

ATLANTIC SALMON MANAGEMENT IN THE KENNEBEC RIVER:

A status report and interim management plan

by

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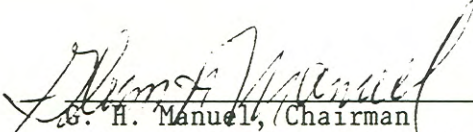
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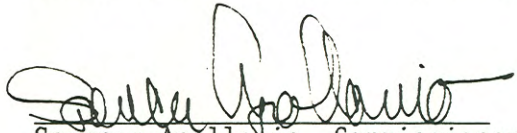
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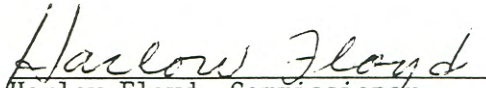
The following document outlines the Atlantic Sea-Run Salmon Commission's interim plan for Atlantic salmon restoration to the Kennebec River above Augusta. This plan is dependent upon the provision of fish passage to waters above the Edwards Dam (FERC #2389).

This document is not intended to stand alone as a management plan, but rather, is intended to supplement existing fisheries management plans prepared by the Maine Department of Inland Fisheries and Wildlife and Department of Marine Resources. It is the Commission's intention to develop a more comprehensive long-term plan for restoration of Atlantic salmon to the Kennebec drainage in the near future.

A number of dam owners on the Kennebec River have formed the Kennebec Hydro Developer Group (KHDG) to coordinate fish passage needs with anadromous fish restoration plans for the Kennebec. It is anticipated that ongoing planning and consultation between KHDG and the State fishery agencies will produce a joint fish passage development plan and anadromous fish restoration program that will facilitate the restoration of salmon, shad, and alewives to the Kennebec River drainage.


G. H. Manuel, Chairman
Atlantic Sea-Run Salmon Commission


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In their 1969 report on fishery management in the Kennebec River drainage, Foye et al. briefly described the history of the Atlantic salmon resource of the Kennebec River. They also presented data on the quantity and location of Atlantic salmon nursery habitat within the Kennebec watershed. At the time of that report, water pollution and impassable dams precluded the initiation of an Atlantic salmon restoration program for the Kennebec. This report is intended as an interim Atlantic salmon management supplement to the 1969 report, based upon current conditions in the Kennebec drainage.

Since 1969, water quality in the Kennebec River and its tributaries has improved considerably, as a result of improvements in the treatment of municipal and industrial wastewaters. Water pollution no longer precludes the restoration of Atlantic salmon in the Kennebec. Department of Environmental Protection water quality data have been summarized and are presented in Appendix A.

The Atlantic Sea-Run Salmon Commission's Strategic Plan for Atlantic salmon management targets the Kennebec River and the Group "C" rivers for Atlantic salmon restoration when resources for that project can be made available for the Kennebec without detracting from existing management and restoration programs, the Group "A" and Group "B" rivers, as outlined in that document.

The Kennebec River currently has a small population of Atlantic salmon below the Augusta dam, composed of hatchery strays from other rivers, as well as wild fish originating from tributaries below Augusta. The salmon runs in the Kennebec below Augusta are of uncertain magnitude, but are believed to number less than 200 adults in most years. Those salmon present in the Kennebec support a small fishery located below the Augusta dam. Atlantic salmon captures for the years 1973-1984 in the Kennebec River are presented in Table 1.

Self-sustaining Atlantic salmon populations co-exist with other cold-water and warmwater fisheries on several other Maine river systems. It is the Atlantic Sea-Run Salmon Commission's belief that an Atlantic salmon population and fishery can exist in the Kennebec watershed without jeopardizing existing fisheries.

Achieving the Atlantic Sea-Run Salmon Commission's long-term restoration goal for the Kennebec River is dependent upon the availability of adequate fish passage to areas of suitable habitat. As the first obstacle encountered by anadromous fish upon their return to the river, passage at the Augusta dam is critical to future salmon restoration efforts on the Kennebec River. The Augusta dam is not the only site requiring fish passage in order to begin salmon restoration on the Kennebec River. Although a minor amount of salmon nursery area exists between Augusta and Waterville in tributaries, most of the salmon rearing area in the Kennebec lies upstream from other impassable dams. Salmon habitat in the Kennebec and its tributaries below Madison is presented in Table 2.

Interim Atlantic salmon passage on the Kennebec River is needed until such time as significant numbers of hatchery salmon are committed to the Kennebec salmon restoration and a long-term fish passage program is adopted. The interim passage program for upstream fish passage will involve trapping at Augusta and transport of salmon to selected upstream areas, in a

manner that makes use of their reproductive potential. Long-term fish passage needs involve upstream and downstream fish passage facilities at dams above Augusta.

