



**New York State
Department of Environmental Conservation**

Division of Fish, Wildlife, and Marine Resources

**Fish Species Inhabiting
the International Portion
of the
St. Lawrence River**

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GEORGE E. PATAKI, *Governor*

JOHN P. CAHILL, *Acting Commissioner*

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D.M. Carlson and S.R. LaPan
New York State Department of Environmental Conservation
317 Washington Street, Watertown, NY 13601

Introduction

A complete list of fish known to inhabit the International portion of the St. Lawrence River is difficult to find. The earliest fish collections, prior to 1900 (Evermann and Kendall 1902), included river sections in the two Canadian provinces and in New York State. Subsequent studies, particularly those in the last 15 years, have been more regional in focus. Cooperative sampling programs have been conducted by New York State Department of Environmental Conservation (DEC) and the Ontario Ministry of Natural Resources (OMNR) since 1977, and most reports are agency documents that are not readily available. Foremost among these are Eckert and Hanlon (1977). The very few published reports include an overview of the fisheries by Edwards et al. (1989) and the well documented life history summaries by Scott and Crossman (1972) and Smith (1985). This project was initiated to summarize the species listings that have been well documented, and to bring them up-to-date for the 178 km river section forming the International boundary between Ontario and New York.

Methods

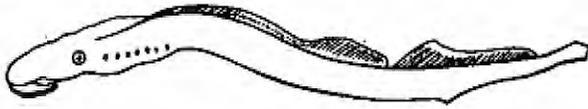
Fish records and locality descriptions available for this listing have been grouped into three time periods, prior to 1933, 1976-78, and after 1982. The earliest collections, prior to 1900, were combined with the biological surveys of 1930-33 by Greeley. The most comprehensive survey of New York's waters, in 1976, was the foundation of the second period. The third period included the annual gill netting program started after 1982 by DEC and OMNR, and catches are grouped into three river sections: Thousand Islands, Middle Corridor and Lake St. Lawrence. During this same period, there were specialized surveys by several investigators, and these are listed at the bottom of Table 1.

Findings

Fish species inhabiting the International portion of the St. Lawrence River have changed little from the 1930's to 1996. Eighty-five species are known to occur in this river section (Table 1). Ten of the species are non-native and have been introduced, most prominent including common carp, rainbow smelt and white perch. Three species (channel darter, blacknose dace and sauger) have not been caught here since 1931 or earlier. Sauger is the only one that is also absent from waters nearby. The number of fish species classified as sensitive or intolerant of pollution has not decreased with time, and the 16 species in 1982-96 included mooneye, pugnose shiner, greater redhorse and stonecat. Species accounts in the next section provide details about location of records, historic records and habitat preferences, and species classifications are shown in Table 1. These accounts are updated versions of a thorough listing by Eckert and Hanlon (1977).

An annotated list of fishes

Lampreys



Silver lamprey, *Ichthyomyzon unicuspis*, were caught in 1894, 1931, 1976 and are probably the species seen attached to spawning sturgeon near Ogdensburg in 1996. These lampreys are parasitic, and adults are occasionally found attached to suckers and sturgeon. The ammocetes probably do not occur in the St. Lawrence River, but possibly in the Oswegatchie River.

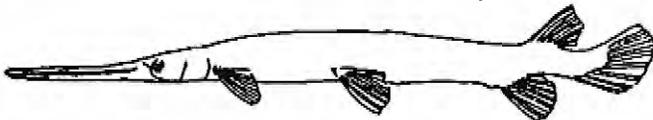
Sea lamprey, *Petromyzon marinus*, are parasitic and considered rare, but occasionally are seen attached to fish. Adults found in the St. Lawrence probably come from Lake Ontario, and lampreys in the River downstream of Moses-Saunders Dam likely originate from tributary rivers like the Grasse and Raquette.

Sturgeons



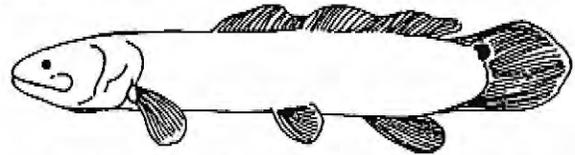
Lake sturgeon, *Acipenser fulvescens*, were once an abundant species, but are now drastically reduced due to a combination of over exploitation and degradation and fragmentation of sturgeon habitat. Areas downstream of Moses-Saunders Dam have sustained the highest numbers of sturgeon in New York, and historic areas of congregation near Ogdensburg show recovery, at least in regard to some spawning use.

