

USFWS Alpena Fish and Wildlife Conservation Office Update

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Emerging Contaminants

Purpose of Study: To understand contaminants of emerging concern (CECs) with respect to source, routes of exposure, and impacts to Trust Resources.

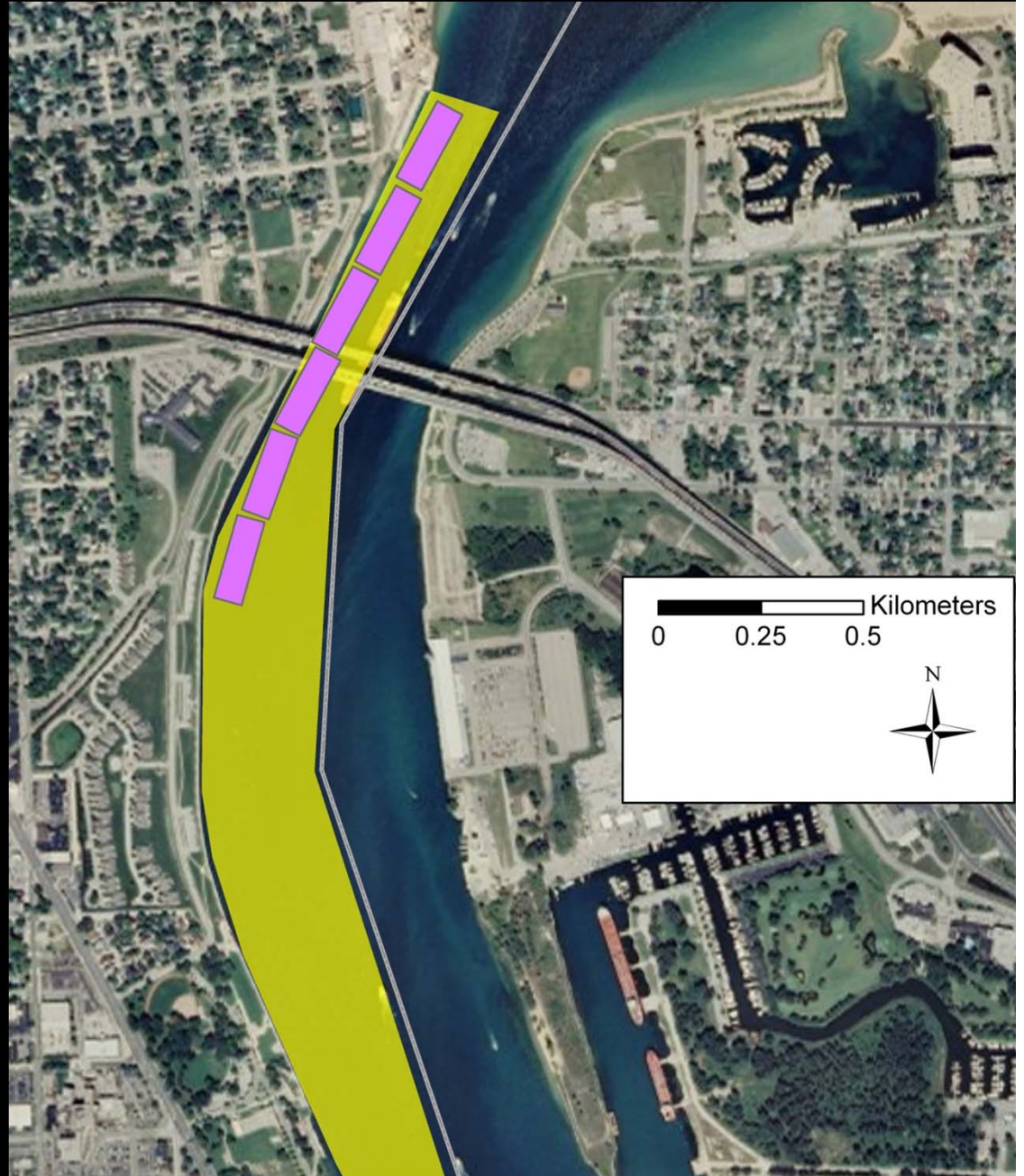
- Being conducted by USFWS East Lansing Ecological Services Office with support from Waterford Substation
- Measuring select contaminants of emerging concern concentrations across time, space, water, sediment, and fish in locations characterized as Areas of Concern
- Conducted in AOC's around the Great Lakes

- Six sites were sampled in the Detroit River in September 2010 and three sites were sampled in May of 2011
- Determine areas most at risk to cause effects in fish and wildlife, and analyze select response endpoints to determine possible CEC exposure and compare those responses between locations to determine areas of increased exposure effects.

