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May 14, 1953

Report No. 1371

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for F.A.C.*

OBSERVATIONS ON PIKE SPAWNING AT WHITMORE LAKE, LIVINGSTON AND
WASHTENAW COUNTIES, DURING THE SPRING OF 1953

By

John E. Williams

Abstract

Observations made during the spring of 1952 (I.F.R. Report No. 1334) indicated that a marshy peninsula on Whitmore Lake (T. 1 N., R. 6 E., Sec. 32, Livingston County and T. 1 S., R. 6 E., Sec. 5, Washtenaw County) was the only remaining pike-spawning habitat in the lake. A real-estate development planned for this marsh would completely ruin it for pike spawning. Since this development was planned to begin this spring (1953), a restraining order was secured by the Conservation Department, preventing development until a court hearing on the situation could be held; the hearing is scheduled for May 18, 1953.

Since the water level at Whitmore Lake was from 6 to 8 inches below that of last year, and most of the marsh was dry, observations were made this spring also to see if numbers of pike would be able to find a suitable spawning area. From March 11 to March 25 the marsh was checked intensively on the 10 days in which water temperatures were above the 40° - 45° minimum for pike spawning. Only four

pike were seen during this period following ice meltage and all were found in the narrow belt of usable but not ideal habitat flooded along the edge of the lake.

No pike fry or fingerlings were found in this marsh up to May 11, as compared to the relative abundance of pike fry in the marsh six weeks after spawning last year.

It was concluded that, in order for pike to have adequate spawning habitat in Whitmore Lake, this marsh must be left relatively unchanged. This year, with its exceptionally low water level, illustrated very well the probable effects of the destruction of this marsh. It is recommended that the part of the marsh below 896' M.S.L. (the level at which optimum spawning conditions prevailed last year) be left undisturbed.

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A proposed real-estate development of a marshy peninsula at the south end of Whitmore Lake (T. 1 N., R. 6 E., Sec. 32, Livingston County and T. 1 S., R. 6 E., Sec. 5, Washtenaw County) made it necessary for the Institute for Fisheries Research to make observations during the spring of 1952 to determine the effect of such a development on the fish of the lake (John E. Williams and Charles A. Pfitzmaier, 1952, I.F.R. Report No. 1334). Since the water level of the lake was considerably lower this year (1953), further observations were made which are summarized in the present report. On March 23, 1953 it was learned that the owners of the marsh planned to begin development on April 1. Since the Conservation Department is a property owner on the lake and because observations indicated this marsh to be the only spawning area for pike in the lake, a restraining order was secured against the owners of the marsh, preventing them from developing this area until a court hearing can be held. This hearing is scheduled for May 18, 1953.

In 1953, observations were first made on March 11, when the ice along shore began to melt. Some open water was present in the lake, but the narrow, flooded strip along the edge of the marsh was still

frozen. The ice, however, was soft and would not support much weight. One mud pickerel (Esox americanus vermiculatis) was seen under the ice in shallow water. The water level of the lake was 895.18' M.S.L., according to the U. S. Geological Survey gage (gage reading 5.18') at the lake, and it was thus 0.72' below the level at the same date last year (895.90' M.S.L.; gage reading 5.90'). This lower level was very evident on the marsh (see Figure 1), for only the very edge of the marsh was flooded; last year nearly the entire marsh, with the exception of the narrow line of wooded high ground, was flooded. Approximately 90 to 95 percent of the marsh was dry and inaccessible to the pike during the spring of 1953.

Most of the ice melted along the edge of the marsh on March 12, and water temperatures ranged from 35° to 54° F. Many mud pickerel were spawning along the edge of the marsh. The flooded edge of the marsh was mostly of sand or marl bottom with patches of muck, detritus and peat, and it was sparsely vegetated with bulrushes (Scirpus spp.). This flooded edge differed from the dry section of the marsh (where spawning occurred last year) which is mostly peat and detritus bottom with thick stands of bulrushes and various of the soft, marsh grasses.

Mud pickerel were abundant in the shallow water of the marsh edge on March 12, 13, 17, 18, 19, 20 and 21, when intensive searches were made for pike (on March 14 to 16 the days were considerably colder than the dates preceding and following). After March 22, pickerel were less abundant along the shore; rarely were more than 3 or 4 seen in 1/2-hour transects made on foot on March 23, 24 and 25.