Gars



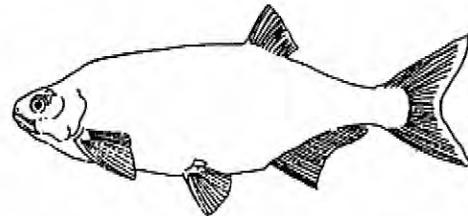
Longnose gar, *Lepisosteus osseus*, are moderately common in shallow bays and creeks. They may have increased in the lower St. Lawrence following formation of Lake St. Lawrence.

Bowfins



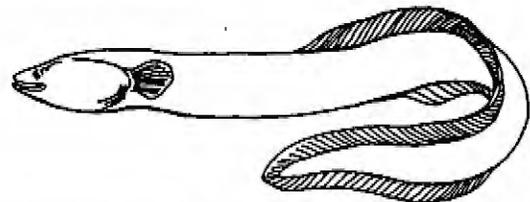
Bowfin, *Amia calva*, are moderately common in shallow areas, particularly in the Thousand Islands.

Mooneyes



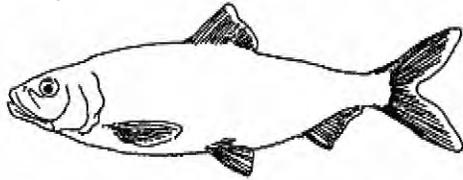
Mooneye, *Hiodon tergisus*, are rare. Apparently this species has declined in abundance since the 1930's, when Greeley listed them as fairly common and made several large catches with gill nets. The most recent specimens were collected in Ontario's portion of the Thousand Islands in 1987, just above Iroquois Dam in 1976, and from Ogdensburg in 1973. Degradation of the River or its tributaries may be a factor in their decline. Spawning was reported at the mouth of the Oswegatchie River in 1931 and above Black Lake, tributary to the Oswegatchie River, in 1995.

Freshwater eels



American eel, *Anguilla rostrata*, are common throughout the river. Adult eels move downstream, and some die while passing through the dam's turbines. Young eels moving upstream utilize an eel ladder on the Ontario side of the Moses-Saunders Dam. The number of young eels using the ladder declined dramatically in the late 1980's, and similar declines are known but not understood throughout the Northeast US.

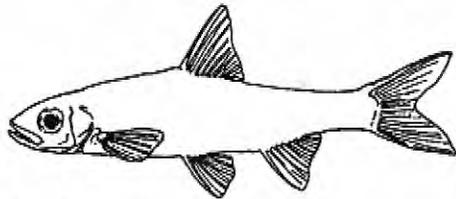
Herrings



Alewife, *Alosa pseudoharengus*, have been abundant throughout most areas of the St. Lawrence River. They were the most important forage fish (in fish stomachs examined during annual netting) in the late 1980's and are less important now. The decline in the Lake Ontario populations of alewife are associated with these changes.

Gizzard shad, *Dorosoma cepedianum*, are fairly common throughout the Middle Corridor and Lake St. Lawrence. They may be a fairly recent arrival to the St. Lawrence, as they were not reported by Greeley. While its status of origin is uncertain here, the first recorded catch in Quebec was 1945.

Minnnows and carps



Goldfish, *Carassius auratus*, are rarely observed in the river, and the only recorded catch was in French Creek, Clayton, NY in 1978. Some are gold in color and are probably recent introductions. Reproducing populations of this species (non-native) are known in Lake Ontario, but have not been observed in the St. Lawrence.

Lake chub, *Couesius plumbeus*, are fairly common in colder waters of Lake Ontario and in lakes and rivers in the Adirondacks. They were last caught in 1987 in Lake St. Lawrence.

Spotfin shiner, *Cyprinella spiloptera*, was a common minnow in the Thousand Islands area during all three study periods, but was never caught in large numbers. Samples from the Middle Corridor to Lake St. Francis infrequently included this species in 1976 and 1996.

Common carp, *Cyprinus carpio*, are abundant throughout the river, and may comprise a significant part of the biomass in some areas. They have inhabited the river since the early 1900's. Their numbers are high in the Massena area, and a popular fishery for archers has developed.

Cutlips minnow, *Exoglossum maxillingua*, were considered common by Greeley in the St. Lawrence below Ogdensburg. A few were collected around Ogdensburg in 1976 and 1996, and they should now be considered uncommon.

Brassy minnow, *Hybognathus hankinsoni*, are rare. Only a few specimens were taken in 1976 in the Middle Corridor and none in 1993-96 sampling. Greeley did not find this minnow in the St. Lawrence, but listed it as common in Adirondack streams. It apparently prefers cooler waters.

