

# **The Atlantic Salmon Resource in Newfoundland and Labrador: An Angler's View**

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## ABSTRACT

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(*Salmo salar*)

The Atlantic salmon resource in Newfoundland and Labrador is considered to be relatively healthy but not without problems. Licence sales show an increase in popularity of the Atlantic salmon sport fishery and angling data indicates a corresponding rise in amount of fishing effort. Interviews with anglers in 1977 indicated concern about poaching and overharvest by the commercial fishery but an unwillingness to see changes to the sport fishery. Of approximately 20,000 questionnaires made available to anglers in 1979 only 3% were returned. Poaching was again identified as a serious problem and a reduction in the commercial fishery was requested. In contrast to 1977 anglers agreed to lower bag limits but were opposed to a shorter fishing season and restricted entry to the recreational fishery. The majority believed current management of the Atlantic salmon resource to be inadequate and suggested valuable alternatives.

Key words: Atlantic salmon, sport fishery, questionnaires, interviews, opinions, management

## RÉSUMÉ

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Les ressources de saumon de l'Atlantique à Terre-Neuve et au Labrador sont considérées en relativement bonne santé, mais ne sont pas sans problème. Les ventes de permis montrent une augmentation de la popularité de la pêche sportive du saumon de l'Atlantique, et les données sur la pêche à la ligne indiquent une hausse correspondante de l'effort de pêche. Les entrevues avec les pêcheurs à la ligne en 1977 ont révélé une certaine préoccupation à propos du braconnage et de la surexploitation par les pêcheurs commerciaux, mais ces pêcheurs ne semblent pas prêts à accepter des changements à la pêche sportive. Des 20 000 questionnaires environ distribués aux pêcheurs à la ligne en 1979, seuls 3 % ont été retournés. Le braconnage y a encore une fois été indiqué comme étant un problème grave et l'on a demandé une réduction des activités commerciales. Contrairement à 1977, les pêcheurs à la ligne ont accepté des limites de prise inférieures, mais s'opposaient à un raccourcissement de la saison de pêche et à la limitation de l'accès à la pêche sportive. La plupart des pêcheurs croyaient que la gestion actuelle des ressources de saumon de l'Atlantique était inappropriée et ont proposé des solutions valables.

## INTRODUCTION

The province of Newfoundland and Labrador remains one of the last strongholds of Atlantic salmon in the world. Estimated production is 725,000 salmon annually or 48% of the total production in Atlantic Canada (Anon. 1978). The average Newfoundland and Labrador commercial catch (1970-77) is 524,978 salmon and the recreational fishery takes about 40,000 per year. Generally, salmon stocks are considered to be in good condition but they are not without problems. In insular Newfoundland a deficit of large salmon has been noted and habitat destruction through hydroelectric development, poor logging practices and pollution have significantly reduced stocks in some areas. An increase in fishing effort in the recreational fishery and a rise in by-catch (salmon taken in commercial fishing gear other than salmon gear) have placed an additional strain on the salmon resource. Poaching continues to be a major problem in the province and despite recent efforts by fisheries officers and the courts to reduce its severity, it is expected to be a major threat to the survival of Atlantic salmon in the foreseeable future.

For these problems to be solved, sound management policies must be implemented. Successful implementation of any policy will in the long run depend on the concern and cooperation of the general public, particularly from the harvesters of the resource, the angler and the commercial salmon fisherman. This report represents an effort to gauge the concern and solicit advice on salmon management from participants in the recreational fishery.

## METHODS

Information was obtained from four sources. First, information pertaining to participation in the Atlantic salmon recreational fishery was provided by the Wildlife Division, Department of Tourism, Government of Newfoundland and Labrador. Data consist of number of licences sold, resident and non-resident component, type of licences and number of persons participating per licence. Both residents and non-residents may purchase either individual or family licences. A family licence entitles family members under nineteen years of age to angle for salmon. The only restriction on this type of licence is that the bag limit for all family members combined is the same as for individual licence holders. Commencing in 1978 both resident and non-resident senior citizens could obtain angling licences free of charge.

Secondly, catch and effort data from the Atlantic salmon recreational fishery were provided by the Conservation and Protection Branch, Department of Fisheries and Oceans. Data include numbers of rod days of effort (a rod day being a day or any part thereof in which an individual angles) and numbers of grilse (<2.7 kg) and salmon (≥2.7 kg) angled (Table 2).

