



Batten Kill Watershed (0202000303)

Water Index Number

H-301
H-301
H-301- 6
H-301-17-P75
H-301-17-P79
H-301-17-P79-1-P80
H-301-18-P82

Waterbody Segment

Batten Kill, Lower, and minor tribs (1103-0010)
Batten Kill, Middle, and minor tribs (1103-0011)
Fly Creek and tribs (1103-0013)
Carter Pond (1103-0014)
Cossayuna Lake (1103-0002)
Summit Lake (1103-0015)
McDougall Lake (1103-0016)

Category

NoKnownImpct
Impaired Seg
NoKnownImpct
UnAssessed
Impaired Seg
UnAssessed
UnAssessed

Batten Kill, Lower, and minor tribs (1103-0010)

NoKnownImpct

Waterbody Location Information

Revised: 07/06/2005

Water Index No: H-301
Hydro Unit Code: 02020003/080 **Str Class:** C
Waterbody Type: River
Waterbody Size: 40.7 Miles
Seg Description: stream and selected tribs from mouth to Greenwich

Drain Basin: Upper Hudson River
Reg/County: 5/Washington Co. (58)
Quad Map: SCHUYLERVILLE (I-26-3)

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
TMDL/303d Status: n/a ()

Resolution Potential:

Further Details

Biological (macroinvertebrate) surveys of the Batten Kill at multiple sites between the mouth and the Vermont state line (and beyond) were conducted in 1999 and 2001. Sampling results indicated water quality conditions that range between non-impacted and slightly impacted. Many sites are borderline between these two categories, depending on flow-year. Historically, water quality in the Batten Kill has been excellent, with typically non-impacted conditions throughout the reach. However, the 1999 survey found slightly impacted conditions at a number of sites upstream of this reach. In the 2001 follow-up macroinvertebrate sampling, some upstream sites returned to non-impacted conditions, while apparent slight declines in water quality compared to 1986 conditions were documented at Shushan, Battenville, Center Falls, and at the one site within this reach: Clarks Mills. Impacts appear assignable to nonpoint source nutrient enrichment. Slight increases in conductance in the river occurred since 1984 are likely related to residential and commercial development in the watershed. Further sampling is needed in the upper Batten Kill to examine the apparent trend. Despite these changes, aquatic life 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)

This segment includes the portion of the stream and selected/smaller tribs from the mouth to the dam in Greenwich. The waters of the stream are Class C for the reach. Tribs to this reach/segment, including Hartshorn Brook (-4), are primarily Class C,C(T),C(TS). Fly Creek (-6) and larger lakes in the watershed are listed separately.

Batten Kill, Middle, and minor tribs (1103-0011)

Impaired Seg

Waterbody Location Information

Revised: 10/02/2006

Water Index No: H-301
Hydro Unit Code: 02020003/080 **Str Class:** B(T)
Waterbody Type: River
Waterbody Size: 49.6 Miles
Seg Description: stream and selected tribs, fr Greenwich to E.Greenwich

Drain Basin: Upper Hudson River
Reg/County: 5/Washington Co. (58)
Quad Map: CAMBRIDGE (I-27-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
HABITAT/HYDROLOGY	Impaired	Suspected

Type of Pollutant(s)

Known: ---
Suspected: OTHER POLLUTANTS (loss of cover, predation)
Possible: ---

Source(s) of Pollutant(s)

Known: ---
Suspected: HABITAT MODIFICATION
Possible: ---

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DEC/FWMR
TMDL/303d Status: 4c (Impaired by Pollution, Not Pollutant(s), Not Listed)

Resolution Potential: Medium

Further Details

Habitat/hydrology use of this reach of the Batten Kill is thought to be impaired as a result of the systematic removal of stream cover, combined with increased predation by birds. These conditions hinder the ability of the river to support a trout fishery. There is no evidence of water quality problem.

Historically, the Batten Kill supported a very strong wild brown trout fishery. However since the mid-1980s, the brown trout population has been in decline. The most recent explanation for the decline has focused on channel alterations and the systematic removal of trees, brush and limbs that hinder canoeists, kayakers and other recreationists in the river. But this habitat alteration removes the most effective refuge for fish from predators, flooding and high temperatures. This cover is especially important to support young trout. Though the loss of habitat as a cause of the decline of the fishery remains a theory, it is gaining considerable acceptance. To support the number of mergansers recorded on the river would require a considerable fish population. Furthermore, the size and class of trout that have declined is consistent with what mergansers would be expected to consume. Decrease abundances of other species would also be consistent with predation by mergansers. (DEC/DFWMR, Region 5, July 2005)

Biological (macroinvertebrate) surveys of the Batten Kill at multiple sites between the mouth and the Vermont state line (and beyond) were conducted in 1999 and 2001. Sampling results indicated water quality conditions that range

between non-impacted and slightly impacted. Many sites are borderline between these two categories, depending on flow-year. Historically, water quality in the Batten Kill has been excellent, with typically non-impacted conditions throughout the reach. However, the 1999 survey found slightly impacted conditions at a number of sites within and upstream of this reach. In the 2001 follow-up macroinvertebrate sampling, some upstream sites returned to non-impacted conditions, while apparent slight declines in water quality compared to 1986 conditions were documented upstream of this reach at Shushan, within the reach at Battenville, and Center Falls, and below this reach at Clarks Mills. Impacts appear assignable to nonpoint source nutrient enrichment. Slight increases in conductance in the river occurred since 1984 are likely related to residential and commercial development in the watershed. Further sampling is needed in the upper Batten Kill to examine the apparent trend. Despite these changes, aquatic life 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)

