This segment includes the portion of the stream and all tribs from the Yonkers water supply dam near Yonkers to Woodlands Lake (P12) in Woodlands. The waters of this portion of the stream are Class A. Tribs to this reach/segment are also Class A. Lower, Upper Saw Mill River are listed separately.

Saw Mill River, Upper, and tribs (1301-0101) Impaired Seg

Waterbody Location Information

Revised: 05/30/2008

Water Index No: H- 4
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: B(T)*
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 25.3 Miles
Quad Map: WHITE PLAINS (Q-25-3)
Seg Description: stream and tribs, above Woodlands

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known
Aquatic Life	Stressed	Suspected
Recreation	Stressed	Suspected

Type of Pollutant(s)

Known: PESTICIDES (chlordane)
Suspected: D.O./Oxygen Demand, Nutrients, Unknown Toxicity
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT
Suspected: Other Sanitary Disch, 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: DEC/DER
Resolution Potential: Medium
TMDL/303d Status: n/a->2b*

Further Details

Overview

Fish consumption in this portion of the Saw Mill River is known to be impaired by pesticide contamination resulting in a fish consumption advisory. Other toxics and organic and nutrient loadings that result in reduced dissolved oxygen levels in the stream are thought to impact aquatic life and recreational uses. However due to the lack of more recent data, conditions in this portion of the stream should be verified.

Fish Consumption Advisories

Fish consumption in the Saw Mill River is impaired due to a NYSDOH health advisory that recommends eating no more than one meal per month of American eel because of elevated pesticide (chlordane) levels. The source of pesticides is primarily contaminated sediment in the river. The advisory for the river was first issued prior to 1998-99. (2006-07 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2006).

Previous Sampling

The most recent monitoring information for this reach of the stream is a 1992 biological (macroinvertebrate) survey of the Saw Mill River. This survey, which included two sites (Elmsford and Pleasantville) in this reach, found that impacts increased as one moved downstream into the more urban areas. Water quality at the upstream site at

Pleasantville was slightly impacted, probably by nutrient and/or organic enrichment. From Elmsford to Nepera Park the impacts were characterized as moderate. Increasing toxic and organic impacts were indicated at the most downstream site in Yonkers. (Saw Mill River Biological Assessment, Bode et al, DOW/BWAM, April 1993)

Section 303(d) Listing

The Lower Saw Mill River is included on the NYS 2008 Section 303(d) List of Impaired Waters. This updated assessment suggests that it is appropriate to include a listing for this upper reach of the river due to the fish consumption advisory, which applies to the entire river. A Part 2b Listing to reflect fish consumption impairments should be considered. (DEC/DOW, BWAM, May 2008)

Segment Description:

This segment includes the portion of the stream and all tribs above Woodlands Lake (P12) in Woodlands. The waters of this portion of the stream are Class B(T). Tribs to this reach/segment, including Rum Brook (-11) and Nannyhagen Brook (-24), are primarily Class C, with some portions designated Class A. Lower, Middle Saw Mill River are listed separately.

Sparkill Creek, Lower (1301-0088) Impaired

Waterbody Location Information

Revised: 04/01/2016

Water Index No:	H- 13	**Water Class:**	C
Hydro Unit Code:	Saw Mill River-Hudson River (0203010104)	**Drainage Basin:**	Lower Hudson River
Water Type/Size:	River/Stream 2.2 Miles	**Reg/County:**	3/Rockland (44)
Description:	stream, from mouth to NY-NJ state line		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	**Severity**	**Confidence**
Water Supply	Unassessed	-
Public Bathing	Unassessed	-
Recreation	Impaired	Known
Aquatic Life	Impaired	Known
Fish Consumption	Unassessed	-
Conditions Evaluated		
Habitat/Hydrology	Unassessed	
Aesthetics	Unassessed	

Type of Pollutant(s)

Known:	PATHOGENS
Suspected:	LOW D.O./OXYGEN DEMAND, Nutrients, Silt/Sediment, Unknown Toxicity
Unconfirmed:	Temperature

Source(s) of Pollutant(s)

Known:	MUNICIPAL DISCHARGES, OTHER NON-PERMITTED SANITARY DISCH, URBAN/STORM RUNOFF
Suspected:	Construction, Hydro Alteration, Streambank Erosion
Unconfirmed:	

Management Information

Management Status:	Strategy Implementation Scheduled or Underway
Lead Agency/Office:	DOW/Reg3
IR/305(b) Code:	Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

Aquatic life support and recreational uses in this portion of Sparkill Creek are impaired by pathogens, organic inputs and toxicity attributed to sewage discharges and urban runoff sources. Nutrient enrichment was also noted.

