

## STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-80-R-8

Study No.: 230703

Title: Lakewide assessment of the contribution of natural recruitment to the Chinook salmon population of Lake Huron

Period Covered: October 1, 2006 to September 30, 2007

### Study Objectives:

- (1) To estimate annual natural recruitment of Chinook salmon to Lake Huron for the 2000 to 2004 year classes;
- (2) To determine contributions from natural reproduction to the spawning populations of selected tributaries to Lake Huron;
- (3) To refine recruitment modules of Lake Huron's bioenergetics and catch-at-age models, which will, in turn, be used to prescribe stocking levels for Lake Huron.

**Summary:** This was the sixth year of funding for this project. Only Job 5 (data analysis and reports) was active this year. Job 4 was originally scheduled for 2006-07, but work was completed prior to the 2006-07 fiscal year. All field elements of this project are completed. Electronic images of scales and vertebrae were read a second time in 2007 and differences in ages determined by different image readers were reconciled. Data and findings were presented at various meetings and are being used to help manage Chinook salmon and in designing future studies.

**Findings:** Job 5 was scheduled for 2006-2007, and progress is reported below.

**Job 5. Data analysis, preparation of annual and final reports, report layout and publication, and presentation of findings at technical and public meetings.**—We used a fluorescence dissecting stereoscope and imaging software to detect OTC marks. We aged Chinook salmon by counting annuli on both scales and on the vertebrae. The imaging technology allowed archiving and peer review of our image analysis, using electronically saved images. During previous segments, OTC mark composition and ages were determined for 2,184 vertebrae samples. All were read a second time during 2007 and differences in age and mark determinations were reconciled.

This annual progress report for October 2006–September 2007 was prepared. Data from this study were presented at the Upper Lakes Meeting of the Great Lakes Fishery Commission annual lake committee meetings and were compiled for publication in the 2004 State of Lake Report. Coordination was carried out with the Lake Huron Technical Committee on employing what has been learned from this study in designing future Chinook salmon marking efforts and studies of origin.

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