

## STUDY PERFORMANCE REPORT

**State:** Michigan

**Project No.:** F-81-R-2

**Study No.:** 661

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

**Period Covered:** October 1, 2000 to September 30, 2001

**Cooperators:** Central Michigan University; Lake Superior State University; Michigan Technological University; Ralph Wilcox, Tribal Fisher, Brimley, MI

**Study Objective:** (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 (Houghton and Baraga Co.), Indian Lake (Schoolcraft Co.), 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 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, 2001. We tagged 115 lake sturgeon in Black River (Cheboygan Co.) during the spawning period, 47 adult and juvenile lake sturgeon in Black Lake (Cheboygan Co.), 51 adult lake sturgeon in Sturgeon River (Baraga Co.), 40 adult lake sturgeon in St. Mary's River (Chippewa Co.), and three lake sturgeon from Lake Michigan near the Cedar River mouth (Menominee Co.). Three adult lake sturgeon were also observed in the Otter River (Baraga Co.) but were not captured or tagged and approximately 15 adult lake sturgeon were observed spawning in Indian River (Cheboygan Co.) but were not captured. 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.

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

**Findings:** We sampled stream drift for larval lake sturgeon in Sturgeon River, Otter River, and Black River during May and June, 2001. Sturgeon River was sampled from 15 May to 11 June, Black River was sampled from 10 May to 14 June, and Otter River was sampled from 7 to 15 June. Drift nets were fished between 21:00 and 00:00 hours. Larval lake sturgeon were captured in Sturgeon River (N=138) and from Black River (N=2975), but none were captured in Otter River in three nights of sampling effort. Larval lake sturgeon lengths ranged from 19 to 24 mm total length. We did not sample other locations in 2001 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 or Ontonagon River due to a lack of personnel.

**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. Data analysis has been completed and the results are summarized in a Master's thesis published by Michigan Technological University.

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

**Findings:** We used large dip nets to sample selected rivers for spawning lake sturgeon during spring, 2001. Rivers sampled included the Sturgeon River, Otter River, Black River (Cheboygan Co.), and Indian River (Cheboygan Co.). Although adult lake sturgeon were observed, no lake sturgeon were captured in either Otter River or Indian River. Three lake sturgeon were observed in deep water in Otter River on 14 May and approximately 15 lake sturgeon were observed spawning in Indian River on 11 May. In late April three lake sturgeon were captured in pound nets near the Cedar River mouth in Lake Michigan and all three were tagged. Fifty-one adult lake sturgeon were captured in Sturgeon 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 eastern Lake Superior were tagged and released by Ralph Wilcox, tribal commercial fisher. However, data on the tagged fish have not been received to date. Personnel from Lake Superior State University began sampling the St. Mary's River with set lines during summer, 2001 and captured and tagged 40 adult lake sturgeon.

**Job 6. Title: Analyze data and write reports**

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

**Prepared by:** Edward A. Baker

**Date:** 15 October 2001