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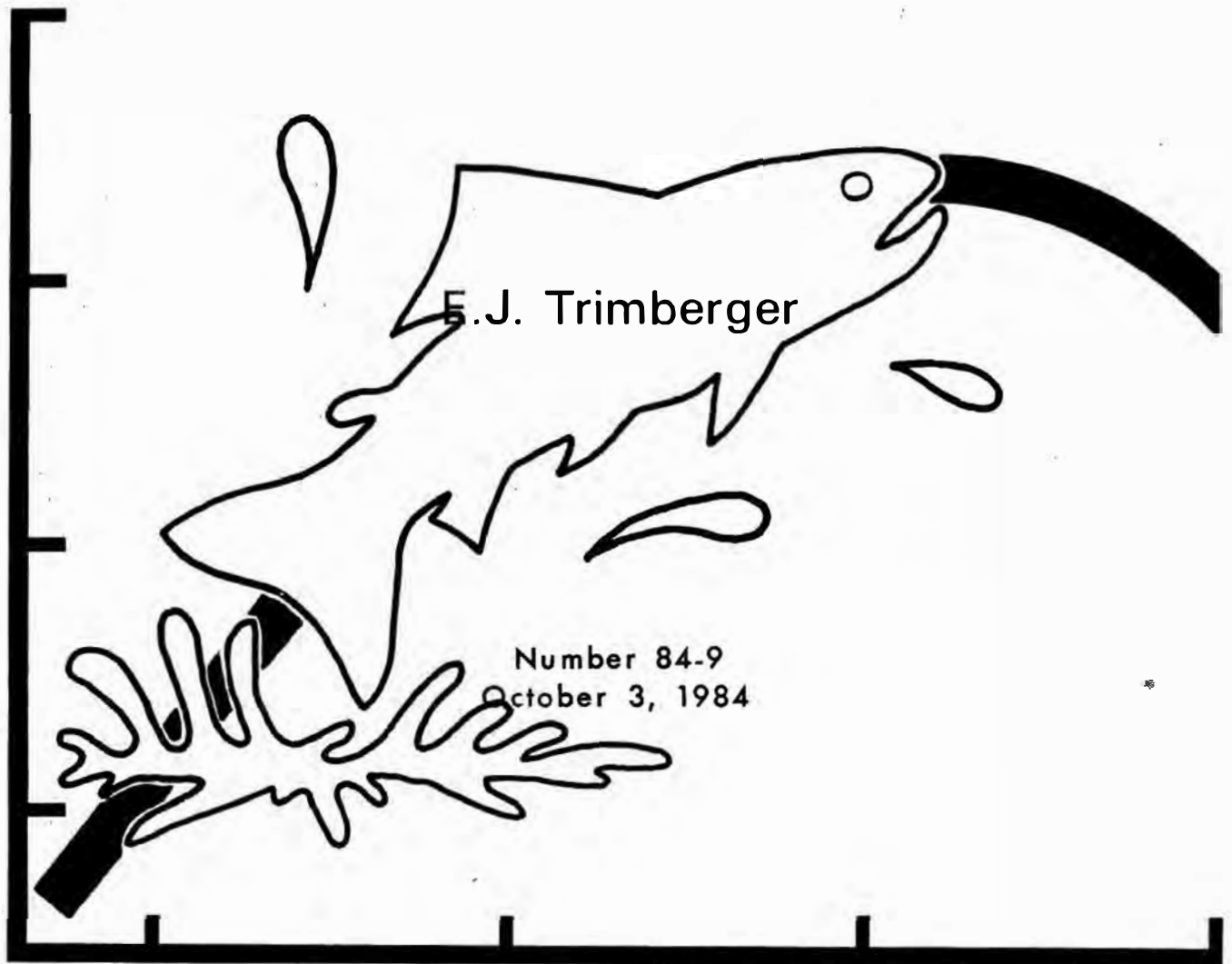
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# FISHERIES DIVISION

