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Institute for
Fisheries Research
J. Scully
J. T. Wilkinson
R. S. Marks

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# The Rainbow Problem

By Albert S. Hazzard

Fish Division-Institute for Fisheries Research

Ever since about 1900 when rainbow trout became firmly established in the Great Lakes and its tributary rivers they have posed a problem to conservation administrators. It was hoped that non-migratory strains had been brought from California and that these fish would stay in the streams and help fill the gap left by the disappearance of the grayling and the brook trout. But eggs from both the resident Shasta rainbow and the sea-run steelhead eventually found their way to Michigan and large rainbows soon appeared in the Great Lakes and in their tributary streams during the spring spawning runs into these rivers.

In his interesting booklet on Michigan trout, Harold Smedley[1] tells of the early attempts to acclimatize the California or "mountain" trout and the efforts to give it special protection by higher size limits and later spring openings. By 1916 the spectacular rainbow fishing of the Soo Rapids had been developed and publicized and the Au Sable, once famous for its native grayling fishing and later for phenomenal brook trout angling, became noted for the many large rainbows it produced. As early as 1907 the season for rainbows in the St. Marys River had been set as June 1 to September 1. The rainbow had fulfilled the fondest hopes of those who had sponsored its introduction and were populating the streams long since abandoned by the grayling and the brook trout because of changes in the habitat caused by lumbering and agriculture.

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[1] Smedley, Harold Hinsdell. 1938. Trout of Michigan. Printed by the author, Muskegon, Michigan.

But were Michigan anglers satisfied? Apparently many were not and probably many never will be ! In addition to bemoaning the loss of the grayling, claims were made as early as 1904 that the rainbow was driving out the brook trout and by 1914 demands were heard for netting and spearing seasons to control these invaders. In 1917 the spearing of rainbows in parts of certain streams was permitted but apparently aroused so much objection that it was soon abandoned. Later a barrier screen was installed on the lower end of Pine Creek, Manistee County, to prevent rainbows from ascending that stream to compete with the brook trout. But like all screens not given constant attention, it washed out in a flood and was not replaced.

The basis of the rainbow problem in Michigan is the migratory habit characteristic of most of our present stock. Perhaps the steelhead blood mixed in with the early resident rainbow plantings is to blame. In the current January-February issue of Michigan Conservation Dr. Shetter has discussed the controversial issue of whether or not river mouths need to be kept open artificially in order to allow these runs from the lakes to enter. Although our research indicates that this is not a serious problem, there are other factors which must be considered if we are to manage rainbow trout intelligently. Young rainbow trout spawned in Great Lakes' tributaries such as the Pere Marquette and Manistee rivers, are of seven different growth types as shown by a study of the scales made by Dr. John R. Greeley[2] in the period 1928-32. A few are entirely "stream-resident" fish growing, maturing and spending their entire lives in the streams. The other six types live from one to four years in the streams and most of the balance of the time in lakes to which these streams are tributary. Greeley found that the commonest type spent the first two years and a part of the third in streams and then

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[2] Greeley, John R. 1933. The growth rate of rainbow trout from some Michigan waters. Trans. Am. Fish. Soc., Vol. 63, pp. 361-378.

ran down to lakes to mature. He further discovered that in certain streams, such as the Little Manistee River, growth of the young rainbows spawned there by runs of adults from Lake Michigan was so slow because of overpopulation that only about one-fourth of the survivors barely reached the legal size of seven inches and were available to the angler before starting for Lake Michigan. How common this condition is we do not know or whether it exists at present under heavier angling and longer seasons, but judging by a few persistent reports of overabundant small rainbows from anglers fishing the Little Manistee, Pere Marquette, Bear Creek, and the Platte and Jordan rivers, the problem may still exist. In the average year the run is pretty well over by the last Saturday in April and many of the adults have started back to the Great Lakes. Relatively few of these fish are taken in the average spring in tributaries of the Great Lakes.

Another serious phase of the problem is that adult rainbow trout are generally in poor condition when taken early in the season. Only a novice displays with pride a hook-jawed, battle-scarred male running milt or a female heavy with dripping spawn. The flesh is dark, strong and hardly edible. Equally serious but generally not recognized or admitted by those who take them is the poor fighting quality of such fish caught from the spawning beds or recently spent and on the way down to the rich feeding grounds of the lakes where recovery would be rapid. Compare such spring-caught rainbow with the fat, silvery, fighting fish taken in summer or fall! We can hardly blame the sportsmen who feel that the season should not open on rainbow trout till May 15 at the earliest. Certainly this should be the opening date in all inland lakes (including their tributaries such as the Sturgeon River and perhaps in the Jordan and the Platte since most of their runs are believed to originate in the large lakes to which they are tributary).

