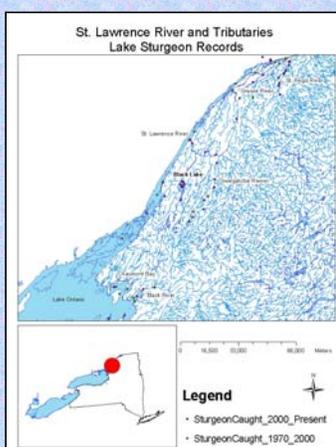


New York Lake Sturgeon Projects



Native fish conservation, restoration, and rehabilitation are key activities for the continuation of freshwater ecosystem health. Lake sturgeon (*Acipenser fulvescens*) is one native fish species considered integral to healthy fish communities. In 1993 the New York State Department of Environmental Conservation initiated a project to restore lake sturgeon as a viable self-sustaining component of the fish community in New York.

Figure 1. The local range of lake sturgeon was/is Lake Ontario, Niagara River, the Finger Lakes, the St. Lawrence River, and associated rivers.

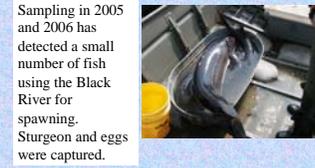
The New York State Department of Environmental Conservation (NYS-DEC) and partner agencies are collecting biotic and abiotic data on extant lake sturgeon in the Niagara River, other major tributaries to Lake Ontario, and the St. Lawrence River. In addition the NYS-DEC has been using artificial propagation of this species to begin the reestablishment of populations in selected tributaries of Lake Ontario and the St. Lawrence River, including the Genesee River, Oswegatchie River, Black Lake, Raquette River, St. Regis River, Oneida Lake and Cayuga Lake.



The source population for propagation was from the St. Lawrence River downstream of the Moses-Saunders Dam. Lake sturgeon were reared in the NYS - DEC Oneida Hatchery. Lake Sturgeon at release.

Black River: Extant Population

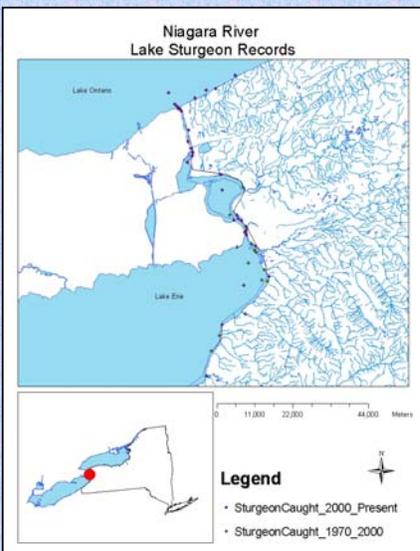
Rodger Klindt NYS-DEC



Sampling in 2005 and 2006 has detected a small number of fish using the Black River for spawning. Sturgeon and eggs were captured.

Future Research: Assessment will continue into 2007 to characterize this population.

Niagara River: Extant Population



From July 1998 through August 2000, 67 lake sturgeon were captured in the lower Niagara. Ages of captured lake sturgeon ranged from 1 to 23 years; 47 of the 61 aged fish were younger than age 10. A subset was marked and radio tagged. The lake sturgeon population in the lower Niagara River is probably small relative to its historic abundance, Hughes et al 2005.



Chris Lowie and Tom Hughes with Lower Niagara River Sturgeon.



Niagara river as it flows into Lake Ontario.

Current Research Plans

Betsy Trometer, USFWS
Deploy egg traps in the lower Niagara to identify sturgeon spawning areas. Examine the substrate composition of the lower Niagara River and Niagara Bar, to spatially quantify habitat, and link lake sturgeon spawning activity with habitat.

Future Research Possibilities

Doug Carlson, NYS-DEC:
Lake Erie/Upper Niagara: Summarize information and formulate management plans. Lower Niagara/Lake Ontario: A study of: 1) the habitat needs of sturgeon spawning in the lower Niagara R. and being recruited to Lake Ontario and 2) characteristics and abundances of various life stages.

Genesee River: Experimental Stocking



Genesee River Stocking: 900 in 2003, 1,000 in 2004

Dawn Dittman, USGS
Emily Zollweg, USFWS

Sturgeon Assessment:
Systematic gill netting using experimental nets.



Summary: Successful. The stocked sturgeon are using the Genesee River habitat and growing well.