Water Quality Sampling

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network monitoring of Sparkill Creek in Tappan, Rockland County, (at Washington Street) was conducted in 2003. Intensive Network sampling typically includes macroinvertebrate community analysis, water column chemistry, sediment and invertebrate tissues analysis and toxicity evaluation. During this sampling the biological (macroinvertebrate) sampling results indicated slightly impacted water

quality conditions. These were improved from severe impacts noted in the previous year. Water column sampling revealed coliform, total dissolved solids and iron to be parameters of concern. Both total and fecal coliform were found to be very high on several occasions. Iron may be considered to be naturally occurring and not a source of water quality impacts. Bottom sediment sampling results revealed PAHs to be exceeding the Probable Effects Level – a level at which adverse impacts are expected – and pesticides (endrin) to be above Threshold Effects level – levels at which adverse impacts occasionally occur. Toxicity testing of the water column showed no significant mortality or reproductive impacts. Based on the consensus of these established assessment methods, overall water quality at this site results in an impaired segment that is not supportive of aquatic life or recreational uses. (DEC/DOW, BWAM/RIBS, January 2005)

A biological (macroinvertebrate) assessment of Sparkill Creek at this site was also conducted in 2002 during the Biological Screening effort in the basin as part of a more detailed survey of the stream. This biological (macroinvertebrate) survey of Sparkill Creek included sampling at multiple sites between the mouth in Sparkill and the headwaters in Blauvelt. Sampling results indicated moderately impacted water quality conditions at the sites in this lower reach. The fauna was dominated by caddisflies and midges with sewage–tolerant worms, sowbugs and black fly larvae present. Mayflies and stoneflies were absent. Stream conductivity was found to increase significantly downstream, likely reflecting urban runoff impacts. Previous macroinvertebrate tissue sampling found elevated levels of metals, PAHs and pesticides. (DEC/DOW, BWAM/SBU, June 2005)

Bacteriological sampling for enterococcus in the creek has been conducted by the Riverkeeper in 2014 and 2015 data showing exceedences of the EPA recommended entero criteria for support of recreational uses. Although NYSDEC is considering the use of entero (or E-coli) criteria to replace the current coliform standards, it has not yet adopted these criteria as water quality standards. However these results support the evaluation of the waterbody as impaired by pathogens and its current inclusion on the Section 303(d) List. (DEC/DOW, BWAM, April 2016)

Bacteriological sampling conducted by Lamont-Doherty Earth Observatory of Columbia University in 2006-07 found consistently elevated enterococci values at a tributary site on at Sparkill Creek. (Hudson Riverkeeper, May 2008)

Section 303(d) Listing

Lower Sparkill Creek 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 to address pathogens and low dissolved oxygen. This waterbody was first listed on the 2010 List. (DEC/DOW, BWAM, April 2016)

Segment Description

This segment includes the portion of the stream from the Ferdon Mill Pond (P24) dam in Sparkill to the NY–NJ state line. The waters of this portion of the stream are Class C. Tribs to this reach/segment are listed separately. Upper Sparkill Creek is also listed separately. Lower tidal portions of this trib is included with the Hudson Main Stem.

