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An examination of Cadillac and Mitchell Lakes (Wexford County)

to determine the success of game fish spawning

by

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Each year since 1941, a check of Cadillac and Mitchell Lakes has been conducted to determine the success of natural spawning. Each year our netting has indicated that sufficient young are present to insure a maximum future production of legal game fish.

Early in August of 1946, arrangements were made by telephone with Mr. H. A. Johnson, secretary of the Cadillac Big Game Club to conduct another demonstration to check on the success of natural reproduction.

I arrived at Cadillac on the afternoon of August 21, as scheduled, and spent the entire following day contacting various sportsmen and club officials in Cadillac and around Cadillac and Mitchell Lakes. Messrs. Leland Anderson and Kenneth Peterson joined me on the afternoon of August 22.

We wish to thank Conservation Officer Claude Spoor of Cadillac for the help that he extended during our stay at Cadillac. Thanks are also due Messrs. William and Gordon Kietzman of the Cadillac Bait and Tackle House, who helped us with the netting operations.

Despite the fact that ample publicity had been given out well in advance, very few people were out to witness our operations. None of the officers of the club were out and few, if any, of the resort operators were sufficiently interested to put in an appearance.

Approximately 30 people were on hand to witness our first haul of the 25-foot bag seine in Cadillac Lake. After the second or third haul the number of visitors dwindled until only 10 or 12 were present to watch us make the two hauls in Mitchell Lake. Tremendous numbers of young-of-the-year game fish were taken in each haul of the seine in both lakes. As everyone who witnessed our seining was satisfied that natural reproduction had been unusually successful in 1946, no further seining was attempted.

Both lakes produced enormous numbers of young-of-the-year bluegills, perch, crappies, largemouth bass, smallmouth bass, pumpkinseed sunfish, rock bass, walleyes and several species of minnows. Three young walleyes, about four inches long, were taken in the seines for the first time since 1940 and 1941. At least 500 small fish were taken in each seine haul and an estimated 5,000 fish (about 12 to 15 quarts) were taken in one haul.

In the thousands of seine hauls that I have made in hundreds of Michigan lakes, never have I seen more fish or have I been able to take more fish consistently in haul after seine haul than we took in Lakes Cadillac and Mitchell on August 22 and 23. Messrs. Anderson and Peterson, who spent the entire summer of 1946 netting various lakes, concur with me in the above statement.

It was obvious, therefore, that all species of game fish in Cadillac and Mitchell lakes spawned successfully in 1946. Adequate numbers of

small fish are present to insure a maximum population of legal fish of all species.

The average size of the young bluegills and bass was much smaller in 1946 than in either 1944 or 1945. This was probably caused by the cool spring which resulted in the fish spawning later than usual. That the hatch and survival was excellent this year indicates that spawning conditions are ideal for all species of fish and that large numbers of adult spawners are present to produce large numbers of young.

Eleven gill nets, each 100 to 125 feet in length, were set in Cadillac and Mitchell Lakes. Four nets were set in Cadillac Lake on the afternoon of August 22 and were lifted on the morning of August 23. These 4 gill nets captured 18 walleyed pike, 11.1 to 15.2 inches in length and 46 perch 5.8 to 13.0 inches in length. Two of the four nets did not produce a single fish and most of the fish caught were taken from one gill net. On the afternoon of August 23, two gill nets were set in Cadillac Lake and five nets were set in Mitchell Lake. These nets were lifted on the morning of August 24. These seven nets that were set in the two lakes caught a total of 11 walleyes (6.4 to 14.5 inches), 26 perch (5.7 to 12.0 inches), one crappie and 1 sucker. We failed to take as many fish in seven nets on August 24 as were taken in two nets on August 23. This frequently happens when fishing gill nets. It is well known that commercial fishermen in the Great Lakes sometimes catch only 100 pounds of fish in the 10 to 12 miles of gill nets that they set each day. Yet, at other times, these same fishermen may get a boatload of fish out of the same gill nets. There are times in all lakes when fish just do not move and therefore cannot be taken in gill nets, or for that matter, any kind of net or lure. Therefore, the results of a

two-night netting cannot be indicative of the number of fish present in any lake. To obtain accurate estimates of the number of legal fish in a lake would require as much as six weeks of intensive netting with commercial trap nets which are more effective than gill nets. Our gill netting indicated that adult fish are present in Lakes Cadillac and Mitchell in numbers that are at least average or above the average found in other Michigan lakes. Messrs. Anderson and Peterson, who spent at least three months during the summer of 1946 netting various lakes have figures to prove that the number of fish taken by gill nets in Lakes Cadillac and Mitchell were at least average and probably above the average taken from other lakes. They state that these were the richest lakes netted during the 1946 season.

