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INSPECTION OF LAKE MARGRETHE, CRAWFORD COUNTY,  
WITH RESPECT TO THE INSTALLATION OF A FISH SCREEN  
AT THE OUTLET (PORTAGE CREEK) AND NORTHERN PIKE SPAWNING AREAS

by

G. N. Washburn and W. F. Carbine

An inspection of the lake was conducted on September 9, 1944 by the writers for the purposes of determining if it would be desirable to install a fish screen at the outlet (Portage Creek), preventing the movement of fishes into and out of Lake Margrethe, and to learn more about the extent of the northern pike spawning grounds.

Many local residents feel that fish leave the lake through the outlet and do not return. This feeling (in case of the northern pike) has undoubtedly arisen from the poor pike fishing experienced in recent years. Whether poor pike fishing in the lake has been caused by the exodus of this species is not known and can be determined only by scientific methods. Several other factors may have been or are in operation which might produce the same results. The presence of walleyed pike in the lake in increasing numbers may have been a contributing factor. Several other lakes in the state, exemplified by Lake Gogebic in Ontonagon County and Central Lake in Antrim County, have had a decline in the northern pike population after the introduction and increase of walleyes, and yet at the same time the extent of the northern pike spawning areas remained approximately the same, thus leading one to believe that the entrance of the walleyes were a direct

contributing factor in the decline of the northern pike.

Another factor having influential effect on the northern pike population is the availability of sufficient spawning grounds. W. F. Carbine of the Institute staff found in his pike studies on Houghton Lake, Roscommon County, that in recent years several large former spawning grounds have been drained and ruined as spawning areas and he believes that this factor may be significant in the present reduction of northern pike in that lake.

If the northern pike spawning grounds in Lake Margrethe are of the same size today as they were in former years, they certainly were limited unless the fish migrated downstream in Portage Creek to spawn along its banks. Typical northern pike spawning grounds are restricted to three areas, one of which is located at the outlet on the northwest side of the lake. The two remaining sites, one located at the north end of the lake adjacent to the M-72 fill and the other at the southwest shore in a small swale area, are small and may or may not be used by spawning pike. It is possible that northern pike move out of the lake in the spring, down Portage Creek and enter the marshes along its banks, as they did in former years according to local residents. If so, a considerable spawning area was available for these fishes as certain sections of the stream were once impounded by beaver dams, leaving a flat flood plain covered with dense marsh vegetation. One of the former dams, located nearest to Lake Margrethe, was of considerable height and flooded several acres making an ideal pike spawning area. At the time of inspection this old pond bottom was dry, but in the spring of the year it probably is partially covered during high water.

If the above is true, it would not be desirable to screen the outlet and prevent the use of this stream by migrant fishes as the available spawning areas would be greatly reduced and further, close supervision

would be necessary to assure good screening operations. Work of this type in the past has not been too satisfactory. Mr. Hans Peterson, District Fisheries Supervisor at the Grayling State Hatchery, has known this area over a long period and was consulted on this matter of screening the outlet. He is quoted as follows:

"In regards to former barriers on the Lake Margarethe outlet, there is not much to report on as each of the operations were in direct connection with the local conservation officer, with the exception of last year; this installation was made without the consent of any Division or representative of the Department of Conservation and the screens installed were removed by our hatchery crew and junked.

"In the early days there was quite a run of pike out of Lake Margarethe in the spring and much illegal spearing was done at the outlet and on Portage Creek. For quite a few years while the late Rueben S. Babbitt was Game-warden they used to put stakes and chicken wire netting right at the main outlet above where the old grade crossing bridge was at that time. Later years, the resort owners got some snow fence and installed above the old dam site, but this didn't work much better than the wire due to the volume of water and debris at that time of year. Then they finally installed it right along the edge of the lake which gave them a 200 ft. screen area which created less pressure per square foot on the barrier.

"Since the installation of the control dam, screens have been installed in the keyways of the dam proper until we tore them out. We would not discover the screens until we were notified by property owners that the lake was too high and was washing their banks out, then we would go out and find these screens clogged with debris and the only way to get them out would be to chop them out.

"What I would like to see if anything was done, is to put a two way weir in below the present dam to operate from April until July 1st to see what, if any, movement of fish move up or down this creek. Personally, I don't think that the fish other than suckers drop down over the present dam.

"We saw quite a few nice bass below the dam this summer, whether or not these fish had dropped down over the dam or reached their maturity in the flood waters below."

W. F. Carbine and D. S. Shetter, Institute staff members, prepared a report (No. 936) from the data secured in the use of weirs for checking the movements of fishes in streams "Examples of the Use of Two-way Fish Weirs in Michigan." Results of their studies indicated that the differences

in the up and down stream movements, as far as the loss of fish was concerned, were insignificant. Results from the operation of the Muskegon River weir below Houghton Lake, Roscommon County, tend to show that some northern pike leave the lake to spawn but a high ratio of these later return. Further evidence was obtained from the operation of the weir on the Ontonagon River below Lake Gogebic in Ontonagon County which did indicate a movement of fishes in and out of the lake, but there was no substantial loss of fish from the lake by downstream movement.

These findings from weir operations would tend to be applicable to movements of fishes through the Lake Margrethe outlet. In order to definitely determine the ratio of up and downstream movements, a two-way weir would necessarily have to be installed and maintained. There are suitable locations on Portage Creek for the erection of a weir if this type of information is needed.

In conclusion, we feel that the screening of the outlet of Lake Margrethe would tend to be more detrimental than helpful and recommend that no screen be installed until actual proof is secured of the need.

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