## TECHNICAL REPORT

### White River Harvest Weir Report, 1983



Michigan Department of  
Natural Resources

MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
FISHERIES DIVISION

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WHITE RIVER HARVEST WEIR REPORT, 1983

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## Introduction

The White River flows into Lake Michigan at Whitehall, in Muskegon County. Although the river has never been stocked with salmon, in recent years runs of chinook salmon, estimated to be as many as 20,000 fish, have occurred. It is believed that in past years chinook straying from plants made in other rivers spawned successfully in the White River and its tributaries, creating a more or less discrete stock which has increased in numbers over the years. These naturally produced chinook may be responsible for the excellent offshore fishery which occurs annually in the Whitehall-Montague area.

In late October, the chinook fishery in the river is replaced by a good steelhead fishery. Normally, the steelhead run intensifies until cold weather (early December), then slows down, and increases again with warmer water temperatures in March. Although some natural reproduction of steelhead occurs, the majority of the run seems to be supported by annual plantings of hatchery fish.

### Harvest Weir Operation, 1983

The first attempt to harvest chinook salmon from the White River occurred in 1983. On August 15 and 16, a temporary weir was constructed on the river, between the Whitehall-Montague highway bridge (Business Route US-31) and the Chesapeake and Ohio railroad bridge (Fig. 1). The river is about 225 feet wide at this point. The weir was installed by TempoTech Industries of Hart, Michigan, as part of a contract with the State of Michigan to handle surplus salmon. By contract, TempoTech was to receive all salmon harvested in excess of 1,000 fish per week, the number which were to be passed upstream to provide a recreational fishery and to sustain natural reproduction in the White River system.

The temporary weir consisted of a lead net stretched from the north shore in a southeasterly direction to the south shore, where a collection trap was located. The trap had a narrow opening and was lined with a fine mesh net which could be lifted from the water to harvest and sort fish. This net arrangement did not work, as no salmon were captured in the trap. It is believed that the lead net did not remain securely on the bottom, allowing for upstream escapement of salmon under the lead net.

On October 8, TempoTech improved its harvest operation by installing a modified purse seine with a mesh of 3.5 inches (Fig. 1). This resulted in the first harvest of salmon after the weir was installed on August 15. From October 17, a total of 695 chinook weighing 10,977 pounds (Table 1) and 4 coho salmon weighing 16 pounds were harvested and shipped to TempoTech Industries.

A biological sample of chinook was taken on October 9. Unfortunately, no scale samples were obtained, so age composition and growth could not be determined. The 55 males sampled had a mean length of 35.7 inches (range, 27.2 to 42.9 inches) and a mean weight of 15.8 pounds (range, 7.2 to 27.7 pounds) while the 44 females averaged 35.5 inches (range, 29.5 to 41.1 inches) and 15.5 pounds (range, 11.5 to 22.2 pounds). The size distribution of the chinook indicates that the usual complement of three age groups was present.

A number of fish of various species which became entangled in the net were removed and buried, including 10 chinook, 9 coho, 20 steelhead, 2 largemouth bass, 1 smallmouth bass, 2 northern pike, 2 bowfin, 2 carp, and 2 white suckers.

Fish passed upstream included 75 steelhead (70 during October 12 to 17), 1 brown trout, 1 largemouth bass, 2 bluegills, 1 bowfin, 1 sucker, and 2 sheephead.

A salmon harvest operation is not planned for the White River in 1984.

