

INSTITUTE FOR FISHERIES RESEARCH

DIVISION OF FISHERIES

MICHIGAN DEPARTMENT OF CONSERVATION

COOPERATING WITH THE

UNIVERSITY OF MICHIGAN

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REPORT NO. 387

DISCUSSION OF THE STATUS OF NORTHERN
PIKE FISHING WITH SPECIAL REFERENCE TO
HOUGHTON LAKE

This discussion is based primarily on the biological aspects of the question of altering regulations for pike fishing. The question of public relations in connection with the problem is recognized as an important one but has not been fully stressed because of the realization that the public-relations angle is best handled by those who are especially interested in that angle.

As interpreted by us, the petition signed by persons interested in fishing in Houghton Lake asks for two changes in the regulations for that lake:

1. A closed season on all fishing during March and April.
2. A discontinuation of all spearing.

The comments below refer in part to Houghton Lake only, in part to all lakes containing pike.

Desirability of northern pike

To the angler: The fact that 600 persons signed a petition to increase restrictions on the northern pike in Houghton Lake indicates their interest in this species. There is every reason to believe that most non-residents also have a high regard for the northern pike. The reasons for their regard for this species are probably many and varied and include those given below:

1. The northern pike is uncommon or absent in much of the area from which most non-resident tourists and resorters are attracted to Michigan (Ohio, Indiana, Illinois and Kentucky). Rareness of a species tends

to increase its value; abundance tends to decrease its value (carp were once regarded very highly; sturgeon were used as fertilizer).

2. The pike takes a good picture. Cameras are commonly carried by tourists and resorters. It is entirely in accord with human nature for the male to want to display his fishing ability to those back home and a picture of a northern pike helps him immensely to gain his end. This point is probably more important than is generally realized.

The pike is also relatively highly prized by many of the residents, and it appears *that* the belittlement of this species by muskellunge fishermen or by those advertising muskellunge waters has probably been less effective than might be expected. There is some reason to believe, however, that in some areas the walleye is generally more popular than the northern pike.

To the lake: The northern pike is without doubt a predator and a voracious feeder. The term "predator", however, might well be applied also to other species, including perch, walleyes, both species of black bass and rock bass. The quantity of food consumed is compensated for by fast growth. The pike tends to have habitat preferences more or less comparable to the preferences of suckers and perch and is generally associated with these species. Suckers have feeding habits which prevent their being taken frequently on a hook and line. Probably only a very small percentage of the suckers in the state are taken by anglers. In many Michigan lakes perch are over-abundant and become stunted. An extreme condition was found in South Twin Lake, Pigeon River State Forest, where apparently the greater portion of the population died of starvation before reaching legal size. Perch are apparently quite prolific and, unless "held down", over-populate many of our northern lakes. In some lakes therefore the pike is probably of direct benefit since it feeds on perch to a considerable extent and since it consumes suckers which otherwise might not be utilized.

It is probable, however, that the walleye competes directly with the northern pike and that this species has a similar effect on the perch and suckers.

Northern pike in bluegill lakes might be considered a definite nuisance. However, they are usually not abundant in the better bluegill waters. In the southern tiers of counties where bluegills are quite abundant, the lakes are near the southern border of the range for northern pike and there is little reason to believe that this species (pike) will become abundant in those waters. The relation between pike and bluegills is definitely shown in the report on the 1935 general census (Report No. 371-B). In the 5 districts in the Lower Peninsula--District 1 including the lower two tiers of counties, District 5 including the most northern counties in the Lower Peninsula--the percentage of bluegills and pike in the catch was:

<u>District</u>	<u>% of Total Catch</u>	
	<u>Bluegills</u>	<u>Northern Pike</u>
1	84.3	0.8
2	61.3	2.4
3	36.3	0.9
4	16.6	6.9
5	5.0	5.8

A lake will support a large number of small fish or a relatively small number of large fish. Which of the two is preferable cannot be stated, unless, of course, the small fish are too small to satisfy the fishermen. Whether or not large predators such as pike should be encouraged depends in many lakes on whether a limited number of large fish is preferable to a much larger number of fish of some smaller species.

It must be concluded that while pike may be detrimental to fishing in some lakes, they are definitely beneficial in others, unless it be decided that the walleye, a competing species, is preferable to northern pike and that this species can be successfully introduced and maintained in present pike waters.

