

STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-81-R-4

Study No.: 661

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

Period Covered: October 1, 2002 to September 30, 2003

Cooperators: Michigan State 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 was carried out in several rivers during spring and summer, 2003. We captured 124 spawning adult lake sturgeons in Black River (Cheboygan Co.), 44 spawning adult lake sturgeons in Sturgeon River (Baraga Co.), 3 adult lake sturgeons in St. Mary's River (Chippewa Co.), 11 adult lake sturgeons in Menominee River (Menominee Co.), and 19 adult lake sturgeons in Green Bay/Bay de Noc. Larval sampling captured 16,417 lake sturgeons from Black River in May and June. Juvenile habitat use was assessed in Ontonagon River with setlines, gillnets, trawl, and through radio telemetry. Sixty-one juvenile lake sturgeons were captured during summer, 2003 and two of these had radio transmitters implanted in them. In addition, four juvenile lake sturgeons raised at the Wolf Lake hatchery were radio tagged and released in the Ontonagon River.

Findings: Jobs 1 through 6 were scheduled for 2002-03, 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, 2003. Black River was sampled each night from 11 May to 10 June. Drift nets were fished between 21:00 and 00:00 hours and captured 16,417 larvae. We did not sample other locations in 2003 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.—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. The Ontonagon River was sampled with trawl, setlines, and gillnets throughout summer, 2003 and 61 juvenile lake sturgeons were captured. Captured fish were from 150 to 860 mm TL and weighed 13-2000+ grams.

Job 4. Title: Compare habitat availability to juvenile habitat use.—Juvenile habitat use has been monitored via radio tracking six juvenile lake sturgeon in Ontonagon River and by sampling various habitats in the lower Ontonagon River. Personnel from Michigan Technological University and DNR captured and radio tagged two juvenile lake sturgeons during summer, 2003 and radio tags were placed on four lake sturgeons that were raised at the Wolf Lake hatchery and stocked into the Ontonagon River. Radio tracking is continuing and data analysis is incomplete. Habitat variables were also measured at fish locations during the period of radio tracking. The results of this aspect of the study will be summarized in a Master's thesis due to be completed in December, 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 sturgeons were observed in Otter River. We captured and tagged 44 lake sturgeon from Sturgeon River and 124 from Black River. Eleven lake sturgeons were captured incidental to walleye tagging operations in Menominee River and all fish were tagged. In addition, lake sturgeon that were incidentally caught in gill and trap nets in Lake Superior were tagged and released by Vanlandschoots Commercial Fisheries, although data have not been summarized. Personnel from Lake Superior State University continued sampling the St. Mary's River with set lines during summer, 2003 and captured and tagged three adult lake sturgeons. Large mesh gillnets were used to sample northern Green Bay and 19 adult lake sturgeon were captured. Sampling was concentrated near the Whitefish, Escanaba, and Cedar River mouths. There was no indication that any of the fish captured were pre- or post-spawn fish.

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

Prepared by: Edward A. Baker

Date: September 30, 2003