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INSTITUTE FOR FISHERIES RESEARCH
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UNIVERSITY OF MICHIGAN

ALBERT S. HAZZARD, PH.D.
DIRECTOR

ADDRESS
UNIVERSITY MUSEUMS
ANN ARBOR, MICHIGAN

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CENSUS -- FISHERIES STYLE

by

O. H. Clark and Albert S. Hazzard
Of the Institute for Fisheries Research
With Michigan Department of Conservation

The tanned, smiling chap with pad and pencil in hand who may greet you when you climb from a trout stream or step from a boat this year won't ask you what your income was or how many children you have but he will ask you some questions about your fishing and will want to see your catch. This season, as has been the practice since 1928, the Conservation Department will be conducting a census of the fishing in every part of the state in order to find out how the catch is holding up under the great increase in fishing pressure and to learn other facts upon which to base recommendations for laws and other management.

If the man who is taking the census wears the uniform of a conservation officer, your answers will be recorded on a white slip and will make up a part of the "general" or random sample type of census. For thirteen years the officers have been asking these questions of fishermen they meet during their regular patrol duties and the records--about 150,000 to date-- are sent in to the Department's Institute for Fisheries Research at Ann Arbor, where the figures are tabulated and reports prepared. Of course even this number of records is only a small fraction of the actual amount of fishing which goes on in Michigan each year but they are taken

at random and at all seasons of the year, mostly on the heavily fished and on the better waters it is true, but they include experts and dubs alike. As such these records give a cross-section or sample of the fishing in Michigan which becomes increasingly valuable during the years.

Of considerable interest and value is the fact that over a period of 11 years for which the figures have been analyzed relatively little decline in the success of the average angler has occurred. In other words, in spite of increased numbers of fishermen as shown by license sales, the figures indicate that the average fisherman can expect to catch about the same number of fish per hour of angling as he could eleven years ago. The figures from 1928 to 1938 for all types of fishing are: 1928 - 1.1 fish per hour; 1929 - 0.9; 1930 - 0.8; 1931 - 0.9; 1932 - 1.2; 1933 - 1.0; 1934 - 1.6; 1935 - 1.5; 1936 - 1.4; 1937 - 1.5; 1938 - 1.3. The average for the entire period was 1.3.

Your census taker may not be a conservation officer, but may be wearing the uniform of the C.C.C., and if so, you have been fishing one of the sections of trout stream set aside for experiments in planting or selected as representative of a certain type of water for which the fish yield is to be determined by "intensive" census. The chances are this lad will ask you more questions than would the conservation officer, will weigh and measure each fish and look it over carefully for a tag or missing fins. He may ask if you will allow him to scrape a few scales from the side or remove the stomach for scientific studies of the growth rate and feeding habits by the Institute staff the following winter. Where CCC help is not available, the Department employs trained workers to take such intensive censuses along with other data on the waters. W.P.A. assistance has also been used, notably in the Waterloo area being developed by the National Parks Service.

Such intensive censuses have been conducted on many individual lakes throughout the state. In such censuses an effort is made to record all catches made throughout the season. On lakes, especially those where a census has been in progress for several consecutive years, facts are accumulating which show that some lakes are relatively stable as to the annual production of fish as well as the percentage of the total catch represented by individual species. In other lakes varying degrees of population fluctuation occur as in Clear Lake, Jackson County, where in 1935 90% of the winter catch was crappies; in 1937 - 55%; and in 1938 - 15%. It seems to follow that when one species drops off in numbers, other species increase and largely offset the effect on the total population. In 1935 on this same lake, 8% of the winter catch were yellow perch; in 1937 - 41%; in 1938 - 51%. Bluegills rose from 6% in 1935 to 32% in 1938.

The intensive census also demonstrates the extent to which a lake is used by non-resident anglers. This varies from no non-residents to 90% non-resident angling. In addition, the figures indicate the average size of fish caught, and from samples of scales from the fish, their age is calculated.

An average of 31 fish per acre of lake surface were taken in the summer season of 1936 from 12 representative Michigan lakes, ranging from 114 fish on one lake to less than one fish per acre on another. The fishing pressure on these 12 lakes averaged 37 man-hours per acre of lake surface. In the winter an average of about 6 fish per acre were taken from the 12 lakes. The census is providing figures on which to base intelligent interpretations of the interrelationships between summer and winter fishing, a problem of rapidly increasing interest to all anglers, especially in southern Michigan.

Similar intensive censuses are being conducted on a number of Michigan trout streams where information as to movements of planted fish, productivity, the value of stream improvement and different methods of restocking is obtained. The state fish hatcheries have supplied a large number of legal sized trout, many of which have been jaw tagged or fin clipped. The return of these tags and the checking of the fin clipped fish through census and cooperation of anglers have furnished the data as to rapidity of growth, the percentage of stocked fish that survive, and the movement of trout. It should eventually be possible through these records to determine the number of pounds of fish that a particular area of water can support efficiently. The tagging operations and the creel census records also supply a measure by which the effectiveness of planting at the various seasons of the year can be gauged. The average fishing pressure recorded in the number of man-hours of fishing per acre of water surface on seven Michigan trout streams for three years was 149 hours. The average catch per acre on these seven streams for 1939 was 71 trout of legal size, ranging from 12.7 to 173.8 fish per acre. These figures help to explain why trout streams are more easily depleted than warmwater lakes and why it is more difficult to maintain satisfactory trout fishing in Michigan.

For still another type of census no recorder except the fisherman himself is required. This is the volunteer "expert" census. During the past three years a carefully selected group of anglers has been asked to keep accurate and complete logs of their catches and though we have no way of knowing how thoroughly this has been done, the results are of considerable interest. Although the expert takes half again as many fish and larger fish than the average man, he strikes poor days too and comes home skunked 17 per cent of the time.

So, Mr. Fisherman, when you are asked to report on your catch, please cooperate. Your record isn't just filed or forgotten. Through your help the Department is enabled to know not just guess how good fishing is and is able to act intelligently in recommending legislation and carrying out management procedures for the betterment of fishing.