Legislation

Present regulations keep pike lakes open to spring fishing and close non-pike lakes from May 1 to June 25. If pike are to be encouraged in pike lakes and discouraged in non-pike (undesignated) lakes, the current legislation is not consistent; theoretically, it would have an opposite effect. It is reasonable to believe that where fish are to

be encouraged they should be protected during their spawning season; where they are to be discouraged they should not be protected during their spawning season. Theoretically then, pike lakes should be closed to pike fishing in spring, while non-pike lakes should be open to spring fishing for pike. The term "theoretical" has been stressed above--it is realized that other questions are involved and that theories cannot always be successfully applied.

A year ago the Houghton Lake delegation asked that the number of ice lines be reduced from 5 to 2. The Institute indicated at that time that the meager evidence on hand failed to indicate that the change from 5 lines to 2 was justified, and that relatively few fish were taken in most lakes even on 5 lines. The number of lines was reduced not only for Houghton Lake but for the entire state. The change apparently resulted in an increase in spearing. In place of five lines there was a tendency to use 2 lines plus a spear in a shanty. The delegation therefore unwittingly encouraged the increased use of the spear in much the same manner as the W.C.T.U. has at times been very helpful to the bootlegger.

Spring fishing

There is reason to believe that the Houghton Lake delegation is justified in asking for a closed season during the northern pike spawning period, provided fishing is sufficiently extensive during that period to significantly effect the number of spawning fish.

The data provided by Mr. White on Houghton Lake do not include returns for April on that lake. Whether there was no fishing in April or whether Mr. White failed to take census records during that month was not ascertained. However, since the ice usually is unsafe or breaking up during this month probably little fishing for pike occurs in the lake. For the years 1928-1934 the average catch per hour for March was the same as for February (0.16 pike per hour). It was decidedly lower than for May (0.24 pike per hour). On the basis of the evidence available from Mr. White's data (which is qualitative only), a closing of the lake to May fishing would probably save more pike than closing in March.

Fortunately, almost complete data for the winter fishing on Houghton Lake for the winter of 1935-36 are available (Report No. 369). These data represent an estimated 85% of all fishing for the period of December 18 to March 31. The number of pike recorded for each month was:

Dec. 18-31	260
January	961
February	480
March	516

Had the fishing season been closed during March, the lake would have contained 516 more northern pike--about 1 pike per 35 acres. It does not appear that the removal of 1 fish per 35 acres will seriously effect the next summer's fishing. Whether or not fishing is extensive in April should be ascertained from Officer White. If it is less intensive in April than in March, there is little reason to believe that closing the lake to March and April fishing would bring about the desired results.

Judging from the data provided by Mr. White (Report No. 363), the pike were more readily and consistently taken in May than in any other month. There is probably considerable fishing during that month. If the pike are to receive protection, a closed season during May (or April and May) would probably be more effective than a closed season during March and April, as requested by the petition.

The general census data for 1935 (Report No. 371, Part 4) includes almost no records for April. These data show that in District 4 (including Roscommon County) pike constituted 15% of the total fish catch in March, 21% in May.

Recommendations

Regarding a closed season during March and April, the following recommendations and/or comments are made:

1. There appears to be little justification for closing the pike fishing season during March. The fishing during that month is limited to 2 lines and the evidence available suggests that the take of northern pike in March is relatively small. While the closing of the fishing season during March might be beneficial, it is doubtful whether the benefit would be significant.

2. There appears to be some justification for closing the lakes to fishing during April and May in those lakes where the pike are to be encouraged. The limited data available are inadequate to justify a definite recommendation for the discontinuance of fishing during these two months, but it is urged that the matter be given serious consideration, especially if pike-fishing is extensive during these months. This applies to all pike lakes.

Spearing

The petition requests that winter spearing be stopped on Houghton Lake.

Approximately 85% of the fishing in Houghton Lake last winter produced 5630 fish. A total of 5520 fishermen caught these fish in a total of 31,627 hours. Of the fish taken, 4041 were taken by line fishing, 685 by spearing and 904 by both methods used simultaneously. A total of 920 pike were taken by line fishing, 641 by spearing, and 656 by both methods used simultaneously. Line fishing took more pike from the lake than spearing, although spearing took more pike per hour than line fishing.

