

Little Manistee River Weir Steelhead Egg-Take Report, 1967-92

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Abstract.—Winter steelhead have been collected each spring at the Little Manistee River weir facility since 1968. These wild fish are the only source of Michigan-strain steelhead eggs reared in Michigan hatcheries. The earliest weir installation was 2 March and the latest removal was 28 April. The weir was operated for an average of 37 days a year during this period. Egg collection began when approximately 50% of females are ripe. The number of adults returning to the weir each spring has ranged from 996 to 10,480. The annual catch per weir-day ranged from 41 to 283. Steelhead eggs collected since 1968 have been sent to various Michigan hatcheries, several states, and two foreign countries. The number of eggs collected annually has ranged from 1.2 million to 8.8 million. Average percent eye-up of fertilized eggs has ranged from 63 to 96%, with most years exceeding 80%. Since 1979, an average of 77% of the steelhead had smolted after two summers in the stream. Size of returning adults is more dependent upon years spent in Lake Michigan than on age at smolting. Length at age for steelhead has fluctuated since 1979, and few fish live to lake age 5 or 6. Sex ratio (percent females) has not changed dramatically since 1979, with an average of 68%. Steelhead may spawn more than once. Percent lamprey marks (wounds/scars) was highest in the late 1960s and early 1970s, then decreased to less than three percent in recent years. The State Fish Pathologist has examined samples of fish each year since 1972. Bacterial kidney disease (BKD) was not detected in the 1970s, but has been detected since 1988.

Steelhead *Oncorhynchus mykiss* (the anadromous form of rainbow trout) were first introduced from the Pacific Coast into the Great Lakes in the late 1800s (MacCrimmon 1972). This species established itself in many rivers, one of the first being the Little Manistee River. Adult collection for hatchery operations has been conducted at different locations on the river, such as Fox Bridge in Lake County (1926-1929) and Link's ponds in Manistee County near Six Mile Bridge (1967), since the start of the program. Annual recorded runs, during March to May from 1926 through 1929, ranged between 1,123 and 2,274 fish at Fox Bridge. Construction of a permanent facility for adult

and gamete collection was begun in 1967 and completed in 1968. This facility is located about 5 miles upstream from Manistee Lake, Manistee County, and consists of a blocking weir, fish ladder, holding ponds and a fish harvest and egg collection building (Figure 1). Since 1968, this facility has been used to collect salmon and steelhead gametes, and to monitor population trends.

From 1967 to present, Little Manistee River has been planted annually with spring fingerling chinook salmon *Oncorhynchus tshawytscha* and yearling coho salmon *Oncorhynchus kisutch* (Table 1). All returning adult chinook and coho salmon reaching the weir are harvested and sold