Eastern silvery minnow, *Hybognathus regis*, were common in 1976 and 1993-96 sampling. Their distribution appears localized, but several very large collections were made. Greeley did not find them in the St. Lawrence.

Common shiner, *Luxilus cornutus*, were infrequently caught in all sections of the river in 1930-31 and 1976, but only in the Lake St. Francis area in 1996.

Golden shiner, *Notemigonus crysoleucas*, were very abundant in each study period, particularly in the slower waters near vegetation. They are used extensively for bait fishing.

Pugnose shiner, *Notropis anogenus*, are rare here, and are at the eastern end of their range. They were caught at 5 New York sites in the Thousand Island area in 1993-94, in areas of dense vegetation and slow waters.

Emerald shiner, *Notropis atherinoides*, were caught infrequently in each river segment in 1930-31, 1976 and 1993-95.

Bridle shiner, *Notropis bifrenatus*, have inhabited marsh areas and dense aquatic vegetation areas in the Thousand Islands in all three time periods. Samples from areas farther downstream included a few areas in 1930-31, and the only recent catch record was in Ontario near Cornwall.

Blackchin shiners, *Notropis heterodon*, live in weedy areas with slow current. They were relatively common in the Thousand Islands area in 1930-31 and 1993-95, and occasionally caught downstream to Morristown, NY in 1976 and 1930-31. Sampling in the Ontario waters of Lake St. Francis included this species in 1994, and further sampling in NY near the Quebec border would likely confirm its presence there.

Blacknose shiner, *Notropis heterolepis*, usually occur in smaller clear streams. They were infrequently caught in 1976 and 1930-31, and these sam-

ples were from the Thousand Islands area and from downstream of Ogdensburg. They were not reported during the 1990's.

Spottail shiner, *Notropis hudsonius*, live in open-water areas. They were commonly caught in each study period. They are found throughout the river and are an important forage fish.

Rosyface shiner, *Notropis rubellus*, were infrequently caught in areas downstream of the Thousand Islands, in all three study periods. They were more common in larger tributaries like the Oswegatchie and Grasse rivers.

Sand shiners, *Notropis stramineus*, were occasionally caught in all sections of the river in all three study periods. They prefer sand bottoms and clear water where current keeps the bottom free of silt.

Mimic shiner, *Notropis volucellus*, were common in 1930-31 in all river sections, but they were collected infrequently in 1976 and 1993-96. Most of the recent collections were below Moses-Saunders Dam.

Bluntnose minnow, *Pimephales notatus*, have been the most commonly caught minnow throughout the river in all three study periods. They are an important forage fish.

Fathead minnow, *Pimephales promelas*, have been rarely caught in the St. Lawrence in all three study periods, but occur in tributaries and are a popular baitfish.

Blacknose dace, *Rhinichthys atratulus*, prefer swift waters of smaller streams, and the only catch record from the St. Lawrence comes from the Cape Vincent and Ogdensburg areas in 1894. They are still frequently caught in tributaries.

Longnose dace, *Rhinichthys cataractae*, prefer rocky areas, and they occurred infrequently in each river section. None were caught in 1993-96.

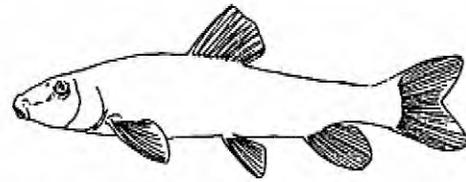
Rudd, *Scardinius erythrophthalmus*, prefer still and sluggish water and have been caught in Thousand Islands area since 1989 and Lake St. Lawrence in 1990. They have become a popular baitfish and were originally imported from Europe.

Creek chub, *Semotilus atromaculatus*, prefer small tributaries and ponds. A few were taken near Morristown in 1976 and downstream of Moses-Saunders Dam in 1996.

Fallfish, *Semotilus corporalis*, were a common species in the river in all three study periods in

areas of faster current. They are an important forage fish.

Suckers



Quillback, *Carpoides cyprinus*, are occasionally found in Lake Ontario, and have rarely been collected in the river. The only individual reported was in Chippewa Bay in 1978.

Longnose sucker, *Catostomus catostomus*, prefer clear, cold waters. They are common in the Adirondacks and are occasionally caught in Lake Ontario. Extensive netting programs in the St. Lawrence caught only two in the Thousand Islands area, in 1982 and 1984.

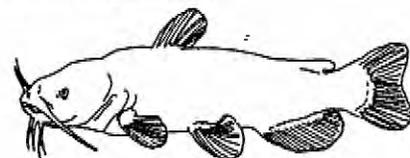
White sucker, *Catostomus commersoni*, are an abundant fish species throughout the St. Lawrence. They probably constitute a large part of the biomass of some areas.