The distribution of Atlantic salmon spawning and nursery habitat in the Kennebec River and tributaries below Madison is shown in Table 2. The data presented for the Winslow-Shawmut reach are based upon the FERC license application by Scott Paper Company for the Winston dam (Hydro-Kennebec Project), and only include nursery habitat located within the project area. The available data indicate that over 33,000 production units (100 square yards per unit) of suitable nursery area is present in the Kennebec watershed downstream of the Madison dam. Approximately one-half of that total (17,304 units) is located in the Sandy River sub-drainage. Other significant tributary habitat areas are Wesserun-sett Stream and the Sebesticook River (Table 2).

Until hatchery fish surplus to present program needs could be made available for the Kennebec, salmon restoration would depend upon utilization of the reproductive potential of those salmon that presently return to the Kennebec. Such a passive restoration strategy would result in a slow increase in stock size in the Kennebec, but is dependent upon the provision of adequate upstream and downstream fish passage to assure that the existing spawning potential of the Kennebec River is used wisely. If an interim trap and transport program for Atlantic salmon is implemented for the Kennebec River, it is anticipated that salmon will be released into habitat areas above Augusta in a manner consistent with habitat capabilities. The first stage of such a program includes tributaries to the Kennebec downstream of Waterville, which includes the Sebesticook River sub-drainage. It is estimated that approximately 250 adult salmon are required for full habitat utilization in this part of the drainage. Any salmon in excess of 250 would be available for

transport to areas upstream of Waterville, and will be distributed according to the habitat requirement for each area.

As noted in Appendix A, portions of the Sebasticook River are presently considered marginal for salmonid fishes, due to water quality problems. Should any part of this drainage prove unsuitable for Atlantic salmon at such time as fish passage above Augusta is available, the allocation of salmon to that drainage would be modified accordingly.

Expanding the habitat availability and distribution of adult salmon in the Kennebec would greatly enhance the sport fishing potential of that river for Atlantic salmon. In the Kennebec River, Atlantic salmon fishing is presently limited to waters below the Augusta dam. Providing passage to areas upstream of the Edwards Dam will make sport fishing opportunity available in other portions of the watershed.

Sport fisheries in Maine rivers with self-sustaining populations currently harvest between 10 and 30 percent of the returning adult salmon, with the remaining fish making up the spawning escapement.

As Atlantic salmon restoration efforts on the Kennebec River expand, the Commission will probably adopt regulations that allow sport fishing opportunity to increase while severely restricting the harvest of large Atlantic salmon. Similar regulations have already been enacted on the Penobscot and St. Croix Rivers, with the objective of enhancing spawning escapement.

The Atlantic Sea-Run Salmon Commission will be preparing a comprehensive salmon management plan for the Kennebec River. As an interim measure, transport of salmon captured at Augusta or other suitable sites to upstream habitat areas in a sequential fashion will be an acceptable alternative to permanent fishways. As part of the development of long-term Atlantic salmon restoration plans for the Kennebec River

drainage, the Commission will be working with the Department of Marine Resources and dam owners to develop a comprehensive program of upstream and downstream fish passage development for the benefit of anadromous fish restoration.

Table 1. Documented Atlantic Salmon Returns, Kennebec River, 1973-1984

Year	# Salmon	Comments
1973	30	Found dead below Augusta dam; 15 tagged hatchery strays, 14 untagged hatchery strays, 1 wild origin
1975	2	Caught by anglers; tagged hatchery strays
1976	2	Netted below Augusta; hatchery strays
1979	20+	6 caught by anglers; 2 wild, 4 hatchery strays; 14 seined or netted, some strays, others uncertain; several reported released by anglers
1980	4+	Caught by anglers; 2 hatchery strays, 2 unknown; others released by anglers
1981	14	5 caught & kept by anglers; 3 hatchery strays, 2 of unknown origin; 9 others released by anglers
1982	24	21 caught & kept by anglers, unknown origin; 3 released by anglers
1983	18	12 caught & kept by anglers, unknown origin; 6 released by anglers
1984	1	Caught illegally in Bond Brook

Table 2. Atlantic Salmon Nursery Habitat, Kennebec River & tributaries below Madison

River Section	Nursery Habitat (100 yd ² units)	Minimum Spawning Escapement Requirements ¹
Below Augusta		
Bond Brook	176	12
Togus Stream	<u>958</u>	<u>56</u>
	1,134	68
Augusta-Waterville		
Sevenmile Brook	141	8
Sebasticook River		
Winslow-Burnham	3,300	196
above Burnham	<u>879</u>	<u>52</u>
	4,320	256
Waterville-Skowhegan		
Wesserunsett Stream	4,576	272
Martin Stream	642	38
Carrabassett Stream	432	26
Main Stem below Shawmut ²	840	174
Main Stem above Shawmut	<u>2,915</u>	<u>50</u>
	9,405	560
Skowhegan-Madison		
Sandy River	17,304	1,028
Main Stem ²	<u>1,170</u>	<u>70</u>
	18,474	1,098
Total Below Madison	33,362	1,982

¹ Spawning escapement requirements based upon 220 eggs per 100 yd² production unit, 50% females, 9 lbs. average, 7,400 eggs per female

² This figure is believed to underestimate the available habitat in this river reach