

orig. in Mr. Bunker  
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**MEASURES NEEDED TO ASSIST THE  
RESTORATION OF SALMON IN MAINE**

**(Covering a report made to the Special Maine  
Salmon Commission, September 1945)**

The U.S. Fish and Wildlife Service, just before the war, began preliminary research on Maine salmon as part of a long-range program designed to restore salmon runs to New England rivers. An agreement was drawn up and signed in 1941 between the Maine Department of Inland Fisheries and Game, the Maine Department of Sea and Shore Fisheries, and the U.S. Fish and Wildlife Service, establishing certain basic principles relating to salmon propagation and stocking procedures, and setting up a research committee to coordinate the salmon work of the three agencies. This project was interrupted during the war, but now has been resumed on an increased scale.

The Fish and Wildlife Service is encouraging this program because we are basically concerned with the maximum utilization of fishery resources. We are therefore interested in the restoration of potentially great salmon resources in Maine as well as in other North Atlantic states where suitable conditions might be established. With our research and salmon propagation facilities we can help Maine agencies find out how to bring back salmon runs and maintain them at the most productive level.

The State, however, is completely responsible for administering the fishery and for applying the results obtained in this cooperative work. It is the responsibility of the State to provide the most effective administrative machinery and legislation for carrying out needed restoration measures.

preparation of report to Special Maine Salmon Commission

At an early stage in the restoration program it became clear that the continued expenditure of funds and effort on restoration work, would be futile unless it were possible to more effectively control the catch taken by sportsmen, commercial fishermen, and poachers. It is useless to expend time and effort on research, in improving conditions in the streams and on stocking fish, if the fish are taken in such quantities that insufficient numbers are left to return and spawn. It also became clear that the present divided responsibility and authority in Maine for administering salmon measures in fresh and salt water, made it difficult to carry out a consistent policy and apply an overall coherent management program.

In order to overcome these limitations on an effective restoration program two measures are urgently needed. These requirements are:

(1) A single administrative unit with authority over salmon in both fresh and salt water.

This administrative unit could consist of a three-man commission made up of the Commissioner of Inland Fisheries and Game, the Commissioner of Sea and Shore Fisheries, and a third member appointed by the Governor. The present Departments of Inland Fisheries and Game, and Sea and Shore Fisheries, possess warden forces covering both the fresh and salt water areas frequented by salmon. Consequently it would be uneconomical and inefficient to set up a duplicate warden force for salmon alone. By including the commissioners of these two departments on the proposed salmon commission, the facilities of their departments would be available for carrying out any measures decided upon by the Commissioners, and the interests of both departments would be represented in the activities of the Commission. The third member, having no commitments to either department, and without a full

schedule of other duties, would be able to devote time and attention to following through on measures agreed upon by the three-man commission.

(2) The above Commission should be provided with legislative authority to control the salmon catch in both fresh and salt water; to appraise and buy up weir rights in and about the mouths of salmon rivers; to require licenses for all catchers of salmon in salt as well as fresh water; to require licenses for all dealers handling salmon, and that they show that all of their purchases were made from licensed fishermen; and to carry out such other measures in regard to control of the catch as may be needed. The money from licenses should be earmarked for use in purchasing weir rights and for other salmon restoration work.

The above regulations would not be mandatory, but the Commission would have authority to apply them if and when needed. These measures would make it possible to obtain better control of salmon fishing and to reduce salmon poaching. Thus, during the early stages of salmon restoration work, while efforts were being concentrated upon developing adequate spawning runs, it would be possible to hold the taking of salmon to low levels. As the runs developed and more adequate spawning stocks were obtained, increasing numbers of salmon would be permitted to both sport and commercial fishermen.

Numerous other measures could be listed which would assist the salmon restoration program. However, the problems on various rivers are different, and these measures must be considered in relation to the particular problems involved. They must be part of an overall long-range program if they are to have an effective part in improving the salmon runs.

