

STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-80-R-16

Study No.: 230567

Title: Development of databases, classification systems, and fisheries management tools for inland lakes of Michigan

Period Covered: October 1, 2014 to September 30, 2015

Study Objective: The overall goal of this study is to develop inland lake databases and classification systems to provide information and decision-support tools for assessing and managing inland lakes in Michigan. The specific objectives are to: (1) assemble available information on inland lakes into a centralized and standardized database, including water quality, biological community, lake morphology, and shoreline development descriptors; (2) delineate buffer, and local and network lake catchment boundaries for all lakes that are 5 acres or bigger; (3) synthesize natural landscape descriptors for the local and network catchments, including land cover, surficial geology, soil permeability, slope, and climate; (4) synthesize landscape human disturbance descriptors for the buffer, and local and network catchment spatial zones, such as agricultural and urban land uses, population, imperviousness, nutrient loading, point source pollution, and road density; (5) calculate lake network descriptors, such as lake network position, linkages with river network and groundwater, and zoogeographic zone; (6) develop models for predicting parameters that are essential for assessing conditions in lakes where field data are not available; (7) develop a lake classification framework based on variables that are not influenced by human activities; (8) develop lake fisheries classifications based on the suitability for targeted sport fish species; and (9) assess lake health status based on landscape human disturbances.

Summary: This study was amended for 2015-16 to allow another year for publishing and writing the final study report.

Findings: Jobs 12 and 13 were active this year, and progress is reported below.

Job 12. Publish results.—Work on revising a manuscript describing the lake classification framework was not completed because of assignment to other duties.

Job 13. Prepare final report.—This job was not completed in 2014-15; therefore the study was amended for one more year to allow time for publication in 2015-16.

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Date: September 30, 2015