Original: Fish Division
cc: Mr. Peterson
Dr. Leonard
Mr. Ruhl

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

ALBERT S. HAZZARD, PH.D.
DIRECTOR

ADDRESS
UNIVERSITY MUSEUMS
ANN ARBOR, MICHIGAN

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SOME PURPOSES OF THE HUNT CREEK TROUT EXPERIMENT STATION

For many years, production of agricultural commodities has been increased and improved through the application of facts discovered at the numerous agricultural experiment stations which have been developed during the past fifty or sixty years. Realizing that production of game fish in natural waters should be considered from a crop-wise standpoint, the Fish Division of the Conservation Department plans to establish, in the very near future, a field experiment station where year-round investigations of trout production problems can be carried on.

On the headwaters of Hunt Creek, about fifteen miles southwest of Atlanta, the Department owns considerable frontage within the Lundeen Public Hunting Area, including complete control of three small lakes from which the stream originates. Somewhere on this property tentative plans call for the erection of a small building with laboratory facilities and living accommodations where members of the Institute for Fisheries Research staff will "live with the fish," and by so doing endeavor to find answers to some of the knottier problems of trout stream management.

What, for example, becomes of the trout which in summer occur in small streams but in winter are nowhere to be found? What justification

is there in actual practice for the "nursery or feeder stream" theory? Are these small tributaries contributing to the fishing in the main streams and if so how much? When trout spawn naturally in our streams, what percentage of the eggs hatch, and of those that hatch, how many live to attain a catchable size?

Carrying capacities of streams will come in for a great deal of attention. Grazing experts can now tell, almost at a glance, how many head of cattle can safely be carried on a given range area. Experiment stations have already done a large part of their work for them. The fisheries manager, unfortunately, must depend largely on hunch, judgment and guesswork when planning a stocking program. Grasses and edible shrubs on cattle range show up fairly clearly; but the aquatic insect larvae, snails, and worms which compose the bulk of the trout's pasturage are not only tiny but given to lurking on the under side of stones or in mud bars in the stream bed, where they are not easily seen and appraised. Carrying capacities, in ultimate analysis, are determine largely by the growth rate of the animal concerned. If cattle steadily fail to gain in weight it may be assumed they are too numerous for the amount of pasture available. It is the same way with fish. When, as sometimes happens, fish free from disease are taken which prove to be actually undersize in spite of being old enough to be well above legal size limits, it is obvious that the food supply is inadequate. When the Hunt Creek Project gets under way it is planned to screen off a number of sections of equal length, with similar bottom food supply, and by stocking different numbers of trout in these sections and noting their growth arrive at a more definite idea of the quantity a given stream should carry per mile.

What proportion of a resident, reproducing trout population may be considered as the annual crop? In other words, how many fish can be

removed each year by anglers without causing a permanent decrease in the normal population? At Hunt Creek, different sections of stream, each carrying a properly balanced population, will be subjected to varying amounts of supervised fishing until a usable answer to the question is obtained.

It is planned to carry on work on the nutritional values of various natural trout foods. The cattle feeder knows that steers lay on fat faster when eating corn than when running on open range. Cows do better on a properly balanced ration of ground feed than on hay. But we don't know--yet--which is best for trout growth, a mayfly nymph or a caddis larva, an aquatic fishworm or a snail. Tests will be devised to assay the relative merits of the commoner natural trout food organisms, and ways and means for increasing the numbers of the more desirable ones sought out.

For many years the argument has gone back and forth on the part played by other fishes normally inhabiting trout streams. Are suckers really spawn-stealers, or do they simply take stray eggs already lost from the nest? Are chubs, muddlers and shiners serious food competitors of trout? Intensive observations may afford a workable policy as regards so-called coarse fish in trout water.

Late in the season, anglers often complain of the large amounts of algae which form in trout streams, and whose long mats of tiny green filaments trail from every obstruction. May excessive quantities of this plant, when dying, release decomposition products harmful or even fatal to trout?

The effect of floating ice and anchor ice on fish and fish food organisms can be studied at first hand, as can many of the habits of trout in winter; for the station, when completed, will be operated the year around.

INSTITUTE FOR FISHERIES RESEARCH

By J. W. Leonard
Assistant Aquatic Biologist