Silver redhorse, *Moxostoma anisurum*, are a large, relatively common sucker that occurs in areas with some current. They were taken mainly in gill nets in 1976 and in the subsequent annual netting programs in all areas.

Shorthead redhorse, *Moxostoma macrolepidotum*, were listed by Greeley as the most common redhorse sucker in the St. Lawrence. They were uncommon in the 1976 sampling, and were last captured in Lake St. Lawrence in 1994.

Greater redhorse, *Moxostoma valenciennesi*, were common in the 1976 sampling, and was probably the most common redhorse taken. They occurred in annual gill net samples in Thousand Islands area and in Lake St. Lawrence in 1994. Most of the annual netting catches of redhorse were not identified to species.

Freshwater catfishes



Yellow bullhead, *Ameiurus natalis*, have been rarely collected, but were reported in 1976, 1978 and 1990. Earlier records were from tributary waters, including Black Lake near Ogdensburg.

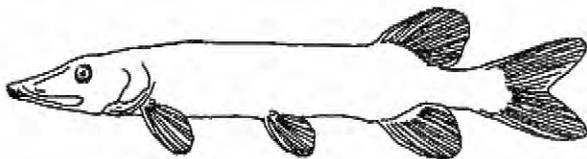
Brown bullhead, *Ameiurus nebulosus*, are, and have been, very abundant and an important sport-fish throughout the river. They spawn in shallow water along shore, in bays and in creek mouths.

Channel catfish, *Ictalurus punctatus*, are relatively abundant throughout the river and were collected in all three study periods. Greeley documented spawning near-to-shore in Eel and Chippewa bays.

Stonecat, *Noturus flavus*, were common in tributary streams, and were listed by Greeley as common along the rocky shores of the St. Lawrence. Several specimens have been taken in gill nets since 1976, downstream of Thousand Islands.

Tadpole madtom, *Noturus gyrinus*, is rare but was caught in each of the study periods in the Thousand Islands area. In 1931, one was also captured near Ogdensburg.

Pikes



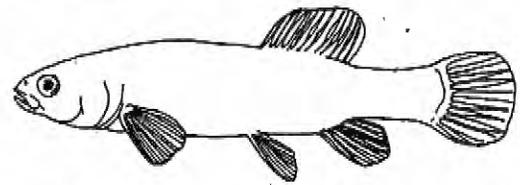
Grass pickerel, *Esox americanus vermiculatus*, inhabit shallow weedy areas of the Thousand Islands and other bays and tributaries. They are rare in areas downstream of Thousand Islands, and only two catches are recorded from between Chippewa Bay and Ogdensburg in 1976. None have been caught farther downstream.

Northern pike, *Esox lucius*, are abundant and are a very important game fish throughout the length of the river. Marshes and shallow, vegetated areas are used for spawning and undoubtedly are a key factor in the success of pike reproduction.

Muskellunge, *Esox masquinongy*, are a relatively uncommon but extremely important game fish and trophy fish. Popular fisheries are found in the Thousand Islands and in the tailwater of Moses-Saunders Dam.

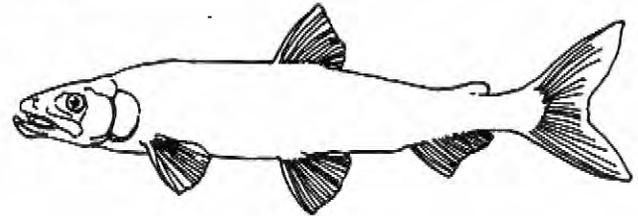
Chain pickerel, *Esox niger*, exist in Lake Ontario bays and a St. Lawrence River tributary, the Indian River. The only record for the River came from 1994 in Lake St. Lawrence. The native range for this species is farther to the south (Mohawk) and east according to Page and Burr (1991). Earlier records from watersheds to the south indicate this species expanded its range through canals and from angler stocking.

Mudminnows



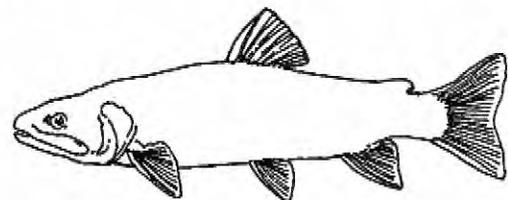
Central mudminnow, *Umbra limi*, are uncommon in the open areas of the St. Lawrence. They prefer heavily vegetated areas and are frequently caught in creek mouths, bays and marshes.

