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Use of Floy Tags to Determine Angler Harvest of Brown Trout in Two Southern Michigan Streams

Michael P. Herman

Jackson District Office
301 Louis Glick Highway
Jackson, Michigan 49201

Abstract.–In late March 1991, fifty percent of yearling brown trout stocked into the St. Joseph-of-the-Maumee River and sixty-three percent of those stocked in the South Branch of the Kalamazoo River were marked with Floy tags in an effort to estimate angler harvest. St. Joseph River anglers returned a total of 31 tags representing an estimated minimum harvest of 1.8% and Kalamazoo River anglers returned a total of 38 tags, representing an estimated minimum harvest of 1.6%. Factors that could have contributed to the observed low number of tag returns include; tag loss (or shedding) after stocking, high hooking mortality of sublegal tagged fish, mortality due to tagging, natural mortality of tagged trout before they reached legal size, tags not returned by anglers and migration of fish out of the stocked areas. Tag loss and migration of stocked trout was probably very high throughout this study. Thus, angler returns of Floy tags did not yield reliable estimates of angler harvest. These estimates have limited value since they are based on a small number of returned tags and harvest was likely underestimated. Using larger trout may result in improved tag retention and is recommended for future tagging studies.

The St. Joseph-of-the-Maumee River in Hillsdale County and the South Branch of the Kalamazoo River in Jackson and Hillsdale Counties are representative of the marginal trout streams in south-central Michigan. The influence of urbanization, agriculture and other human activities have had significant negative effects on coldwater streams in this region. Even though these streams are often degraded and have somewhat poorer trout habitat than streams farther north, they are very important to trout anglers because of their proximity to urban centers in southern Michigan. These streams can support trout, at least seasonally, and are a fishery management challenge for biologists in this part of the state.

From 1986 through 1990, an average of nearly 65,000 brown trout have been stocked in District 13 (Jackson) streams each year. Electrofishing has been the main method used to evaluate stocking programs. These surveys sometimes yield good information about trout growth and survival, but indicate nothing about angler catch.

Angler surveys are one of the best available methods for measuring angler effort and relative success of fish stocking programs, but they are time consuming and costly. Therefore, fishery managers generally depend upon voluntary angler reports to assess the success of existing trout stocking programs. There is need for an inexpensive, yet effective, method for estimating trout harvest and angler effort in streams.

The main purpose of this study was to evaluate brown trout *Salmo trutta* stocking