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

**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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# GENERAL PROGRAM OF THE HUNT CREEK EXPERIMENT STATION OF THE INSTITUTE FOR FISHERIES RESEARCH

Justin W. Leonard

The Hunt Creek Experiment Station, built for and operated by the Institute for Fisheries Research, Fish Division, Department of Conservation, is situated in the south half of the northeast quarter of Section 35, T. 29 N., R. 2 E., Montmorency County, Michigan. The Station will serve as an operations base for various experiments concerning fundamental problems presented by game fishes, especially trout. General administration of the research program will be by the Director of the Institute. Individual studies will be carried out by members of the Institute staff under the immediate supervision of a resident biologist.

It is anticipated that the Station's activities will embrace the Hunt Creek System from its headwaters to the line separating Sections 25 and 36 of T. 29 N., R. 2 E. With almost no exceptions, the waters so described lie within State ownership in the Public Hunting Grounds adjacent to the Lunden Game Refuge. The Hunt Creek System, including its ten tributaries and the three Fish Lakes, East, Middle and West, occupies a considerable portion of Sections 34, 35 and 36, small parts of Sections 26 and 27, T. 29 N., R. 2 E., and Sections 1, 2 and 12 of T. 28 N., R. 2 E.

The last-named three sections lie outside the Lunden Game Area, in Oscoda County.

The Institute contemplates creating no material alterations in the existing natural terrestrial ecology of the Hunt Creek drainage basin, aside from the minor changes actuated by the construction of the laboratory itself and by the introduction of service lines for telephone and electricity. Not merely does the Institute propose no disturbance of land conditions: its selection of this site was in large part motivated by a belief that no other interested agency entertained intentions of carrying on activities entailing disturbances, such as construction of new roads or extensive cutting of live timber. Such environmental alterations as may be brought about in the stream and its immediate course are mentioned under specific headings below.

A complete statement of projects to be carried out at the Station is, of course, impossible, at a time when the laboratory itself is still unfinished. The research potentialities of the region as well as the financial investment represented by the material plant now under construction render it probable that the site will be actively occupied for many years to come; and the program of an experiment station must remain sufficiently flexible to allow its course to be charted by the light of current discoveries. A brief conspectus of certain investigations already proposed, however, may be of value to all agencies having interests in the area.

Fish Population Studies: Since a fundamental inventory problem exists in the present lack of adequate fish census methods, various approaches will be brought to bear to provide an accurate evaluation of the present numbers and sizes of fishes inhabiting the experimental area. Separate phases of this attack will include tagging and marking experiments conducted in conjunction with an intensive creel census; seining of numerous restricted

stream sections; and treatment with anaesthetizing chemicals known to affect only poikilothermous vertebrates.

Fish Food Surveys: An assessment will be made of all potential fish-food organisms normally inhabiting the stream, with particular attention to their ecological and seasonal occurrence and distribution. At the same time, controlled laboratory experiments will be directed at rating these organisms according to their respective merits, e.g., nutritive value, abundance, palatability, availability and requirements. These experiments will be accompanied by stomach examinations of fishes of various size groups from different localities at all seasons of the year. An attempt will be made to develop culture methods for organisms proving particularly desirable, and their natural requirements will be subjected to intensive inquiry.

Predator Investigations: It is expected that opportunities may be offered for further examination of the roles assumed by the various animals which prey upon fish. Predator control, however, will be exercised only where necessary to protect abnormal concentrations of fish.

Beaver-Trout Relations: Observations made during the past year indicate that the Hunt Creek System supports but few beaver. At the present time there are known to be seven dams on the headwaters of the main stream and two on its principal tributary, Fuller Creek. Only two of these, one on the main Hunt and one on Fuller, are of considerable dimensions. It is believed that these are the only ones occupied by beaver, although the onset of cold weather may reveal others. Except for one unoccupied dam on Fuller Creek and three in close succession on Hunt Creek which are already partially demolished and have been long abandoned, it is planned to retain the dams for further study of beaver-trout relations. Should the Game Division wish to remove dams because

of destruction of cedar, the Institute would voice objections in no instance save that of the large Fuller Creek dam, which has upwards of ten acres of water impounded, and which appears to be reaching its peak as a producer or harborer of trout. It is hoped that investigations during its decline may afford useful data on the question of why a small, artificially impounded body of trout water almost invariably produces excellent fishing for a short period of years and then drops into an apparently irremediable slump.

Environmental Control: As soon as reliable figures are obtained for existing populations of fish and fish food organisms, it is planned to install certain types of stream improvement structures in positions where they can be made the subject of continuous close scrutiny, and their effects carefully evaluated. This work would be carried out with materials at hand, employing beaver-killed timber and occasional streamside trees, and might also entail thinning of bank cover at points where the shade is especially dense, to allow the sunlight to reach the stream.

Natural vs. Artificial Propagation of Trout: Inquiry into this important and widely discussed phase of fisheries management will employ various avenues of approach, including direct observations of natural spawning activities and concentrations with subsequent determinations of extent of natural fertilization, percentage of hatch and survival. Data so obtained will be supplemented by evidence derived from marking experiments including known numbers of both naturally hatched and artificially propagated trout of different sizes.

Trout Migrations and Movements: Installation of weirs at various strategic points upon Hunt Creek and some of its major tributaries is expected to provide practical information on the normal composition of the trout fauna, and may cast light on other matters such as seasonal movements, possible territorial defense, and ultimate fate of artificially propagated fish.

Limnology: In all likelihood occasion will be found to utilize the opportunities for study of lake fishes and lake productivity offered by the three Fish Lakes aforementioned. At present, plans call for the introduction of a small population of Montana grayling into East Fish Lake, which already contains brook trout. Because the three Fish Lakes are in different stages of development, they are well suited for studies of lake evolution within a restricted area. Physical, chemical and biological investigations of the lakes and of the waters impounded by beaver dams are anticipated.

As was stated earlier in this memorandum it is patently impossible to outline in accurate detail the complete research program to be carried out at the Hunt Creek Experiment Station. It is desirable that its program be subject to modification and growth. The fundamental problem confronting game fisheries workers is that of the basic carrying capacities of natural waters, and the ways and means whereby such capacities may be increased. The particular studies mentioned above as already under way or proposed for the near future are all simply individual phases of an attack upon the basic matter of game fish production and yield.

It is considered as highly improbable that the interests of the Game Division and the Fish Division will ever prove to be incompatible in the Hunt Creek area. The activities of the Station will be concerned almost entirely with the waters of the Hunt Creek System and the lands immediately adjacent thereto. The interests of the Game Division, it is believed, center in the terrestrial situations capable of producing and supporting game birds and mammals, and in insuring hunting privileges in the area to the public. All of these uses of the area should lend themselves to perpetuation without conflict.

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