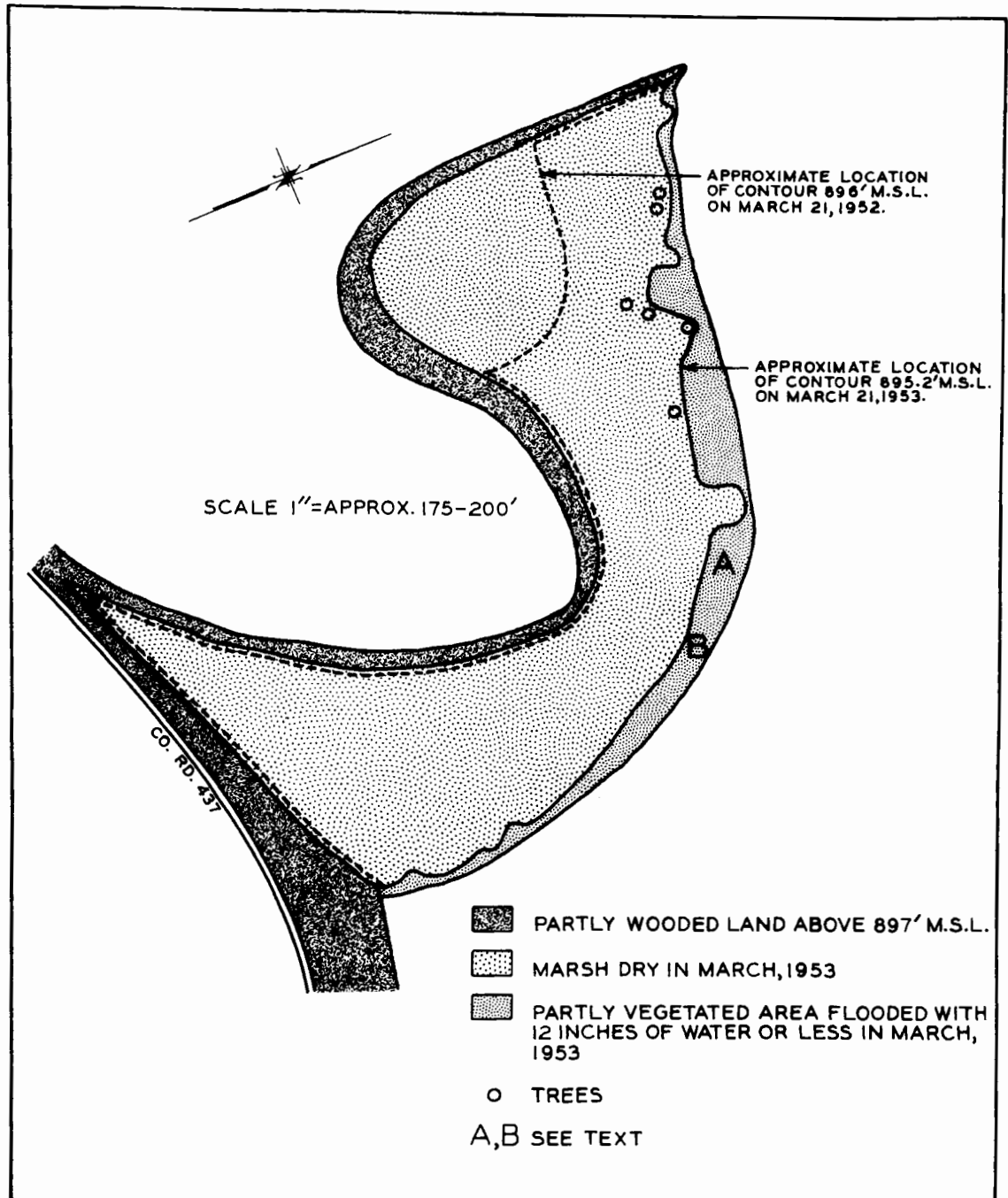


FIG.1 SKETCH OF THE PENINSULA AT THE SOUTH END OF WHITMORE LAKE.
TRACED FROM AERIAL PHOTOGRAPH TAKEN IN 1952 (FROM LOW ELEVATION AND FROM THE SOUTHEAST)
WITH SOME DISTORTION OF SCALE

Altogether, observations were made rather intensively for 10 days at the height of the pike-spawning period in this region. Normally, pike would be expected in this marshy area as soon as the marsh ice melted and the water temperatures rose to 40° - 60° F. The marsh was checked on all days of optimum weather during this 2-week period, but the presence of pike was rarely noted.