Smelts



Rainbow smelt, *Osmerus mordax*, were probably introduced into Lake Ontario in the early 1900's and were first captured in the St. Lawrence in 1939. They are now common here. Summer temperatures may be something of a limiting factor in the River.

Trouts



Coho salmon, *Oncorhynchus kisutch*, were stocked in Lake Ontario in the 1970's. Some individuals have strayed into the upper river, like those caught in 1982-86.

Chinook salmon, *Oncorhynchus tshawytscha*, were also stocked in Lake Ontario in the 1970's and stocking continued at higher numbers relative to coho salmon in the 1980's and 1990's. Some have migrated downstream and have been seen attempting to spawn in tributaries like the Oswegatchie, Grasse and Raquette rivers. The only record for the St. Lawrence was from the Thousand Islands in 1991.

Rainbow trout, *Oncorhynchus mykiss*, are common in Lake Ontario (steelhead), Adirondack lakes, and tributary streams, where they have been stocked since the late 1800's. They occasionally

stray into the St. Lawrence, like the reported catches of 1976 and 1986. Tributary spawning congregations of steelhead are similar to those for chinook salmon. They are probably limited by warm water temperatures in the summer months.

Atlantic salmon, *Salmo salar*, were abundant throughout Lake Ontario and the St. Lawrence system in 1836, but were extinct by 1900. They have been reintroduced to Lake Ontario with limited success in the 1990's. They occasionally stray into the St. Lawrence when water temperatures are cool, like those reported at the mouth of the Oswegatchie River in April 1996.

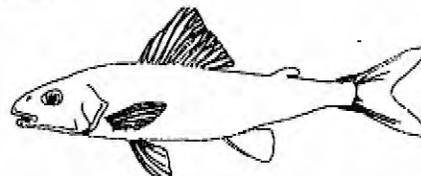
Brown trout, *Salmo trutta*, are common in Lake Ontario from stocking programs and have been caught infrequently in the Thousand Islands and areas downstream. A small sportfishery exists upstream and downstream of Moses-Saunders Dam.

Lake trout, *Salvelinus namaycush*, are common in Lake Ontario and some Adirondack lakes. They occasionally stray into the St. Lawrence, like those caught in the Thousand Islands and Middle Corridor in 1989, and near Moses-Saunders Dam in 1994. Lake trout are unable to tolerate the high water temperatures in most summers.

Cisco (lake herring), *Coregonus artedii*, are caught in greater numbers in Lake Ontario and rarely stray into the river. The last recorded catch was in the Thousand Islands in 1989, which was preceded by records of commercial landings for Ontario in 1976. The only catches in the 1930's were around Waddington and Ogdensburg. In the 1930's, adults were common in Lake Ontario. That population declined in the early 1950's, but catches have increased since about 1993.

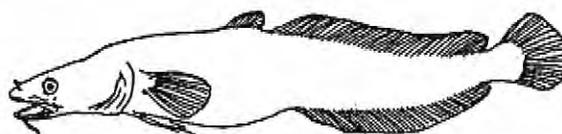
Lake whitefish, *Coregonus clupeaformis*, have been caught in greater numbers in Lake Ontario, and they probably now occasionally stray into the river. The last and only record for the St. Lawrence was from the commercial landings by Ontario in 1972. In the 1920's, adults were common in Lake Ontario. That population and harvest declined gradually through the 1960's to a very low level. However, catches have increased since the early 1990's, and some have been taken near Tibbits Point at Cape Vincent.

Trout-perch



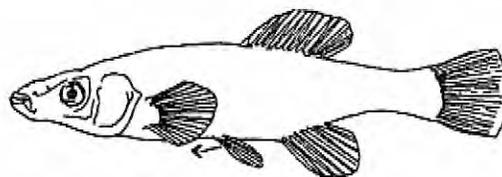
Trout-perch, *Percopsis omiscomaycus*, inhabit deep waters in Lake Ontario and the upper St. Lawrence, where they can be caught by bottom trawls. They live throughout the remainder of the river, but are difficult to capture. The only recent records were from sampling in the Massena area in 1994 and SCUBA observations near Ogdensburg in 1995.

Codfish



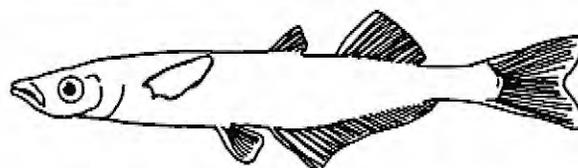
Burbot, *Lota lota*, are infrequently caught in the St. Lawrence. A few specimens were taken downstream of Ogdensburg in 1931, downstream of Moses-Saunders Dam in 1976, in the Thousand Islands area in 1982-86 and near Massena in 1994. Anglers sometimes catch them while ice fishing.

