INTRODUCTION

Since 1966 the Platte River (Benzie County) has been the primary source of brood fish for the coho salmon stocking program undertaken by the Michigan Department of Natural Resources (MDNR). Eggs are collected each fall at the Platte River State Fish Hatchery, located 4.0 miles east of Honor (Figure 1). The young coho are raised to the smolt stage (about 5.5 inches long) in 1.5 years and stocked at selected sites throughout Michigan.

Prior to 1979, between 265,000 and 1,092,000 (average 607,000) coho smolts were stocked in the Platte River (Table 1). This produced sufficient adults for egg-take operations plus a spectacular Lake Michigan sport fishery from Frankfort to Platte Bay in August to September. The annual plants for 1979–84 approximated 1 million smolts and these plants, with the exception of the 1984, produced annual returns to the weir of 123,000 to 168,000 adults, or 12% to 16.4%. The 1984 plants produced a 1985 return of only 80,354 coho adults, or 8.1%. Plants since 1984 have decreased to the 1987 low of 622,079 smolts. Adult returns have also remained relatively low. The 1987 adult run was from a plant of 751,183 coho smolts made in the spring of 1986.

The Platte River has two salmon blocking weirs. The lower weir is located 1.6 miles upstream from the river mouth (Figure 1). Since 1980 it has been the primary site for harvesting surplus salmon. Steelhead runs are monitored there also. The upper weir, located at the Platte River Hatchery, has facilities for holding adults and collecting eggs.

Current in-state and out-of-state commitments require the collection of 12 to 14 million coho eggs annually. Depending on the size of the returning coho, the egg-take requires about 5,750 to 7,000 adult females (age 1.1).[1] To assure that enough females are available for egg-take, the Fisheries Division has directed that the first 30,000 salmon reaching the lower weir be passed upstream (allowed to swim through the open weir). An additional 3,000 salmon are passed each week to maintain a sport fishery in the river. However, the above numbers may be modified by the biologist-in-charge as conditions dictate.

Other salmon blocked by the lower weir (including surplus coho adults; a moderate run of chinook; and, in recent years, a few pink salmon) are collected and harvested. Coho jacks (age 1.0) are small enough to swim upstream through the weir grate. Trout that are collected during harvest operations are counted and released upstream. This includes a moderate run of steelhead plus small runs of brown trout and lake trout. All salmon collected at the upper weir are harvested, including the coho used for egg-take.

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[1]An age 1.1 for an anadromous fish means that 1 year was spent in the river (or hatchery) prior to smolting and 1 year was spent in Lake Michigan after smolting.

The 1987 salmon run was typical. The fish concentrated off Frankfort and Platte bays during the last 2 weeks in August and ran the river during the last 14 days in September as expected. The open-water fishery was relatively good considering the lower return rate which was recorded for this year. The river fishery was good throughout the run because we were able to pass fish almost on a daily basis.

The only problem which occurred was access to Platte Bay. The National Park Service did not start dredging the river mouth until September 8, the day after Labor Day. And then, due to past high Lake Michigan water levels and the recent drop of these levels, the dredging produced excessive current in the area of the access site. It was almost 2 weeks before upstream storage was reduced enough to slow the current at the access site so boats could be loaded without difficulty. Water levels in the river dropped almost 2 feet at the access site, over 6 inches at the lower weir, and affected water levels all the way upstream to the M-22 bridge.

LOWER WEIR OPERATION, 1987

The lower harvest weir was ready for operation on August 28. Beginning on September 4, the weir was closed at night and the accumulated fish were processed the next morning. The weir was left open during the day. The National Park Service assisted us in this operation by closing the weir gate at night. The weir was manned 24 hours per day from September 14 to October 23. A total of 34,905 salmonids (salmon plus trout) were actually counted through the weir between September 4 and October 20 (Table 2). The peak of the run occurred about when expected, during the week of September 21. The total number of salmonids passed through the weir was about 7.5% lower than the average for the previous 5 years. The species composition of these fish is assumed to be the same as that of the fish actually handled during each week of harvesting. Additional trout were sorted out during harvesting and transferred upstream from the weir.

Harvesting began September 15 and continued intermittently until October 23. Salmon were actually harvested on only 11 days during this period and three of the harvests were primarily to obtain biological samples. Three full semi-trailer loads and eight partial loads were sent to Tempotech Industries in Hart, Michigan.

Coho salmon

The harvest of coho salmon began on September 15 and ended on October 23, a period of 39 days. However, 78.5% of the coho were harvested on only 3 harvest dates, September 22, 24, and 30 (Figure 2). A total of only 24,707 adult coho weighing 152,198 pounds and 156 jack coho weighing 264 pounds were harvested (Table 3). Mean weights of the harvested coho