Thirdly, interviews were held in 1977 with anglers on five rivers in insular Newfoundland: Humber River, Bay of Islands; Harry's River, Bay St. George; Western Arm Brook, St. Barbe; Ragged Harbour River, Notre Dame Bay; and Salmonier River, St. Mary's Bay. Anglers were selected at random as they proceeded to or from the fishing pools. The same questions were asked in all areas. They dealt with angler's profile, opinion on the status of salmon management policy and extent of cooperation through licence returns (Appendix 1).

Finally, in cooperation with the Department of Tourism, Government of Newfoundland and Labrador, a questionnaire was attached to the 1979 Atlantic salmon angling licence and anglers requested to complete and forward it to the federal Department of Fisheries and Oceans. Postage was to be paid by the angler. The questionnaire was comprised of five questions (Appendix 2). Questions one and two dealt with the adequacy of present management policies for Atlantic salmon and sought opinion on how improvement could be made. Question three defined specific management options and requested preference should their implementation become necessary. Questions four and five asked whether anglers were willing to pay a greater share of the cost of salmon management and most importantly whether they would assist in specific management programs in their area. No socio-economic factors were requested or used in analysis of the information.

## RESULTS AND DISCUSSION

### LICENCE SALES

Participation in the Atlantic salmon recreational fishery has increased significantly in recent years. From 1966 to 1970 an average of 15,000 people purchased licences to angle Atlantic salmon in Newfoundland and Labrador. By 1973 there were 27,694 licenced participants and in 1977 it rose to more than 40,000 (Table 1). Cox (1974) found that appreciation and enjoyment of the 'outdoors' were the reasons most people gave for participating in the recreational fishery but more leisure time is probably a major contributing factor to the increase.

Generally, an increase in number of licenced participants is reflected in the amount of fishing effort exerted in the recreation fishery. The relationship is not however directly proportional (Table 2). For example, from 1966 to 1977 the number of licenced anglers increased by 180% while effort rose by only 68%. During several years, an increase in licenced anglers was followed by a subsequent reduction in fishing effort. There are a number of possible reasons for this, not the least of which may be a shortfall in data collection, but poor weather conditions, fluctuations in salmon stock size and privacy from other anglers are known to alter effort pattern. River closures due to low water levels and high water temperatures have been common during the 1970's and although they tend to shift angling effort to rivers that remain open some overall reduction has been noted. Introduction of family licences in 1971 may also have resulted in increased participation in the fishery. Between 1966 and 1974 there was no real increase in licence sales yet the number of licenced participants rose from 14,703 to over 37,000. Although it



Table 1. Atlantic salmon recreational fishing licence sales statistics for Newfoundland and Labrador, 1966-78. (Average number of participants per family licence in parentheses.)

Year	Residents		Non-Residents*		Total licences	Total participants
	Individual	Family	Individual	Family		
1966	13228	N/A	1475	N/A	14703	14703
1967	12962	N/A	1492	N/A	14454	14454
1968	13428	N/A	1614	N/A	15042	15042
1969	14391	N/A	1900	N/A	16291	16291
1970	13996	N/A	1710	N/A	15706	15706
1971	9180	4378 (2.59)	1494	169 (2.63)	15211	22453
1972	9968	3384 (3.70)	1872	311 (2.68)	15535	25194
1973	9523	3974 (3.92)	1711	338 (2.61)	15546	27694
1974	12297	5992 (3.60)	2768	315 (3.00)	21372	37581
1975	10765	5641 (3.66)	1568	294 (3.05)	18268	33876
1976	11690	6607 (3.67)	1518	288 (2.70)	20103	38233
1977	12343	7021 (3.79)	1455	242 (3.10)	21061	41158
1978	12760	6297 (3.81)	1488	232 (2.62)	20777**	38823

\* Includes season, 2 week, 3 day, 2 day and 1 day licences available prior to 1974. After 1974 non-residents could purchase only season or two week licences.

\*\* Includes 1168 individuals and 139 family licences issued to senior citizens free of charge.

Table 2. Angled catch, effort and catch per unit effort of Atlantic salmon in Newfoundland and Labrador, 1953-79. Five-year means and standard deviations are included.