Sparkill Creek, Upper, and minor tribs (1301-0106) Needing Verification

Waterbody Location Information

Revised: 04/01/2016

Water Index No:	H- 13	**Water Class:**	C
Hydro Unit Code:	Saw Mill River-Hudson River (0203010104)	**Drainage Basin:**	Lower Hudson River
Water Type/Size:	River/Stream 4.2 Miles	**Reg/County:**	3/Rockland (44)
Description:	stream and select tribs, above NY-NJ state line		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

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

Type of Pollutant(s)

Known:	PATHOGENS
Suspected:	Nutrients (phosphorus), Chloride/Salts
Unconfirmed:	- - -

Source(s) of Pollutant(s)

Known:	- - -
Suspected:	URBAN/STORM RUNOFF, UNKNOWN SOURCE
Unconfirmed:	- - -

Management Information

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

Further Details

Overview
Aquatic life support and recreational uses in this portion of Sparkill Creek are known to experience impacts from pathogens, nutrient enrichment and other contaminants from urban runoff and various nonpoint sources.

Water Quality Sampling:
A biological (macroinvertebrate) survey of Sparkill Creek at multiple sites between the mouth in Sparkill and the headwaters in Blauvelt was conducted in 2003. Sampling results indicated slightly impacted water quality conditions at the sites in this upper reach. The fauna was dominated by filter-feeding caddisflies but clean-water mayflies and stoneflies were present at the upstream sites. The stoneflies and more sensitive species were not found in downstream sites. Increases in stream conductivity indicated urban runoff impacts as one moves downstream. (Sparkill Creek

Biological Assessment Report, DEC/DOW, BWAM/SBU, January 2004)

Bacteriological sampling for enterococcus in the creek has been conducted by the Riverkeeper in 2014 and 2015 showing exceedences of the EPA recommended entero criteria for support of recreational uses. Although NYSDEC is considering the use of entero (or E-coli) criteria to replace the current coliform standards, it has not yet adopted these criteria as water quality standards. However while it is premature to use entero results to evaluate impairment, these results suggest it is appropriate to consider recreational uses to be at least stressed, and possibly rising to the level of impairment. Additional focus on pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

Section 303(d) Listing

Upper Sparkill Creek is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody was suggested and considered for listing during development of the the 2016 List. However, although enterococcus levels were found to be elevated, NYSDEC has not adopted an entero standard; and as a result the waterbody is more appropriately assigned to IR Category 3 as a water with insufficient data to make a listing decision. (DEC/DOW, BWAM, April 2016)

Segment Description

This segment includes the portion of the stream and selected/smaller tribs above the NY–NJ state line, excluding the short reach above unnamed trib (-13). The waters of this portion of the stream are Class C,C(T). Tribs to this reach/segment include all tribs entering the Upper Sparkill from the west and the lower reach of unnamed trib (-6) are Class C. Lower Sparkill Creek and other tribs are listed separately.

Minor Tribs to Upper Sparkill Creek (1301-0108) Unassessed

Waterbody Location Information

Revised: 04/01/2016

Water Index No:	H- 13- 6 thru 13	**Water Class:**	B
Hydro Unit Code:	Saw Mill River-Hudson River (0203010104)	**Drainage Basin:**	Lower Hudson River
Water Type/Size:	River/Stream 2.3 Miles	**Reg/County:**	3/Rockland (44)
Description:	total length of select tribs to Upper Sparkill Creek		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	**Severity**	**Confidence**
Water Supply	N/A	-
Public Bathing	Unassessed	-
Recreation	Unassessed	-
Aquatic Life	Unassessed	-
Fish Consumption	Unassessed	-
Conditions Evaluated		
Habitat/Hydrology	Unknown	
Aesthetics	Unknown	

Type of Pollutant(s)

Known:	- - -
Suspected:	- - -
Unconfirmed:	- - -

Source(s) of Pollutant(s)

Known:	- - -
Suspected:	- - -
Unconfirmed:	- - -

Management Information

Management Status:	Assessment/Reassessment Scheduled
Lead Agency/Office:	DOW/BWAM
IR/305(b) Code:	Water with Insufficient Data (IR Category 3)

Further Details

Overview

Currently there is inadequate data/information to evaluate uses and determine a water quality assessment for this waterbody.

Use Assessment

This waterbody segment is a Class B waterbody, suitable for public bathing and general recreation use and support of aquatic life, but not as a water supply.