Maine rivers fall into three general groups which present different problems:

Group A. Rivers with relatively small salmon runs which appear to be increasing in size owing to general improvement in river conditions and to construction of fishways. The first problem in such cases is to see that conditions continue to improve.

This requires:

1. Control of the catch, sport, commercial, and illegal.
2. Maintenance and improvement of fishways.
3. Decrease in pollution where such pollution exists.
4. Control and reduction of predator species, if they are an important factor in limiting the survival of young salmon.

Group B. Rivers with small runs which are stationary or decreasing in size in spite of extensive planting of young salmon (Penobscot).

The first problem is to determine what is limiting the runs:

1. Inability of adults to migrate upstream to the spawning grounds (dams and pollution)?
2. Inability of the young to survive in the tributaries or main river (predators and pollution)?
3. Inability of young salmon to return to the sea (dams, power turbines, pollution)?

If the limiting factors can be determined, then corrective measures can be developed and applied.

Group C. Rivers now without salmon.

The problem here is to

1. Determine what conditions make the rivers unsuitable.
2. Correct these conditions if possible.
3. Stock favorable sections with young salmon to establish runs.

In view of the numerous and varied requirements of these many rivers, it is obvious that it will be impossible to attack all the problems at once. Consequently if it is decided that a new commission with authority over salmon be established, this commission should be authorized to determine which restoration measures should first be applied, and it should be given authority to carry out these measures. In this way the State would be assured of a continuing program which would benefit from the continued attention of the three Commissioners. The Commissioners in turn would be able to make use of the increasing quantity of biological data which will be obtained by State and Fish and Wildlife Service biologists from year to year.

Maine salmon have been lost as a major resource for many decades and past attempts at restoring them have not been successful. However, prospects for success now appear promising providing an effective administrative agency is set up with authority to carry out an effective long-range program and apply restoration measures developed by sound biological research.

Dec. 30, 1946

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Statement prepared for  
Mr. Pearce or Mr. Bailey  
of Reg. Office - about Oct. 24, 1944

(Copy in  
B. Salmon)

RESTORATION OF ATLANTIC SALMON

During the War, the Atlantic salmon work carried on by the Fish and Wildlife Service, was limited principally to the marking and planting of young salmon produced at the Service's Craig Brook hatchery. Most of the marked fish were planted in the Penobscot and in three experimental rivers where conditions are much improved over those existing in past years when the salmon runs were wiped out. Up to the present, no returns have been observed from these experiments, indicating that mortality in fresh or salt water has been very heavy or perhaps total.

It had been hoped that the study of stream mortality and its causes could be begun during the past summer, but limitations in funds, personnel, and the impossibility of obtaining delivery on equipment, made it impossible to do more than preliminary work. A limited amount of suitable equipment will be available by next spring so that if personnel and funds are available, it will be possible to begin a basis study of the factors causing stream mortality and methods for their control.

Worth-while work on large, much-dammed rivers such as the Penobscot and Connecticut, will not be possible unless much greater facilities are available than now appears possible. Granted adequate funds, it should be possible to determine the practicability and cost of getting adult migrating fish up over the succession of dams to the spawning grounds, and young, seaward migrants down over the dams or through the turbines to the sea; and to determine the extent to which pollution is a limiting factor. However, this is a major problem and will require adequate financing to offer much hope of success.

Restoration of Atlantic Salmon

Control of the taking of salmon by anglers, commercial fishermen, and poachers, is a function of the State authorities, but it is the opinion of Service investigators that these authorities have not been given an adequate administrative setup or sufficient legal authority to exercise this control effectively. The Fish and Wildlife Service has cooperated with the Maine Commissioners of Inland Fisheries and Game and Sea and Shore Fisheries, and with other Maine representatives, in developing recommendations for improving these conditions. These recommendations are now being studied by the Special Salmon Committee appointed by Governor Hildreth, of Maine.

Can be  
omitted