

STUDY PERFORMANCE REPORT

State: Michigan

Project No.: F-80-R-4

Study No.: 507

Title: Long-term suppression of brook trout reproductive success by sand bed load

Period Covered: October 1, 2002 to September 30, 2003

Study Objective: To determine and document the long-term impacts of a 1-time (period) elevation of sand bed load on brook trout populations in Hunt Creek, Michigan. To explore reasons why young-of-the-year (YOY) habitat remains degraded nearly a quarter century after experimental sand additions were discontinued.

Summary: Recruitment of YOY brook trout in a section of Hunt Creek degraded by excess sand sediment in the early 1970's has remained lower, relative to recruitment in an upstream control zone, for approximately 25 years. The present study was designed to determine if this long-term reduction in reproductive success could be linked to channel morphology characteristics. I attempted to duplicate measurements of channel morphology made during a study of sediment effects on brook trout populations and their habitat that was conducted during 1967-86. Preliminary analyses of channel morphology data collected in 2000-01 suggested that habitat remains degraded by sand sediment. The reduced abundance of brook trout YOY, compared to levels observed prior to 1972 may result from persistent high percentages of sand substrate.

Findings: Only Job 3 was scheduled this year, and progress is reported below.

Job 3: Title: Analyze data and write final report.—Additional work responsibilities placed on co-investigators Nuhfer and Zorn severely limited the amount of time they could work on this study in 2002-03. Population data files have been updated and some data analyses have been completed. The introduction and methods sections have been drafted. I expect to complete the first draft of the final report by December 31, 2003.

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Date: September 30, 2003