AQUACULTURE update

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Pacific Biological Station

Atlantic Salmon Watch Program 1996 Review

The Atlantic Salmon Watch program (ASWP) was established in 1992 as a joint research initiative between Fisheries and Oceans Canada and the British Columbia Ministry of Agriculture, Fisheries and Food to study the abundance, distribution and biology of Atlantic salmon (*Salmo salar*) in British Columbia (BC) and it's adjacent waters. ASWP provides a single repository for data and information about Atlantic salmon. The program operates with the co-operation of the BC Ministry of Environment, Lands and Parks, the Alaska Department of Fish and Game and the Washington Department of Fish and Wildlife (McKinnell et al., 1997; Thomson and McKinnell, 1997). The program relies on fishers, fish processors, government field staff and hatchery workers to report Atlantic salmon.

Escapes

From 1991 to 1995, 141,887 Atlantic salmon escaped from BC marine aquaculture facilities in 22 reported incidents. There were 12,667 Atlantic salmon reported escaped in British Columbia in two incidents in 1996. On July 2, 1996, approximately 101,000 Atlantic salmon escaped from a farm site in northern Puget Sound in Washington State. In addition to these marine escapes, 40,000 fry were accidentally spilled during transfer into lake net-pens in Georgie Lake, northern Vancouver Island.

Marine Catches

Within BC waters, Atlantic salmon were reported from as far north as Prince Rupert, and as far south as Victoria. There were 671 documented recoveries of Atlantic salmon from marine fisheries in 1996. Commercial, tribal and test fisheries in Washington State caught 112 Atlantic salmon and the commercial fisheries of south-east Alaska netted 135

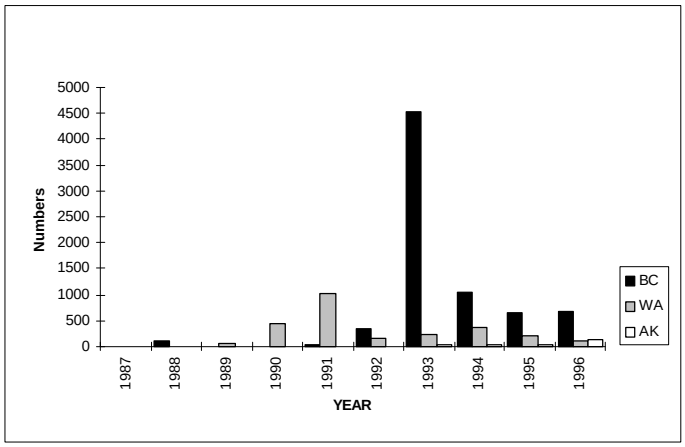

Figure 1 Marine Catches of Atlantic Salmon from 1987-1996.

Atlantic salmon (Fig. 1.). These numbers are down considerably from the largest catch (4067) in BC that occurred during a sockeye salmon fishery in Johnstone Strait on August 7, 1993, shortly after the escape of approximately 10,000 Atlantic salmon from two farms in the region (Fig. 1).

Freshwater Catches

ASWP received reports of 211 Atlantic salmon that were either caught or sighted in BC rivers in 1996. This exceeds the total of all previous years combined (Fig. 2). Some of this increase may be attributed to the significant increase in monitoring of streams on the West coast of Vancouver Island associated with conservation initiatives the Department has undertaken to address concerns over chinook and coho salmon stocks. Swim surveys provided the majority of the data, and probable re-counts of the same fish are not included in this total. The greatest number of Atlantic salmon counted in one river on one day was 40 in the Zeballos River on Oct. 1, 1996. They accounted for 5.06% of all salmonids counted in the river that day. There have been no reports of successful reproduction of Atlantic salmon in the wild and no feral juveniles have been found.

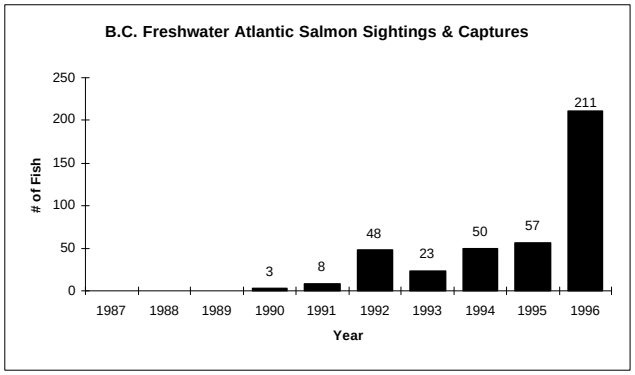

Figure 2. Freshwater sightings and captures of Atlantic salmon in BC from 1987-1996 .

Biological sampling

114 Atlantic salmon recovered from BC fisheries in 1996 were examined at the Pacific Biological Station. Fish were measured for length and weight, examined for stomach contents, amount of fat deposition in the body cavity and state of sexual maturation. Fork lengths ranged from 52.5 to 77.5 cm with a mean of 63 cm. Round body weights ranged from 1.7 to 5.8 kg with a mean of 3 kg. Most of the fish were sexually immature. Of 64 males the median gonad weight was 5 grams; for 47 females, it was 7.5 grams. The fat content of escaped Atlantic salmon caught in Alaska is significantly lower than the fat content of those caught in BC; both groups had a lower fat content than found in Atlantic salmon examined at the time of harvest in BC salmon farms. The reduced level of fat is correlated with a low incidence of feeding by the escapees. Of 111 fish analysed for stomach contents, only 3 (2.7%) contained prey items.

135 Atlantic salmon were caught in Alaska and shipped to the Pacific Biological Station for analysis. Fork lengths of the Alaskan recoveries ranged from 46 to 82.5 cm with a mean of 63.5 cm. Round body weights ranged from 1.0 to 5.8 kg with a mean of 2.6 kg. Of 68 males recovered from marine landings, the median gonad weight was 3 grams; in 62 females, the median weight of the ovary was 7.75 g. Only 3.8% of the 131 fish stomachs examined contained herring, sandlance or other prey items.

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