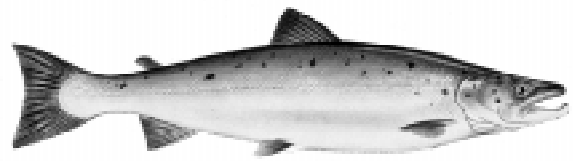
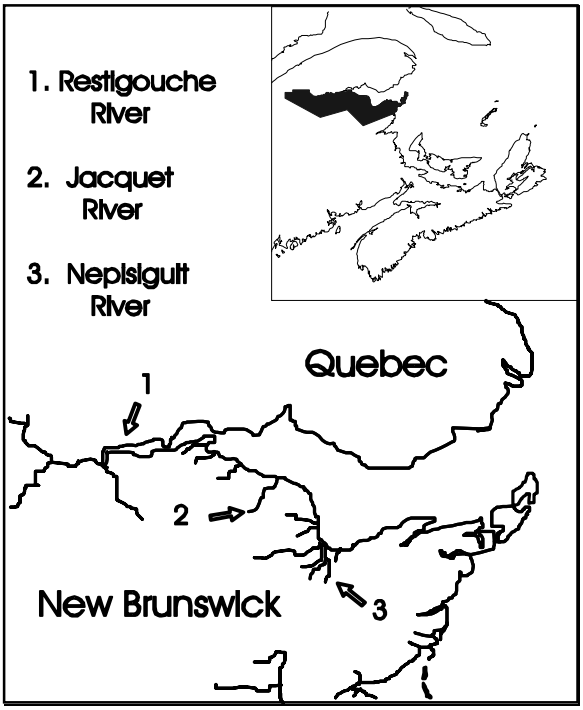


Atlantic Salmon
Chaleur Bay
SFA 15

Background

Salmon Fishing Area (SFA) 15 includes northern New Brunswick; major rivers are the Restigouche, Nepisiguit and Jacquet. Juvenile salmon generally remain in fresh water for two to three years. Adult stages consist of small salmon (fork length <63 cm) and large salmon (fork length ≥ 63 cm). Most small salmon spend one year at sea before returning to spawn. Most large salmon returning to the Nepisiguit River have spent two years at sea. The Restigouche River stock has components of both two- and three-sea-winter fish. Most large salmon are female. Small salmon in the Restigouche River are >98% male The Restigouche stock is early-run, with most returns in June and July. Most other rivers of SFA 15 have a later run, primarily in September-October. The early run has been enhanced through stocking in the Nepisiguit River.

Conservation requirements for each river are based on 2.4 eggs/m^2 of river habitat. The objective is to obtain this egg deposition from the large salmon component. Small salmon requirements are defined to provide a 1:1 sex ratio.



The Fishery

Aboriginal and recreational fisheries took place in all three rivers. Four First Nations and members of the New Brunswick Aboriginal Peoples Council (NBAPC) fished in 1996 under agreements with DFO (in N.B.) or with the Quebec Ministère de l'Environnement et de la Faune. Gillnets, trapnets and angling gear were used.

Recreational angling in New Brunswick (including provincial boundary waters of the Restigouche River) was regulated by seasonal and daily limits of eight and two small salmon, respectively, with no retention of large salmon. Quebec waters of the Restigouche system were regulated by seasonal (seven salmon) and daily (one salmon) limits irrespective of size; but if the first fish caught in a day was a small salmon,

a second fish of any size could be caught and retained. Angling seasons varied among rivers Angling of "bright" salmon returning to the river to spawn in the current year was permitted in all rivers of SFA 15. All except the Restigouche and Nepisiguit had spring angling seasons directed at kelts (salmon which spawned the previous autumn).

River	Angling season
RESTIGOUCHE:Main river, N.B. tributaries	June 1-Sept. 15 (hook-and-release only after Aug. 31)
Matapedia, Patapedia (Que.)	June 1-Aug. 31
Kedgwick (Que.)	June 1-Sept. 30
NEPISIGUIT	June 1-Oct. 15
JACQUET	Apr.15-May 15 (kelt) June 1-Oct. 30 (bright)

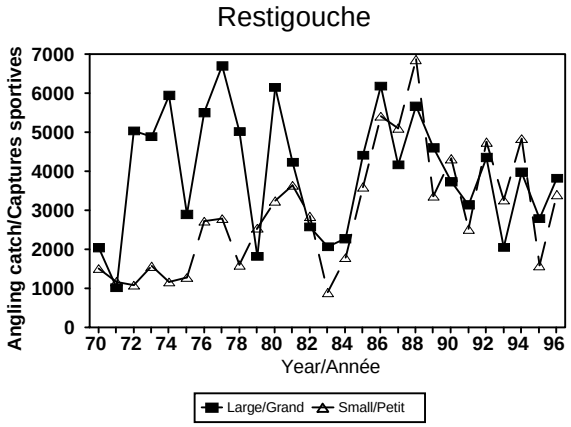
Harvests by First Nations communities on the three rivers were estimated as 1226 large and 183 small salmon.