Fish surveys conducted in 2000 also point to causes other than water quality. These surveys found high abundance of wild fingerling trout and more old, large trout than were present in the 1970s. But natural reproduction by trout is typically the first life stage to fail when water quality degrades. And the presence of older trout indicate that water quality over time is capable of supporting the fishery over a longer continuum. Neither of these indicators is definitive, as tribs, springs and other refuge can sustain the fish. But these indicators along with healthy macroinvertebrate community suggest impacts not the result of poor water quality. (DEC/DFWMR, Reg 5, July 2005)

This segment includes the portion of the stream and all tribs from the dam in Greenwich to Black Creek (-20) near East Greenwich. The waters of the stream are Class B(T) from Greenwich to tribs -8a and Class C(TS) for the remainder of the reach. Tribs to this reach/segment, including Trout Brook (-11), Whittaker Brook (-17) and Livingston Brook (-18), are primarily Class C,C(T),C(TS); a few waters are Class D. Larger lakes in the watershed are listed separately.

Fly Creek and tribs (1103-0013)

NoKnownImpct

Waterbody Location Information

Revised: 07/06/2005

Water Index No: H-301- 6
Hydro Unit Code: 02020003/080 **Str Class:** C
Waterbody Type: River
Waterbody Size: 27.2 Miles
Seg Description: entire stream and tribs

Drain Basin: Upper Hudson River
Upper Hudson-Hoosic
Reg/County: 5/Washington Co. (58)
Quad Map: CAMBRIDGE (I-27-4)

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
TMDL/303d Status: n/a ()

Resolution Potential:

Further Details

A biological (macroinvertebrate) assessment of Fly Creek in Greenwich (above Route 372) was conducted in 2001. Sampling results indicated non-impacted water quality conditions. Within the non-impacted category, the fauna exhibited some traits of nutrient enrichment. However the stream is considered to fully support aquatic life uses. (DEC/DOW, BWAR/SBU, June 2005)

This segment includes the entire stream and all tribs. The waters of the stream are Class C(T),C(TS). Tribs to this reach/segment, including Robertson Brook (-6), are Class C,C(T),C(TS).

Cossayuna Lake (1103-0002)

Impaired Seg

Waterbody Location Information

Revised: 12/06/2006

Water Index No: H-301-17-P79
Hydro Unit Code: 02020003/080 **Str Class:** A
Waterbody Type: Lake
Waterbody Size: 659.3 Acres
Seg Description: entire lake
Drain Basin: Upper Hudson River
Reg/County: 5/Washington Co. (58)
Quad Map: COSSAYUNA (I-27-1)

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
HABITAT/HYDROLOGY	Impaired	Known

Type of Pollutant(s)

Known: ALGAL/WEED GROWTH, NUTRIENTS (phosphorus), PROBLEM SPECIES, Silt/Sediment
Suspected: - - -
Possible: Pathogens

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION
Suspected: FAILING ON-SITE SYST, Agriculture, Construction
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg5
TMDL/303d Status: 3a->1 ()
Resolution Potential: Medium

Further Details

Recreational uses (swimming, fishing, boating) in Cossayuna Lake are considered to be impaired due to nutrient (phosphorus) enrichment, and aquatic weed growth (including invasives) in this eutrophic lake. The primary source of these impacts are failing and/or inadequate on-site septic systems serving lakeshore residences, nonpoint runoff of nutrients and sediment from the lake watershed and habitat modification (related to the invasive species).

Cossayuna Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1992 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, although productivity has been somewhat lower over the most recent five years. Phosphorus levels in the lake regularly exceed the state guidance criteria for impacted recreational uses, resulting in transparency measurements that at times fail to meet what is recommended for swimming beaches. However water clarity readings have improved in the most recent years of sampling. (DEC/DOW, BWAM/CSLAP, May 2006)

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

indicate recreational suitability of the lake to be mostly unfavorable since that lake was first evaluated and continuing through the most recent assessment. The lake is described most frequently as "slightly" to "substantially" impaired for most uses. Assessments have noted that aquatic plants regularly grow to the lake surface and are frequently quite dense. Aquatic plant communities appear to be dominated by a mix of native and non-native species. The lake association has been actively engaged in an aquatic plant control effort for many years. These efforts include use of aquatic herbicides in selective areas, targeted mechanical weed harvesting, and lake drawdown. (DEC/DOW, BWAM/CSLAP, May 2006)

A two-year water quality study was conducted in 2000-01 by the Washington County WQCC and Adirondack Community College. The study found elevated nutrient concentrations in tribs to the lake. Elevated levels of pathogens - perhaps related to waterfowl populations - were also noted. The lake is surrounded by camps with on-site septic systems as well as a trailer park. There are some agricultural activity along the tribs to the lake, but overall agriculture is declining. (Washington County WQCC/SWCD, 2005)

The lake is included on the NYS 2006 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 are confirmed and the lake be moved to Part 1 of the List as Waterbody Requiring TMDL Development (or other strategy to attain water quality standards).