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REPORT NO. 630-B

(Supplement to Report No. 630)

A SUMMARY AND PARTIAL REVISION OF MANAGEMENT SUGGESTIONS FOR SOME LAKES OF THE OTTAWA NATIONAL FOREST, MICHIGAN

by

Paul Eschmeyer

(Institute for Fisheries Report No. 630, "A Fisheries Survey and Management Suggestions for Some Lakes of the Ottawa National Forest, Michigan," by James W. Moffett.)

The results of detailed physical, chemical, and biological surveys of 23 lakes of the Ottawa National Forest made by the Michigan Department of Conservation with the cooperation of the U. S. Forest Service have been summarized in Institute Report No. 630, by Dr. James W. Moffett, formerly of the Institute staff. Included in the report are recommendations for the improvement of the fisheries in the various lakes concerned. Among the management suggestions are some which are too costly to be carried out with the hope of reasonable returns from the required investment under present fishing pressures or any which can be foreseen in the near future. This is true even though preliminary investigations by various workers have shown the suggested management methods to be entirely applicable in bringing about the desired improvements in the waters concerned. For example, the report recommends that some of the lakes be improved by artificial fertilization. Among the lakes for which such

procedure is recommended are Golden Lake, Smoky Lake and others, each of which has an area of about 500 acres. Unquestionably, the procedure suggested in the report would improve the fertility and no doubt also the fish production of such lakes. However, to distribute an average of 90 pounds of fertilizer per acre in a lake such as Golden Lake, over 26 tons of the material would be required, and a single application would not meet the needs of the lake for more than a few years at most. With other lakes in the immediate vicinity which are richer and which produce good fishing, and with existing light fishing pressures, the limited additional usage to which Golden Lake would be put by anglers would represent total returns, tangible and intangible, which would in no sense justify the expenditures required to achieve them. On the other hand, under conditions of steadily increasing recreational use of northern Michigan waters, it is perhaps not inconceivable that at some future time, forms of very intensive management (such as fertilization) could be justified.

This supplementary report is in no way a criticism of the original manuscript. The economic limitations to immediate practical use of some of the more intensive forms of management is repeatedly recognized in that paper. It is the purpose of this report to summarize and list the management recommendations for the various lakes, and to limit suggestions to those which are of immediate practical value, consistent with present fishing conditions and pressures. In the case of most lakes, the management suggestions in this report are identical to those of the original manuscript; in others, as has been noted, suggestions not at the present time deemed practical are omitted, with the expectation that reference to the original report will be made whenneeded; in still others, new suggestions or changes have been added, consistent with the findings of new field observations which have been made since the completion of the original manuscript.

Each lake will be considered in turn and discussed in the same order as that in the original report.

Lakes of the Paint River Drainage

Golden Lake

1. Change designation to that of a trout lake.
2. Open the lake to fall fishing for rainbows.
3. Transfer 100 to 500 adult cisco to the lake from Crooked Lake.
4. Plant yearling rainbows just before the ice forms.
5. Determine by gill net sets whether or not lake trout previously planted have reproduced.
6. If lake trout have not reproduced, stock with adults or near-adults of this species.
7. Discontinue all stocking of warm water species.
8. Warn fishermen to be considerate of nesting bass in early season.

A number of lake trout as well as some rainbow trout were reliably reported taken by anglers during the summer of 1940 (Report 630-A). It appears that trout are already of sufficient importance in the lake to warrant placing it in the trout lake classification. They should soon achieve dominance in the lake with continued stocking. Opening the lake to fall fishing for trout would permit the taking of rainbows at a time of the year when fishing is best for this species. Rainbows are given preference over brook trout in Golden Lake because of the size and in view of the absence of inlet or outlet streams.

Lake Five

1. Discontinue stocking pan fish.
2. Introduce forage fish (blunt-nose, fine-scaled dace, or northern red-bellied dace).

3. Investigations of smallmouth reproduction should be made. If found to be inadequate, some stocking with this species should be done.

Paint Lake

1. Discontinue all stocking.
2. Warn fishermen to be considerate of nesting bass in the early season.
3. The dam which was removed from the Paint Creek outlet previous to 1937 should be replaced.

Winslow Lake

1. Discontinue artificial stocking.
2. Warn early season fishermen to avoid bass nests.
3. A creel census or intensive observations on the lake should be made to determine the need for reclassifying the water into the "all others" group.

East Paint Lake

1. Discontinue all stocking.

Robinson Lake

1. Discontinue all stocking of game fish.
2. Stock forage fish (e.g., blunt-nose, red-sided dace)
3. Brush shelters should be placed on shoal areas.

Harding Lake

1. Discontinue all stocking.

Lakes of the Brule River Drainage

Hagerman Lake

1. Discontinue all stocking.
2. Add brush shelters along east and west shores in water not over

20 feet deep. These should be securely anchored to prevent their sliding down the drop-off.

3. Warn early season fishermen to avoid bass nests.

Pickerel Lake

1. No change in designation unless trout become well established. If this occurs, the lake should be changed to trout lake classification and opened to fall fishing for rainbows. Spearing whitefish through the ice should continue to be permitted.
2. Stock with legal size rainbow trout.
3. Discontinue all other stocking.

