

Original: Fish Division
cc: Mr. Ruhl
Mr. Trautman

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INSTITUTE FOR FISHERIES RESEARCH
DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
UNIVERSITY OF MICHIGAN

ALBERT S. HAZZARD, PH.D.
DIRECTOR

October 13, 1938

ADDRESS
UNIVERSITY MUSEUMS
ANN ARBOR, MICHIGAN

REPORT NO. 492

REPORT ON A PRELIMINARY INVESTIGATION
OF THE MUSKEGON RIVER FLOODING PROJECT

At Dr. A. S. Hazzard's request, on October 10 I accompanied a party on an inspection of the Muskegon River below Houghton Lake. The party consisted of Dr. Hazzard, Messrs. Martin Webb and Farley Tubbs of the Game Division, Michigan Conservation Department, Mr. Warren Bebee, resort owner at Houghton Lake, and myself.

Our inspection began at 11:00 a.m. on the Muskegon River about 1 1/2 miles downstream from its outlet at Houghton Lake (Sec. 4, T. 23 N., R. 4 W., Roscommon County), at a point known as Mead's Landing. Using two rowboats with motors, we traveled downstream to the mouth of Dead Stream, up that stream about a mile and return, thence continuing down the Muskegon River to the site of the proposed dam (Sec. 25, T. 23 N., R. 5 W., Missaukee County). The distance covered was somewhat under 10 miles. We left the stream at 5:30 p.m.

Throughout the entire distance the Muskegon River and Dead Stream meanders through an old lake-bed valley. This shallow valley is chiefly in swamp-meadows dominant vegetation of which is the tall grasses of the Calamagrostis type. At the upper end the swamp-meadows were as much as 1 1/2 miles across, while in the lower end near the proposed dam site they had decreased to a narrow stream fringe. No plant species except the

Calamagrostis type seemed dominant. Several plants considered of particular importance as waterfowl foods, such as smartweeds (Persicaria), sorrel (Rumex), pondweeds (Potamogeton), and wild celery (Vallisneria), were noted in small or moderate-sized stands. Cattail (Typha) was conspicuously rare. The bog plant association everywhere prevailed. The low hummocks, scattered about the swamp-meadows, and the low banks were in brush or trees. The wooded areas were bog forest of the tamarack type or swamp forest of the elm-ash-maple-poplar type. The latter forest occupied the better drained ground.

The streams and connecting sloughs seemed very good for spawning pike (Esox lucius). Nursery conditions for yearling pike appeared to be almost ideal since cover was abundant and the minnow population unbelievably huge. Conditions for adult pike are poor, which of course makes nursery conditions better. In examining this stream, one could readily believe the tales concerning the large spawning and past spawning runs from and to Houghton Lake.

Much to my surprise, less than six ducks (Mallards and Black Ducks) were flushed. Mr. Earl Mead, who lives at the point where we entered the stream, told us that in September "2,000 or 3,000 Black and other ducks were using the marsh." The general impression was gained that the marsh was extremely high in waterfowl cover but low in food value.

Mr. Warren Bebee is much interested in the proposed flooding. Probably through wishful thinking he and all except a few of the other Houghton Lake residents (so he told us) believe that only great good will come from flooding. They are under the impression that pike fishing and duck hunting in the region (Houghton Lake included) will be improved. If the phenomenal results expected by them do not materialize, they will surely blame the Conservation Department.

Concerning my opinion of the effect of flooding the great swamp-meadows and adjacent low woodlands, I do not know exactly what will happen, and neither does anyone else. Biological research is too young a science to have the answers. Many things can happen. Much depends on which vegetation types become dominant. Seemingly the Calamagrostis grass type (unless the bog rises with the ascending waters) will be largely submerged, leaving the field for other vegetation. But will better waterfowl nesting, cover, and food plants take their place? Will wave action and possibly ice push make a Houghton type of lake? Obviously much depends upon conditions over which we have as yet little knowledge or control.

What will happen to the pike and other fish species? Will the deepened waters make favorable year-round conditions for pike, and will these conditions plus consequent lack of current cause the pike which are reported to run downstream from Houghton Lake to spawn to remain in the flooded area, to the detriment of that lake? Will pike nursery conditions be spoiled and will the adults remain in the deepened water to prey upon the young? Or will these adults leave the lake-like waters, for some unapparent reason, and continue to return to Houghton Lake? Will pike fishing in the impounded waters become remarkably good within a few years after impoundment (and to the great joy of all), then shortly thereafter begin a decline from which it does not recover? Such has been the case in many impounded waters.

