STUDY PERFORMANCE REPORT

State: Michigan **Project No.:** F-35-R-24

Study No.: 661 **Title:** Evaluation of lake sturgeon *Acipenser fulvescens* populations in northern Michigan

Period Covered: April 1, 1998 to September 30, 1999

Cooperators: 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, 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, 1998 and 1999. We tagged 14 adult lake sturgeon in Menominee River, two adult lake sturgeon in Millecoquins River, and 40 adult lake sturgeon in Sturgeon River (Baraga Co.) during 1998. In addition, 17 adult and juvenile lake sturgeon were captured and tagged in Whitefish Bay, Lake Superior in 1998. We tagged one adult lake sturgeon in Menominee River and 44 adult lake sturgeon in Sturgeon River (Baraga Co.) during 1999. No adult or juvenile lake sturgeon were observed or captured in other locations sampled. Larval lake sturgeon were captured in Sturgeon River (Houghton Co.) in 1998 and 1999 and in Black River (Cheboygan Co.) in 1999.

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

Findings: We sampled drift for larval lake sturgeon in several selected rivers during May and June, 1998. Rivers and dates sampled were: Sturgeon River (Houghton Co.), 13 May to 2 June; Sturgeon River (Delta Co.), 12 and 18 May; Menominee River (Menominee Co.), 5 May; Ontonagon River (Ontonagon Co.), 14 and 19 May; Ford River (Delta Co.), 5, 13, and 19 May; and Millecoquins River (Schoolcraft Co.), 4, 7, 11, and 15 May. Drift nets were fished between 21:00 and 00:00 hours. Larval lake sturgeon (N=5) were captured only in Sturgeon River (Houghton Co.). Larval lake sturgeon lengths ranged from 20 to 22 mm total length. We did not sample other locations in 1998 either because spawning adults were not encountered or because personnel were not available to carry out sampling.

During May and June, 1999 we sampled larval drift in Sturgeon River (Houghton Co.) from May 12 to June 11 and Black River (Cheboygan Co.) from 12 to 31 May. Six larval lake sturgeon ranging from 20 to 22 mm were captured in Sturgeon River and 415 larvae from 20 to 26 mm total length were captured in Black River.

Job 2. Title: Determine habitat availability 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 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 (Houghton Co.) 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 (Schoolcraft Co.), 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.

Visual surveys were conducted during July and August 1998 and 1999 in Sturgeon River (Houghton Co.) and juvenile sturgeon were captured using D-frame dip nets during both years. Sixteen juvenile sturgeon ranging from 98 to 165 mm total length were captured during 1998 and one juvenile sturgeon 116 mm total length was captured during 1999.

Gill nets and set lines were fished in Portage Lake from 8 July to 6 November 1998 and from 29 June to 10 August 1999, and juvenile lake sturgeon were captured both years. Thirteen juvenile lake sturgeon ranging from 230 to 625 mm total length were captured in 1998 and four juveniles ranging from 65 to 522 mm total length were captured during 1999.

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

Findings: Analysis for Portage Lake habitat availability and use has not been completed at this time.

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

Findings: We used a boat mounted-electrofishing unit and large dip nets to sample selected rivers for spawning lake sturgeon during May and June 1998. Rivers sampled included the lower Menominee River (Menominee Co.), Millecoquins River (Mackinaw Co.), and Sturgeon River (Houghton Co.). Fourteen adult and juvenile lake sturgeon were captured and tagged in the lower Menominee River, two adult lake sturgeon were captured in Millecoquins River and, 40 adult lake sturgeon were captured in Sturgeon River. Adult lake sturgeon ranged from 58 to 180 cm total length. In addition, 17 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.

During 1999 we captured and tagged 44 adult lake sturgeon in Sturgeon River (Houghton Co.) and one adult lake sturgeon in Menominee River. Gill nets were fished overnight in Tahquamenon River and Manistique River on 26 April and 21 May respectively but no lake sturgeon were captured.

Job 6. Title: Analyze data and write reports

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

Prepared by: Edward A. Baker
Date: September 30, 1999