North American Commission

NAC(02)6

Report on US Atlantic Salmon Management and Research Activities in 2001

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Stock Enhancement Programs

During 2001, about 15 million juvenile salmon were released into 20 river systems in the US. Most fish released (94.5%) were fry and these were stocked in rivers including the Connecticut, Merrimack, Saco, Penobscot, Dennys, East Machias, Machias, Narraguagus, and Sheepscot Rivers. Parr releases occurred primarily as a by-product of smolt production programs. Hatchery smolts remain an important component of enhancement programs and approximately 570,000 were released in the Penobscot, Merrimack, Connecticut, Saco, Dennys, Pawcatuck and St. Croix Rivers. In addition to juveniles, approximately 7,500 adult salmon were released in US rivers.

Returns

The documented adult salmon returns to US rivers in 2001 were 1,083 fish. This represented less than 4% of the estimated spawner requirement for the US. Most returns were recorded in Maine, with the Penobscot River accounting for 72.6% of all US returns. Overall, 25.8% of the adult returns were 1SW salmon and 74.3% were MSW salmon. Most returns (79%) originated from hatchery smolts and the balance (21%) originated from either natural spawning or hatchery-origin fry and parr.

Sport Fisheries

All fisheries (commercial and recreational) for sea-run Atlantic salmon are closed in US waters. Salmon incidentally caught must be released immediately, alive and uninjured, without being removed from the water. A recreational fishery for excess broodstock occurs in the Merrimack River. In the spring and fall of 2001, nearly 3,000 surplus broodstock were released to support this recreational fishery.

Tagging and Marking Programs

Tagging and marking programs addressed various research and assessment objectives including identification of release life stage and location, movement studies, and growth/survival studies requiring individual identification of fish. Nearly 520,000 salmon released into US waters in 2001 were marked or tagged in some manner. Tag types included: Floy, Carlin, PIT, radio, acoustical, fin clips, fin punches and visual implant elastomer (VIE). In addition, beginning in 1999 all broodstock for the endangered populations in Maine have been PIT tagged and sampled for genetic characterization. This allows for the establishment of genetically marked fry and smolt families, which can be tracked through non-lethal fin samples at various lifestages.

Salmon Habitat Enhancement and Conservation

Salmon habitat enhancement and conservation efforts in New England in 2001 focused on habitat surveys, the development of stream restoration assessment tools, habitat protection projects, and habitat restoration projects including dam removals. These cooperative efforts have involved state and federal fishery resource agencies, watershed councils, non-

government organizations, corporate sponsors, volunteers, and numerous other public and private interest groups. Habitat protection projects in New England have included technical assistance to local conservation groups, federal, state and private funding for land acquisition projects, riparian and stream channel restoration, and state-sponsored fish habitat programs that generate revenues to support salmon habitat enhancement and conservation.

Additional information on habitat protection, conservation and enhancement of salmon habitat is contained in the US paper presented during the Special Session.

Connecticut River Program

In 2001, the Connecticut River Atlantic Salmon Commission (CRASC) continued its strong emphasis on hatchery releases, relicensing of hydroelectric projects, and research. In addition, the CRASC devoted increased time to environmental education partnerships, fishway construction, dam removal, habitat restoration and increased federal government support. A total of 40 sea-run Atlantic salmon were documented to return to the Connecticut River watershed. Also in 2001, about 9.6 million juvenile Atlantic salmon (fry and smolt) and 962 adult domestic broodstock were stocked into the Connecticut River. The Connecticut River Salmon Association and the Deerfield/Millers River Chapter of Trout Unlimited carried conservation messages to over 2,000 students in 80 schools. In Vermont, the Connecticut River Salmon Association and the Vermont Institute of Natural Science carried similar conservation messages to more than 300 students in 18 schools. A number of stream habitat restoration projects were carried out in the watershed by the US Forest Service, US Fish and Wildlife Service, Vermont Agency of Natural Resources, White River Partnership and several non-government organizations. Additional effort is directed at dam removal within the watershed. It is also worth noting that the Connecticut River Atlantic Salmon Commission was reauthorized by the passage of the 2002 Farm Bill within the United States.

Merrimack River Program

A total of 83 adult sea-run Atlantic salmon returned to the Merrimack River in 2001. A shift was observed in the proportion of hatchery smolt origin versus fry origin fish in 2001. In 2000, 24 of the 85 fish that returned to the river were from the fry stocking program, whereas 5 of the 83 fish that returned in 2001 were determined to be from the fry stocking program. Approximately 1.7 million juvenile Atlantic salmon were released in the Merrimack River watershed during the period May-June 2001. The Adopt-A-Salmon program completed its eighth year in approximately 100 schools.

