The Use of Science for Fisheries Restoration in the Huron-Erie Corridor

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Acknowledgements / Partners

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Lake Sturgeon Facts

- Largest fish in the Great Lakes.
- They can live 120+ yrs.
- They have been known to reach 2.5 meters in length and weigh between 45 and 140 kg.
- Spring spawner at water temperatures of 9-16° C.
- Seek out fast moving, well oxygenated water and coarse rock rubble.
- They take 15-20 years to reach sexual maturity.
- Females spawn once every 4-7 years.
Lake sturgeon were once abundant in the Great Lakes, including the Huron-Erie Corridor

- Millions in each Great Lake.
- 4000 caught in June 1890 in the HEC.
- Considered a nuisance fish.
- Burned carcasses for fuel.
- Presently threatened with extinction (1% left).
Millions Were Caught

Massive overfishing for flesh, oil & eggs
Lake Sturgeon Annual Harvest

Figure 2 of Manny 2013 (great lakes policy and mgmt book)

Harvest (kg x 1000)

1879 1889 1899 1909 1919

U.S. Waters
Canadian Waters
Spawning Areas Removed

Before: Natural River Bottom

During Construction

Present Day Lower Detroit River

Legend

- Historic Spawning Sites
- Shipping Channels
- Spoil Dumping Grounds

28 Species of fish have historically used 35 spawning sites that are located in or near areas that have been altered by construction of the shipping channels.
Number of Sturgeon in the Central Great Lakes Today

<table>
<thead>
<tr>
<th>Location</th>
<th>Population Estimates *</th>
<th>Lower CI</th>
<th>Upper CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Lake Huron</td>
<td>35,484</td>
<td>25,939</td>
<td>45,030</td>
</tr>
<tr>
<td>North Channel, SCR</td>
<td>11,720</td>
<td>7,356</td>
<td>16,083</td>
</tr>
<tr>
<td>Detroit River</td>
<td>4,068</td>
<td>869</td>
<td>7,268</td>
</tr>
</tbody>
</table>

*J. Chiotti, et al., ISS7 presentation*
Existing Spawning Habitat

• In 2001, only 3, small, sturgeon spawning grounds were known in the HEC: Blue Water Bridge, Mazlinka’s Reef in SCR and, Zug Island in DTR

• Of these only Blue Water Bridge is naturally occurring. The other two were manmade.
Conservation Measures Partnership Open Standards

1. Conceptualize
   - Define initial team
   - Define scope, vision, targets
   - Identify critical threats
   - Complete situation analysis

2. Plan Actions and Monitoring
   - Develop goals, strategies, assumptions, and objectives
   - Develop monitoring plan
   - Develop operational plan

3. Implement Actions and Monitoring
   - Develop work plan and timeline
   - Develop and refine budget
   - Implement plans

4. Analyze, Use, Adapt
   - Prepare data for analysis
   - Analyze results
   - Adapt strategic plan

5. Capture and Share Learning
   - Document learning
   - Share learning
   - Create learning environment
Zug Island Steel Mill, Detroit River

Egg mat
GPS-guided rock placement
Reef materials used included:

Shot-rock

Sorted limestone

Mix

Sorted round stone
Planned Reef Construction

Seven new spawning sites in the 160 km channel by 2016.

Newer reefs are larger than early experimental reefs (1.2 to 1.6 hectares each).
We expect the HEC to be the epicenter of sturgeon restoration in the Great Lakes.