

STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-81-R-1

Study No.: 661

Title: Evaluation of lake sturgeon *Acipenser fulvescens* populations in northern Michigan

Period Covered: October 1, 1999 to September 30, 2000

Cooperators: Michigan Technological University; Ralph Wilcox, Tribal Fisher, Brimley, MI

Study Objectives: (1) To verify presence of larval lake sturgeon in selected rivers in Upper Peninsula watersheds that are suspected of supporting spawning runs to determine if lake sturgeon are successfully reproducing in those rivers. (2) To determine early (larval and juvenile) life history of lake sturgeon from Sturgeon River/Portage Lake, Indian Lake, and Green Bay/bays de Noc stocks, and identify habitat requirements of young lake sturgeon. (3) To tag adult lake sturgeon spawning in Sturgeon River (Houghton and Baraga Counties) and tributaries of Green Bay to monitor lake sturgeon movement, composition of the spawning stock, and degree of spawning stream fidelity.

Summary: Lake sturgeon sampling efforts were carried out in several rivers during spring and summer, 2000. We tagged two lake sturgeon in Menominee River, one lake sturgeon in Carp River (Mackinaw Co.), one lake sturgeon from Lake Michigan near the Cedar River mouth (Menominee Co.), and 68 adult lake sturgeon in Sturgeon River. We captured six juvenile lake sturgeon from Black River (Cheboygan Co.). No adult or juvenile lake sturgeon were observed or captured in other locations sampled. Larval lake sturgeon were captured in Sturgeon River and Black River. A workshop sponsored by the Great Lakes Fishery Trust was held in Muskegon, MI during June, 2000 to assess the research and assessment needs for lake sturgeon restoration in the Great Lakes. I co-organized the workshop and continue to work on the workshop product, a prioritized list of research needs for lake sturgeon restoration.

Job 1. Title: Sample larval lake sturgeon in selected rivers to verify reproduction.

Findings: We sampled drift for larval lake sturgeon in Sturgeon River and Black River during May and June, 2000. Sturgeon River was sampled from 16 May to 1 June. Black River was sampled from 10 May to 6 June. Drift nets were fished between 21:00 and 00:00 hours. Larval lake sturgeon were captured in Sturgeon River (N=132) and from Black River (N=780). Larval lake sturgeon lengths ranged from 16 to 24 mm total length. We did not sample other locations in 2000 either because spawning adults were not encountered or because personnel were not available to carry out sampling.

Job 2. Title: Determine habitat availability in Sturgeon River/Portage Lake, Indian Lake, and bays de Noc.

Findings: Because previous sampling indicated there has not been recent spawning in any bays de Noc tributaries or in Indian River/Indian Lake, work on this job was not pursued for these locations. If either spawning fish or larval lake sturgeon are captured in bays de Noc tributaries or in Indian River in future sampling efforts, this work will be completed at that time. We are

quantifying habitat availability (depth, substrate, vegetative cover) in Sturgeon River/Portage Lake using Geographic Information Systems technology (GIS).

Job 3. Title: Sample juvenile lake sturgeon in Sturgeon River/Portage Lake, Indian Lake, and bays de Noc.

Findings: Because there was no evidence of successful reproduction in any bays de Noc tributaries or in Indian River/Indian Lake work on this job was also not completed for these locations. If either spawning fish or larval lake sturgeon are captured in bays de Noc tributaries or in Indian River in future sampling efforts, this work will be completed at that time.

No juvenile sampling was conducted in Sturgeon River due to a lack of personnel. Juvenile sampling was completed in Black Lake/Black River and Ontonagon River. Ontonagon River was sampled with gill nets, trawl, and electrofishing from 1 to 3 August 2000 in an effort to capture juvenile lake sturgeon that have been stocked annually since fall, 1998. No juvenile lake sturgeon were captured in Ontonagon River. Black Lake was sampled with a trawl on 14 and 15 August. Sixteen trawl tows of 15 minutes duration were completed in various habitats in Black Lake but we did not capture any lake sturgeon. We visually surveyed and electrofished Black River on 9, 15, 16, 28 August and 12 September and captured six juvenile lake sturgeon. The lake sturgeon captured were 175-198 mm total length.

Job 4. Title: Compare habitat availability to juvenile habitat use.

Findings: Juvenile habitat use has been monitored via radio tracking in Portage Lake. Personnel from Michigan Technological University captured and radio tagged four juvenile lake sturgeon during August, 1999 and tracked the fish until the radio transmitters ceased functioning. Habitat variables were also measured at fish locations during the period of radio tracking. Analysis for Portage Lake habitat availability and use is continuing but is not completed at this time.

Job 5. Title: Tag adult spawning lake sturgeon in Sturgeon River and Green Bay tributaries.

Findings: We used either a boat-mounted electrofishing unit or large dip nets to sample selected rivers for spawning lake sturgeon during spring, 2000. Rivers sampled included the lower Menominee River, Millecoquins River, Carp River, and Sturgeon River. Two lake sturgeon were captured and tagged in the lower Menominee River, 68 adult lake sturgeon were captured in Sturgeon River, and one lake sturgeon was captured in Carp River. No lake sturgeon were captured in Millecoquins River although we did receive a report from a local resident that at least one lake sturgeon was present in the river. Adult lake sturgeon ranged from 58 to 180 cm total length. In addition, lake sturgeon that were incidentally caught in gill and trap nets in Whitefish Bay, Lake Superior were tagged and released by Ralph Wilcox, tribal commercial fisher. However, data on the tagged fish have not been received to date.

Job 6. Title: Analyze data and write reports

Findings: Data analysis is ongoing. This progress report was prepared on schedule.

Additional work completed: The Great Lakes Fishery Trust sponsored a workshop titled "Research and Assessment Needs to Restore Lake Sturgeon in the Great Lakes" on 27 and 28

June 2000. I worked on the workshop steering committee along with Robert Elliott and Mark Holey of the U. S. Fish and Wildlife Service, and Thomas Thuemler, recently retired from Wisconsin DNR, to organize the workshop. The workshop was facilitated by Dr. Joseph Koonce, Case Western Reserve University, and was attended by 52 individuals involved in lake sturgeon research and management from throughout the Great Lakes basin. Attendees represented management agencies, academia, tribal agencies, and private firms from all the Great Lake states and the provinces of Ontario and Quebec. The goal of the workshop was to “Identify the research and information gaps that limit our ability to restore lake sturgeon in Lake Michigan and the Great Lakes.” I am currently working with the other members of the steering committee on a final report for the Trust that will contain a prioritized list of knowledge gaps as well as a prioritized list of lake sturgeon research needs.

Prepared by: Edward A. Baker

Date: September 30, 2000