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On the St. John (Wolastoq) system, adult salmon returning from the ocean migrate as far upstream as Grand Falls and the Serpentine branch of the Tobique River, much more than 100 miles from the head-of-tide at Fredericton. The two major spawning and juvenile salmon nursery streams for salmon were the Tobique River in NB, and the Aroostook River in Maine, which had a combined drainage area that was approximately as big as that of the greater Miramichi system

The Wolastoq Depicting Major Salmon Streams + the Greater Miramichi

<u>Drainage Areas (km²)</u>	
1. Aroostook River:	6,320
2. Tobique River:	4,331
1 + 2 Total Twin Rivers:	10,651
N'west Miramichi:	2,078
L. SW Miramichi:	1,600
Renous + SW Miramichi:	7,700
3. Total Greater Miramichi:	11,378



The Tobique First Nation is located at the mouth of the Tobique at its confluence with the Wolastoq, and just downstream of the Aroostook's confluence into the drainage. The First Nations people from Tobique First Nation should be somewhat forgiven for venturing to the Dungarvon to fish for salmon. They have no access to Food, Social, and Ceremonial fishing on their home river, the Tobique any more.

Until the 1980s, the Atlantic salmon was the prime sport fish on the upper St. John River (Wolastoq) system above the head-of-tide. The species supported First Nations' food, social and ceremonial (FSC) fisheries and even a commercial fishery.

Table 1. Estimates of average annual catches and corresponding spawning escapements of Atlantic salmon (in numbers of fish) by fishery and five-year period, Saint John River, New Brunswick.

Period	Fishery			Spawning escapement	Total
	Commercial	Sport	Native		
1951-54	14,900	3,100	—	11,700	29,700
1955-59	10,200	2,200	—	8,300	20,700
1960-64	8,600	2,300	—	8,700	19,600
1965-69	12,100	1,300	—	4,900	18,300
1970-74	1,800	2,900	100	11,100	15,900
1975-79	300	5,700	1,300	20,600	27,900
1980-84	3,900	5,700	2,100	17,700	29,400
1985-89	1,200	3,400	1,900	19,000	25,500
1990	700	2,400	500	17,400	21,000

Source: Ritter and Marshall, 1992

Due to the persistent failure of populations to achieve the conservation requirement, the Aboriginal food fisheries and the recreational fisheries have been closed on the Saint John River system since 1998. The Wolastoq's salmon population started its decline towards its present severely depleted state in the 1980s. A probable major cause was viewed by the Canada Department of Fisheries and Oceans (DFO) as being a lack of downstream passage at the power dams in the system. For example, Tobique River juvenile migrants (smolts) must pass the Tobique Narrows Dam, the Beechwood Dam and the Mactaquac Dam before reaching the head-of-tide just upstream of Fredericton. They are subjected to turbine passage, delays in headponds, and increased predation due to these delays. A study in the 1990s showed that returns of smolts released above 3 dams returned from the ocean at a rate 45% lower than those released below Mactaquac. In other words, smolts from the Tobique and Aroostook experienced 45% mortality between their home rivers and the head-of-tide, when a 10% in-river mortality rate would be normal. A subsequent study in the early 2000s by Dr. John Ritter showed this mortality rate to be one half greater again.

Downstream passage facilities were installed at the Tobique Narrows Dam in 2018, and operation of the facility has been fine tuned somewhat, but it is not a perfect solution. There are no downstream passage facilities at Tinker on the Aroostook, Beechwood, or Mactaquac. The Mactaquac headpond is managed for optimal power generation and downstream-migrating smolts have also been shown to be retained in the headpond and not allowed to continue or are critically delayed during their downstream migration to the ocean.

In addition, DFO has never stocked the 500,000 smolts required under the original agreement that was supposed to be implemented when the Mactaquac Dam was constructed.

WHEREAS the parties hereto, recognizing their varied responsibilities for the economic growth of the region, are desirous of maintaining the runs of salmon and other fishes in the Saint John River while at the same time producing much needed electric power for industrial development, and

WHEREAS the Commission, for such purpose, has undertaken and agreed, subject to the approval of the Minister, to design and construct a fish culture station considered capable of producing 500,000 Atlantic Salmon smolts annually in the vicinity of, as well as fish collection facilities in connection with, the Mactaquac Project, to be used for the maintenance of salmon and other fishes in the Saint John River, and

The effects of aquaculture such as the spread of disease perhaps enabled by the sea louse vector and the attraction of predators to the migration routes of wild salmon (the bird feeder effect) have also been hypothesized.

The bottom line is demonstrated in the following table:

Year(s)	MSWs	Grilse	Total
2001-2005	687	1565	2252
2006-2010	385	1387	1772
2011-2015	241	424	665
2016-2020	153	424	577
2023	31	43	74
July 15/'24	52	112	164

Whereas the Tobique First Nation used to have nutritious salmon delivered right to their doorstep, there are virtually none left anymore. DFO's has failed to attempt to forcefully mitigate the problems on the Wolastoq. A new salmon hatchery using modern methods to produce sufficient juveniles to stock the system is urgently needed. Downstream passage facilities at the hydropower stations that do not have such facilities are needed. US and Canadian officials should be working with the local salmon conservation organization, Atlantic Salmon for Northern Maine, to recolonize the vast Aroostook drainage with salmon. The ocean-based salmon aquaculture industry should be encouraged in their ongoing efforts to prevent escapes and to limit the time their fish are reared in sea cages.

If these tasks are accomplished, or even attempted, the Wolastoq system could become a system that produces salmon in sufficient numbers to support recreational and First Nations' fisheries. The existence of such fisheries would not necessitate First Nations people from travelling outside of their home drainage to fish for salmon.