609 Total Floy Tagged as of October 2006

Estimate of the # in the Genesee River	Growth: 03YC	04YC
August 2005	437 mm & 338 g	298 mm & 113 g
May 2006	489 mm & 513 g	359 mm & 199 g
October 2006	527 mm & 657 g	452 mm & 368 g



Largest 04YC:
589 mm
1,250 g

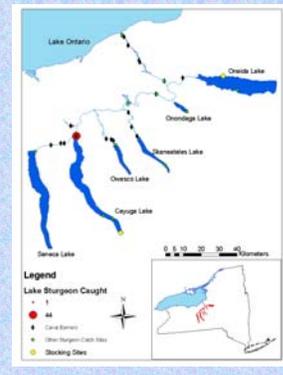
Current and Continuing Research

Continuation of the routine (3 times a year) evaluation of habitat use by stocked juvenile lake sturgeon, including growth patterns and diet evaluations.

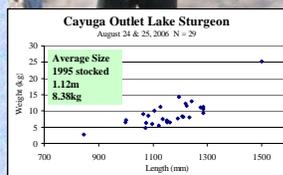
Mananjo Jonahson, a Master's student with Joseph C. Makarewicz, will complete her research. "Movement and habitat use by juvenile lake sturgeon *Acipenser fulvescens* (Rafinesque, 1817) in the Genesee River, New York" Nine of the juvenile sturgeon were radio tagged. She is tracking them frequently. More individuals will be tagged in 2007.



Cayuga Lake / Seneca Cayuga Canal: Restoration Stocking



Dawn Dittman USGS
Released: 2,800 in 1995, 370 in 1998, 412 in 2000, 150 in 2004
Population estimate: August 2006: Cayuga Outlet: 29 to 49



Adult size lake sturgeon caught in the Cayuga outlet on Aug 24th, 2006, it was 1.5 m long and 25 kg

Future Research Plans: Mark-recapture in the canal system, & explore other possible congregation / spawning areas in Cayuga Lake and the Canal System. Locate spawning adults. Distinguish Oneida Lake reared fish from others.

Oneida Lake: Restoration Stocking

Randy Jackson
Tom Brooking

Current Research

Oneida Lake is one of several waters in New York State included in a lake sturgeon restoration program initiated in 1995. To date, just over 8,000 hatchery-reared lake sturgeon have been stocked into Oneida Lake and data from over 500 fish sampled since 1996 indicate a fast-growing and healthy population. Length-at-age data show growth rates of 116 mm/year through age 8, faster than other systems for which data are available. Similarly, length-weight relationships show lake sturgeon in Oneida Lake to be in excellent condition, with the largest individual from our samples weighing over 22 kg at a length of 143 cm. Several age-8 males readily released sperm during spring 2003 sampling, providing further evidence that conditions in Oneida Lake are very favorable.

Oneida Lake Future Research Possibilities

- Continue monitoring catch rates, growth, etc.
- Attempt to identify spawning areas if spawning is taking place.
- Initiate some sort of larval sampling if spawning can be confirmed.
- Develop a proposal for large scale telemetry program designed to a) let fish show us where they might think they will try and spawn; b) fine tune habitat selection information, c) quantify out migration rates: 150-200 fish tagged.
- Ongoing research - have double tagged fish (danglers and PIT) hope to learn something about tag retention.
- Try to use portion of targeted sampling data to do a modified mark-recapture estimate to take a crack at determining survival of stocked fish.

St Lawrence River: Extant Population

Jennifer Hayes SUNY
College of Environmental Science and Forestry

This project involved identification of spawning sites below the FDR Power Project and sturgeon distribution, movements and habitat preference in that area and into Lake St. Francis.

These fish continue to be the egg source for the NYS-DEC restoration efforts.

Future Research Possibilities

More complete information is needed about the demography and ecology of this self-sustaining population.

Oswegatchie River: Restoration Stocking

Scott Schlueter SUNY
College of Environmental Science and Forestry

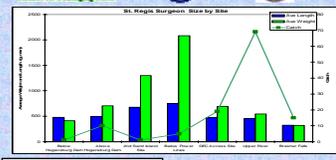
Total Stocked: Just over 11,000

This study characterized the downstream movements of the stocked fish, habitat use, and diet. Radio telemetry was used to describe movements and habitat utilization of stocked juvenile lake sturgeon.

Future Research Possibilities

More complete information is needed about these stocked as they grow, use the habitat, and approach spawning age.

St. Regis River: Restoration Stocking



5,000 stocked
Sturgeon are present and growing well.

Next Steps: Further stocking in the nearby Raquette River and Salmon Rivers with evaluation of sturgeon habitat use and growth and evaluation of movement into Lake St. Francis.