St. Clair River Hydrokinetic Project (FERC# 13694)

Proposed Project

- 6 Farms
- Farm = 11 groups
- Group = 6 turbine units
- 396 turbine units
- Each turbine 7m x 7m x 7m
- Total area = 120m x 1,050m
- Avg. Annual Energy 155,000 MWh
- Sold to DTE Energy



St. Clair River Hydrokinetic Project (FERC# 13694)

- **Current Connections LLC grant application with FERC 03/26/2010**
- **Tetra Tech EC, Inc. meets with USFWS ES East Lansing 05/03/2010**
- **ES office response letter sent to TT with the following concerns to address**
 - **Fish and wildlife entrainment studies**
 - **Disruption to Lake Sturgeon spawning**
 - **Native mussels**
- **Current Connections LLC granted 3 year preliminary permit 12/22/2010**
 - **CC has priority to file a license application during the 3-year permit term**
 - **CC invested \$800,000 for studies, testing, maps, plans, etc.**
 - **First work conducted 2011 (Lashbrook)**
- **November 2011 Project put on hold due to financial constraints**

Detroit River Trawling Assessments - 2011

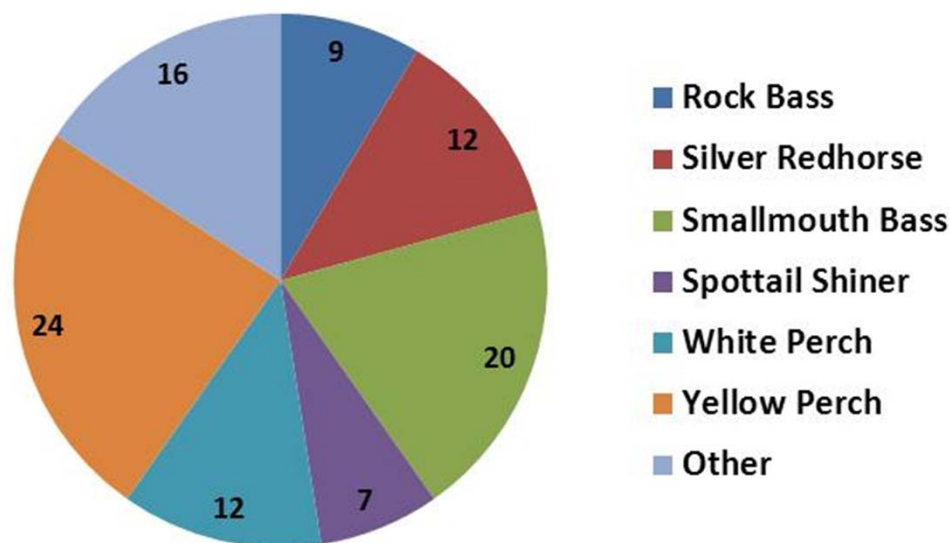
Objective: Determine the distribution and abundance of juvenile lake sturgeon along the east side of Fighting Island

- Bottom trawl assessments in 2010 captured three YOY sturgeon, as a result we focused effort in this area in 2011
- 45 bottom trawls (215 minutes of effort) – main channel and shallow sites
- Humminbird 1190 Series side scan sonar imaging system to characterize substrate (Margaret Hutton – University of New England)

Results

- No juvenile lake sturgeon
- 16 species captured
- Low abundance (82 fish total)

