

## STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-81-R-3

Study No.: 661

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

Period Covered: October 1, 2001 to September 30, 2002

Cooperators: Central Michigan University; Lake Superior State University; Michigan Technological University; Vanlandschoots Commercial Fisheries

**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, 2002. We captured 104 lake sturgeon in Black River (Cheboygan Co.) during the spawning period, 147 adult and juvenile lake sturgeon in Black Lake (Cheboygan Co.), 73 adult lake sturgeon in Sturgeon River (Baraga Co.), 37 adult lake sturgeon in St. Mary's River (Chippewa Co.), 2 lake sturgeon from Menominee River (Menominee Co.), 2 lake sturgeon from Manistique River (Schoolcraft Co.), and 4 lake sturgeon from Misery Bay, Lake Superior. Larval lake sturgeon were captured in Black River and lake sturgeon eggs were observed in Otter River (Houghton Co.). Larval sampling captured 2,500 larvae from Black River in May and June. Juvenile habitat use was assessed in Ontonagon River with set lines, gill nets, and trawls. Three juvenile lake sturgeon were captured during summer, 2002 and one of these had a radio transmitter implanted.

**Findings:** Jobs 1, 2, 3, 4, 5, and 6 were scheduled for 2001-02, and progress is reported below.

**Job 1. Title: Sample larval lake sturgeon in selected rivers to verify reproduction.**—We sampled stream drift for larval lake sturgeon in Black River during May and June, 2002. Black River was sampled from 17 May to 18 June. Drift nets were fished between 21:00 and 00:00 hours and captured 2,500 larvae. We did not sample other locations in 2002 either because spawning adults were not encountered, eggs were observed (confirming spawning activity) 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.**—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.**—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.

**Job 4. Title: Compare habitat availability to juvenile habitat use.**—Juvenile habitat use has been monitored via radio tracking a single lake sturgeon in Ontonagon River and by sampling various habitats in the lower Ontonagon River. Personnel from Michigan Technological University captured and radio tagged a single juvenile lake sturgeon on 2 July, and tracked the fish until the radio transmitter ceased functioning on 24 July. Habitat variables were also measured at fish locations during the period of radio tracking. Data analysis has not been completed, and the effort to capture and radio tag additional fish is continuing. The results of this aspect of the study will be summarized in a Master's thesis due to be completed in 2003.

**Job 5. Title: Tag adult spawning lake sturgeon in Sturgeon River and Green Bay tributaries.**—We used large dip nets to sample selected rivers for spawning lake sturgeon during spring, 2002. Rivers sampled included the Sturgeon River, Otter River, and Black River (Cheboygan Co.). No lake sturgeon were observed in Otter River. We captured and tagged 73 lake sturgeon from Sturgeon River and 104 from Black River. Two lake sturgeon were captured incidental to walleye tagging operations in Menominee River and both fish were tagged. During July we used large mesh gill nets to capture and tag 147 juvenile and adult lake sturgeon from Black Lake (Cheboygan Co.). In addition, five lake sturgeon that were incidentally caught in gill and trap nets in Lake Superior were tagged and released by Vanlandschoots Commercial Fisheries. Personnel from Lake Superior State University continued sampling the St. Mary's River with set lines during summer, 2002 and captured and tagged 37 adult lake sturgeon.

**Job 6. Title: Analyze data and write reports.**—Data analysis is ongoing. This progress report was prepared on schedule.

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**Date:** September 30, 2002