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ATLANTIC SALMON AND TROUT INVESTIGATIONS

1943

Report No. VII. Management of Moser River.

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It seems desirable at the conclusion of the Board's work on Moser river, N. S., in 1943 to formulate recommendations as to the management of that river for salmon and trout. These should be only such as seem fully warranted with present knowledge. With further study of the data obtained at Moser River and with further advance in the salmon investigations, additional recommendations may be warranted.

Breeding

At this time, proposals for increasing the stock of salmon do not seem to be warranted. Although considerable possibilities are seen of increasing the stock, since the system is not very well populated with young, the proper procedures have not been perfected and only a small part of the river system is sufficiently accessible for treatment.

Enemies

A large proportion of the young salmon perish, but it is not clear to what extent this is due to such enemies as eels, trout, kingfishers and mergansers. Local use of eels should be encouraged, and is not likely to be overdone. There are so few kingfishers that the young salmon and trout that they take are probably not of great importance. The mergansers do, however, frequent the parts of the system where there are most young salmon. It is recommended (1) that residents of Moser River be informed of the

possible value of keeping down the numbers of mergansers and of the regulations for taking or killing them.

Protection

It is needful to ensure that a reasonable proportion of the salmon reach the spawning grounds. Since the most important spawning grounds appear to be in the lower parts of the North and East brooks, since the Salmon hole evidently serves as a resting place for the fish that will spawn in those brooks in the fall, and since the salmon largely enter the river early in the season, it is particularly important to ensure that a fair number of fish reach the Salmon hole and remain there till spawning time. Since Mill lake serves as a resting place for salmon spawning in Mill brook and since John Low's still and other stillwaters and lakes farther up the river serve as resting places for fish spawning ^m above the mouth of North brook, it is important that a fair number of fish should reach Mill lake and John Low's still, which are large enough to give them fair safety. The fish in Salmon hole are apt to be poached owing to its small size, comparative shallowness, smooth bottom and accessibility. Good pools are valuable not only for angling, but also for protection of the fish. It is recommended (2) that good pools for protection of the fish as well as for providing angling be ensured at reasonable intervals from the head of tide to Mill lake, Salmon hole, and John Low's still, and that the Salmon hole be made to hold more fish safely by introducing and maintaining obstructions to the flow that will cause the current to deepen the water.

Use

Nearly all the Moser salmon, both males and females, return to the river as grilse (locally called "jumpers"), few remaining in the sea long enough to become fish upwards of 7 lb. in weight (locally called salmon). The nets used in the estuary and in Necum Teuch bay outside are of mesh suitable only for the larger fish, which seem to be mostly wandering fish from many different rivers and seem for the most part not to be entering the Moser river. Nearly all the salmon that enter the river are grilse, and most of them enter from late June to August and are then available for angling.

The chief reason for poor salmon angling in the Moser river is the high temperature in summer of the water of the lower part of the river, which flows out at the surface of the estuary. The salmon enter this warm water even in the estuary and then are not apt to take a fly. For good angling the salmon should enter early in the season, before the water has become too warm (over 70°C.). Freshets form the best means for bringing them in and natural freshets on the Moser river are, because of the many lakes, not apt to be sharp enough to be very effective even if they happen to be of the right size and to come at the right time. Also, there is the point that for good angling temperature the salmon need to be brought in at the beginning of the season, when they seem less inclined to enter than they do later.

It is recommended (3) that artificial freshets from Round Lake raising and lowering the river level abruptly about 1½ feet, be made regularly every few days from the time the salmon appear in the estuary in early June until the water becomes too warm, in

order to provide angling before the salmon are put down by the heat.

There is evidence that Moser fish wander elsewhere and that fish from other rivers enter Moser river, so that, particularly in a dry season, the number of entering salmon can be greatly increased by artificial freshets. Fish that enter may later leave the river. It is recommended (4) that to retain entering salmon for angling and spawning, a valve in the form of a funnel be maintained at the river mouth, so constructed that fish can ascend but not descend.

Salmon that have been put down by the heat from rising to a fly, will become reconditioned for angling by lying in cool water, as in John Low's still. In this way there may be good angling late in the season for fish that come into the river a month or two earlier. It is recommended (5) that pools be constructed at suitable places in the lower part of the river to make use of all available cool brook water for keeping salmon in condition for angling and for reconditioning them after exposure to heat.

In general, conditions that are good for the salmon are also good for the trout (Salvelinus). It should be noted, however, that the trout do not need to be brought in early, since they take well in spite of high temperatures, apparently because they keep in the coolest water available. Also unlike the salmon, the run of trout was very small in the very wet season of 1943, perhaps because the heavy river current swept out at low tide the cool water from all the deeper parts of the estuary. In 1942, in a very dry season the normal number of trout as well as of salmon was doubled with artificial freshets in operation.