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SOME COMMENTS ON THE WATERS OF THE FONTINALIS CLUB, OTSEGO COUNTY AND THE POSSIBILITIES OF USING THESE WATERS FOR EXPERIMENTAL PURPOSES

On October 16, 1937, at the suggestion of Mr. P. S. Lovejoy, the writer visited the Fontinalis Club for the purpose of inspecting the club-owned trout stream. The headquarters of this organization, one of the oldest private outing clubs in Michigan, are located approximately three miles east and one mile north of the village of Vanderbilt, in Otsego County. The private trout stream, locally known as the "club stream," arises in Sec. 35 of T 32 N, R 3 W, and enters the Sturgeon River in Sec. 10 of T 32 N, R 2 W.

An appointment had been made with Mr. Charles Peterson, Caretaker, who conducted the writer over a considerable portion of the stream, discussing at length the fish management program being carried on by the club. There follows a brief description of what was seen and heard on this visit.

The extreme headwaters of the stream were not seen. Mr. Peterson stated that the stream originates from spring seepage in a heavy cedar swamp. He further stated that gravel suitable for brook and brown trout spawning occurs in this headwater section, and that it is utilized every season, but that he had no definite information as to the extent of such utilization, nor of the annual increment to the stream from natural reproduction.

Through Section 24 of T 32 N, R 3 W, and Sections 19, 18, and a part of 17 of T 32 N, R 2 W, the original natural character of the stream has been largely obliterated by the installation of four dams, which have formed ponds of considerable size. The dams, durably constructed of stone and earth with concrete facings and spillways, permit maintenance of a constant and reasonably uniform flow of water. The pond bottoms are covered with a deposition of soft, black silt and organic debris, which in many places has accumulated to a depth of two feet over the original bottom. These silt beds support thick growths of Chara, or stonewort, which in late summer become exceedingly dense and come so near to the surface of the ponds as to restrict the use of row boats. At the upper end of the pond furthest upstream (the only one examined in any detail), considerable quantities of cedars have been killed by flooding. Also, old dead heads and waterlogged trees occur in large numbers on the bottom, the majority almost if not quite covered by silt deposits. Although practically no current is discernible to the eye through the ponds, there is sufficient flow to preserve some vestiges of the original channel. Mr. Peterson stated that it is his custom to lower the ponds in the fall, and to remove the vegetation from the channel by means of a potato fork. He is now endeavoring to perfect a device which, when towed from a row boat, will accomplish the same result.

Below the club house the stream has been permitted to remain in more or less natural condition, although a number of stream improvement devices have been installed by Mr. Peterson. This portion was observed in Section 17 of T 32 N, R 2 W. Here the stream averaged about twenty-five feet in width and ten inches in depth. The current was swift, flowing over a bottom of fine to moderate gravel, with occasional limited areas of coarse gravel and rubble. Cedar and aspen grew thickly on either bank, affording excellent shade yet not interfering with fly casting. In many places

the shore line was boggy because of extensive spring seepages. There were, apparently, few pools in this section originally. During the past few years a number of improvement devices have been installed, and this work is being continued. Most of the structures observed are a sort of modified Hewitt dam, the bank ends well faced and anchored with stone, and which, owing to the swiftness of the current, have produced unusually large, deep pools, undercut far below the dam faces. Here and there four or five large boulders have been grouped in the stream, producing riffles and small, shallow pools. A cursory examination of the stream bottom indicated a high production of trout food organisms, especially leptocerid and sericostomatid caddisflies.

The club has, for some years, maintained a private trout rearing station. One employee of the club devotes full time to the care of this project. Brook, brown and rainbow trout are reared and stocked. Up to the present, the club has done little to check up on the percentage of survival, or the growth rate, of trout planted by them. However, they consider that their fishing is quite satisfactory, a view well borne out by the testimony of a club record book, kept over a number of years, in which all persons angling on the stream enter their catch. In this book are tabulated the number of fish of each species taken, the size of each, the exact locality where taken, together with remarks on the condition of the weather, the kind of tackle used, and whether or not a "hatch" was in progress. Mr. Peterson believes that this record, at least for the last twelve years, is quite accurate.

Very rigid predator control is exercised by the caretaker and his assistants. On the wall of one of the club buildings is nailed an impressive collection of heads of kingfishers, great blue herons, and mergansers. Pole traps are operated, and club employees customarily patrol the grounds with shotguns.

The chief purpose of the writer's visit to the Fontinalis Club was to find out whether or not some fish management projects might be undertaken by the club and the Institute on a cooperative basis. Mr. P. S. Lovejoy, who suggested the visit, believed it probable that an arrangement of mutual advantage might be worked out,--an arrangement which would give the Institute many of the research opportunities of an experimental stream, and at the same time afford information to the club members on the efficiency of their present management system. Mr. Peterson appeared very receptive and cordial toward suggestions of various possible research projects mentioned by the writer, and averred that the president of the club would back him up on any plans made.

It is believed that a number of worthwhile projects might be worked out on this stream. Some important factors in favor of the stream as an experimental unit are:

(1) Complete private control of the stream and adjoining land with protection from trespass; (2) restriction of fishing privileges to a relatively small number of persons, i.e., members and their guests; (3) existence of a complete and accurate catch record, extending over a period of years; (4) continual presence of a full-time caretaker with considerable experience in practical fish culture; (5) existence of a detailed, large-scale map of the stream and its environs; (6) ready availability of trout for stocking; (7) zealous predator control exercised to a degree which almost completely rules out predation as a source of significant fish loss; (8) existence of a complete and detailed record of air and water temperatures covering a period of several years.

Many fish management problems could be studied on such a stream. A few are suggested, as follows:

(1) Study, through tagging and subsequent recovery by angling and/or seining, of the viability of artificially reared trout of three species, and of various size groups; (2) degree of competition and mutual tolerance of brook, brown and rainbow trout inhabiting the same waters; (3) annual increment to stream from natural reproduction; (4) comparative viability of naturally spawned trout versus those reared artificially; (5) comparative growth rate of trout of three species, both naturally and artificially reared; (6) food and habitat preferences of three species of trout; (7) influence of pond versus open stream environment on growth rate and viability of trout; (8) comparison of migratory movements of brook, brown and rainbow trout.

It is believed that an attempt should be made, in the near future, to effect a working agreement between the Institute and the Fontinalis Club which would lead to a study of at least some of the problems suggested above.

INSTITUTE FOR FISHERIES RESEARCH

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