Year	Effort (rod days)	Grilse <2.7 kg	Salmon ≥2.7 kg	Total catch	CUE	Percent grilse
1953	43024	13564	2461	16025	0.37	84
1954	28672	7409	2050	9459	0.33	78
1955	22628	9942	1718	11660	0.52	85
1956	53499	14515	2561	17076	0.32	85
1957	33897	18739	3306	22045	0.65	85
1958	35085	18768	3521	22289	0.64	84
1959	37038	17007	2813	19820	0.54	85
1960	36393	16302	2068	18370	0.50	88
1961	37129	14492	2560	17052	0.46	84
1962	49982	23501	2680	26181	0.52	89
1963	62072	29258	4024	33282	0.54	87
1964	74330	37872	4610	42482	0.57	89
1965	70069	31151	3796	34947	0.50	89
1966	71033	31068	3558	34626	0.49	89
1967	75894	24719	3157	27876	0.37	88
1968	79629	33195	2549	35744	0.45	92
1969	85692	37842	2703	40545	0.47	93
1970	90220	34772	2695	37167	0.41	92
1971	80686	30623	2088	32711	0.41	93
1972	74384	27371	1804	29175	0.39	93
1973	96706	43004	2932	45936	0.48	93
1974	113691	28986	2016	31002	0.27	93
1975	107116	37362	1568	38930	0.36	95
1976	123002	40189	1881	42070	0.34	95
1977	119070	38946	4041	42987	0.36	90
1978	102905	31310	2330	33640	0.33	93
1979	87911	35287	1170	36457	0.41	97
Means and standard deviations						
1953-57	34344.0	12883.8	2419.2	15253.0	0.42	84
S.D.	12164.4	4359.5	599.2	4912.5	0.14	3.0
1958-62	39125.4	18014.0	2728.4	20742.4	0.53	86
S.D.	6123.7	3428.7	524.9	3607.9	0.66	2.4
1963-72	70679.6	30813.6	3829.0	34642.6	0.49	88
S.D.	5364.3	4731.9	541.8	5224.6	0.08	0.7
1968-72	82122.2	32700.6	2367.8	35068.4	0.43	93
S.D.	6051.4	3954.0	402.6	4334.3	0.03	0.5
1973-77	111717.0	37697.4	2487.6	40185.0	0.36	93
S.D.	10387.7	5289.8	1005.8	5709.2	0.07	2.1

is unlikely that all persons per family licence actually angled, the popularity of the family licence (64% of all participants) would suggest that it provided a cheap and easy access to the fishery and probably brought about an increase in effort.

Introduction of the family licence in 1971 may also have caused another change in the recreational fishery. From 1966 to 1970 average number of days fished per licenced angler was 5.3. After 1970, fishing days per angler declined to 3.2 (1971-77). This decline may support the assumption that many anglers brought in under the family licences did not fish or fished less than individual licence holders. Alternatively, the more traditional anglers, discouraged by the influx of new faces, were inclined to spend less time fishing.

Until 1978, with the exception of the family licence in 1971, there were no major changes in regulation or licencing of the recreational salmon fishery since the 1960's. In 1978 an Atlantic Salmon Management Program (ASMP) was designed and implemented to maintain Newfoundland and Labrador Atlantic salmon stocks at a healthy level. Under the program the angling season on most rivers was reduced from 24 May-15 September to 20 June-31 August in insular Newfoundland and to 20 June-15 September in Labrador. Season length was further reduced on rivers deemed to be overfished and the recreational fishery closed on rivers with seriously depleted salmon stocks. A reduced commercial fishery was also part of the 1978 program. Under the ASMP, effort in the sport fishery was expected to be reduced by about 18% but declined by only 13%. The number of participants also dropped by 6% but whether this resulted from the ASMP is difficult to document.

Non-resident involvement in the Newfoundland and Labrador recreational fishery peaked in 1974 when 3713 were licenced to angle. Prior to 1974, non-resident participation rose gradually from 1475 to 2593 anglers and then declined to 2096 in 1978. Cox (1974) found that most non-resident anglers came to the province not to fish salmon exclusively but to enjoy litter free surroundings, to appreciate the natural beauty or to enjoy privacy from other fishing parties.

## 1977 INTERVIEWS

Angler profiles from the interviews conducted in 1977 show 13% to be non-resident. Licence sales indicate only a 5% representation of non-residents in the angling population, indicating a non-resident preference for rivers on which interviews were conducted. Difference of opinion between residents and non-residents was judged to be insignificant and interview results were combined (Table 3).

Participation in the recreational fishery involves a considerable amount of travel with 51% of resident anglers driving in excess of 80 km to angling sites. Non-residents were predominantly from Atlantic provinces but some came from as far as New York, Maine and New Hampshire.

