



Saint Lawrence/Robinson Creek Watershed (0415030103)

Water Index Number

SL (portion 1)
 SL (portion 2)
 SL- 3 thru 9
 SL- 5a

Waterbody

Saint Lawrence River, Main Stem (0901-0002)
 Saint Lawrence River, Main Stem (0901-0001)
 Minor Tribs to St. Lawrence River (0901-0017)
 Massena Power Canal (0901-0014)

Category

Impaired Seg
 Impaired Seg
 UnAssessed
 Impaired Seg

Saint Lawrence River, Main Stem (0901-0002)

Impaired Seg

Waterbody Location Information

Revised: 02/13/2009

Water Index No: SL (portion 1) **Drain Basin:** Saint Lawrence River
Hydro Unit Code: 04150301/000 **Str Class:** A-spcl Upper Saint Lawrence
Waterbody Type: G.Lakes **Reg/County:** 6/St.Lawrence Co. (45)
Waterbody Size: 10.9 ShrMi **Quad Map:** MASSENA (B-21-1)
Seg Description: from St.Regis to Robert Moses Dam

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
Habitat/Hydrology	Stressed	Suspected

Type of Pollutant(s)

Known: PRIORITY ORGANICS (PCBs, dioxin), PESTICIDES (mirex)
Suspected: Water Level/Flow
Possible: - - -

Source(s) of Pollutant(s)

Known: INDUSTRIAL (ALCOA, others), LANDFILL/LAND DISP., Hydro Modification, Tox/Contam. Sediment
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: ext/EPA **Resolution Potential:** Medium
TMDL/303d Status: 2b (Multiple Segment/Categorical Water, Fish Consumption)

Further Details

Overview

Fish consumption in this portion of the Saint Lawrence River is impaired by priority organics (PCBs, dioxin) and pesticides (mirex) in river sediments attributed to past discharges, continuing runoff from industrial waste sites and impacts from Lake Ontario sediments. Aquatic life support and habitat/hydrological uses are also thought to experience minor impacts due to flow regulation to support commercial shipping in the river.

Water Quality Sampling

NYSDEC Rotating Intensive Basin Studies (RIBS) Routine Network monitoring (water chemistry) of the Saint Lawrence River in Massena, Saint Lawrence County, is conducted annually at the Robert Moses Dam, at the upstream end of this segment. In addition, when RIBS Intensive Network monitoring is conducted in a targeted basin every five years, additional sampling methods are employed to gain an overall assessment of water quality. This Intensive Network sampling typically includes macroinvertebrate community analysis, sediment assessment, macroinvertebrate tissue analysis and toxicity testing, in addition to water chemistry. The most recent Intensive Network monitoring was conducted during 2004 (multiplates) and 2005. The biological (macroinvertebrate) assessment conducted in 2004, using artificial substrate samplers suspended in the water column, indicated slightly impacted water quality conditions. Though samplers were

deployed three times, only once did the sampler remain in the river for retrieval. That sample was dominated by tolerant freshwater crustaceans and non-biting midges. Water column chemistry found no substances in concentrations that constitute a parameter of concern. Macroinvertebrates collected at this site and chemically analyzed for selected PAHs, PCBs, and organochlorine pesticides also show no contaminants present in concentrations above established guidance values. Chronic toxicity testing using water from this location indicated no significant mortality but reproductive effects were noted. Sediment screening for acute toxicity indicated moderate toxicity could be present, but sediments were not found to contain any contaminants at levels of concern and, based on sediment quality guidelines developed for freshwater ecosystems, overall sediment quality is not likely to cause chronic toxicity to sediment-dwelling organisms. Based on the consensus of these established assessment methods, overall water quality at this site shows minor impacts, but supports its aquatic life, recreation, and drinking water supply uses. (DEC/DOW, BWAM/SWMS, December 2008).

Fish Consumption

Fish consumption in the Saint Lawrence River is impaired due to a NYSDOH health advisory that recommends eating no American eel, channel catfish, carp, larger lake trout (over 25 inches) or larger brown trout (over 20 inches). The advisory also recommends that consumption of chinook salmon, white perch, white sucker, rainbow trout, smaller lake and brown trout, and coho salmon (over 25") be limited to no more than one meal per month. The fish consumption advisories, which apply to the entire length of the St. Lawrence (including tribs up to the first impassible barrier) are a result of PCB, mirex and dioxin contamination. An additional advisory prohibits consumption of any fish species from the bay at the St. Lawrence-Franklin County line due to PCB contamination. Advisories for the Saint Lawrence River were first issued prior to 1998-99. (2008-09 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2008)

