

STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-35-R-22

Study No.: 661

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

Period Covered: April 1, 1996 to March 31, 1997

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 homing.

Summary: Lake sturgeon sampling efforts were carried out in several Upper Peninsula rivers during spring and summer, 1996. We tagged 251 lake sturgeon ranging from 69 to 171 cm total length and 1.4 to 30 kg in Menominee River during May and August sampling trips. We also tagged 18 lake sturgeon from 121 to 184 cm total length during late May and early June in Sturgeon River, Houghton Co. No adult or juvenile lake sturgeon were observed or captured in other locations sampled (N=8). Larval lake sturgeon were captured in Sturgeon River, Houghton Co. in June but were not captured in any other river sampled (N=5). Larval lake sturgeon measured were from 18 to 24 mm total length.

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

Findings: Marquette Fisheries Station personnel sampled drift in several selected rivers during May and June, 1996. Rivers selected and dates sampled were: Sturgeon River (Houghton Co.), 29 May to June 14; Sturgeon River (Delta Co.), 5, 11, and 12 June; East Branch Whitefish River (Delta Co.), 11 June; West Branch Whitefish River (Delta Co.), 11 June; Indian River (Schoolcraft Co.), 6 and 12 June, and Carp River (Mackinaw Co.). 5 and 12 June. Drift nets were fished between 21:00 and 03:00 hours. Larval lake sturgeon (N=265) were only captured in Sturgeon River (Houghton Co.). Larval lake sturgeon captured ranged from 18 to 24 mm, although only 47 larvae were measured. We did not sample other locations either because spawning adults were not encountered or because personnel were not available to carry out the sampling.

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. 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. However, without evidence of lake sturgeon reproduction, there is no justification for carrying out this job for bays de Noc or Indian Lake. Habitat availability in Sturgeon River/Portage Lake was not quantified because funding needs were not met. Work in Sturgeon River/Portage Lake was to be contracted to Dr. Nancy Auer, Michigan Technological University, as specified in the original study proposal. However, Fisheries Division did not have sufficient discretionary funds in fiscal 1996 to fund that portion of the study. Because sampling was concentrated on rivers that are suspected but not known to have spawning populations of lake sturgeon, sampling in Menominee River was limited. More intensive sampling will be conducted in Menominee River in 1997.

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. 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. However, without evidence of lake sturgeon reproduction, there is no justification for carrying out this job for bays de Noc or Indian Lake. Juvenile lake sturgeon were not sampled in Sturgeon River/Portage Lake, again because funding needs were not met.

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

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. 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. However, without evidence of lake sturgeon reproduction, there is no justification for carrying out this job for bays de Noc or Indian Lake. Habitat availability was not compared to habitat use in Sturgeon River/Portage Lake, again because funding needs were not met.

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

Findings: Marquette Fisheries Station personnel used a boat mounted electrofishing unit to sample selected Upper Peninsula rivers for spawning lake sturgeon during May and June, 1996. Rivers sampled included the lower Menominee River (Menominee Co.), the lower Escanaba River (Delta Co.), the lower Whitefish River (Delta Co.), the lower Manistique River (Schoolcraft Co.) and Tahquamenon River (Chippewa Co.) at the base of the lower falls. We also conducted visual searches for spawning lake sturgeon in Sturgeon River (Delta Co.), Indian River, West Branch Whitefish River, the lower Manistique River, and Sturgeon River (Houghton Co.). Lake sturgeon were only captured in the lower Menominee River and in Sturgeon River (Houghton

Co.). We captured and tagged 31 and 83 lake sturgeon in Menominee River on 21 and 29 May 1996, respectively. The capture of male lake sturgeon on 21 May with free running milt from the vent indicated that spawning may have been occurring at that time, although no fish were captured that were positively identified as females. On 29 May no fish were captured that had either running milt or eggs. Further sampling in Menominee River was conducted on 12, 13, 21, and 22 August and an additional 137 fish were tagged during that period. Menominee River lake sturgeon tagged ranged from 69 to 171 cm total length and from 1.4 to 30 kg. Limited tag-return data indicated tagged fish remained in the river because all tag return data (N=3) were from anglers fishing in the river at or near the site fish were originally captured. We also tagged 18 adult fish in Sturgeon River (Houghton Co.) ranging from 121 to 184 cm total length. The Sturgeon River fish were tagged during the spawning run on May 30 and June 11.

Job 6. Title: Analyze data and write reports.

Findings: Data were analyzed and this report was prepared on schedule.

Prepared by: Edward A. Baker
Date: March 31, 1997