River	Salmon harvest	
	Large	Small
Restigouche	1198	95
Nepisiguit	28	84
Jacquet	0	4
Total SFA 15	1226	183

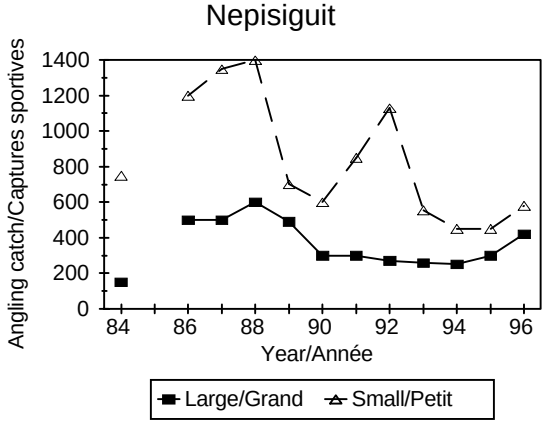
Recreational angling catches were higher in 1996 than in 1995 in both the Restigouche and Nepisiguit Rivers. No angling data were available for the Jacquet River in 1996. Small salmon catch in the Restigouche River was more than double the 1995 catch.

River		Bright salmon catch (C=retained+released) or harvest (H=retained)		
		1996	1995	Mean 1991-95
RESTIGOUCHE				
Large	C	3823	2792	3264
	H	1001	866	861
Small	C	3414	1589	3394
NEPISIGUIT				
Large	C	420	300	276
Small	C	580	450	687
	H	450	350	540
JACQUET				
Large	C	-	0	55
Small	C	-	61	67

Small and large salmon catches have been declining since 1986-1988 in the Restigouche River.



Angling catches of both large and small salmon in the Nepisiguit River have declined since 1988.



Resource Status

Inputs

Restigouche River: Spawning escapement was calculated as angling catch divided by angling exploitation rate minus river harvest and other removals (e.g., broodstock collections). Angling exploitation rate was assumed to be 30%. Poaching-and-disease mortality was incorporated into the calculation of total returns to the river; 14% of the small salmon and 16% of the large salmon population entering the river were assumed lost to poaching and disease.

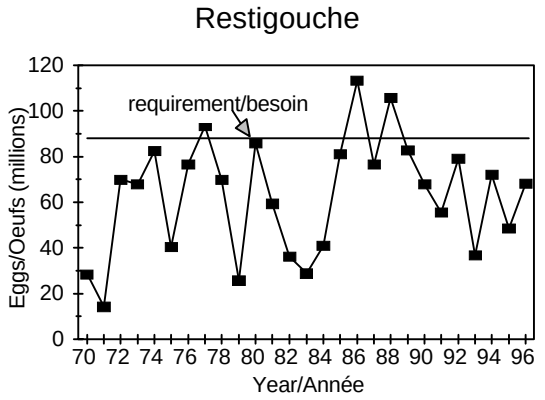
Nepisiguit River: The stock assessment was based on counts at a counting fence, adjusted for its efficiency using angling catch above the fence. The unadjusted fence count underestimated returns since much of the late run entered the river following fence removal and a number of small salmon escaped through the fence in early summer. Spawning escapement was estimated above the fence and extrapolated to the whole river using the number of redds above and below the fence.

Jacquet River: The stock assessment was based on returns to the barrier fence operated by the New Brunswick Department of Natural Resources and Energy. Mortalities at the fence were subtracted to obtain the number of salmon released above the fence. Estimated angling mortality on bright fish, and an assumed native harvest, were subtracted from the stock above the fence to obtain spawning escapement.