Killifish



Banded killifish, *Fundulus diaphanus*, are an abundant and widely distributed species, and they are probably important as a forage fish. They prefer shallow, weedy habitats and sandy, gravel areas of the slower parts of streams.

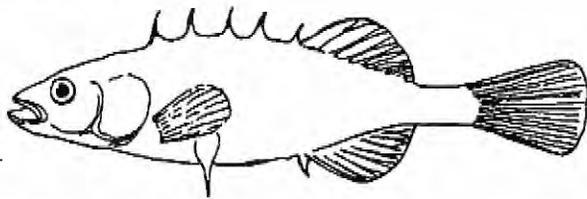
Silversides



Brook silverside, *Labidesthes sicculus*, are moderately common in the Thousand Islands, and are occasionally caught elsewhere. They are difficult to sample since they tend to remain near the

surface in open water, even though they are also associated with weedy areas.

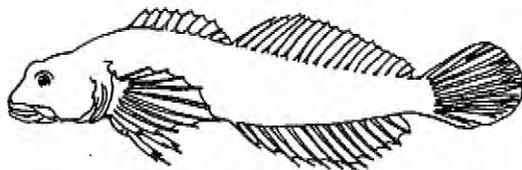
Sticklebacks



Brook stickleback, *Culaea inconstans*, are common in tributaries but rare in the St. Lawrence. They prefer cool, weedy waters. They were infrequently caught in 1930-31, 1976, 1989 and 1994.

Threespine stickleback, *Gasterosteus aculeatus*, are rare in the St. Lawrence downstream of Thousand Islands area. This species was in one collection in 1976 in Lake St. Lawrence, one collection in 1978 near Ogdensburg, and Greeley reported it as rare to moderately common in 1930-31. None have been collected since 1978.

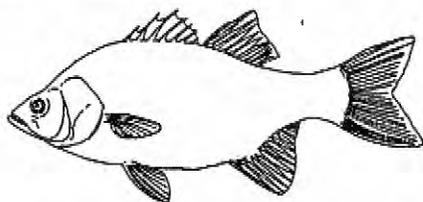
Sculpins



Mottled sculpin, *Cottus bairdi*, were infrequent in samples from each period. They live in deep lakes, and their habit of hiding under rocks makes them difficult to collect.

Slimy sculpin, *Cottus cognatus*, require cold waters and usually inhabit streams. They were captured only in 1976 in trawl (in the upper, Thousand Islands) and seine samples (from Ogdensburg, as re-identified when archived in the NYS Museum).

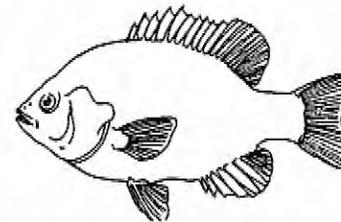
Temperate bass



White perch, *Morone americana*, invaded the Great Lakes through the Erie Canal and occurred in the St. Lawrence after the early 1950's. They were common in 1976 and were occasionally caught in the annual netting in each river section, 1982-94.

White bass, *Morone chrysops*, were not caught in 1930-31, and they may have recently expanded their range downstream from Lake Ontario into the St. Lawrence (Scott and Crossman 1973). Since 1976, they have been rarely caught in the upper St. Lawrence but were occasionally caught downstream of Moses-Saunders Dam.

Sunfishes



Rock bass, *Ambloplites rupestris*, are an abundant and important sportfish throughout the river.

Pumpkinseed, *Lepomis gibbosus*, are an abundant panfish, especially in shallow bays. They appear to outnumber other sunfish species in the St. Lawrence.

Bluegill, *Lepomis macrochirus*, are relatively common in bays and shallow areas of the Thousand Islands, occasionally caught downstream of Moses-Saunders Dam but rarely in the sections in-between. Greeley's records for northern New York found this species only in Lake Champlain and in four other lakes in the Oswegatchie watershed, and not from the St. Lawrence. Sampling in 1976 frequently captured this species in Thousand Islands and occasionally in Lake St. Lawrence.

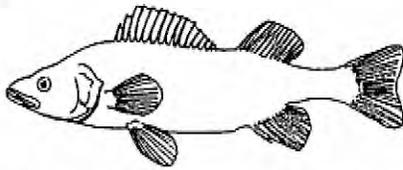
Smallmouth bass, *Micropterus dolomieu*, are abundant and are unquestionably the most important gamefish in the area. Shallow water and gravel areas are required for spawning, and young bass make extensive use of rocky and weedy littoral areas.

