

## STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-81-R-1

Study No.: 679

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

Period Covered: October 1, 1999 to September 30, 2000

### 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 classifications 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 principal investigator to other duties. However, an un-funded graduate student (B. Saxton) has been working with MDNR trout managers to develop map-based criteria for classifying coldwater and trout stocking streams, and has used our GIS-based valley segment system to develop some alternative scenarios for classification of coldwater and trout stocking streams across Lower Michigan. He has begun a limited review of these models with MDNR trout managers and will complete a Master's Thesis during 2001. We have also re-filled the vacant investigator's position and expect formal work on this study to resume during 2000-01.

### **Job 3. Title:** Develop coldwater criteria.

**Findings:** This job was not completed as planned, due to re-assignment of the principal investigator to other duties. However, an un-funded graduate student (B. Saxton) did hold 2 meetings with MDNR trout stream managers to brainstorm development of coldwater criteria using large-(map-) scale variables.

### **Job 4. Title:** Classify coldwater streams.

**Findings:** This job was not completed as planned, due to re-assignment of the principal investigator to other duties. However, B. Saxton did run some alternative coldwater classifications for lower Michigan stream segments, using our GIS-based valley segment system. He also held an additional meeting with MDNR trout stream managers to review and evaluate these classifications. Results from this exercise will be presented in a 2001 Master's Thesis.

**Job 5. Title:** Develop trout stocking criteria.

**Findings:** This job was not completed as planned, due to re-assignment of the principal investigator to other duties. However, B. Saxton discussed and developed criteria for alternative trout stocking scenarios during his meetings with MDNR trout managers (see Job 3).

**Job 6. Title:** Classify streams re. trout stocking

**Findings:** This job was not completed as planned, due to re-assignment of the principal investigator to other duties. However, B. Saxton included various trout stocking scenarios in his alternate classifications discussed under Job 4. He also created a summary database of recent trout stocking practices (from the master MDNR database), and mapped this onto the (GIS) valley segment map for direct comparison with the proposed classifications. These comparisons will be discussed with MDNR trout managers and presented in a 2001 Master's Thesis.

