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FISHERIES RESEARCH VALUES AT GROUSEHAVEN

by

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This report was requested to aid in determining the need and possible values of purchase by the State Conservation Department of the Jewett Estate known as Grousehaven. It is based on a field inspection made May 13 and 14, 1944 by O. H. Clark, D. S. Shetter and the writer and upon an early survey of the lakes (July, 1931) by the Institute (Report No. 151) and of Gamble Creek and the Rifle River in 1931 and 1932 (Report No. 185), and upon data secured by the Rifle River stream survey party in 1941. As a result of these earlier studies we are better able to promptly evaluate the research possibilities of this area than we could of any like area in the state.

The area includes about 4,200 acres of solid blocking located in Ogemaw County in T. 23 N., R. 3 and 4 E. It is located at the headwaters of the Rifle River. ^{Seven} ~~Nine~~ lakes suitable for fish varying in size from 1.5 to 125 acres and totaling 318 acres are in complete control. About 3 miles of the Rifle River and about 3 miles of smaller fishing streams are within the boundaries. Three of the lakes (Devoe, North and Loon) have water suitable for trout but also contain warm-water fish. The other lakes are of the shallow, warm-water type and should be suitable for the production of bass, bluegills, pike, etc. All of the streams in the

area have suitable temperatures for trout except possibly the Rifle River from Devoe Lake to the junction with Houghton Creek. In summer this part of the river is too warm at times for trout since it receives the surface waters of Devoe Lake.

Following are listed some of the studies which could be conducted on the lakes and streams; many others are possible, some of which cannot be anticipated.

(1) The rate of decline and changes in character--if any--in the fishing in the trout streams and in the lakes after they are opened to public fishing. These waters have been fished very little during the past 20 years and might be considered as almost virgin and as carrying a maximum stock of fish. This problem was suggested by O. H. Clark, and in my opinion is one of the most important studies which could be undertaken in the area. It would help to answer the question which frequently is raised by sportsmen as to whether closing waters for a period of years would improve subsequent fishing and if so, for how long. Also whether fishing pressure is the reason for the purported decline in the yield of public waters. Opening at least a part of these waters on a permit system requiring accurate records of the catches would, over a period of years, throw considerable light on these questions.

(2) Life history studies of the brown trout. The Rifle and the Gamble are considered good brown trout streams and Devoe, North and Loon lakes also contain very large specimens. An opportunity should be offered to find out more about the spawning, food and shelter requirements of this exotic species which is growing in popularity in the state. Its management in both lakes and streams could be studied in this area. Since brook trout are present in the upper portion of the Gamble and in the various tributaries, it may be possible to learn how the brown trout

compete with the brook trout and the degree of their compatibility. Apparently some competition exists but whether it is for food, shelter, or spawning areas or otherwise is not definitely established. While the physical conditions of the streams (low gradient and swampy ground along certain tributaries) are not as ideal for a study of the brown trout as are afforded for brook trout at the Hunt Creek Station, nevertheless the opportunity to study the species both in lakes and streams and in competition with brook trout is unique in this area and outweighs these disadvantages.

(3) Lake type studies. Three major types of lakes characteristic of most of the lakes in the state are found in the area: (a) the trout lake type as represented by Devoe and North, having limited shoal areas and much deep, cold, oxygenated water, (b) the largemouth bass-bluegill type as found in Loon Lake, Spring Lake, Dollar Lake, and Devils Washbasin. Two subtypes are included in this group--the dominantly high shore as in the first two, and the bog-bordered, "pothole" in the last two. (c) The pike type of lake seems to be fairly well represented by Teal Lake.

The movements of fish into and out of these lakes are self controlled as in Dollar Lake and Devils Washbasin, or are controllable by screens and weirs in the others. This point was determined in the recent field check.

Loon Lake is somewhat intermediate between the trout lake and the bluegill-largemouth type. Also Devoe and North possess possibilities for limited warm-water fishing as well as for cold-water species. This is characteristic of many lakes of southern and northern Michigan and would adapt them for studies of competition between trout and bass, pike and other species. Planting experiments with marked trout in such lakes should give more exact answers as to extent to which this program (planting legalized trout) may be feasible in the many lakes found by the survey to have areas suitable for trout though containing warm-water species.

Answers should eventually be found as to why lakes of these types are adapted to the particular species which dominate them. This will be helpful in the management of lakes of similar types found in various parts of the state.

(4) Tests of the value of present lake regulations: classification by "trout" lakes, "pike" lakes, "all other" lakes, etc. Complete control of these lakes and the fact that they have been closed to the public previously would fit them for studies to determine the value--if any--of closure to fishing for certain periods, the need for size limit and creel limit regulations, etc. Would a May 15 opening and March 15 closing for all waters or protection by species only with no general closed season afford the maximum crop and the greatest public satisfaction, or is the present system best? These questions are most important and can only be answered to the satisfaction of the Department and the public by demonstration and experiment. If authority is granted the Commission by the Legislature to designate a limited number of such waters, those in the Jewett area would be well adapted to such studies and would be readily available to sportsmen of the large urban centers of southern Michigan.

(5) Demonstration streams. As indicated by post-war projects already submitted, there is great need for a number of demonstration areas on trout streams where the cost and the value of legal-sized trout plantings can be determined in contrast with other areas on the same stream where no stocking is done but where additional restrictions on methods and limits may be employed (flies only, two trout limit, no night fishing, etc.). The Rifle, the lower Houghton and Gamble Creeks would offer good opportunities for such demonstrations, especially since the area is relatively close to urban centers and will be heavily used if opened. The fact that these streams have been virtually closed to fishing in the past should make the additional restrictions and reporting of the catches seem

less burdensome to the sportsmen. These experiments should probably follow those listed under No. 1 as they would require more man-power and development than would be available until after the war.

(6) Tests and demonstrations of stream and lake improvement.

While some environmental improvement has already been done by the former owner on recommendation of the Institute, Mr. Clark and I feel that the streams and lakes in the area could be used to secure further evidence of its value and to test additional structures under close and continuous observation. Since the stream improvement structures installed in Gamble Creek and the Rifle were some of the earliest experimental devices of this work and since these were numbered and described in detail and some subsequent checks of the value have been made, they have considerable importance. It would be unfortunate if these streams came into new private ownership which might not be sympathetic to our interests in continued follow-ups of this work.

In general I believe that Grousehaven has exceptional opportunities for fisheries research and for the demonstration of new management techniques in both streams and lakes. Similar areas having all of the advantages listed above are not now in state ownership nor could they be readily secured in such solid blocking without heavy expenditure. The waters form an unusually compact, varied and controllable unit which I believe would be unique for our work.

If acquired and opened to fishing only under permit--as certain game study areas are now controlled for studies of game yields--the cost and man-power needed for the first few years would be small. When men and material are available considerable expansion of the research program would be desirable. The construction of weirs, diversions and other facilities needed for intensive studies could be undertaken as post-war projects. In other words, some experiments as No. 1 could be undertaken

immediately by the transfer of a creel census clerk to the area and by employing the present caretaker to maintain the roads and to enforce the regulations and all of the waters could be opened to public fishing under existing regulations except that permits to fish and report of the catches would be required. This plan might be followed for the duration of the war or until other competent help became available.

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Report typed by V. Andres