Largemouth bass, *Micropterus salmoides*, adults and juveniles are common in shallow weedy bays. They are highly regarded as a gamefish. A localized fishery occurs in the Lake of the Isles area of the Thousand Islands.

Black crappie, *Pomoxis nigromaculatus*, are common throughout the river. They make extensive use of bays and stream mouths during the spring, probably for spawning. The only early report of crappie in the St. Lawrence was in Quebec in 1890, near the Ottawa River. In 1931 they were rare in northern New York and were collected in only Lake Champlain and in three bays of the Thousand Islands. In the 1950's they became established in

many nearby lakes, and crappie have since increased throughout the river.

Perches



Iowa darter, *Etheostoma exile*, have been rare in the St. Lawrence. Greeley captured them in weedy bays and tributary mouths from Goose Bay to Sucker Brook in May and June. In 1976, exploratory seining caught them in spawning condition in May, and they apparently later moved to deeper water where they were unable to be caught. In 1994, researchers caught them in NY and Ontario waters of the St. Lawrence near Massena.

Fantail darter, *Etheostoma flabellare*, are common in smaller streams and deeper waters of Lake Ontario. Greeley listed this species as rare in the River, catching only a few among rocks nearshore and downstream of Thousand Islands. They were not taken in the 1976 sampling but were present in 1983 and 1993 in the Thousand Islands.

Johnny darter, *Etheostoma nigrum*, are more abundant in Lake Ontario and are infrequently caught in the St. Lawrence. The only reported catches are from 1978. Farther downstream in Quebec's waters, they were also infrequently caught (Mongeau 1977). Differences between this species and tessellated darter have been better defined since the 1970's, and earlier identifications are less reliable.

Tessellated darter, *Etheostoma olmstedi*, were abundant throughout the river in all three periods, and they are undoubtedly an important forage species.

Yellow perch *Perca flavescens*, are abundant throughout the river. They are an important sportfish and also provide abundant forage.

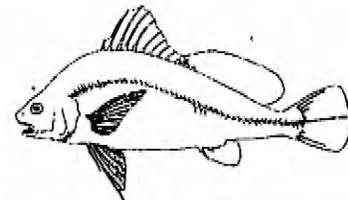
Logperch, *Percina caprodes*, are relatively common in the River, and they are common in tributary streams.

Channel darter, *Percina copelandi*, were listed as rare by Greeley, although widely distributed. They have not been collected since 1930-31, but are known to occur in lower portions of tributaries, like the Raquette River, near Massena.

Sauger, *Stizostedion canadense*, are considered rare or absent throughout Lake Ontario and in this section of the St. Lawrence. They were last reported in 1894 near Ogdensburg. Sauger are more tolerant of turbidity than walleye. They might have inhabited turbid tributaries like Black Lake, and today they are limited in New York to only Lake Champlain.

Walleye, *Stizostedion vitreum*, are a very desirable gamefish which are common through all sections of the river. Spawning runs occur at the mouth of the Oswegatchie River and in Hopple Creek (Ontario) upstream of Moses-Saunders Dam.

Drum



Freshwater drum, *Aplodinotus grunniens*, are infrequently taken in each segment of the River, and possibly travel from Lake Ontario where they are more abundant. The spread of zebra mussel in the mid 1990's may result in modest increases in drum.

Other species not verified in this area that have been considered as possibilities

River redhorse, copper redhorse and eastern sand darter are known to occur farther downstream in the St. Lawrence (close to Montreal) and have not yet been captured here. Golden redhorse, black redhorse, white crappie, round whitefish and 9-spine stickleback have been captured in Lake Ontario or western New York, but are yet to be captured and confirmed in the St. Lawrence.

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Table 1. Fish species of the St. Lawrence River (International portion) from field studies through 1996.