Maine Program

Adult Atlantic salmon counts were obtained at fishway trapping facilities on the Androscoggin, Aroostock, Narraguagus, Penobscot, Saco, St. Croix and Union Rivers. Additionally, counts were made at weirs on the Dennys and Pleasant Rivers. The Maine aquaculture industry reared river-specific salmon eggs to maturity and provided 729 pen-reared adults for stocking into the Dennys, Machias and St. Croix Rivers. The summer of 2001 was extremely dry, resulting in river discharges the lowest on record throughout July and August. In addition, drought conditions continued through the fall salmon spawning season, affecting access to spawning areas in entire drainages and many sub-drainages.

Adult returns and redd counts for rivers with Atlantic salmon populations listed under the Federal ESA were as follows: Dennys River 17 naturally reared, 65 aquaculture escapees, 71 redds; East Machias River 3 redds; Machias River 21 redds; Pleasant River 11 naturally reared, 3 redds; Narraguagus River 32 naturally reared, 24 redds; Ducktrap River 0 redds; Sheepscot River 4 redds; and Cove Brook 0 redds. It is possible that some salmon escaped counting facilities and/or some redds were not detected.

A total of 786 adult salmon was captured at the Veazie Dam fishway trapping facility on the Penobscot River, a 47% increase from the 2000 catch of 535 fish. One salmon suspected to be an aquaculture escapee was captured at Veazie dam. A total of 77 salmon, including 58 aquaculture escapees, was captured at the fishway near the head of tide on the St. Croix River. Returns to other Maine Rivers were as follows: Androscoggin River 5 salmon; Saco River 69 salmon; Union River 2 salmon (both aquaculture escapees); and Aroostook River 28 salmon.

In 2001, Atlantic salmon smolt emigration was monitored in the Narraguagus, Pleasant, Penobscot and Sheepscot Rivers from early April until mid-June using rotary-screw traps. Smolt abundance on the Narraguagus was the lowest of the five-year data series with a total estimate of 1,780 smolts for the watershed. In collaboration with Canadian researchers, the movements of ultrasonically tagged smolts from the Dennys River were tracked as they exited the US waters of Cobscook Bay and migrated through the Bay of Fundy on their way to the Gulf of Maine. A post-smolt pair trawl survey was initiated in Penobscot Bay and the Gulf of Maine, detecting post-smolts at 80% of the 61 stations occupied capturing 1,458 post-smolts, including 340 elastomer-marked and fin-clipped smolts and 15 fin-clipped-only smolts.

Other Research and Items of Interest

Following the listing of US populations of Atlantic salmon under the US Endangered Species Act, the National Academy of Sciences (NAS) was required to review the data that supported the listing. A thirteen-member panel from across the US and Europe met several times in 2001 to review all available scientific information and review program operations and issues. The NAS issued a report in January 2002 that focused on the genetic makeup of wild salmon populations in Maine. The report concluded “Maine has wild salmon populations in the eight DPS rivers that are as divergent from Canadian populations and from each other as expected among wild salmon populations elsewhere in the Northern Hemisphere.” A final report addressing management and recovery issues is scheduled to be released in December 2002. The January 2002 Maine Atlantic salmon genetics report can be obtained at:
http://www.nap.edu/books/0309083117/html
while progress on the final report may be viewed at the National Academies website at:
http://www4.nationalacademies.org

The Annual Report of the US Atlantic Salmon Assessment Committee, Report Number 14 – 2001 Activities, can be accessed at:
http://www.fws.gov/r5cneafp/atsasscom.html

Infectious Salmon Anemia (ISA) was detected in US Atlantic salmon netpen sites in Maine in 2001. The first case of ISA in the US was confirmed in Maine on February 15, 2001. The US Department of Agriculture Animal and Plant Health Inspection Service entered into a cooperative ISA control program with the State of Maine to monitor and manage the disease.

Indemnification was provided for depopulated aquaculture fish. Approximately $7M was provided to compensate growers for up to 60% of the value of fish destroyed. Between December 2001 and February 2002, over 1.4 million exposed or infected fish were depopulated under this program. In order to enroll in the program and prior to restocking of any fish into Cobscook Bay, a management plan needs to be agreed. Under this plan half of the Bay can be restocked in 2002 and the remainder in 2003.