MANUSCRIPT REPORTS OF THE BIOLOGICAL STATIONS

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November 5, 1938.

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MEMORANDUM UPON THE SCHEME FOR STOCKING LAKES WITH SPECKLED TROUT IN CHARLOTTE COUNTY, NEW BRUNSWICK.

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by

M. W. Smith.

FISHERIES RESEARCH BOARD OF CANADA

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According to the fish cultural records for 1933, 1934, 1935 and 1936, the following lakes in Charlotte county were stocked with number one fingerling trout, either directly into the lake or into rearing ponds connected with the lakes: Bonaparte, 30,000; Gibson 25,000; Kerr, 32,500; Limeburner 55,000; Saint Patrick 35,000. (The figures are for the entire four year period. Not all waters stocked in Charlotte county are included). No organized method was employed in these lakes to determine the results of stocking. Anglers' reports are all that are available, and these are consistent in indicating that the catches per individual were not appreciably improved, if at all. In many other Maritime lakes the same story applies. The Fish Culture branch of the Department of Fisheries has appreciated the condition and in certain cases has adopted remedial measures. Thus, in lakes of the Yarmouth district of Nova Scotia the copper sulphate method of eliminating the entire fish population has been used to rid lakes of predator fish, which have been considered the underlying cause for poor stocking results. However, in the Charlotte county lakes that have been indicated above, there does not appear to exist a predator fish population of white and yellow perch as was the case in the Nova Scotian lakes treated with copper. This is definitely known for some of the lakes in question and assumed from fishermens' experiences to be the case in the others. It is true that certain predators of trout exist, as the eel for

instance, and competitor fish may be numerous. Yet, without a great deal of specific information to go upon, there seems to be no readily apparent conditions inherent in these lakes themselves to account for a failure or near failure of stocking. One comes immediately to mind, however, namely over-fishing. It is well known that the Charlotte county lakes are heavily angled, and it is quite possible that it has been this outside influence that has determined the results of stocking in the past.

When lakes are stocked with trout, but not closed to angling, many fish are removed while still small. The stock is being continually drained, and such predator and competitor action that is possible in the lake has full scope to operate against a declining number of trout. If lakes are closed to fishing after they have been stocked, then, although the trout encounter similar predator and competitor forces, they are not subjected to a continual reduction in numbers from angling efforts, and thus have the opportunity that presents itself to become established. In those lakes where the internal antagonism against trout is not great, as we believe to be the case in some of the Charlotte county lakes, the trout stock should readily gain the upper hand and dominate the habitat, providing always that angling is prohibited while the fish are young.

In view of these considerations, the following scheme is advanced. Primarily select a number of lakes which do not support a dominant predator population and which are reasonably close to each other. In this case we have selected the following eight lakes in Charlotte county:-Welch, Gibson, Limeburner, Bonaparte,

Navigation, Johnson, Kerr, Saint Patrick. Stock and close to angling the first two stocked, and likewise the other groups of two after there has been a lapse of three full years from the time they were stocked. In the fifth year again stock and close the first two lakes, and then the other groups in rotation. Thus, after the scheme is in operation, two lakes will always be open to angling in any one year, and six closed.

The greatest distance between any of the lakes above indicated is about fifteen miles. Six of them are upon, or almost upon, passable roads. The other two lie a short distance in the woods on good trails. The alkes vary considerably in size, from approximately fifty to one hundred acres. The area of four is available from surveys made in the past, and the other four could be readily surveyed over the ice. Considerable scientific investigation has been carried out on Welch and Gibson lakes, which are at the head of the Chamcook system. Trout are taken in all of the lakes, but they are intensively angled.

Essential to the scheme is a patrol adequate to stop illegal angling. If proper protective measures were not taken, then the stocking as outlined under the scheme would provide no advance over the policy now employed in some of these lakes. It is preferable, in order to secure proper guardianship, that the man employed for the service be a non-resident of the district and appointed by the Department or the Fisheries Research Board, so as to avoid local political patronage as far as possible. Adequate protection would require the guardian to spend his entire time on the eight lakes.

It is intended that the scheme should follow the present policy of planting number one fingerlings in these lakes. At.

present the hatchery facilities are too restricted to supply many older fish. In certain states of the United States fish of legal size are planted with the anticipation that a large proportion of the trout stock will be removed by the anglers in one open season. In the Charlotte county lakes, it is hoped that suitable fish for angling will be grown in the lakes themselves from small fingerlings under adequate protection. As with the American waters, it is anticipated that a large proportion of the trout stock will be angled from a lake during the first year that it is opened to fishing, and that the remaining breeder stock will be too small to provide good angling in subsequent years. Thus, the scheme calls for restocking each lake after it has been open one season.

The number of lakes involved is not large. Therefore, a carefully-made creel census could be taken, and this is important, for it offers the best means of evaluating the results of the procedure. With a creel census undertaken, the plan could be broadened to include tests upon the relative merits of fingerlings, advanced fingerlings and yearling trout for stocking purposes.

It is advocated that angling be permitted when the introduced fish have attained three full years of growth. Anglers will, in general, desire larger fish, but older fish require a large food supply. It is apparent that a lake will support far more fish three years of age than it will fish four years of age or over. Since this fact is true and since trout three years old give good stort, there appears to be no reason for prolonging the closed season.

To operate the scheme funds are necessary, the major portion of which are required for the guardian's salary. Since this would be a test case, it is considered that the Department, or whoever sponsors the plan, should bear the expense. However, if the scheme proved feasible and was applied in other areas, then attempts should be made to put the procedure on a self-supporting basis. This could be accomplished, in part, at least, by charging a rod license for the privilege of fishing in the controlled waters. A rod license is now levied in the National parks situated in the Maritimes. With this precedent a plan could be evolved to meet the needs of the new areas.

In every region where a plan of this nature was operated, there would be two years at the start when a rod license could not with propriety be charged, as the lakes would then be closed to fishing, but during which period a guardian would be necessary. No guardian would be required during the first year that a lake was stocked.

The idea of the above plan is not new, but a proper demonstration of its efficacy appears to be lacking.

It is obvious that the scheme can be extended to take in a greater number of lakes, and thereby have more waters available for angling at one time. We must always bear in mind, however, that at no time should the number of lakes be too great for adequate patrol. For a preliminary test, the eight lakes that we have indicated are quite sufficient in number, and form a compact group.

M. W. Smith,
November 5, 1938.