**Job 7. Title:** Write reports.

**Findings:** This annual progress report was prepared as scheduled.

**Prepared by:** Paul W. Seelbach

**Date:** September 30, 2000

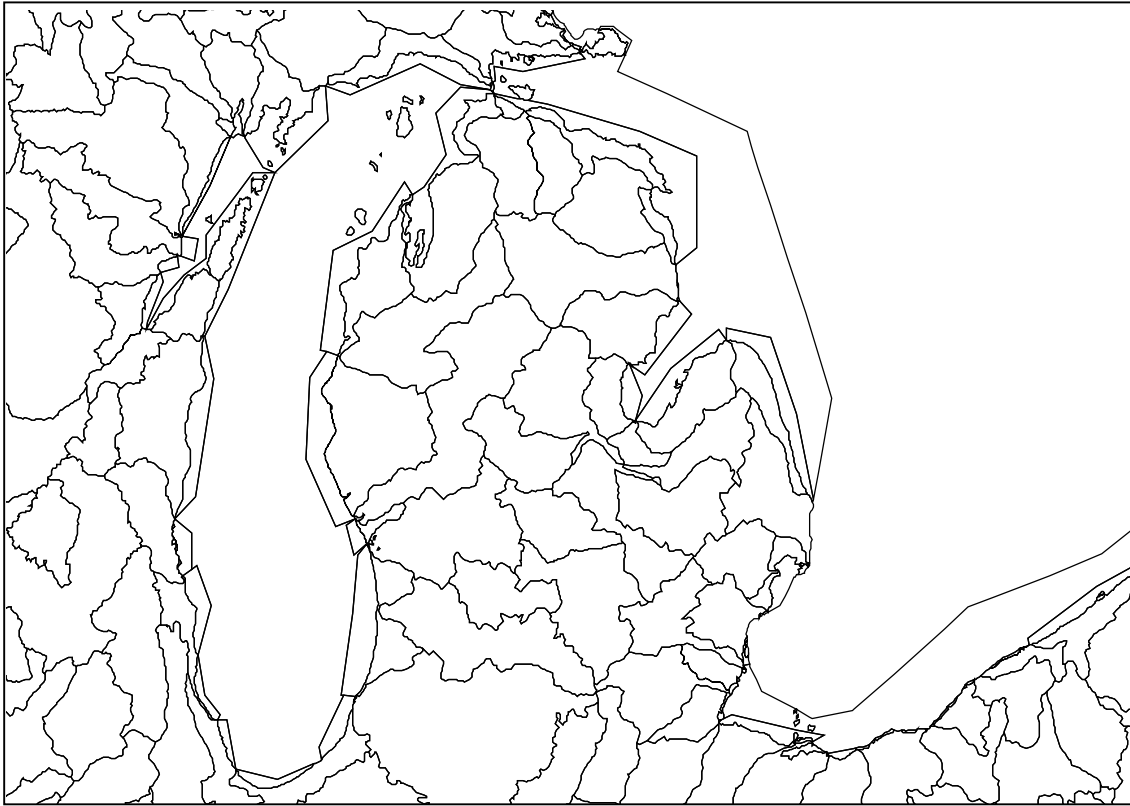


Figure 1.—Map showing EPA's hydrologic cataloging unit boundaries for Michigan's Lower Peninsula.

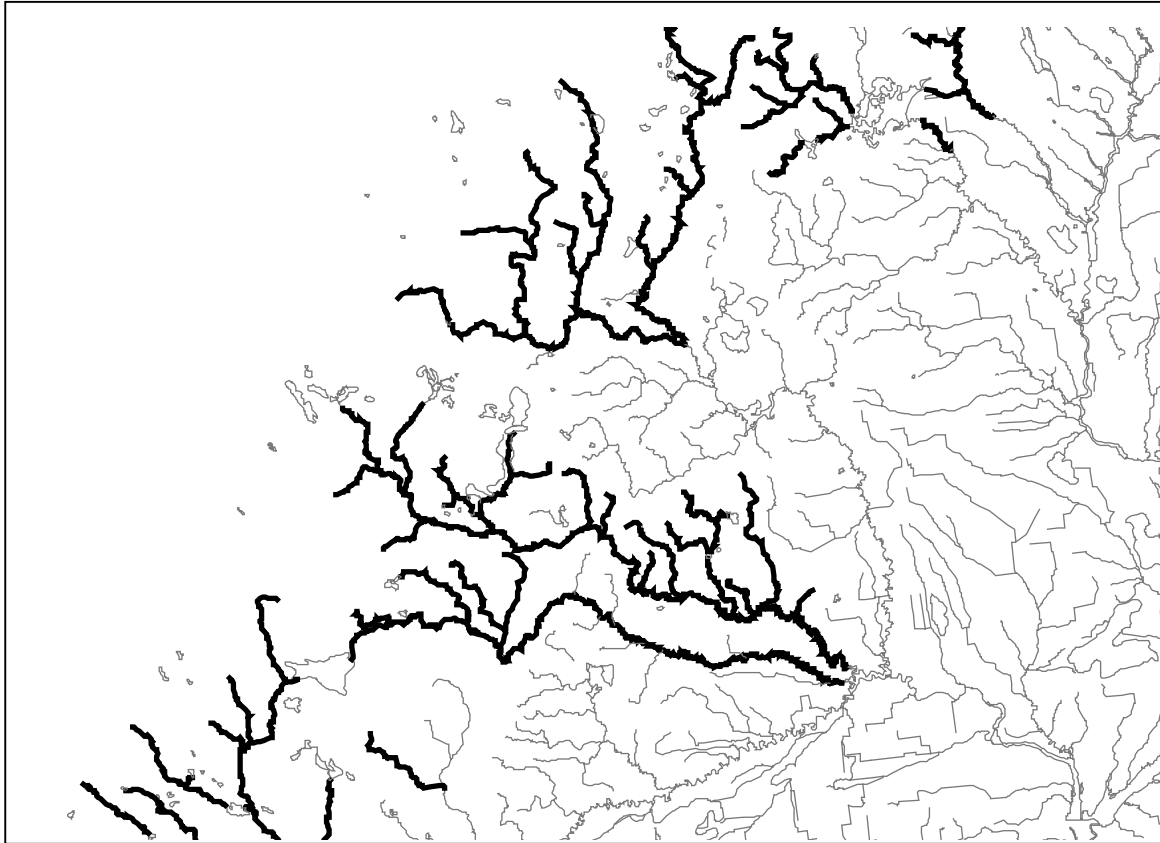


Figure 2.—Example of the trout stream designation mapped onto the RF3 streams basemap for the upper Tittabawassee River. Designated trout streams are shown as heavy black lines.