What about the ducks. Reports indicate that no duck nesting concentrations occur at present. Yet in many respects conditions appear at least as favorable as they are in the Canadian prairie provinces, in the center of most sporting ducks' nesting range, and where the concentrated population nests in upland fields of grain and grass, in sloughs, along dykes and roads, in straw stacks and even in buildings. Why then is this Michigan swamp, which is on the periphery of the ducks' nesting range, so low in

nesting population? What assurance do we have that flooding this marsh will increase the nesting population? And how will these impounded waters differ from dozens of other Michigan lakes? What about adult pike and ducklings? Can we put the cat and the canary in the same cage and show a crop profit for both? Why is it that the sloughs of the prairie provinces, which are usually dry for some portion of the year, produce such numbers of ducks? And where in the lake-dotted East do nesting ducks concentrate? Is it on large lakes full of predacious pike and bass or is most of the sporting duck nesting about small pot holes? We noted many Crows, but whether they were transients or summer residents is not known. Will the ducks, forced to nest nearer wooded areas because of decreased size of swamp-meadows, be less molested by Crows than when the swamp-meadows were more extensive and some portions farther removed from Crow-inhabited woodlands?

As stated previously, the answers to the above questions, and many others, are not known. Therefore to hopefully predict that flooding will be good and to have the public believing you think that flooding will be good, seems poor conservation. I respectfully ask, is it not better to place the project on a wholly experimental basis, explaining to the public your aims and intentions? What better way to spend public monies than to attempt to learn the answers to these important questions? As an attempt to increase fish and game, this project may fail; as an experimental plant, it cannot fail. Something useful will be learned.

If the project becomes an experimental one, then much must be known of present conditions before they are altered. It is vitally important to know the nesting and transient waterfowl populations, and the importance of the area to pike fishing in Houghton Lake. Otherwise, how will you know if flooding decreased or increased the fish and game output? Flooding should not be attempted until the present fish and game evaluation is known.

I respectfully make a few suggestions, and ones which you undoubtedly have considered. Usually impounded areas are filled with water as rapidly as possible, thereby causing an environmental upheaval. Such upheavels so disturb natural equilibrium that sometimes unwanted plants and animals become excessively abundant and recovery is slow. Why not raise the water level very slowly, allowing sufficient time for normal plant and animal adjustment. If unfavorable results become evident, then flooding can be stopped before it is too late.

The standard game management practice is to keep the impounded water level as static as possible. This marsh may be an exception. The most successful pike spawning years occur when the marshes are flooded above normal during the spawning season, then slowly lowered. Such lowering of water levels may force the adult pike to migrate into Houghton Lake and thereby leave the marsh to young pike and ducklings. Lowering of water levels at a reasonable rate and summer draining of marshes or sloughs does not harm nesting ducks, at least such a condition occurs in the prairie provinces. It may be that proper lowering and raising of water levels may result in increasing the numbers of both pike and ducks, a Utopian condition in game management.

Respectfully submitted,

Milton B. Trautman

Milton B. Trautman
Assistant Curator, Fish Division
Museum of Zoology, Ann Arbor, Michigan

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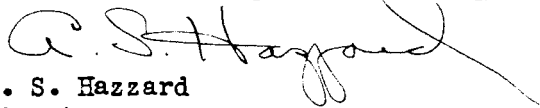
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COMMENT ON REPORT NO. 492

Mr. Trautman's extensive experience in both fisheries and game investigations renders his opinions upon such a problem of especial value since both forms of wildlife will be affected by the proposed impoundment.

I am in agreement with Mr. Trautman's views concerning the possible effect of this project on fish life, as presented in the above report. I would like to detail a man to study present conditions for fish in the area to be flooded and to follow through on the results of the flooding as they may affect conditions for fish both in the newly created reservoir and in Houghton Lake. This will be done if it is decided to consider the flooding project as an experiment in fish and game management and if Mr. Westerman gives his approval. I, too, am convinced that this project is extremely worthwhile if it is used to learn more about the beneficial and harmful effects of impoundment in general. We have many impounded rivers in Michigan at present and are likely to have many new reservoirs built in the future. Finding out what happens to conditions for fish when impoundment occurs on the Muskegon River should help in the fisheries management of other such reservoirs elsewhere in the state.

INSTITUTE FOR FISHERIES RESEARCH


A. S. Hazzard
Director

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