Water Quality Information

There is currently limited water quality information available upon which to base an assessment. Bacteriological

sampling for enterococcus in a trib has been conducted by the Riverkeeper in 2014 and 2015 showing exceedences of the EPA recommended entero criteria for support of recreational uses. Although NYSDEC is considering the use of entero (or E-coli) criteria to replace the current coliform standards, it has not yet adopted these criteria as water quality standards. It is also not certain that results for the sampled trib are representative of the larger waterbody. Additional sampling to more fully evaluate conditions in this waterbody is recommended for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

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

Management Actions
No specific management actions have been identified for the waterbody. Baseline sampling to evaluate conditions in this waterbody segment is needed.

Section 303(d) Listing
This trib waterbody is not included on the current (2014) NYS Section 303(d) List of Impaired/TMDL Waters. There is insufficient information to make a listing decision. (DEC/DOW, BWAM/WQAS, January 2015)

Segment Description
This segment includes the total length of selected/smaller tribs to the Upper Sparkill Creek. Tribs within this segment include tribs that enter the creek from the east, excluding the lower reach of unnamed trib (-6) and including the short reach of Sparkill Creek above unnamed trib (-13), are primarily Class B,B(T).

Pocantico River, Lower, and tribs (1301-0109) Minor Impacts

Waterbody Location Information

Revised: 04/01/2016

Water Index No:	H- 20	**Water Class:**	C(T)
Hydro Unit Code:	Saw Mill River-Hudson River (0203010104)	**Drainage Basin:**	Lower Hudson River
Water Type/Size:	River/Stream 9.5 Miles	**Reg/County:**	3/Westchester (60)
Description:	stream and tribs, from N. Tarrytown to Pocantico Lk		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	**Severity**	**Confidence**
Water Supply	N/A	-
Public Bathing	N/A	-
Recreation	Stressed	Suspected
Aquatic Life	Stressed	Unconfirmed
Fish Consumption	Unassessed	-
Conditions Evaluated		
Habitat/Hydrology	Unknown	
Aesthetics	Unknown	

Type of Pollutant(s)

Known:	PATHOGENS
Suspected:	NUTRIENTS
Unconfirmed:	- - -

Source(s) of Pollutant(s)

Known:	- - -
Suspected:	URBAN/STORM RUNOFF, UNKNOWN SOURCE
Unconfirmed:	Municipal Discharges, Other Non-Permitted Sanitary Disch

Management Information

Management Status:	Assessment/Reassessment Scheduled
Lead Agency/Office:	DOW/BWAM
IR/305(b) Code:	Water with Insufficient Data (IR Category 3)

Further Details

Overview
Recreational uses and aquatic life use in this portion of the Pocantico River are thought to experience impacts due to pathogens and nutrient enrichment from urban/storm runoff and other nonpoint sources. Municipal and other sanitary wastewater inputs may also be contributing.

Water Quality Sampling:
A biological (macroinvertebrate) assessment of Pocantico River in Sleepy Hollow (at Dell Street) was conducted in 2002. Sampling results indicated moderately impacted water quality conditions, however the results appeared to be heavily influenced by impoundment effects. Nutrient enrichment and possible municipal/industrial sources were indicated by the sampling. Additional sampling – perhaps above the upstream impoundment – in order to verify

conditions suggested by this one single sampling result is recommended. (DEC/DOW, BWAM/SBU, March 2008)

Bacteriological sampling for enterococcus in the creek has been conducted by the Riverkeeper in 2014 and 2015 showing exceedences of the EPA recommended entero criteria for support of recreational uses. Although NYSDEC is considering the use of entero (or E-coli) criteria to replace the current coliform standards, it has not yet adopted these criteria as water quality standards. However while it is premature to use entero results to evaluate impairment, these results suggest it is appropriate to consider recreational uses to be stressed. Additional focus on pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

Section 303(d) List

Lower Pocantico River is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody was suggested and considered for listing during development of the the 2016 List. However, although enterococcus levels were found to be elevated, NYSDEC has not adopted an entero standard for general recreation use. Therefore it is not appropriate to list the waterbody at this time. (DEC/DOW, BWAM, April 2016)

Segment Description

This segment includes the portion of the stream and all tribs from unnamed lake (P28) in North Tarrytown to Pocantico Lake (P30). The waters of this portion of the stream are Class C(T). Tribs to this reach/segment, including Gory Brook (-1) and Rockefeller Creek (-2), are Class C. Middle, Upper Pocantico River are listed separately. Lower tidal portions of these tribs are included with the Hudson Main Stem.

