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FISH DIVISION

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Report 254

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REPORT ON AN INVESTIGATION OF SLAGLE CREEK, ESPECIALLY THAT PART ON AND ADJOINING THE SLAGLE RESORT CLUB

Location and Description of Slagle Creek

Slagle Creek rises in Boon Township, Wexford County, Michigan, and flows westward through Slagle Township, Wexford County into northeastern Dickson Township, Manistee County, Michigan. Here it empties into the Manistee River in Section 11 of Dickson Township.

The creek is, from source to mouth, approximately 25 miles long. Throughout the lower third of its length the average width is about 20 feet and average depth 2 feet. The current through this section is usually quite strong. There are a number of high banks along the stream which in some cases are too steep and the sand which comprises them too loose to contain much vegetation. The low banks are very brushy, containing great quantities of alder and nineback.

The middle third of the creek, part of which flows through the Slagle Resort Club property, meanders through two large cedar swamps, the lower one being below the club pond, the other above the club pond. This latter is known as the "jungle". Throughout the swamp sections the stream tends to widen, becomes less deep, and has a tendency to form into small channels. The banks are usually very low and either brush covered or wooded.

The upper third of the creek flows mostly through a rolling farming country through there are some wooded areas. The banks are moderately high and on the whole, have at least a fringe of trees or shrubs. Due to the sandy nature of the soil, methods of grazing, pasturing, and farming, large sections of the watershed are tending to become barren sand wastes. It is in this section that the stream flows through the village of Harrietta and the Harrietta State Fish Hatchery.

Fishing History of the Creek

Past History For many years after the introduction of the three species of trout (brook, rainbow and brown trouts) into this creek it produced much good fishing, and consequently was well known with an excellent reputation as a trout stream. Today it is still one of the finest small trout streams in the lower peninsula of Michigan. At first it was primarily a brook trout stream, through in more recent years the rainbow and brown trouts have become more dominant.

The older members of the Slagle Club agree that in the past and for many years the fishing was consistently excellent. Mr. M. R. Carroll, the present president of the club, states that from the years 1922 to 1927 fishing in this stream was very good and that an average number of 20 members and guests fishing daily throughout the trout season averaged about 12 legal fish each fishing day. Fifty percent of the fish caught at this time were rainbows while the rest were brooks with some brown trout.

In 1928 the fishing, for some unknown reason, was said to have been very poor, the daily catch running consistently low throughout the season. However, after that year the daily catch steadily increased. In 1932, Mr. Carroll states, he was able to catch his limit of legal fish on every day from May 2 to August 19 except for 16 days (8 of these days he failed to get the limit and on the remaining 8 he did not fish). In order to take the limit it was usually necessary to fish only a short period of each day, sometimes less than one hour. The 1933 season, however, was very poor as has been the 1934 season to date.

Present Fishing History Mr. Carroll states that from the beginning of the 1934 trout season to the day of the this investigation, August 9, he was able to catch his limit of legal trout on only one day, and that the average number of fish caught by each man fishing was between two and three fish per day. Of each 15 trout caught there is said to be at present the ratio of 9 rainbows and 4 browns to 2 brook trouts.

Stream Conditions

Methods of On the afternoon and evening of August 9 and morning of August 10, 1934
Investiga- an investigation of the lower two-thirds of this stream was made. During
tion that time the stream was visited, by the aid of a machine, at as many
localities was practical to do so and by walking up or downstream some
five miles through the various types of habitats, noting the characters of the stream.
Information was gathered from various members of the club concerning the past history
of the stream, stocking etc., and Mr. A. J. Walcott of Harrietta, was contacted for
information on former stockings in the stream.

Junction It was obvious from this investigation that certain changes have been
Dam taking place during the past fifty years which have more or less affected
the fishing in this stream. One of these is the Junction or Tippy Dam,
located on the Manistee River some twenty stream miles downstream from the mouth of
Slagle Creek. Before the installation of this dam, some twenty years ago, the rainbow
trout had unobstructed passage upstream to Slagle and other creeks in the vicinity
where they spawned in considerable numbers, thereby creating good fishing in these
tributaries. This run of spawning fish is said to have largely stopped in recent
years and since the installation of the dam. This dam does have a fish ladder but
like practically every other fish ladder in so high a dam, is little used by the up-
stream migrating fish. To aid the fish in their ascent of the river the Michigan
Conservation Department seines many of them from below the dam and liberates them
again upstream, but in spite of this aid the number of rainbows found spawning in
Slagle Creek is said to be much less than formerly. The decrease of spawning rain-
bows would naturally have some effect upon the number of these fish in Slagle Creek.

Removal of Fifty years ago the watershed of Slagle Creek was largely forested. The
the Forest rains, and water from melting snows, in order to reach the creek, must
first seep through a layer of humus into the sand before working down
into the creek. Consequently the flood crest, though it may have been high at times
from melting snows, would carry comparatively little humus and practically no sand

unusual conditions described above being responsible for the poor fishing conditions this year.

Water From the records at the Harrietta Fish Hatchery and temperatures taken
Tempera- on August 9 and 10 when the air temperature rose above 95°F. on two
tures occasions, it is obvious that summer water temperatures are close to
ideal. The average readings for August 9 and 10, taken at many points
on the stream and at various depths was 59.4°F.

Former plantings During the past 13 years (this year not included) the Michigan
of Trout Conservation Department planted a total of 754, 774 brook trout in
Slagle Creek, of which 490,000 were fry, 131, 100 fingerlings,
10,000 were 4 inches in length, 29,000 were 6 inches in length, 83,300 were 7 inches in
length, 7,750 were 9 inches in length, 1,700 were yearlings and 19,024 were adults. A
total of 58,700 brown trout were also planted during this period which consisted of
13,600 fry, 35,000 being 4 inches in length, 7,000 being 6 inches in length, 13,000 being
7 inches in length, and 100 adults. The larger sized fish of both species were planted
mostly within the past five years. With the crop of native hatched fish expected from
such a stream, this amount of stocking should have been more than sufficient.