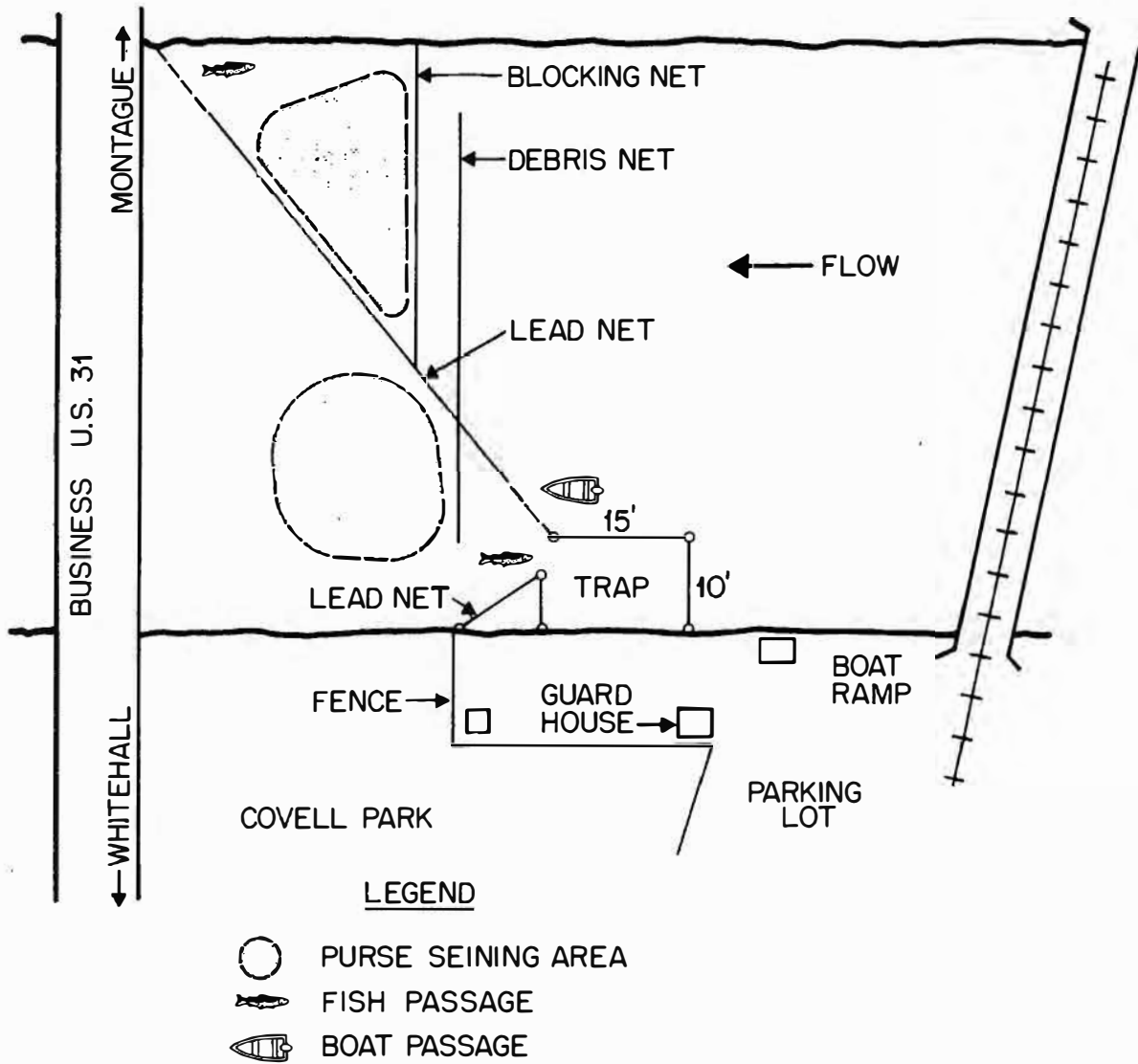


Figure 1. Location of the White River harvest weir. In the improved net configuration (see text), the northwest end of the lead net was opened to allow fish to pass into the purse seining area.

Table 1. Summary of chinook salmon (jacks and adults combined) harvested, by sex, at the White River weir, 1983.

Date	Number of Fish			Total weight (pounds)
	Male	Female	Total	
10/8	3	7	10	154
Weekly total	3	7	10	154
10/9	42	64	106	1,675
10/10	17	10	27	427
10/11	63	37	100	1,580
10/12	168	98	266	4,203
10/13	35	24	59	932
10/14	77	46	123	1,943
Weekly total	402	279	681	10,760
10/17	2	2	4	63
Weekly total	2	2	4	63
Annual total	407	288	695	10,977