Original: Fish Division
cc: Education - Game
Institute for Fisheries Research
R. S. Marks
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DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
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ANN ARBOR, MICHIGAN

February 20, 1951

Report No. 1277

INVENTORY SUMMARY FOR NEVINS LAKE, MONTCALM COUNTY

By

Clarence M. Taube

ABSTRACT

Fish collecting on Nevins Lake in August, 1950 produced ten game species, two coarse species, and seven forage species. The warm-water fishes which hold the greatest interest for anglers here are bluegills, largemouth bass, and perch. Bluegills and perch are of good size, and show average and above-average growth, respectively. The largemouth bass revealed a growth rate which falls below the state average for this species. Despite growth-lag and large numbers of small bass in the anglers' catch, the inventory showed a good number of legal size largemouths present. Rainbow trout occur in Nevins Lake as a result of introduction, and have provided good fishing.

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A partial inventory of Nevins Lake (T. 10 N., R. 7 W., Sections 4, 9), Montcalm County, was made in 1945 by G. P. Cooper and I. A. Rodeheffer. That investigation disclosed that the lake was suitable for trout. Rainbow trout have been stocked here beginning in 1945, and have provided good fishing.

Additional information was desired for this productive, 53-acre lake, so it was mapped in the winter of 1950 and inventoried during August 24-26, 1950. Members of the mapping crew were L. Newton, N. Walker, and E. Sniezek; those who made the biological inventory were J. R. Nyburg, R. F. Stinauer, and C. M. Taube.

Inventory findings

Game fishes collected from Nevins Lake through the 1950 inventory were rainbow trout, brown trout, pike, yellow perch, largemouth bass, bluegills, pumpkinseeds, warmouths, green sunfish, and longear sunfish. Coarse fishes taken were white suckers and yellow bullheads. Gill-net collecting consisted of six 125-foot nets each set for about 19 hours; except largemouth bass, all the forenamed species were taken in this gear. Caught with seine were young game fishes and seven forage species. By far the most abundant of these latter was the bluntnose minnow.

With regard to chemistry, methyl orange alkalinity values ranged from 88 to 120 parts per million of dissolved mineral salts, showing that the water of Nevins Lake is moderately hard. This degree of hardness is regarded as favoring good biological production. The pH range was 8.4 (surface) to 7.3 (near bottom).

The cold-water stratum began at around 22 feet. Sufficient dissolved oxygen to support fish life occurred to a limit of about 27 feet, although the minimum of 4 parts per million which has generally been considered necessary for trout was not found deeper than 25 feet. Similar conditions of stratification can be expected to prevail each year from sometime in July until around the time of the first autumn frost when cooling of the surface water brings about an overturn of the lake. The overturn results in fairly uniform temperatures and quantities of dissolved oxygen from top to bottom.

Discussion of conditions for fish and fishing

The 31 rainbow trout collected with gill nets in August, 1950, ranged from 9.4 to 11.4 inches in length. Evidently they represented the lot of 2,000 trout planted in May, 1950 which had an average length of 7 1/2 inches. Even though they had been in the lake only three months, these fish were already pink meated. The lone brown trout taken probably had been accidentally introduced with the rainbows.

Trout in lakes ordinarily are mostly confined to the well-oxygenated portion of the cold-water stratum during the summer months. However, the exceptionally cool summer of 1950 probably permitted near-surface activity of Nevins Lake trout during most, if not all, of this time which usually is a critical period for cold-water species. A large number of trout were seen working at the surface in August when the surface water temperature was 70° F.

The perch and bluegills on the whole were of excellent size. Eighty-five of the 100 net-caught perch were over eight inches long; 19 bluegills out of 74 exceeded seven inches. An age and growth analysis was made from random samples of scales. The bluegills were found to be growing at a rate which is average for this species in Michigan. The perch indicated growth rates considerably above the average.

The only pike taken was 47 3/4 inches long and weighed 29 1/4 pounds. Fishermen reported pike as extremely scarce in Nevins Lake. From the standpoint of trout it is fortunate that this species is rare, for it is known to prey extensively on trout.

Several persons have mentioned a marked abundance of sub-legal largemouth bass and an apparent scarcity of bass of larger size in Nevins Lake. During the inventory, 33 largemouths were collected with hook and line for scale samples. All bass caught were sampled. The size range of these fish was 5.7 to 19.3 inches, total length.

The growth rate of Nevins Lake largemouth bass was found to be below the state-wide average for this species. Fish of age-groups II, III, and IV revealed average lengths of 7.1, 8.8, and 10.2 inches, respectively. Corresponding state averages are 8.7, 10.0, and 12.1 inches. (Roman numerals represent the number of year-marks or annuli found; for example, fish of age-group II had completed two growing seasons and were in the third--in other words, were 2+ years old.)

While it is the rule that young fish outnumber the mature individuals of a population, growth-lag apparently has accentuated the predominance of small fish in the catch of bass fishermen at Nevins Lake. Nevertheless, a good number of "keeper" largemouths was found. Ten of the 33 bass collected at the time of the inventory exceeded the 10-inch legal minimum length, and four were over 12 inches long. The largest measured 19.3 inches and weighed three pounds, fourteen ounces.

Management

Except for sub-average growth of largemouth bass, the fish population was found in excellent shape. Since a sizeable number of legal size bass occur here, slow growth should offer little cause for concern. Fishing at night with large lures is suggested for reducing the number of undersized largemouths in the catch.

Bass and bluegills have not been planted in Nevins Lake since 1944. Current abundance of these species attests to their success in reproducing naturally. Annual introduction of rainbow trout now for five years has materially added to the appeal of the lake. Stocking of hatchery trout is considered necessary because it is thought that trout do not spawn here successfully. Until 1950, each year's quota for this lake had been 1,000 legal-sized rainbows; this past year 2,000 were planted.

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