But what can be done to insure a better harvest of the rainbows from the Great Lakes? That is the real "rainbow problem." Except in the St. Marys River where rainbow are resident or come from the Great Lakes to spend much of the year (we do not know which) and where the June 1 to November 30 season is proper, these fish are seldom caught by the angler. Presumably rainbows are either widely scattered in the cooler waters of the Great Lakes except during the spawning season or are localized in places where few commercial fishermen set their nets, as not often are they reported caught. Only an occasional rainbow is taken in sport trolling in Great Lakes waters.

But fortunately some of these rainbows move into tributary rivers in late summer and early fall and can be caught readily in the inland lakes where they are established as the water cools down during September and October.

As early as 1913 proposals were being made by the State Board of Fish Commissioners (see 20th Biennial Report, p. 17) that a fall season extending to "October 15th or perhaps November 1st" be permitted for rainbows only in order to keep their numbers under control and utilize them when in best condition. In 1930 the legislature opened seven of the larger lakes directly connected with Lake Michigan to hook and line fishing for rainbows through the months of September, October and November. In subsequent years, by legislative act, many lakes and the lower courses of some of the Great Lakes tributaries were added to the list of waters open to fall rainbow fishing. In 1949 authority was given the Director of Conservation to designate such open waters. Because of its length the list is not included in the law digest for 1950 but a copy may be obtained by writing to the Department of Conservation.

Fall would be the ideal time to harvest the surplus rainbow crop from the Great Lakes if this were possible. Such fish are then prime--fine

conditioned silvery fighters of delicious flavor. But only a fraction of the run enters the rivers in the fall if the counts made on the Platte River at the weir operated from November 1, 1941 to June 20, 1943 are indicative.[3] Of a total of 965 rainbows taken moving up from Lake Michigan in those two years, only 13 or 1.3 percent were caught in the fall. If the one full year of operation is considered, the 12 rainbows taken in October, 1942 made up 5.8 percent of the total trapped that season. How representative these figures may be of fall and spring runs is not known but transfer operations at dams such as Tippy, Homestead, etc. are not considered worthwhile until spring.

Of the rainbow which enter the streams during the fall season only a fraction is taken for lack of interest on the part of fishermen. Cold weather and the hunting season may be responsible. One enthusiastic angler told of catching rainbows up to seven pounds in weight until his wrist ached. He saw only one other fisherman on the river during the last two weeks of that colorful October. Even if fall runs could be increased, it is doubtful if they could be adequately harvested.

Opening the season earlier in the spring (April 15) has been tried for three years on the lower end of the Black River, Mackinac County. Interest in this fishing has been growing and last year about 150 anglers were counted on the mile and a half of open water on the fifteenth and many more on the subsequent weekends. For the 49 anglers checked the catch totalled 73 rainbow trout averaging about 17 inches in length. If population counts this coming summer show good evidence of regroduction,

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[3] Carbine, W. F. and David S. Shetter. 1943. Examples of the use of two-way fish weirs in Michigan. Trans. Am. Fish. Soc., Vol. 73, pp. 70-89.

further liberalization of regulations may be tested. Perhaps opening these lower river courses to year-round fishing and even abandoning the size limit may be necessary to allow full use of the migratory rainbow.

Still another way to harvest the rainbow runs and increase the amount of fishing has been suggested by the Gulley Pond project and the operation of the Bear Creek screen. In the former, rainbows reaching the dam on this tributary to the East Branch of the Au Gres River have been transferred to the small pond above and held there for fly fishing with low daily limits during the regular open season. Removal of about sixty percent of the runs by this method does not appear to have hurt the fishing in the river system in subsequent years. On Bear Creek the screens are dropped in place after the major part of the run has passed the barrier. After spawning it is reported that the trout drop back down but upon reaching the screen return to the deeper pools above where anglers take them at intervals during the season. In both cases the screens are removed in early fall and the remaining fish are permitted to return to the Great Lakes.

Both projects seem to have been popular, judging by the reports of sportsmen; the chief objection is the poor condition of the trout which are held upstream. Considerable loss of weight and energy occurs in spawning and full recovery of condition seems to require the rich feeding grounds of the lower river courses and of the Great Lakes.

Because of the interest expressed by anglers the Conservation Department has agreed to further experiment in holding up a major rainbow run on the East Branch of the Au Gres. Installation of a removable barrier screen is now being completed on this stream just below a dam maintained by the ~~Celotex~~ National Gypsum Company. It will be operated much the same as the Bear Creek screen. The results will be carefully checked this season and further extension of this method of increasing the rainbow harvest will depend upon the success achieved there and approval by the majority of the sportsmen.

INSTITUTE FOR FISHERIES RESEARCH

A. S. Hazzard

Approved by A. S. Hazzard

Typed by B. J. Bair