Fishing on Cadillac and Mitchell Lakes was reported good, especially early in the season, by many local sportsmen who were contacted. Most resort owners and tourists claimed that fishing was extremely poor. Poor fishing cannot be due to the fact that stocking has been discontinued because young of all of the species usually planted were present in tremendous numbers and have been for a number of years. These young native fish were at least as large if not larger than the bass and bluegills raised in our hatcheries for planting purposes. There are as many young fish of all species present along 100 yards of shallow water in each lake as would normally be planted in the entire lake. (From our seining operations it is estimated that there were 230,000 young game fish in the 25-foot band paralleling the shoreline of Cadillac Lake and 352,000 young game fish in a similar band around Mitchell Lake). It is known that there are natural limitations to the number of fish of various sizes which can be supported by any body of water. If more young fish are

present than can live to reach legal size, then plantings of hatchery fish would not do any good. In fact, the increased competition introduced by the planted fish would not guarantee any more legal fish and perhaps fewer. It can be assumed that any planted fish which reached legal size would do so at the expense of the naturally spawned fish.

Some sportsmen, resort owners and one official of the Big Game Club still believe that the Department should plant fish. Some of these people actually believe that the public relations or psychological benefits derived from planting fish would attract more fishermen and make fishing better without doing any harm to the lakes. With the hundreds of thousands of young fish that are already present in Cadillac and Mitchell Lakes, it is difficult to see where the addition of a few thousand more could actually do any good. In fact from the evidence that we now possess, more harm than good would be the only result. Why should energy and money be wasted on something that will not result in better fishing when this same energy and money could be expended on something that would be more worthwhile? If a pasture can produce just enough grass to support 5 cows and 2 horses, what would be gained by placing another 5 cows and 2 horses in the same pasture? Without sufficient food none of the animals would grow and they would gradually become emaciated. Our lakes and streams are aquatic pastures and can produce only so many pounds of food to support only so many fish. The farmer has an advantage over the fishery biologist and the fisherman because he can transfer his cattle to another pasture or supplement the natural food by hauling hay. Any such procedure in fish management would be impracticable.

Many sportsmen feel that there are too few legal game fish in Cadillac and Mitchell Lakes. Our gill netting, seining, observations and conversations with local fishermen would indicate that there is a good population of legal fish in these lakes. Since 1941, our seining on Cadillac and Mitchell Lakes has definitely proven that a large population of young-of-the-year game fish were present and that these fish were the result of natural reproduction. Such a tremendous number of young must imply a large population of adult (legal) fish.

In Michigan the average length of time required for fish of various species to reach legal size is as follows: Bluegill - 4 summers; pumpkinseed sunfish - 4 summers; rock bass - 5 summers; crappie - 3 summers; perch - 3 summers; largemouth bass and smallmouth bass - 3 summers; northern pike - 2 summers; walleye - 3 summers. Therefore, of the tremendous numbers of fish that were hatched during the summer of 1941, some should have survived to reach legal size in the following years: 1942 - northern pike; 1943 - crappie, perch, largemouth and smallmouth bass and walleye; 1944 - bluegill and pumpkinseed; 1945 - rock bass. If the young fish that are produced in the lake do not reach legal size in the average length of time prescribed for each species, something is definitely wrong; a shortage of food or overpopulation of fish. From what data we have this is not the case in these lakes. Most of the species of game fish in Cadillac and Mitchell Lakes are growing as fast or slightly faster than average for the state except the walleye which are growing slightly slower than average. Reports of reliable local observers and our netting has shown that there is a large (definitely above average) population of walleyes of just under legal size in both Cadillac and Mitchell Lakes.

should  
It is believed that the size limit on walleyes should be lowered from 14 inches to 12 inches or removed entirely. Size limits on perch should also be removed to permit a greater harvest of the tremendous perch population that is present in these two lakes.

