

Report 251

June 29, 1934

REPORT ON THE EXAMINATION OF THE MAD RIVER IN LOGAN AND CHAMPAIGN COUNTIES, OHIO

On May third, 1934, the writers made an examination of the Mad River in Logan and Champaign Counties, Ohio. The purpose of the work was to make collections of fishes to furnish additional records for the proposed "Fishes of Ohio" and to investigate the trout possibilities of this stream.

The collecting of specimens, which was done under permit kindly furnished by Mr. Reinhart, Conservation Commissioner, was successful. Previous indications that the fish fauna of this stream is very peculiar were confirmed and one new county record was obtained. Some interesting observations were also made on the spawning of certain minnows and suckers. A very interesting observation made in the river at the mouth of King's Creek was that of four medium to large sized adults of the small-mouth bass, which species is very rare in this stream. It is quite possible that these bass were forced up into these cold waters by recent pollution entering the Mad River at the City of Urbana.

Basing our opinion on years of experience and investigation of the trout waters of Michigan, we agree that the stream has many characteristics favorable to trout. The water is surprisingly clear for an Ohio stream. The temperatures which have been taken by the Division of Conservation, considering the purity of the water, are well within the toleration of even brook trout. Spawning gravel was found to be plentiful. The ditching of the stream may not have raised the temperature, because it has probably permitted a greater inflow

of spring water, although in most parts of Ohio ditching presumably warms the streams. This has probably not been true of this stream because of the peculiar nature of the soil and water supply.

Although we understand that hundreds of thousands of fingerlings to adult trout have been planted during recent years, during which time it has been partly closed to fishing, we could not find a single trout in the stream, although we examined the stream carefully for half a mile upstream from Ludlow Bridge, Monroe Township, Logan County, and for a mile downstream from the mouth of King's Creek, in Salem and Concord Townships, Champaign County. The latter section we seined almost continuously, without obtaining a single specimen of trout of any size. While it is possible that an occasional adult trout may have escaped our attention in the deep holes, which exist only beneath the bridges, we feel confident that there has been no natural reproduction of any consequence in the area examined, because not a single young trout was found in the scant marginal shelter of watercress, etc., where they undoubtedly would have been found if they had been present in any numbers worth mentioning. Moreover, no trout were observed in a rather cursory examination of Macochee and King Creeks.

Since Mr. Trautman's previous examinations of this stream have indicated that the sections examined are typical of the stream as a whole, we conclude that there has been no establishment of trout in this stream sufficient to provide worth-while fishing. Certainly the closing of this stream to fishing has not led to the anticipated result of building up a trout population through natural reproduction. The management practice on this stream has, in our opinion, been a failure.

The reason why the trout have not remained in any considerable numbers in this stream is, in our opinion, due to the combination of a high flood crest and almost total lack of adequate shelter. The trout have literally been unable to stem the floods and have been washed down into the Miami and finally into the Ohio River, where they have presumably served only to feed Kentucky's predations<sup>C6045</sup> fishes.

In our opinion the only possibility of building up this stream so as to provide any considerable amount of trout fishing lies in trout stream improvement. The two primary improvement needs of the stream are: (1) Frequent flood control dams with relatively small bottom outlets to hold back and smooth out the flood crests, but to be built so as not to interfere with the fish movements during low water; (2) increased shelter. The shelter can be provided by installing deflectors which dig holes, and low flow-over dams, to deepen the water about a foot. Then covers should be added in the deepened portions and trees planted on the west bank to provide shade. The east bank could be left open to facilitate fly fishing, because the morning sun is not so likely to heat the stream as the afternoon sun.

Unless this improvement is carried out we believe there is small chance of establishing any considerable amount of trout fishing in this stream. So long as the breeders are washed downstream there can be little hope for any natural reproduction, and the few young which may be produced will almost certainly suffer the same fate.

If the stream will be improved so as to make it really habitable for trout, a very considerable amount of natural reproduction can logically be anticipated. We can assume, however, that word of good trout fishing in this stream would attract fishermen in such large numbers that the natural reproduction will probably be insufficient in itself to maintain good fishing. The policy we would

recommend would be to maintain a hatchery of adequate capacity to stock this stream and a few other trout streams of smaller size in the vicinity. Fingerlings should be planted only so far as necessary to thin out the stock in the hatchery, so as to avoid disease, and these should be placed in the small weedy tributaries. The bulk of the fish from the hatchery should be planted at the size of six to twelve inches. Because of the unique character of this stream it would be unsafe to predict which species of trout would be most satisfactory for this stream. We recommend that the matter be solved by trial in the following way: Propagate brook, brown, and rainbow trout in equal numbers for several years after the stream has been improved, then determine by creel census which of the species is furnishing the bulk of the fishing, and therefore restrict the operations largely to that species. The adequate improvement of this stream system throughout approximately forty miles of potential trout water would involve a very considerable expense, but this work could be spread over a period of several years. We believe that the return on the investment would fully justify the cost.

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Ohio Cons. Comm.*

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