# WHAT ABOUT ATLANTIC SALMON?

by

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The Atlantic salmon in New England has reached the stage of the vanished passenger pigeon, except for a few streams in eastern Maine where small runs still survive. Here, the strenuous and devoted efforts of a small but growing number of sportsmen combined with the work of the State Department of Inland Fisheries and Game and the Federal Hatchery at Craig Brook, Maine, have made it possible to preserve a remnant of the once great runs as a reminder of the past and of the potential possibilities of the future. Certainly, there are many who think that effective restoration work can be done, although they may not agree on the best method to be used. Moreover, there still are hundreds of fishermen in New England who are actively interested in salmon fishing, as is evidenced by their annual pilgrimages to Newfoundland and New Brunswick when the salmon are running. There are other thousands and tens of thousands in New England and adjacent sections of the country who would become ardent devotees of salmon fishing, were it only possible to find this king of gamefish somewhat nearer home. One with a mercenary turn of mind might also think of the financial reward such fishing would bring to the State or States where it could be found.

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Now, many may take for granted that the Atlantic salmon is merely a victim of the times, and that there is no point in wasting money or effort on such a forlorn hope as the restoration of salmon appears to be. However, it seems premature to classify the Atlantic salmon as a "forlorn hope".

Fully aware of the vigorous but perhaps somewhat unorganized interest in Atlantic salmon, and of the lack of agreement as to the possibility or means by which they might be restored, Mr. David Aylward, President of the National Wildlife Federation, requested the Bureau of Fisheries of the United States Department of the Interior, to cooperate through the scientists of its North Atlantic research staff, in searching for an answer to the situation. They were asked to make a brief survey of information at present available, to report on the possibilities of salmon restoration, and to prepare a program suggesting the most effective methods for carrying out restoration work.

Mr. Wm. C. Herrington and Dr. G. A. Rounsefell of the Bureau of Fisheries, have prepared the following report, working in cooperation with Mr. Stobie, Commissioner of Inland Fisheries for Maine, and with the advice and counsel of the Commissioners or their representatives from the other North Atlantic States and of Mr. Raymond Dow and other sportsmen who have long been interested in the salmon.

"Tentative Program for Restoration of Salmon in New England Waters

"In times past, the salmon fisheries of New England have been of great economic and recreational value but in recent years, the value of this resource has approached the vanishing point due to progressive decletion 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 the closing of lumber and pulp mills and abandonment and destruction of temporary 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 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 recommend 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 ten 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.

"Some of the work mentioned above, particularly that under Item I, has already been begun by the various States. In some cases, surveys of State streams are being carried on as rapidly as funds permit and much good work is being done in installing effective fishways in the streams. Any additional work carried on under the above program would be in cooperation with the State biologists and would serve to supplement and coordinate the surveys of the several States. In any event, it is obvious that a successful program for restoration of salmon will take the best efforts of all concerned, sportsmen, commercial fishermen, State conservation workers, and Bureau of Fisheries. It is believed that the most important problem at present is to prove that extensive restoration of Atlantic salmon is feasible and practical. Once this has been demonstrated on one or two streams, ample support should be available for similar work

on others. Or, if present support is sufficient, the work can be carried on simultaneously on several streams."

As has been indicated, the above program should extend over a period of about 10 years and will require the services of several trained aquatic biologists to carry on stream surveys, tagging, and the other biological work described. Since neither the states nor the Bureau of Fisheries have funds now available for this purpose, the launching of this program will depend on the appropriation of the required funds by some agency interested in a general New England salmon restoration program.