Many people have stated that the Department should plant legal walleyes in Cadillac and Mitchell Lakes. The Department has attempted to raise walleyes to fingerling size. This program was abandoned several years ago because it wasn't considered practical to raise this species to fingerling size as a general procedure. The survival of walleyes was so small that an entire hatchery would be needed to provide enough fish for stocking one good sized lake. The walleye is a fish eater and if other fish are not present and available as food the walleye turns cannibal. Even when large quantities of other fish are present as food, walleyes still seem to prefer to eat one another. Experiments by various fishery workers have shown that between 4 and 7 pounds of food is required to produce one pound of fish. It is doubtful whether more than 100 pounds of minnows or other suitable fish can be produced per acre of water in Michigan. Therefore, between 80 and 140 acres of ponds would be needed to produce one ton of walleyes. If we were to plant only 10 walleyes, each weighing a half pound, per acre in Cadillac (1150 acres) and Mitchell (2,580 acres) Lakes (37,300 fish weighing 18,650 pounds), we would need between 746 and 1,305 acres of pond space, considerably more than the total acreage for all warm water hatcheries in Michigan.

The presence of such a large number of young fish in Cadillac and Mitchell Lakes indicates that a tremendous number of eggs must have been deposited because only a few hundred or at most a few thousand fish survive to the end of the first summer from each million eggs that

are deposited by spawning fish. Therefore, it stands to reason that a large population of adults must be present.

A lake that is over fished contains very few large adult fish because anglers catch the fish as soon or soon after they reach legal size. Every year that we have netted Cadillac and Mitchell Lakes we have found that there were large numbers of large perch 10 to over 13 inches in length. These fish are old and this indicates that the perch population is not being heavily cropped. It is safe to say that more legal perch die of old age than are caught by anglers. Perch are probably the easiest of all fish to catch. If the perch population is not being cropped, what about the other species of game fish?

In ordinary years, the number of young fish have been reduced considerably by late August by the predation of larger fish. In 1946, because of the late spawning, the numbers of small fish had not been reduced to such an extent. Perhaps this was the reason that angling was poor during August because the large fish had plenty of small ones to eat. Our examination of the stomachs of the large fish showed that they had been feeding heavily on small fish.

Just because large fish cannot be taken on hook and line is no indication that they are not present. On lakes that are as large as Cadillac and Mitchell it is necessary to know the best fishing locations. Certain local residents who were well acquainted with the lakes told me that they had no trouble at all in catching fish. At least three people told me that fishing was the best that they had had in over 10 years. It is rather difficult for anyone not acquainted with a large lake to go out and catch fish and any experienced angler knows that it cannot be done. If the resort owners and local sportsmen expect tourists to



catch fish they should see that guides are available or that the tourists are at least "briefed" before going out fishing. The angler should be told where to fish, the proper depths to fish and the best baits or lures to use.

Fish are present in Cadillac and Mitchell Lakes and they can be caught. Too many anglers fish for only one or two species. Anglers should use a greater variety of techniques and lures. If bass are not biting anglers should attempt to catch perch or bluegills. If trolling is unprofitable, still fishing or casting should be tried. The only thing that the Department could do to make better fishing would be to secure a change in legal size limits. It is therefore up to the resort owners and local sportsmen to improve fishing for the tourist. Many local sportsmen know where, when and how to catch fish in these two lakes but do not wish to tell anyone because they believe that their own fishing may be ruined or that more tourists would be attracted. Why isn't the perch fishing stressed more in fishing advertisements? It is known locally that fishing at certain times (for example, certain times in the spring and fall) is much better than at other times. Why not make an effort to attract more fishermen at such times?

The complaints of the Cadillac sportsmen are not justified in the light of our present investigations. In 1945, there were objections because not enough people were notified in time to enable them to witness our demonstration netting. When they did have an opportunity to take part in the 1946 operations they apparently were not sufficiently interested to turn out. There were few if any people out who did not believe that the Department was doing the right thing. Where were all of the dissenters?

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