At the time of this writing, it is not known whether the outlet and inlet of Pickerel Lake are suitable spawning habitats for trout. If so, both brook and rainbow trout might successfully reproduce. Under the conditions present at the lake, it is thought that rainbows would be the better choice.

Lake Seventeen

1. Discontinue all stocking (exception: item 2).
2. A large series of scale samples of perch, largemouth bass and pumpkinseeds should be taken to determine whether or not the fish are stunted and would thus be benefited by the introduction of northern pike.
3. Brush shelters may be required if and after pike become established, to provide shelter for other species.

Lakes of the Ontonagon River Drainage

Thousand Island Lake

1. Discontinue all stocking except that of walleyes, which should be curtailed to alternate years.

Crooked Lake

1. Discontinue all planting of warm water species.
2. Make experimental planting of legal size brook trout.

The brook trout planting should be followed up to determine whether or not the fish have survived before further stockings with the species are made. Crooked Lake has two critical periods, in late summer and in late winter, when it becomes a border-line lake for cold water species, and mortality might occur during these seasons. The plantings would probably be most likely to succeed in the northwest depression. The trout might possibly spawn in the tributary of the Middle Branch of the Ontonagon River which flows from that end of the lake.

Sucker Lake

1. Re-classify to pike lake if northern pike can be established.
2. Discontinue all stocking except for the introduction of some adult northern pike.
3. The northern pike planting should be followed up to see if the species reproduces.
4. The seasonal occurrence of trout in the lake should be further investigated.

Beatons Lake

1. Introduce cisco from Crooked Lake. (Whitefish or smelt would be acceptable substitutes.)
2. Plant legal size rainbow trout.
3. Open the lake to fall fishing for rainbows.
4. Discontinue all stocking with warm water species.

5. Avoid encouraging smallmouth bass, bluegills, pumpkinseeds and perch. Nests of bluegills and pumpkinseeds should be destroyed if found to be practicable.

6. Discontinue planting land-locked salmon.

7. Open lake to fall fishing for rainbows.

Marion Lake

1. Discontinue all stocking.

2. Destruction of bluegill and pumpkinseed nests recommended.

Bass Lake

1. Discontinue all game fish stocking.

2. Introduce a few northern pike.

Bob Lake

1. Discontinue all game fish stocking.

2. A few brush shelters should be added to the sandy shoals, but not in peaty areas.

3. A larger fish collection from this lake would be desirable.

Imp Lake

1. Discontinue all stocking of warm water species.

2. Stock 1,000 6- to 7-inch rainbow trout.

3. Introduce cisco from Crooked Lake (or whitefish or smelt).

4. Inlet and outlet streams should be observed to see if they carry enough water in the early spring to permit rainbow spawning, and if so, whether or not the flow of water is maintained long enough to permit fry to escape back into the lake.

5. Lake should be opened to fall rainbow fishing.

Lake Sixteen

1. Discontinue all stocking. If perch become overpopulated and stunted in future years, however, northern pike should be stocked.

2. The "night kill" of perch due to oxygen depletion would be of interest to investigate.

Pilot Lake

1. Plant 1,000 6- to 7-inch brook trout. Restock periodically in future.
2. Discontinue all other stocking.
3. Change designation to that of a trout lake if trout come through well.
4. Fertilize with crushed lime rock and soybean meal.

This lake is sufficiently small to permit the use of fertilizers in an experimental way. Complete data on the productivity of the lake before and after fertilization should be obtained, and the effect of fertilization on fish production (growth) should be observed. The experiment should be under the direction of Dr. E. W. Roelofs of the Institute staff.

Sturgeon River Drainage

Markey Lake

1. Discontinue all stocking.
2. Fertilize with limestone (or marl) and soybean meal.

The above represents a departure from the original report. Report No. 630 recommends the introduction of brook trout in Markey Lake, with the suggestion that if this species fails in competition with the present population, the lake should be poisoned and a planting of only brook trout made.

The writer visited Markey Lake on June 30, 1941, and found lakeshore cottage owners enjoying very good fishing. About a dozen mixed largemouth

and smallmouth bass of good size were seen, besides some unusually large bluegills (for the area). It is strongly felt that, in view of this good fishing, lake residents would never submit to a plan of complete poisoning, although the addition of brook trout to the lake fauna would probably not be opposed.

It is suggested that for the present the addition of brook trout be deferred to some future date and that the lake be used to test the method of fertilization recommended in Report No. 630, and has been suggested above for Pilot Lake. With its relatively little shoal area, great depth, low methyl orange alkalinity, high acidity, and with the presence of 5 important game species (largemouth and smallmouth bass, bluegills, pumpkinseeds, and perch), the lake has possibilities of providing some good data concerning the effect of lake fertilization on fish production and growth which would be of much value in the management of many typical "pot hole" lakes of Michigan's Upper Peninsula.

The fertilization experiment should be directed by Dr. Roelofs of the Institute staff.

Deerskin River Drainage

Smoky Lake

1. Introduce 6- to 7-inch lake trout.
2. Plant legal-size rainbow trout.
3. Discontinue all stocking of warm-water species.
4. If trout become dominant and a change in classification becomes necessary, the lake should be opened to fall rainbow fishing.

Carp River Drainage

Lake of the Clouds

1. Stock adult northern pike.
2. Discontinue all other stocking.

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