The data in general fail to indicate that spearing is responsible for a depletion in the summer catch of pike. There is, however, a growing resentment against spearing and an increasing alarm in the decline of pike. (Two letters expressing this feeling have come to our attention while writing these suggestions.)

A point which should be seriously considered in connection with the decline of pike fishing is the fluctuation of water level in recent years. A low level undoubtedly limits or destroys the marshy borders used by pike in spawning. The damming of some of the lakes to permit flooding of the marshy marginal areas in early spring might produce a decided change in pike fishing in the future and would possibly produce immensely better results than the curtailment of winter fishing except perhaps in a few lakes.

Recommendations

The data now available fail to prove that in general spearing is an important factor in the decline of pike fishing (except in Otsego Lake, Report No. 311) or that winter

fishing in general is responsible for it. However, if growing resentment against spearing urges the stopping of spearing, and if spearing is stopped, probably no harm will result and a little good might be accomplished. The public should not be led to believe, however, that pike fishing will decidedly improve when and if spearing is curtailed or outlawed. It might be more to the point to encourage the public to feel that fluctuating water-levels may influence the production of pike.

We see no harm (to the lake) in stopping spearing, but also see little good in so doing. If spearing is stopped, an increase in the number of lines (under immediate control) might well be considered. Winter fishing on Houghton Lake, for example, attracts many fishermen from many localities and is a definite asset to some local residents. It comes at a time when relatively little income is derived from other sources by these individuals.

It is urged that Reports No. 368 and 379-A be read and considered in connection with any consideration of changes in the winter fishing.

Other Comments

It might be remembered that the pike is primarily a "cool-water" fish, that it is most readily taken when the water is cool or cold. Because of this tendency of the pike, it is not as readily caught (in warm lakes such as Houghton) during the hottest part of the year (height of the tourist season) as in spring, fall or winter. (See Report 363).

Another point regarding pike, though not closely related to the above discussion, might well be mentioned. The mud pickerel common to southern Michigan waters now receives almost complete protection since it seldom reaches a length of 14 inches (in Michigan). The average fisherman probably cannot differentiate between this fish and the young northern pike, and its protection might therefore be considered justified. It appears, however, that very few undersized northern pike are caught. Some mud pickerel (often believed to be northern pike) are taken by hook and line and are returned to the lakes. In lakes in the lower two tiers of counties the mud pickerel are often much more abundant than are the northern pike and even spearing would probably

result in the removal of many more mud pickerel than young pike. The problem is in need of more study, but it is believed that, under the circumstances, the taking of mud pickerel should be permitted and encouraged. It is believed that no size limit is preferable to a size limit which might easily do more harm than good.

Recommendation

In view of the above discussion, it is recommended that, for the lower two tiers of counties (where the mud pickerel is apparently quite abundant) the size limit on pike be removed. It is further recommended that the reasons for the desirability of making the change be given ample publicity along with or preceding the removal of the limit.

Whether or not the third or fourth tiers should be included later would depend on further study. The almost complete protection of a predator does not appear to be good conservation, especially when the more desirable competing species may be caught, giving it greater opportunity to increase in number by reducing the number of its competitors through fishing.

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By: R. W. Eschmeyer

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SUMMARY OF SUGGESTIONS BY R. W. ESCHMEYER

BASED ON REPORT NO. 387

1. A lake will support only a limited number of pounds of fish--relatively few large predators or a much larger number of fish of smaller species.
2. When pike increase in abundance it may be expected that bass and pan fish will decrease in abundance.
3. Whether or not pike should be encouraged depends on whether a limited number of pike are preferable to a much larger number of pan fish.
4. Pike are primarily a "cool-water" fish and appear to bite best when the water is cool (spring, fall, and winter)--poorest in mid-summer (at height of the tourist and resort season).
5. Pike are beneficial in many lakes containing perch. Perch tend to become over-abundant and stunted in some lakes when not "held down".
6. If it is desirable to encourage pike, they should be protected during their spawning season.
7. Restriction of winter fishing will probably not produce a decided increase of pike in most lakes. Although data are not available to prove it, the low water-levels for a period of several years probably was more responsible for a decline in pike than was winter-fishing over the state as a whole.
8. A decided increase in the number of pike can probably best be obtained by damming lakes to keep the water level up, where this is practicable.