Industrial and Hazardous Waste Sites

The seven mile length of the river below Massena is also significantly affected by activity at a number of industrial facilities in the area. The most prominent of these are ALCOA, Reynolds Metals and General Motors. Numerous separate hazardous waste sites have been identified on ALCOA's 3500 acre facility. Landfills, disposal sites, storm water runoff and waste water discharges from the ALCOA facility have resulted in PCB and other priority pollutant contamination of soils, groundwater, river sediments, fish and wildlife in and along the Lower Grasse and St. Lawrence Rivers. General Motors is under consent order to complete remediation of its Central Foundry Facility (Site No. 6-45-007) to eliminate the release and exposure of PCBs and priority organics to the environment. Remediation of these contaminant sources (including the dredging of river sediments) are in various stages of completion. Reynolds Metals (Site No. 6-45-009) was also under consent order to address PCB contamination at its sites and overland flow and drainage to the St. Lawrence River. The remedial action has been completed and the site is currently under long-term operation, maintenance and monitoring. (Environmental Site Remediation Database, DEC/DER, December 2008)

Saint Lawrence/Massena Remedial Action Plan

The St. Lawrence River at Massena Remedial Action Plan (RAP) Area of Concern (AoC) begins above the power dam facilities and seaway locks at the Massena Village drinking water intake and follows the river downstream for about fifteen miles to the international border. For New York State, the AoC includes portions of the Grass, Raquette and St. Regis Rivers. There are three governmental agency groupings that share jurisdictional responsibilities for the AoC. These are the United States, Canada, and the St. Regis Mohawk Tribe at Akwesasne.

Pollution from past local area industrial production and waste disposal practices created contaminated sediments and hazardous waste sites that to a large degree are being or have been remediated. The sources and causes include PCBs, mercury, DDE, Mirex, nutrients, metals and physical disturbance. Large area remedial projects at Alcoa and General Motors sites have contributed significantly to the restoration and protection of beneficial uses in the AoC. After the Grass River and limited land-based remedial measures are completed, a reassessment of the status of the beneficial use indicators is to be conducted. When including the installation of water and air pollution discharge equipment, the total costs of the Massena area cleanup will likely exceed one billion dollars.

Habitat/Hydrologic Impacts

The management of water levels and flows of the river to support commercial navigation also affects the fishery habitat. The International Joint Commission (IJC) recently called for a new management plan that supports more natural river flows

that support fish and wildlife habitat and recreation benefits. The Moses-Saunders Dam was constructed in 1958 for hydropower and to aid commercial navigation on the St. Lawrence River. However the management plan to control water levels on the river and Lake Ontario was developed at a time when there was less consideration of environmental impacts. Research shows that the current plan, which severely limits natural water level fluctuations, has significantly reduced the diversity of plant species in river wetlands, which in turn has impacted populations of many fish and other wildlife. However, these conditions can be reversed by allowing the river to have a more natural flow. A revised management plan can significantly improve the health of the river while continuing to serve commercial interests. (International Joint Commission and American Rivers, December 2008)

Segment Description

This segment includes the waters of the Saint Lawrence within New York State from the Canadian border at St. Regis to the Robert Moses Dam.

Saint Lawrence River, Main Stem (0901-0001)

Impaired Seg

Waterbody Location Information

Revised: 02/13/2009

Water Index No:	SL (portion 2)	Drain Basin:	Saint Lawrence River
Hydro Unit Code:	04150301/000	Str Class:	A-spcl
Waterbody Type:	G.Lakes	Reg/County:	6/St.Lawrence Co. (45)
Waterbody Size:	42.9 ShrMi	Quad Map:	MASSENA (B-21-1)
Seg Description:	from Robert Moses Dam to Waddington		

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
Habitat/Hydrology	Stressed	Suspected

Type of Pollutant(s)

Known: PRIORITY ORGANICS (dioxin), PESTICIDES (mirex)
Suspected: Water Level/Flow
Possible: - - -

Source(s) of Pollutant(s)

Known: TOX/CONTAM. SEDIMENT, Hydro Modification
Suspected: - - -
Possible: Industrial

Resolution/Management Information

Issue Resolvability:	1 (Needs Verification/Study (see STATUS))	
Verification Status:	4 (Source Identified, Strategy Needed)	
Lead Agency/Office:	ext/EPA	Resolution Potential: Medium
TMDL/303d Status:	2b (Multiple Segment/Categorical Water, Fish Consumption)	

Further Details

Overview

Fish consumption in this portion of the Saint Lawrence River is impaired by priority organics (PCBs, dioxin) and pesticides (mirex) in river sediments attributed to past discharges, continuing runoff from industrial waste sites and impacts from Lake Ontario sediments. Aquatic life support and habitat/hydrological uses are also thought to experience minor impacts due to flow regulation to support commercial shipping in the river.

