

STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-81-R-7

Study No.: 230737

Title: Status and trends of fish populations and community structure in Michigan streams

Period Covered: October 1, 2005 to September 30, 2006

Study Objectives: The objectives of this study are to:

1. Characterize fish community structure and the abundance, presence, and distribution of fish populations in a variety of stream types across the state.
2. Quantify the baseline level of variation in fish population abundance and community structure in a variety of stream types for use in interpreting individual field samples.
3. Describe long-term trends in fish community structure and fish population abundance in valuable trout and smallmouth bass streams and representative small coldwater streams across the state.
4. Track changes in survival and growth of salmonids and smallmouth bass over time.
5. Examine the relation between temporal changes in fish population size and structure and instream habitat.
6. Identify appropriate spatial scales for describing regional trends (if any exist) in fish community structure and fish population abundance.
7. Compare temporal patterns in resident salmonid abundance, growth, and recruitment among and between land-locked and potamodromous coldwater streams.
8. Oversee continued implementation, coordination, and maintenance of the Stream Status and Trends Program.

Summary: The Fisheries Division of the Michigan Department of Natural Resources (MDNR) initiated the Statewide Status and Trends Program (SSTP) during the spring of 2002. The division-wide SSTP uses standardized sampling methods in an effort to collect and evaluate data from a state-wide perspective. These data include fisheries information from electrofishing, habitat measurements, and water quality sampling that will be used to monitor statewide status and trends of streams as well as to evaluate stocking and other management activities in streams. In 2005, we continued to coordinate fish and habitat surveys, worked with other Division personnel to refine the central database used to store all SSTP data, and explored opportunities for collaboration with other agencies. These efforts will ensure that the SSTP progresses steadily into the future.

Findings: Jobs 2, 3, 4, and 9 were scheduled for 2005-06, and progress is reported below.

Job 2. Title: Coordinate fish and habitat surveys.—We continued to work with field personnel to identify suitable fixed, long-term monitoring sites for the SSTP and to provide guidance on the completion of fixed and random fish and habitat surveys scheduled for the 2006 field season. A total of 54 random sites and 32 fixed sites were scheduled for surveys. We do not know how many of these surveys were completed since fieldwork was still being conducted when this report

was written. In 2005, surveys at all fixed sites scheduled for sampling (33) were completed. A total of 12 of 54 random sites scheduled for sampling were completed. Time and budgetary constraints greatly reduced the number of random sites sampled in 2005.

Job 3. Title: Work to upgrade the capabilities of the FCS.—We worked with administrators of Fisheries Division’s central fish database, the Fish Collection System (FCS), to upgrade its data storage and retrieval capabilities. The FCS has received further upgrades to summarize fisheries data, including weighted mean-length-at-age. We also continued to refine a Microsoft Access database developed to automatically query fish community and habitat data from the FCS. These improvements will assist in retrieval and summarization of data for future analyses.

Job 4. Title: Explore opportunities for collaboration with other agencies.—We have continued to explore opportunities for collaboration with other agencies. In particular, we have worked with Dr. Daniel Hayes at Michigan State University to begin preliminary analysis of data collected from the SSTP and the Michigan Department of Information Technology to begin providing web-based summaries of SSTP data for fisheries managers and eventually the public.

Job 9. Title: Write annual performance report.—This progress report was prepared as scheduled. In addition, publication of an update to Chapter 26 of the Fisheries Division survey manual (Schneider 2000) was completed as a product of Job 1.

Wills, Todd C., T. G. Zorn, and A. J. Nuhfer. 2006. Stream Status and Trends Program sampling protocols. Chapter 26 *in* Schneider, James C. (ed.) 2000. Manual of fisheries survey methods II: with periodic updates. Michigan Department of Natural Resources, Fisheries Special Report 25, Ann Arbor.

Literature Cited:

Schneider, J. C. (ed.) 2000. Manual of fisheries survey methods II: with periodic updates. Michigan Department of Natural Resources, Fisheries Special Report 25, Ann Arbor.

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