Thirty-two percent (32%) of anglers interviewed had angled for one to four years and were considered to be newcomers to the recreational salmon fishery. The highest single percentage (41%) of anglers were those who had been fishing Atlantic salmon for 12 or more years.

Of the 163 anglers questioned, 77% considered salmon fishing to be their major recreational activity. Annual expenditures ranged from 50 to 1550 dollars with 44% spending between 101 and 500 dollars. Initial costs of fishing equipment, boats, campers, etc., were not included. Non-residents generally spent more than residents but most figures given were rough estimates at best.

Previous angling surveys have indicated that anglers average 2 hours per day fishing (unpublished data). The 1977 interviews indicate 80% fish longer with 28% fishing for more than 6 hours per day. The discrepancy may result again from data collection or have reflected only fishing and weather conditions.

It was anticipated that anglers would be familiar with the life history of Atlantic salmon. However, of those interviewed, only 19% could be considered knowledgeable about its life history. Most could identify some juvenile stages but knew little detail of its relationships with the freshwater and marine environments. The possibility of overfishing in the rivers was not generally accepted.

The majority of anglers (61%) felt that Atlantic salmon stocks had declined in Newfoundland in recent years with overfishing in the commercial fishery and poaching in home waters predominantly to blame. Weirs used by the federal Department of Fisheries and Oceans to monitor salmon migrations were also thought to have contributed to a decline. Twenty-six percent (26%) were uncertain as to the reason for the reduction but thought it related to the Greenland fishery. Thirty-one percent (31%) felt salmon numbers were comparable to past years or had even increased.

There was little support for restrictions on the recreational fishery. Particularly unpopular was limiting participation in the fishery (78% against) and a reduction in bag limit (72% against). More anglers were willing to have a shorter season and 62% thought spawning areas and headwaters should be restricted areas. Protection against habitat destruction and salmon poaching was thought inadequate.

Anglers were asked whether or not they had submitted licence returns in 1976. Positive responses were received from 38% but past experience has shown the percentage to be 5-10% of total licence sales. This indicates an unrepresentative sample, a high loss rate in the postal system, or questionable integrity of some interviewees.

Table 3. Analysis of the angler's interviews conducted in 1977 on five insular Newfoundland rivers. (N = 178 interviews)

Responses * (N)	% Frequency	Questions
<u>Angler Profile</u>		
178	100%	1. Angler Status
154	87%	1. Resident
24	13%	2. Non-resident
154	100%	2. Resident Angler Status
75	49%	1. <80 km from river
79	51%	2. >80 km from river
160	100%	3. Fishing Experience (Atlantic Salmon)
30	19%	1. 1 < 2 years
4	2%	2. 2 < 3 years
17	11%	3. 3 < 4 years
15	9%	4. 4 < 5 years
28	18%	5. 5 < 12 years
66	41%	6. 12+ years
163	100%	4. Major Recreational Activity
128	79%	1. Yes
35	21%	2. No
167	100%	5. Annual Expenditure for Angling Atlantic Salmon
61	37%	1. \$ 50 - 100
74	44%	2. \$101 - 500
32	19%	3. \$501 - 1000+
166	100%	6. Knowledge of the Life History of Atlantic Salmon
97	58%	1. Uncertain
38	23%	2. Some
31	19%	3. Knowledgeable
168	100%	7. Average Daily Effort (hours/day)
33	20%	1. 1 < 2
8	5%	2. 2 < 3
36	21%	3. 3 < 4
31	18%	4. 4 < 5
13	8%	5. 5 < 6
47	28%	6. 6+

Table 3. (Cont'd)

Responses*	% Frequency	Questions
<u>Opinion</u>		
154	100%	1. Do you think the population of Atlantic salmon has declined or increased during recent years
94	61%	1. Declined
20	13%	2. Increased
27	18%	3. No Change
13	8%	4. No Opinion
78	100%	Reason for any decline
24	31%	1. Overfishing
21	27%	2. Poaching
13	17%	3. Counting fences
20	25%	4. Other
131	100%	2. Do you think this river is adequately protected, i.e. habitat destruction and poaching
56	43%	1. Adequate
71	54%	2. Inadequate
4	3%	3. No opinion
158	100%	3. How would you feel about a shorter angling season
70	44%	1. Agree
79	50%	2. Disagree
9	6%	3. No opinion
163	100%	4. Do you agree or disagree with closing sections of rivers, i.e. spawning areas, headwaters, to anglers
101	62%	1. Agree
57	35%	2. Disagree
5	3%	3. No opinion
160	100%	5. Do you agree or disagree with restricting the numbers of anglers
35	22%	1. Agree
125	78%	2. Disagree

