TENTATIVE PROGRAM FOR RESTORATION OF SALMON IN NEW ENGLAND WATERS

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In times past, the salmon fisheries of New England have been of great economic and recreational value. However, in recent years, the value of this resource has approached the vanishing point due to progressive depletion of the salmon stock resulting from the blocking of rivers to spawning salmon by dams and log jams, pollution, overfishing, and perhaps destruction of spawning areas. The relative importance of each of these destructive factors is not generally agreed upon.

Numerous attempts have been made to maintain the salmon fisheries through regulatory laws, construction of fish ladders, artificial propagation, and through introduction of pink salmon from the Pacific Coast; but these efforts have not served to restore past abundance or even to halt the gradual reduction of the stock. Many observers consider that these negative results are not conclusive, because in no case was it possible to carry through the measures under adequately controlled conditions. Furthermore, it is believed that at present, due to removal of lumber mills and abandonment and destruction of dams, and to the construction of fish ladders in permanent dams, conditions on many of the rivers are more favorable for salmon than has been the case for many years past.

From a survey of reports and other available information on the subject, we believe that it should be possible to rebuild self-perpetuating salmon stocks in many of the New England rivers, granted the requisite cooperation of the anglers and commercial fishermen, the states, and the Bureau of Fisheries. Judging from the size of the rivers, extent of potential spawning areas, and magnitude of the salmon runs in the early history of the fishery, it should be possible through careful study and adequate regulation, to develop salmon runs of a magnitude far beyond that visualized

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at present by the majority of sports fishermen and other interested persons. Such runs, once properly developed, would supply almost unlimited numbers of fish for the sportsmen and in addition would provide a supplementary income of tremendous value to the struggling communities of commercial fishermen along the coast, where the small boat fishermen are finding it difficult or impossible to survive in competition with the mass production of the offshore fisheries. Consequently, any program for restoration of the salmon has great social as well as recreational implications.

In line with the above conclusion, we propose that a carefully supervised experiment be carried out which will definitely prove or disprove the practical feasibility of restoring this potentially valuable resource, and that this experiment be developed along the general lines of the recommendations which follow. Should facilities be sufficient and should it be deemed advisable by the interested parties, this experiment in management and restoration could be extended to a wider area than is contemplated at present.

Our recommendations are as follows:

I. A comprehensive survey (by experienced personnel) covering the most promising New England rivers from mouth to source to show the following:

1. Number and kind of obstructions to salmon migrations and the adequacy of fish ladders or other devices to permit the free up- and down-stream migration of adult and young salmon.
2. Extent and degree of pollution and to what extent it limits salmon movements and spawning.
3. Condition and extent of spawning areas.
4. Suitability and capacity of stream for young salmon.

II. On the basis of the above survey, select the most suitable stream for restoration and management experiments.

III. Obtain State laws prohibiting or severely limiting the capture of salmon anywhere on this river or within a suitable distance from its mouth for a period of 10 years (or such other period as the survey indicates is necessary).

IV. Provide means for determining the number of fish which spawn naturally. This can be accomplished in various ways, such as counting at a fish ladder, weir, or on the spawning grounds.

V. Obtain a supply of Atlantic salmon eggs for hatching and planting each year for at least 5 years to assist in rebuilding the natural stock.

VI. Mark wild parr and smolts in the different tributaries, and hatchery-reared parr and smolts to determine:

1. Relative value of the tributaries for spawning and nursery grounds.
2. The best age to release hatchery stock.
3. Optimum size of spawning run for each tributary.

VII. After 10 years or less, should results be sufficiently successful, open the stream to controlled fishing. The amount of fishing to be permitted in subsequent years to be determined by results of annual observations. The basic consideration in limiting fishing will be to require an annual spawning run sufficient to build up and maintain a self-perpetuating stock at the most productive level. This is the basis of the Bureau's Alaskan program which has proved so successful in restoring and maintaining the Alaskan salmon runs.

VIII. Study the possible advantages and disadvantages to be derived from introducing a more desirable species of West Coast salmon than that previously tried in Maine waters. It is believed that a species could be selected which would be of value to both sports and commercial fishermen and whose early life history is such that it would offer a minimum of competition to native salmon.