Recommendations

This stream, with but few exceptions has sufficient shelter for trout during normal conditions. In some places in the cedar swamps above and below the club's pool, logs in the stream are very abundant. Yet despite this amount of logs, many of them are poor cover for trout because the sand has filled in over and around them. During high water at least, they offer but poor protection from the current for the fish.

"Jungle" It is therefore recommended that proper stream improvement barriers be
Swamp used in digging and maintaining several large holes in the more sandy,
slow flowing shallow portions of the so-called "jungle" (the cedar swamp
above the club's pool) section of the stream. This will assist in removing some of the
excess sand, speed up the current in some sections, uncover more gravel for spawning

beds for trout, increase the trout food supply by removing the sand and exposing the gravel, and above all offer some shelter for trout during periods of high water. As this "jungle" stretch of stream is now but little fished because of the brushy conditions of the banks, the necessary cutting of this brush to allow and encourage fly fishing should be made. This will increase the area open to fishing for the members of the club and their guests. It is becoming increasingly evident that on such waters as these an unfished area is not, conducive to a great increase in the fish numbers or the fish crop.

Cedar Swamp As a great deal of the sand that washes downstream from above settles Below the in the club's pond, the stream bed in the cedar swamp below this pond, where Club's Pond the stream flow is again lessened, contains much less sand than does the "jungle" swamp. But very little stream improvement is necessary here, though the construction of a few hole digging barriers would be a practical safety measure.

Club Pond The pond or pool formed by the dam and levee, and about which the club houses, cottages, etc. are built, at present contains a moderate amount of submerged aquatic vegetation. The bulk of this vegetation is the water weed (Elodea). It is largely confined to two large beds, one on each side of the open channel. During August of this summer a considerable amount of it grew high enough to reach the surface of the water. At present the beds are not too dense, offers great quantities of animal food and shelter for both young and adult trout, keeps the water temperature along the edge of the pond low by shading the bottom, and does not greatly interfere with fly-fishing. However, a further increase would interfere with fishing so it is recommended that each year sufficient vegetation be removed so that from 1/4 to 1/3 of the pond area is free of weeds and fishable during August. The best method of weed removal appears to be by the use of a chain or rope pulled across the beds toward the shores where it can be raked out. (This method was explained in detail to some of the members at the time of the investigation). Neither the use of sodium arsenite or copper sulphate seems advisable. Care should be taken not to remove too much of the vegetation. To do this, will result in less fish being caught over a long period of time, though it would probably increase the fish catch for a short period directly after the weed

removal. It would be at the expense of future fishing, however.

As has been done in the past, it may become necessary in the future to periodically lower the water in the pond and flush out the bottom to remove the accumulated sand and debris and to deepen it to its former depth. This should be done as seldom as possible, as washing this bottom material downstream has a decided tendency to fill up the pools in the cedar swamp below. It is advisable when flushing, to leave a fair supply of aquatic vegetation somewhere about the pond, possibly near the edge, to allow a rapid increase of plants after the water level has again been restored. This will be necessary to insure a food supply for the trout remaining or returning to the pond.

High Sand Banks Below the club property and largely in Dickson Township, Manistee County, there are at least a dozen high sand banks which are capable of pouring several hundred pounds, if not tons, of sand into the creek by the aid of a severe rain. These eroded banks were originally caused by vegetation removal, by paths made by Man and animals, and by stream cutting; and tend as time goes on to increase in size. The sand so poured into the streams is rapidly filling some of the best of the remaining deeper holes or pools and covering the gravel, and by so doing decreasing the food supply and spawning area for trout. An arresting of this erosion can be made through proper erosion controls, such as tree and shrub planting and shoring with logs and timbers.

Dam at Mouth of Creek It was suggested that a rock be constructed at or near the mouth of Slagle Creek that would be high enough to make a fairly deep pool and still not stop upstream migrating trout. This does not appear practical at this time, for such a ponded area would certainly fill with sand in a short while, especially if the eroding of the high banks is not stopped.

Stocking Recommendations Because of present conditions periodic floods are more or less to be expected and as rainbow and brown trouts are more tolerant of floods than is the brook trout, it is, therefore recommended that instead of great numbers of brook trout being yearly planted, as has formerly been the case, more rainbow trout be planted during the next few years. They, together with some brown trout are to be planted only in the creek below the club pond. The policy of

planting brook trout and possibly a few brown trout above the club grounds should be continued. This is quite logical, as the fish records show that in spite of the large yearly plantings of brook trout, the bulk of the catch today consists of rainbow and brown trouts. To stock rainbow and brown trouts should therefore increase fishing as it appears obvious that these two species are more suited to present stream conditions. What rainbow trout go downstream into the Manistee should increase the brood stock of that stream and tend to offset the stopping of migrating fish by the Junction Dam. It is suggested that up to 20,000 rainbow and brown trouts, 4 inches or more in length, be planted yearly in the lower half of this stream during the next few years. The vast bulk of these should be rainbows.

If no further factors arise to alter conditions, this change in the stocking policy should ~~be~~ greatly improve fishing conditions over that of 1934, especially if hole digging barriers are installed on the swamp portions of the stream and erosion is somewhat checked. However it is to be remembered that it is too much to expect 1932 fishing conditions every year, as such a condition must have been wholly abnormal and high above the average fish capacity of this stream.

INSTITUTE FOR FISHERIES RESEARCH

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