

STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-81-R-2

Study No.: 679

Title: Ecological river classification as a basis
for management of coldwater streams

Period Covered: October 1, 2000 to September 30, 2001

Study Objectives:

- 1) To complete the classification of Lower Peninsula rivers by including the remaining, smaller coastal rivers (most Lower Peninsula rivers were classified by Seelbach et al. 1997).
- 2) To review the classification boundaries and codings of all Lower Peninsula stream segments, in light of available data and experiences of field personnel. This revision will add major in-channel lakes, coding of individual tributary streams, current trout stocking prescriptions, and current stream classifications.
- 3) To develop criteria for classification of coldwater streams, and to then classify all stream segments as appropriate. Segment classifications will be compared with previous Fisheries Division Stream Classifications and changes recommended, if needed. Finally, a process for revision of classifications will be developed.
- 4) To develop stream criteria for trout stocking, and to then classify all stream segments as to their suitability for stocking to meet specific management objectives.

Summary: Work on this study was not completed as planned, due to re-assignment of the original Principal Investigator (Dr. Paul Seelbach) to other duties. The vacant Investigator's job was filled in 2000-01 by Dr. Kevin Wehrly. Work resumed on the review and validation of segment classifications. This work included the review of segment boundaries by field personnel and the acquisition of existing field data to validate segment codings. In addition, map themes were summarized for each segment in 8 major river systems in order to provide landscape-based estimates of stream temperature and hydrology. These estimates will be used to further validate segment codings. The study was amended to provide more information on the relationship between stream temperatures and trout population dynamics (Job 9), and to develop temperature guidelines for management (Job 10).

Job 2. Title: Review and update classification.

Findings: Classification boundaries were reviewed by the Principal Investigator and field personnel for the Muskegon and Kalamazoo river systems. Fish survey data and stream temperature data have been collated for over 250 sites in the Central and Southern Lake Michigan management units. Currently, these data are being used to validate segment codings in the St. Joseph, Kalamazoo, Muskegon, White, Pentwater, Pere Marquette, and Manistee rivers. Catchment boundaries for all upstream, midpoint, and downstream segment nodes have been delineated and map themes summarized (by catchment) for all segments in 8 major watersheds. These data will be used to generate landscape-based estimates of stream temperature and hydrology for validation of segment codings.

Job 3. Title: Develop coldwater criteria.

Findings: This job was not completed as planned due to re-assignment of the original principal investigator.

Job 5. Title: Develop trout stocking criteria.

Findings: This job was not completed as planned, due to re-assignment of the original principal investigator to other duties. Job 9 was amended to this study to provide more information on the relationship between temperature and trout population dynamics. Because temperature has such a strong influence on trout stream quality, this thermal information will greatly improve development of trout stocking criteria. Work on Job 5 will commence in 2001-02.

Job 7. Title: Write reports.

Findings: This annual progress report was prepared as scheduled.

Job 9. Title: Evaluate effects of temperature on trout populations.

Findings: This job was amended to the study in 2000-01. Trout population data and stream temperature data have been collated for over 250 sites in the Lake Michigan management unit. Databases to be used in analyses are partially complete.

Job 10. Title: Develop temperature guidelines for management.

Findings: This job was amended to the study in 2000-01 and is dependent on results of Job 9.

Prepared by: Kevin E. Wehrly

Date: September 30, 2001