Status

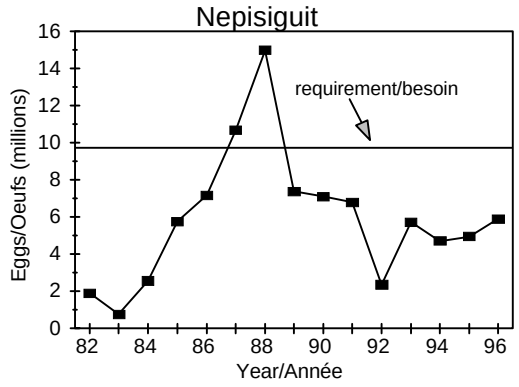
Restigouche River: The level of precision in the estimate of escapement suggests that the conservation requirement was approached and possibly achieved. The angling-based assessment method using the assumed 30% exploitation rate indicated that egg deposition and large salmon escapement were about 93% of the conservation requirement. Small salmon spawning escapement was about three times the requirement. Total returns of large salmon to the river probably exceeded the conservation requirement for spawning escapement by about 4,000 fish.

	Large salmon	Small salmon	% of conservation
RESTIGOUCHE			
Cons. req.	12,200	2,600	
Returns	16,332	13,251	
Spawners	11,382	7,914	
Eggs	66.6 million		93%
NEPISIGUIT			
Cons. req.	1,626	823	
Returns	1,178	1,036	
Spawners	976	499	
Eggs	5.9 million		62%
JACQUET			
Cons. req.	412	250	
Returns	337	600	
Spawners	333	524	
Eggs	2.4 million		89%



Nepisiguit River: Spawning escapements of both large and small salmon in the Nepisiguit were below conservation requirements. Egg deposition was estimated as 62% of the conservation requirement. Returns of large salmon were about 500 less than the required spawning escapement. Returns of small

salmon exceeded spawning requirements by about 200 fish. Conservation requirements have been met or exceeded in only 2 of 13 years since 1984.



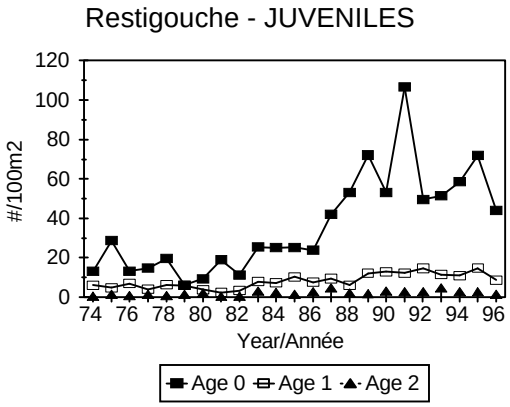
Jacquet River: Spawning escapement of large salmon in the Jacquet River was below the conservation requirement but small salmon spawners were twice the required number. Egg deposition was estimated as 89% of requirement. This is the first time that egg deposition requirements have not been met in the three years in which a stock assessment has been done on this river. Returns of large salmon were about 100 fish less than the spawning escapement requirement.

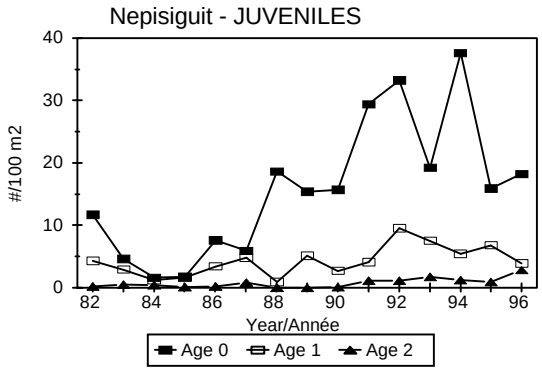
Environmental Considerations

Summer water levels in rivers of SFA 15 were much higher in 1996 than in 1995 when record low discharges were reported. As a result, water temperatures were lower and angling conditions were considered to be better. Low autumn water levels were observed in the Restigouche system. Furunculosis, which was very common in the Restigouche River in 1995, was rarely observed in 1996.

Outlook

Compared to pre-1984 levels, densities of all age classes of juvenile salmon have increased in both the Restigouche and Nepisiguit rivers in the past decade. However, over the past five years, densities of parr have been relatively stable, suggesting that there will be no significant change in returns to both rivers in the future unless marine survival improves.





Given that spawning escapement requirements have been met in the Jacquet River in two of the past three years and almost achieved in the third year (89%), it is likely that the requirement will be met in coming years.

Management Considerations

None of the three SFA 15 rivers assessed in 1996 exceeded egg deposition requirements for conservation. Both Restigouche and Jacquet river stocks only approached conservation requirements. The Nepisiguit stock fell well short of the requirement but concerns exist about the requirement being excessive. Accordingly, the precautionary approach to management is recommended for all three stocks. Specifically, no increase in the level of exploitation of large salmon should be considered in the coming year and, if feasible, reductions should be made on the Restigouche and Nepisiguit river stocks. As in other years, there should be surpluses of small salmon in all three rivers, particularly the Restigouche and Jacquet rivers.

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