Water Quality Sampling

NYSDEC Rotating Intensive Basin Studies (RIBS) Routine Network monitoring (water chemistry) of the Saint Lawrence River in Massena, Saint Lawrence County, is conducted annually at the Robert Moses Dam, at the downstream end of this segment. In addition, when RIBS Intensive Network monitoring is conducted in a targeted basin every five years, additional sampling methods are employed to gain an overall assessment of water quality. This Intensive Network sampling typically includes macroinvertebrate community analysis, sediment assessment, macroinvertebrate tissue analysis and toxicity testing, in addition to water chemistry. The most recent Intensive Network monitoring was conducted during 2004 (multiplates) and 2005. The biological (macroinvertebrate) assessment conducted in 2004, using artificial substrate samplers suspended in the water column, indicated slightly impacted water quality conditions. Though samplers were

deployed three times, only once did the sampler remain in the river for retrieval. That sample was dominated by tolerant freshwater crustaceans and non-biting midges. Water column chemistry found no substances in concentrations that constitute a parameter of concern. Macroinvertebrates collected at this site and chemically analyzed for selected PAHs, PCBs, and organochlorine pesticides also show no contaminants present in concentrations above established guidance values. Chronic toxicity testing using water from this location indicated no significant mortality but reproductive effects were noted. Sediment screening for acute toxicity indicated moderate toxicity could be present, but sediments were not found to contain any contaminants at levels of concern and, based on sediment quality guidelines developed for freshwater ecosystems, overall sediment quality is not likely to cause chronic toxicity to sediment-dwelling organisms. Based on the consensus of these established assessment methods, overall water quality at this site shows minor impacts, but supports its aquatic life, recreation, and drinking water supply uses. (DEC/DOW, BWAM/SWMS, December 2008).

Fish Consumption

Fish consumption in the Saint Lawrence River is impaired due to a NYSDOH health advisory that recommends eating no American eel, channel catfish, carp, larger lake trout (over 25 inches) or larger brown trout (over 20 inches). The advisory also recommends that consumption of chinook salmon, white perch, white sucker, rainbow trout, smaller lake and brown trout, and coho salmon (over 25") be limited to no more than one meal per month. The fish consumption advisories, which apply to the entire length of the St. Lawrence (including tribs up to the first impassible barrier) are a result of PCB, mirex and dioxin contamination. An additional advisory prohibits consumption of any fish species from the bay at the St. Lawrence-Franklin County line due to PCB contamination. Advisories for the Saint Lawrence River were first issued prior to 1998-99. (2008-09 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2008)

Habitat/Hydrologic Impacts

The management of water levels and flows of the river to support commercial navigation also affects the fishery habitat. The International Joint Commission (IJC) recently called for a new management plan that supports more natural river flows that support fish and wildlife habitat and recreation benefits. The Moses-Saunders Dam was constructed in 1958 for hydropower and to aid commercial navigation on the St. Lawrence River. However the management plan to control water levels on the river and Lake Ontario was developed at a time when there was less consideration of environmental impacts. Research shows that the current plan, which severely limits natural water level fluctuations, has significantly reduced the diversity of plant species in river wetlands, which in turn has impacted populations of many fish and other wildlife. However, these conditions can be reversed by allowing the river to have a more natural flow. A revised management plan can significantly improve the health of the river while continuing to serve commercial interests. (International Joint Commission and American Rivers, December 2008)

Segment Description

This segment includes the waters of the Saint Lawrence from the Robert Moses Dam to Clark Point in Waddington, portion known as Lake Saint Lawrence.

Massena Power Canal (0901-0014)

Impaired Seg

Waterbody Location Information

Revised: 12/31/2008

Water Index No:	SL- 5a	Drain Basin:	Saint Lawrence River
Hydro Unit Code:	04150301/050	Str Class:	C
Waterbody Type:	River	Reg/County:	6/St.Lawrence Co. (45)
Waterbody Size:	3.5 Miles	Quad Map:	MASSENA (B-21-1)
Seg Description:	entire canal		

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

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

Type of Pollutant(s)

Known: PRIORITY ORGANICS (PCBs)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: INDUSTRIAL (ALCOA), TOX/CONTAM. SEDIMENT
Suspected: - - -
Possible: Landfill/Land Disp. (ALCOA)

Resolution/Management Information

Issue Resolvability:	1 (Needs Verification/Study (see STATUS))	
Verification Status:	4 (Source Identified, Strategy Needed)	
Lead Agency/Office:	DEC/FWMR	Resolution Potential: Medium
TMDL/303d Status:	2b (Multiple Segment/Categorical Water, Fish Consumption)	

Further Details

Overview

Fish consumption in the Massena Power Canal is impaired by priority organics (PCBs) in river sediments attributed to past industrial discharges.

Fish Consumption

Fish consumption in the Massena Power Canal is impaired due to a NYSDOH health advisory that recommends eating no more than one meal per month of smallmouth bass due to PCB contamination. Advisories for the Massena Power Canal were first issued prior to 1998-99. (2008-09 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2008)

A general refuse landfill on ALCOA property was the source of contamination to the canal. The remediation of the site (Site No. 6-45-002) was completed in 1995. ALCOA will continue to monitor this site. There are no current plans to remediate the Power Canal. (Environmental Site Remediation Database, DEC\DER, December 2008)

Segment Description

This segment includes the entire canal , from the Saint Lawrence River (Lake Saint Lawrence) to the Grass River.