The first pike seen was a single specimen at 3:15 p.m. on March 18. This fish was in a heavy growth of bulrushes in 8 inches of water in the section of shore directly opposite the point where the peninsula swings westward (A on Figure 1). This fish, when flushed, moved rapidly the 25 feet to the open lake and disappeared. Upon making a second transect of the marsh at 4 p.m., a pike (probably the same one) was again flushed at the same place and again it returned to the lake. Water temperature at this location was 47° F. and ranged from 45° in 12 inches of water to 52° in 2 inches of water over the remainder of the marsh.

Water temperatures in the marsh were cooler on March 19 but did reach 45° by 4 p.m. However, no pike were present at that time. Intensive searches on March 20, 21 and 22 also revealed no pike, although water temperatures ranged from the high 40's to the low 60's.

A careful check of the marsh on March 23 from 4 to 7 p.m. revealed 3 pike present, two of which were spawning, in the area about 100 feet southeast of the observation of March 18 (B on Figure 1). The fish were in 10 inches of water at 53° and were spawning in an area of small bulrushes over a bottom of sand with scattered patches of peat and debris. Water temperatures in the marsh at that time ranged from 52° to 57° F. The third pike was by itself and approximately 50 feet away.

Observations on the morning of March 24 (water temperatures 47° - 54° F.) and during the morning and afternoon of March 25 (water temperatures 53° - 58° F.) revealed no pike present in the area. The pressure of making observations in other parts of the state prevented the author from making further checks beyond March 25. Since spawning was about finished at Sugarloaf Lake, Washtenaw County, under similar circumstances, it was believed that activity was probably about finished at Whitmore Lake also.

Other possible spawning locations were checked on March 21, but no satisfactory spawning habitat was found. One pike was seen as it jumped out of water at the extreme end of a narrow lagoon at the north end of the lake. Crappies were abundant in this area at the time, however, and it was thought that this fish was probably feeding on the crappies.

From observations made, it seemed definite that spawning habitat was extremely limited in Whitmore Lake this spring. Apparently few pike spawned at the peninsula this spring, as compared to the large numbers that used the area last spring.

By March 21 the water level had risen slightly to 895.24' M.S.L. (gage reading 5.24'), but this rise (.06') was scarcely noticeable in the marsh and it resulted in little more flooded area. The comparative reading last year on March 21 (when pike were actively spawning in the marsh) was 896.02' M.S.L. (gage reading 6.02') or 0.84' (10 inches) higher. This was sufficient to cover most of the marsh with 6 to 8 inches of water, an adequate amount for spawning.

Since there has apparently been no large reduction in the numbers of pike in Whitmore Lake since last year, the dryness of the marsh this year is considered the reason for the small number of pike using it for spawning purposes.

The peninsula was checked on April 27 with a scap net and on May 11 with a seine for the presence of pike fry or fingerlings. None was found. Last year pike fry were abundant in the marsh six weeks after spawning. The water level of the lake had risen, by May 11, to 895.42' M.S.L., or slightly over two inches above the level on March 21.

On the basis of the above observations it is concluded that there will probably be a noticeable lack of the 1953 age group when pike are sampled in the lake two or three years hence. If this peninsula is destroyed, probably few, if any, pike will be raised in the lake. However, if the peninsula marsh remains, it will continue to raise pike for the lake as it did under normal water conditions last year.

Since the spawning habitat last year was nearly optimum, it is recommended that all marsh under 896' M.S.L. be left unmolested.

Literature Cited

Williams, John E. and Charles A. Pfitzmaier

1952. Observations on Pike Spawning at Whitmore Lake, Livingston and Washtenaw Counties, during the spring of 1952. Institute for Fisheries Research Report No. 1334, June 2, 1952 (unpublished).

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