

Lake Sturgeon Project in the Genesee River



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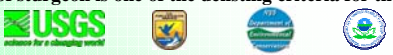
- Lake sturgeon has historically been an important component of native fish communities in the Great Lakes Region.
- This large, primitive, ecologically critical, macroinvertevore is considered threatened throughout much of its range.
- Management of a threatened species includes rehabilitation in rivers where the species was once common.



Lake Sturgeon

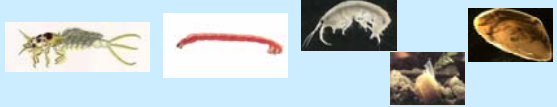
Why target the Genesee River for Lake Sturgeon??

- Sound conservation theory recommends that multiple populations of species in danger be maintained or reintroduced.
- The Genesee River is one of the major tributaries to Lake Ontario and has had improving water quality.
- In an account of the early history of the Genesee River, VERY LARGE sturgeon existed there in the 1830's.
- Rochester Area of Concern (AOC): USEPA Presence of sturgeon is one of the delisting criteria for the AOC.



Phase I Objectives: 1999-2002

1. Assessment of physical habitat parameters in the Genesee River.
2. Evaluation of the suitability of the current aquatic habitat for Lake Sturgeon.
3. Sampling of the benthic invertebrate community as a sturgeon food source and as system indicators of river habitat improvement.



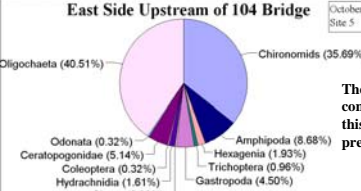
METHODS

- An evaluation of spring spawning and adult and juvenile summer foraging habitat was conducted in the 9 km of accessible river and intensively at evenly spaced transects: 1999 to 2002.
- Physical habitats were mapped from Lake Ontario to the first natural barrier (Lower Falls) 9km.
- Water flow, depth, temperature, and substrate characteristics were recorded.
- Habitat data were rated using a **Habitat Suitability Index Model** developed for Canadian rivers.
- Data on the benthic macroinvertebrate community were collected using a Ponar grab and standard benthic invertebrate sorting and identification techniques.

Summary of Genesee River Sturgeon Habitat Suitability Analysis. The habitat was rated using the physical parameters of the Habitat Suitability Index Model for Lake Sturgeon.

Evaluation Type	Location	Season	Average Velocity (m/s)	Depth Range (m)	Substrate Types	Habitat Rating
Foraging Juvenile	Seth Green Island to Harbor	Spring to Fall	0 - 0.77	1-7.2	sand, silt, silty sand, sandy gravel	Good to Very Good
Foraging Adult	Lower Falls to Harbor	Spring to Fall	0 - 0.77	1-7.2	cobbles, sand, silt, silty sand, sandy gravel	Good to Very Good

East Side Upstream of 104 Bridge October Site 5



The benthic macroinvertebrate community: the food needed for this large macroinvertevore was present.

Experimental Stocking: 2003 to ...

PHASE II

2004 Lake Sturgeon Egg Take, Massena NY





2003
900 stocked
1st & 2nd scutes removed


2004
1000 stocked
4th & 5th scutes removed





Standardized gill netting

Mark/recapture evaluation of habitat use and retention in the river.




Genesee River Kilometers

Recent Catches:

May 06	73	(2)
July 06	59	(3)
October 06	40	(3)
May 07	35	(1)
July 07	64	(2)
October 07	64	(2)

Site 4



Site 2

Examples of Repeated Captures

2004	6	262	63 USGS0006	2003 LAS tree
2005	6	408	277 USGS0006	2003 Willow
2007	10	730	1750 USGS0006	2003 above barge

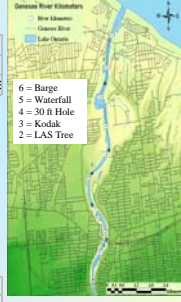
2004	10	310	109 USGS0159	2003 1st below 104 ft
2005	7	339	145 USGS0159	2003 Above 104 ft
2006	10	456	370 USGS0159	2003 Below 104 ft
2007	10	503	500 USGS0159	2003 below 104 ft

Strong site fidelity.


Equal numbers move up and downstream.

2005	8	307	112 USGS0538	2004 zoo falls
2006	5	372	218 USGS0538	2004 30ft hole
2007	7	574	825 USGS0538	2004 30ft hole


2005	5	390	250	USGS0223	2003	barge	
2006	7	500	550	169	USGS0223	2003	Waterfall
2007	7	574	800	193	USGS0223	2003	Kodak
2007	10	590	850	191	USGS0223	2003	30ft hole



6 = Barge
5 = Waterfall
4 = 30 ft Hole
3 = Kodak
2 = LAS Tree




677
Floy tag marked by Oct. 07




Estimates of the number in the river

August 2005	1,045	817-1433
October 2006	1,385	
October 2007	900-1200	




	03YC	04YC
Stocked Size	210 mm & 44 g	169 mm & 23 g
August 2005	437 mm & 338 g	298 mm & 113 g
October 2006	527 mm & 657 g	452 mm & 368 g
October 2007	603 mm & 918 g	505 mm & 571 g

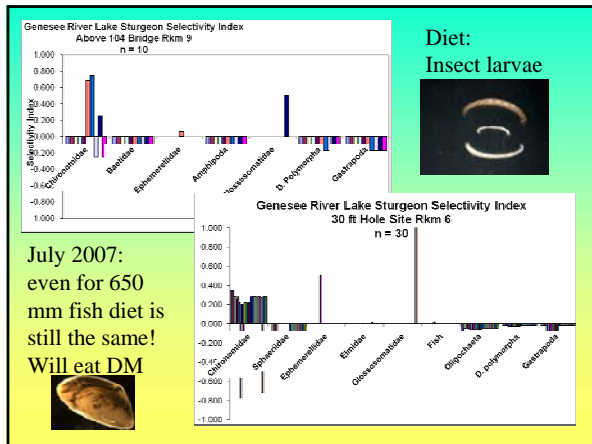
Largest 03 730 mm & 1,750 g
Smallest 03 503 mm & 500 g



28.7 inches and 3.9 lb.



Largest 04 627 mm & 1,200 g
Smallest 04 416 mm & 300 g



- Summary results:**
- Juvenile sturgeon are staying the river in good numbers.
 - The habitat in which the fish were captured was gravelly to sandy.
 - Most captures were in the deepest sections of a given river reach.
 - Growth for the year class was similar to growth in other systems.
95 to 115 mm average / yr
 - Sturgeon diet was similar to that in other systems (WI, Canada).

Lake Ontario

New for 2007:
We have started PIT
tagging the larger
fish. Only have
funds for a limited
number.

2008?
5 yr olds

More move out
to the lake

Current

Thank You!!

Goal