Proportion of Fish Captured Detroit River - 2011



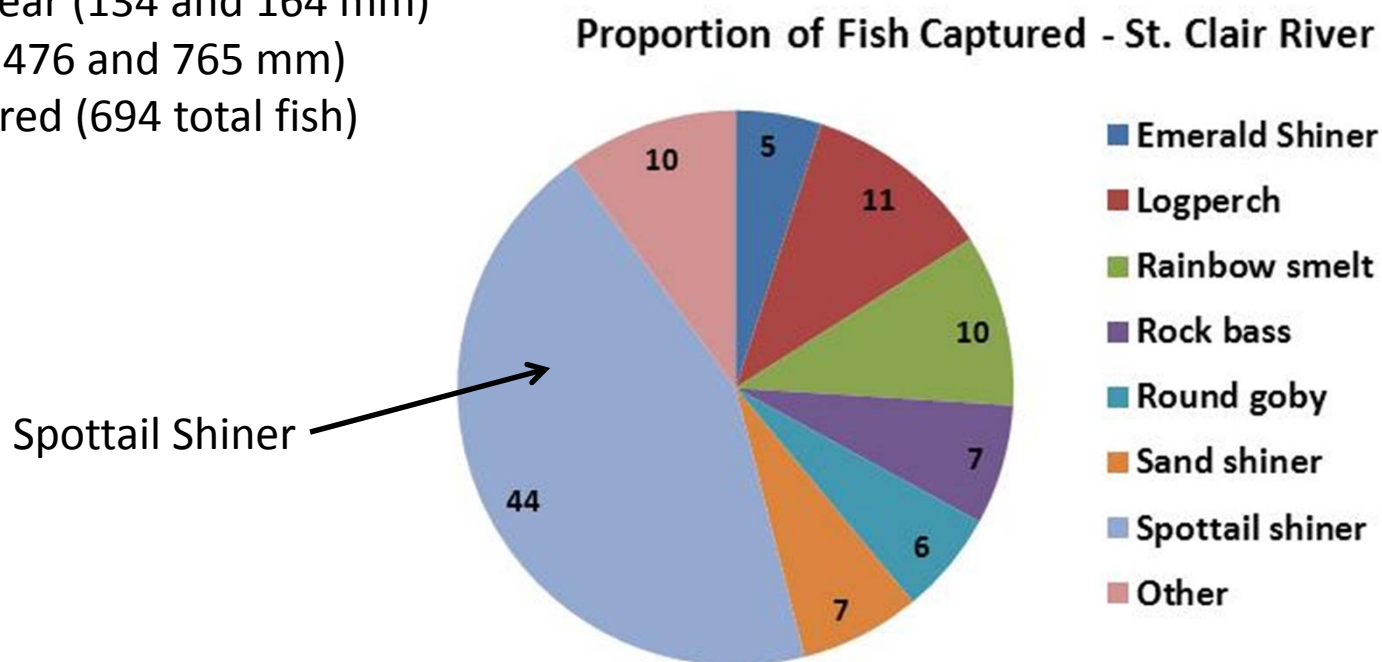
St. Clair River Trawling Assessments - 2011

Objective: Determine the distribution and abundance of juvenile lake sturgeon in the Lower St. Clair River

- Effort was focused in the North and Middle Channels
- 58 bottom trawls (328 minutes of effort)

Results

- Four juvenile lake sturgeon
 - two young of year (134 and 164 mm)
 - two juveniles (476 and 765 mm)
- 18 species captured (694 total fish)



2012 Juvenile Lake Sturgeon Assessments

Objective: Determine the distribution and abundance of juvenile lake sturgeon in the Detroit and St. Clair Rivers

- Begin late summer
- Effort will be distributed throughout each system (not just focused in areas)
- Southern Lake Huron and Lake Erie will also be sampled
- Multiple gear types will be used
 - small mesh gill nets (Barth et al. 2009)
 - modified minnow traps
 - 4.9 m head rope trawl with smaller mesh to sample additional species



Sea Lamprey Assessments in the Detroit River

Objective: Capture metamorphosing sea lampreys during the peak of their downstream fall outmigration in the lower Detroit River

- Conducted between 11/21 – 12/22/11
- Fyke nets fishing the surface



Sea Lamprey Assessments in the Detroit River



- Captured 4 sea lamprey (1 in Livingstone Channel, 3 in FI Channel West of FI)
- Estimated number of sea lamprey drifting – 21,905 animals
- Captured 9 unidentified Coregonids – species identification using genetics