Species ¹	1930-31 ^a and earlier	1976 ^b ,78 ^c General surveys	1982-96 ^{d-k} Gill nets and Special surveys
Silver lamprey	•	b	—
Sea lamprey	•	b	h
Lake sturgeon	•	b,c	d
Longnose gar	•	b,c	d,h
Bowfin	•	b,c	d,g
Mooneye +	•	b	d
Alewife	•	b	d,g
Gizzard shad	—	b,c	d,g
Goldfish--	—	c	—
Lake chub	a	—	d
Spotfin shiner	•	b	g
Common carp--	•	b,c	d,g
Cutlips minnow	•	b	g
Brassy minnow	—	b	—
Eastern silvery minnow	—	b	g
Common shiner	•	b	g
Golden shiner	•	b,c	g
Pugnose shiner +	•	b	g
Emerald shiner	•	b,c	g
Bridle shiner	•	b	g
Blackchin shiner +	•	b	g
Blacknose shiner +	•	b	g
Spottail shiner	•	b,c	g
Rosyface shiner +	—	b	g
Sand shiner +	•	b	g
Mimic shiner +	•	b	g
Bluntnose minnow	•	b,c	g
Fathead minnow	•	b	e,g
Blacknose dace	a	—	—
Longnose dace +	•	b	—
Rudd--	—	—	g
Creek chub	•	b	g
Fallfish	•	b,c	d,g
Quillback	—	c	e
Longnose sucker	—	—	d
White sucker	•	b,c	d,g
Silver redhorse +	•	b,c	d,g
Shorthead redhorse +	•	b	d,h
Greater redhorse +	•	b,c	d,h,i
Yellow bullhead	—	b,c	d
Brown bullhead	•	b,c	d,g
Channel coffish	•	b,c	d
Stonecat +	•	c	d
Todpole madtom	•	b	g
Grass pickerel	•	b	d,g
Northern pike	•	b,c	d,g
Muskellunge	•	b,c	d,g
Chain pickerel--	—	—	h
Central mudminnow	•	b	g
Rainbow smelt--	—	b,c	d,h,i
Coho salmon--	—	—	d
Chinook salmon--	—	—	d
Rainbow trout--	—	b	d

Table 1. Fish species of the St. Lawrence River (International portion) from field studies through 1996.

Species ¹	1930-31 ^a and earlier	1976 ^{b,78c} General surveys	1982-96 ^{d-k} Gill nets and Special surveys
Atlantic salmon	a	—	k
Brown trout--	—	b	d,h
Lake trout	—	—	d,h
Cisco	•	—	d
Lake whitefish	—	—	f
Trout-perch	•	b,c	h,k
Burbot	•	b,c	d,h
Banded killifish	•	b,c	d,g
Brook silverside +	•	b,c	d,g
Brook stickleback	•	b,c	d,h
Threespine stickleback	•	b,c	—
Mottled sculpin	•	b,c	g
Slimy sculpin	—	—b	—
White perch--	—	b,c	d,h
White bass	—	b,c	d,h
Rock bass	•	b,c	d,g
Pumpkinseed	•	b,c	d,g
Bluegill	—	b,c	d,g
Smallmouth bass	•	b,c	d,g
Largemouth bass	•	b,c	d,g
Black crappie	•	b,c	d,g
Iowa darter	•	b	h,i
Fantail darter	•	—	e
Johnny darter	—	c	h
Tessellated darter	•	b,c	g
Yellow perch	•	b,c	d,g
Logperch +	•	b,c	d,g
Channel darter +	•	—	—
Sauger	a	—	—
Walleye	•	b,c	d,g
Freshwater drum	—	b	d,h
# Sensitive Species	15	14	16
TOTAL # OF SPECIES	62	71 b=47 c=43	76 d=45 g=46 h=47
^a Biological surveys of New York's waters in 1930-31 by Greeley and Greene (1931) and Greeley and Bishop (1932) are marked by "•". Additional species records prior to 1900 are marked with "a", as summarized by Evermann and Jordan (1902) and Parsons (1973). ^b Fisheries studies for New York's International portion, by Eckert and Hanlon (1977), with more detail about the data in US Fish and Wildlife Service (1976). ^c Dunning, Evans, and Tarby (1978), Dunning, Tarby and Evans (1978). ^d Annual sampling with gill nets in New York and Ontario waters of the St. Lawrence River described in a NYSDEC/ OMNR report series and are marked with "d". Some of the unusual species and the longer time series articles include McCullough & Richardson 1987, Hendricks 1993, Bendig 1994, LaPan & Klindt 1995. General collections by Smith (1985) are marked by "e" and commercial landings reported in Patch and Busch (1984) are marked by "f". ^e Study records by Carlson (1997) are marked by "g", and for other species which were collected only in other studies (in Lake St. Lawrence and upper Lake St. Francis by Normandeau Assoc. (1995, with revisions) marked by "h", by MS thesis studies with records archived in collections of Dr. Francois Chapleau, Univ. Ottawa, marked by "i" and by others stored in the Royal Ontario Museum, Toronto, marked by "j". Another special study was in 1996 near Ogdensburg by LaPan (DEC) and is marked by "k". ¹ Introduced species (according to Smith 1985 and Eckert and Hanlon 1977) are labeled "—" and species sensitive or intolerant to pollution are labeled "+" (according to Plafkin et al. 1989 and Ohio EPA 1987).			