Pocantico River, Middle, and tribs (1301-0110) Needing Verification

Waterbody Location Information

Revised: 04/01/2016

Water Index No:	H- 20	**Water Class:**	B(T)
Hydro Unit Code:	Saw Mill River-Hudson River (0203010104)	**Drainage Basin:**	Lower Hudson River
Water Type/Size:	River/Stream 17.5 Miles	**Reg/County:**	3/Westchester (60)
Description:	stream and tribs, from Pocantico Lake to Echo Lake		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	**Severity**	**Confidence**
Water Supply	N/A	-
Public Bathing	Impaired	Unconfirmed
Recreation	Impaired	Unconfirmed
Aquatic Life	Stressed	Suspected
Fish Consumption	Unassessed	-
Conditions Evaluated		
Habitat/Hydrology	Unknown	
Aesthetics	Unknown	

Type of Pollutant(s)

Known:	PATHOGENS
Suspected:	- - -
Unconfirmed:	- - -

Source(s) of Pollutant(s)

Known:	- - -
Suspected:	URBAN/STORM RUNOFF, UNKNOWN SOURCE
Unconfirmed:	- - -

Management Information

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

Further Details

Overview
Public Bathing and recreational uses in this portion of Pocantico River are known to experience impacts from pathogens. The severity of these impacts need to be confirmed.

Water Quality Sampling:
Bacteriological sampling for enterococcus in the creek has been conducted by the Riverkeeper in 2014 and 2015 showing exceedences of the EPA recommended entero criteria for support of recreational uses. Although NYSDEC is considering the use of entero (or E-coli) criteria to replace the current coliform standards, it has not yet adopted these criteria as water quality standards. However while it is premature to use entero results to evaluate impairment, these results suggest it is appropriate to consider recreational uses to be at least stressed, and possibly rising to the level of impairment. Additional

focus on pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

Section 303(d) Listing

Middle Pocantico River is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody was suggested and considered for listing during development of the the 2016 List. However, although enterococcus levels were found to be elevated, NYSDEC has not adopted an entero standard; and as a result the waterbody is more appropriately assigned to IR Category 3 as a water with insufficient data to make a listing decision. (DEC/DOW, BWAM, April 2016)

Segment Description

This segment includes the portion of the stream and all tribs from Pocantico Lake (P30) to Echo Lake (-P33). The waters of this portion of the stream are Class B(T). Tribs to this reach/segment, including Caney Brook (-6) and Washburn Creek (-9), are Class C. Lower, Upper Pocantico River are listed separately.

Sing Sing Creek and tribs (1301-0118) MinorImpacts

Waterbody Location Information

Revised: 03/28/2008

Water Index No: H- 28
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: C
Waterbody Type: River
Reg/County: 3/Westchester Co. (60)
Waterbody Size: 9.0 Miles
Quad Map: OSSINING (Q-25-2)
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	Suspected

Type of Pollutant(s)

Known: - - -
Suspected: UNKNOWN TOXICITY
Possible: - - -

Source(s) of Pollutant(s)

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

Resolution/Management Information

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

Further Details

Overview

Aquatic life support in Sing Sing Creek is thought to experience minor impacts from unknown toxicity. Urban runoff sources are the likely cause of the impacts.

Water Quality Sampling

A biological (macroinvertebrate) assessment of Sing Sing Creek in Ossining (at Route 9) was conducted in 2002. Sampling results indicated slightly impacted water quality conditions. Impact source determination identified toxicity likely from urban runoff sources as the primary cause of impacts. Siltation was also indicated. However, nutrient biotic evaluation determined these effects on the fauna to be minor. (DEC/DOW, BWAM/SBU, December 2004)

Segment Description

This segment includes the entire stream and all tribs. The waters of the stream are Class C. Tribs to this reach/segment are also Class C. Lower tidal portions of these tribs are included with the Hudson Main Stem.