



PROPOSAL: TO UTILIZE THE SALMON REARING CAPACITY OF THE AROOSTOOK RIVER

This is a proposal to supply eggs to the Dug Brook (Aroostook River) Hatchery that is operated by the Atlantic Salmon for Northern Maine, a wild Atlantic salmon conservation and restoration organization. It is the first step in a larger plan to bring the Aroostook River drainage back into full salmon production.

The Aroostook and Tobique sister rivers flow into the main stem St. John River only 4.5 km apart near the Village of Perth-Andover, NB. The Aroostook flows to the St. John from the west, and the Tobique from the east. Both rivers have hydropower dams near their confluences with the St. John River. The Tobique has a drainage area upstream of the Tobique Narrows Dam of 4,330 km², and the considerably-larger Aroostook drainage covers an area of 6,060 km² upstream of the Tinker Dam that is on the Canadian side of the international border.

Before the upper St. John River system was developed for hydropower production, it was one of the most productive Atlantic salmon rivers in the world. However, because of the effects of power dams and poorly understood mortality factors that occur in the ocean, the upper river now requires supplementation programs to avoid the extirpation of its salmon populations. The Tobique is the prime salmon nursery stream in the upper St. John River drainage, and offers juvenile salmon habitat of excellent quality. The Aroostook River offers salmon rearing habitat of similar or even superior quality, and because of its larger drainage area, more of it.

Whereas the Atlantic salmon population of the Tobique River is supported by an intensive publicly-funded captive-adult salmon rearing program, that of the Aroostook has relied until recently on a few 100,000 eyed eggs that were supplied annually by the Mactaquac Biodiversity Facility (MBF) to the privately owned and operated ASNM's Dug Brook hatchery. At this facility, unfed salmon fry are produced for stocking into the Aroostook. The practice of transporting eyed eggs, instead of fish, across the international border avoided difficult fish transfer regulations. Two years ago, this meager egg supply was cut off.

To compensate for this suspension of egg provision to Dug Brook, in 2016 the St. John Basin Salmon Recovery Inc., of which the ASNM is a member, partnered with the Tobique First Nation to obtain a grant to capture smolts trapped in the gatewells of the Beechwood Generating Station. Being downstream of both the Tobique and the Aroostook rivers, these smolts could have been from both the Tobique and the Aroostook as well as from other smaller upstream drainages. The smolts were used to supplement the Captive Adult Rearing Program for the upper St. John River. The "grilse" produced from this effort will mature in the fall of 2017, and the 2 sea-winter surrogates will mature in the fall of 2018. The program was repeated in 2017, and these fish will mature in 2018 and 2019.

The intent of the gate-well rescue effort was to produce mature grilse and salmon that would be released at Perth Andover and allowed to free-swim to their rivers of origin and subsequently to the spawning grounds on which they were imprinted juveniles. All fish entering either the Aroostook and Tobique rivers must pass through fishways to take them past their respective near-confluence power dams. There is a collection box at each fishway where the salmon and grilse are enumerated and measured. Because the fish are imprinted on their own rivers, any fish trapped in the fishway collection box at either the Aroostook or Tobique river would be assumed to have originated in that river. It was reasoned that any Aroostook River salmon captured at the fish lift at Tinker, instead of being released to spawn in the wild, could be transported to the MBF and used as a brood stock to supply fertilized eggs to the Dug Brook Hatchery. Following are additional details about the plan:

We have access now to the LAST available Aroostook-reared, seaward-migrating smolts that resulted from the LAST distribution of unfed fry from the Atlantic Salmon for Northern Maine (ASNM) Dug Brook Hatchery in 2015 as a result of collections, by crews from the Tobique First Nation (TFN) of downstream migrants from the gatewells at the Beechwood Hydro Dam in 2016 and 2017. Although the parents of these fish originated from smolts, held back out