

GREAT LAKES LAKE STURGEON REHABILITATION

Background

Rehabilitation of lake sturgeon (*Acipenser fulvescens*) in the Great Lakes is an international collaborative effort among federal, state, tribal and provincial natural resource agencies, academic institutions, and private industry. Partners are all working toward conservation of lake sturgeon and the habitat that sustains them. Success in this endeavor is an indicator of our ability to restore and protect the health of the Great Lakes by preserving the stability of the native ecosystem and the populous region that it sustains. The cooperative use of federal funds and resources leveraged with state, tribal, university, and private industry resources are contributing to the progress of this rehabilitation effort.



Lake sturgeon, the giants of the Great Lakes with adults ranging from 20 to 150 pounds and capable of reaching more than 100 years of age, were historically abundant in the nearshore waters of the Great Lakes. In the spring sturgeon spawned by the thousands in many major tributaries, connecting waters, and shoal areas across the basin. Their rapid decline in the late 1800s resulted primarily from intense commercial fishing associated with the development of the Great Lakes region (Baldwin 1979, Figure 1), but also from degraded water quality, habitat destruction, and elimination of access to spawning habitat. Since 1900 they have remained a highly depleted species no longer present in many tributaries and waters where they once spawned and flourished. As a result they have special conservation status in each of the Great Lakes. At present, lake sturgeon rehabilitation is identified as a Fish Community Objective for each Great Lakes by agencies of the Great Lakes Fishery Commission.

Rehabilitation Goal

To protect, enhance and rehabilitate lake sturgeon populations and their habitat throughout the Great Lakes, which contribute to a stable and healthy ecosystem and provide for responsible use of sturgeon resources.

Cooperative Efforts

Cooperative assessment efforts focus have addressed several rehabilitation objectives, while focusing on determination of the current status of lake sturgeon populations. Efforts are underway to identify and protect spawning populations and to assess their numbers and demographics, to describe the extent of sturgeon movement, to determine critical habitat needs at each life stage, to describe the status of existing habitat, and to describe population genetic structure. Information gathered is being used to guide decisions on the need to protect and restore habitats, and to determine the best approaches to re-establish populations in areas where they no longer occur, or increase numbers of depleted populations.



Accomplishments

Remnant spawning populations have been confirmed in 11 of 22 known historic spawning tributaries in Lake Superior, 8 of 27 in Lake Michigan, 3 of 29 in Lake Huron, and 3 of 8 in Lake Ontario. The abundance of sturgeon populations ranges from 10s in some tributaries to thousands in large connecting waterways such as the St. Clair and Detroit rivers. While the status in many Great Lakes tributaries is uncertain, abundance appears to be increasing in some areas. Genetic information is being used to determine appropriate donor and recipient populations and to provide recommendations for maintenance of

existing genetic diversity. Sturgeons are being stocked into some Great Lakes tributaries in an effort to re-establish populations. Research and development of sturgeon passage methods and structures continues with prototype designs being employed at select sites. Sturgeon mortalities have occurred in isolated areas of lakes Erie, Ontario, and Michigan in recent years, the primary cause appears to be botulism.

An important partnership between commercial fishers and fishery agencies on all five Great Lakes is providing key information on sturgeon abundance, movement, growth, and through genetic analysis, the likely tributary in which the fish originated. Through this cooperative effort commercial fishers are provided basic field equipment and training to gather data, tag, and release sturgeon caught incidentally while fishing for other species. Data is provided to the U.S. Fish and Wildlife Services offices and others for analysis.

Impediments

Dams are a primary impediment to sturgeon rehabilitation as they block access to upstream spawning and rearing habitat and alter flow regimes affecting reproduction and survival. Water quality, disease, over-harvest, and contaminants are a concern in isolated areas of the lakes and may be an impediment to rehabilitation.

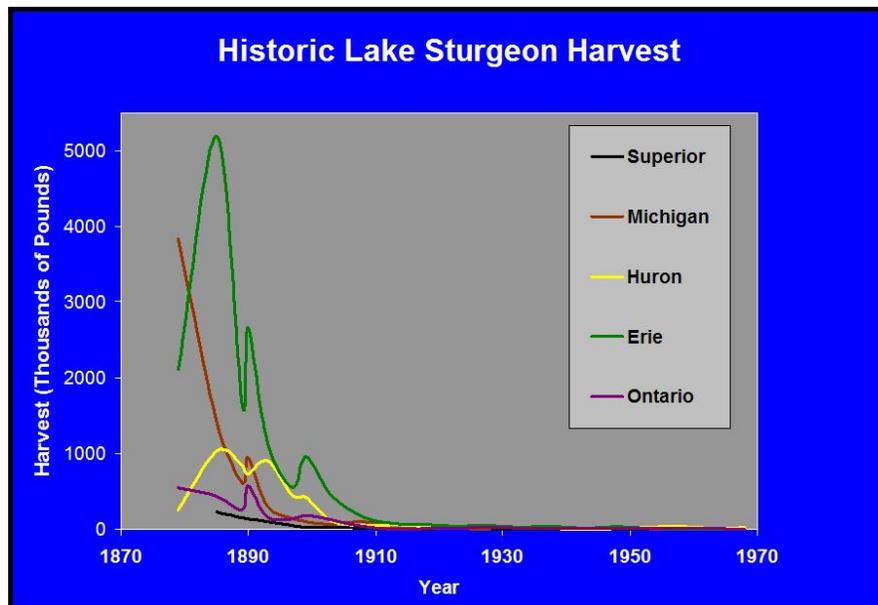


Figure 1. Commercial harvest of lake sturgeon in the Great Lakes (Baldwin et al 1979).

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Partners

Federal Agencies - U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. Forest Service, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers

State Agencies - Michigan, Minnesota, Wisconsin, Illinois, and Indiana Departments of Natural Resources, Ohio Division of Wildlife, New York Department of Environmental Conservation, Pennsylvania Fish and Boat Commission, Vermont Department of Fish and Wildlife

Tribes and Tribal Organizations - Great Lakes Indian Fish and Wildlife Commission, Chippewa-Ottawa Resource Authority, 1854 Authority, Bad River Band of Lake Superior Chippewa, Keweenaw Bay Band of Lake Superior Chippewa, Red Cliff Band of Lake Superior Chippewa, Bay Mills Indian Community, Grand Portage Band of Chippewa, Fond du Lac Band of Chippewa, Little River Band of Ottawa Indians, Little Traverse Bay Band of Odawa Indians, Menominee Indian Tribe of Wisconsin, Mohican Nation Stockbridge-Munsee Tribe, Grand Traverse Band of Ottawa and Chippewa Indians, Oneida Nation, St. Regis Mohawk Tribe



Commissions and Non-Government Organizations - Great Lakes Fishery Commission, Sturgeon for Tomorrow, Great Lakes Fishery Trust, Giovanni Auletta Armenise Harvard Foundation, National Fish and Wildlife Foundation

Industry – 32 State and Tribal licensed commercial fishing operations on all 5 Great Lakes, Province of Ontario licensed commercial fisher, Alden Research Laboratories, Inc., Golder Associates, Hydropower companies

Universities - Michigan State University, Michigan Technological University, University of Wisconsin Stevens Point, University of Wisconsin Milwaukee, Purdue University, Central Michigan University, Lake Superior State University, Ohio State University, Cornell University, University of Michigan, University of California Davis, University of Georgia, University of Guelph

Canadian Agencies and First Nations – Ontario and Quebec Ministries of Natural Resources, Fisheries and Oceans, Parks Canada, Anishnabec/Ontario Fisheries Resource Centre, Pic River First Nation, Sagamok Anishnawbek

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