Table 3. (Cont'd)

Responses*	% Frequency	Questions
173	100%	6. Do you agree or disagree with reducing the daily bag limit
49	28%	1. Agree
124	72%	2. Disagree
<u>Cooperation in Management</u>		
140	100%	Did you submit the return from your previous year's Atlantic salmon fishing licence
53	38%	1. Yes
87	62%	2. No

\* Number of responses are not consistent because some anglers did not answer all questions.

## 1979 QUESTIONNAIRE

Response to the 1979 questionnaire was disappointing. Of the approximately 20,000 made available through licence sales only 3% were returned. This is surprising considering public interest in Atlantic salmon during 1979 and the 5-10% return rate in previous years. Encouragingly, many questionnaires submitted contained detailed plans and rationale for future management of the Atlantic salmon (Appendix 3).

Eighty-one percent (81%) of respondents felt that government was not adequately managing the Atlantic salmon resource (Table 4). Suggestions varied but many anglers (43%) thought that more effective control of poaching through increased river surveillance, stiffer fines and better quality wardens would improve salmon management. Cox (1974) also found a high percentage (46%) of his responses related to poaching, indicating that anglers still consider it the most serious threat to the Atlantic salmon.

Possibly because all respondents were from the recreational fishery, 21% versus 15% of total suggestions were in favour of restrictions on the commercial salmon fishery rather than the sport fishery. A general reduction in commercial fishing effort was thought necessary. Problems of non-Canadian harvest of Canadian stocks and bycatch in the commercial fishery were also mentioned. Eliminating family licences, increased fees and seasonal bag limits were suggested as measures to improve management of the sport fishery. Although pollution and habitat destruction are two serious problems facing the Atlantic salmon in Newfoundland and Labrador only 4% of respondents gave it any priority.

Specific questions outlining techniques or tools used in resource management indicated a prominent shift in opinion. Interviews in 1977 showed 72% disagreement with a reduction in the daily bag limit of four salmon per day. Two years later a full 68% of respondents supported just such a reduction to preserve the salmon resource. A shorter season and restrictions on entry to the sport fishery still have, as in 1977, little popular support.

Although many were not in favour of additional restrictions on the recreational fisheries, 46% of anglers indicated a willingness to contribute more financially to the cost of salmon management. A further 59% volunteered their time and energy to assist with salmon stocks in their area and although the exact nature of this assistance has not yet been determined the Atlantic salmon will benefit.



Table 4. Analysis of information obtained from the 1979 Atlantic salmon angling licence questionnaires. (N = 596 returns)

Responses* (N)	% Frequency	Questions and suggestions
596	100%	<u>Do you feel that the Atlantic salmon resource is adequately managed?</u>
114	19%	Yes
482	81%	No
835	100%	<u>How can the following be improved?</u> (salmon stocks, management, angling quality)
356	43%	(A) Poaching:
214	60%	1. Increase river surveillance
54	15%	2. Reduce or eliminate poaching
50	14%	3. Greater penalties for poaching
30	8%	4. Better quality wardens and guardians
6	2%	5. Better pay for wardens
2	1%	6. Other
176	21%	(B) Commercial Fishery:
130	74%	1. Reduction in commercial fishing (non-specific)
14	8%	2. Restrict foreign catches/international regulations
13	7%	3. Close areas in bays near rivers
7	4%	4. Reduce by-catch
6	3%	5. Use larger mesh nets
6	3%	6. Others
121	15%	(C) Sport Fishery:
20	17%	1. Eliminate/increase fee for family licence
16	13%	2. Non-resident restrictions/increase fee
15	12%	3. Rotational closing of rivers
13	11%	4. Close headwaters/spawning areas
13	11%	5. Reduce angling effort
10	8%	6. Seasonal limit/issue tags
7	6%	7. Daylight fishing only
6	5%	8. Specific licence for each river
5	4%	9. Close angling during low water conditions
16	13%	10. Others

Table 4. (Cont'd)

Responses*	% Frequency	Questions and suggestions
80	10%	(D) Enhancement:
57	71%	1. Hatcheries/artificial rearing
9	11%	2. Increase enhancement
3	4%	3. Introduce fish in rivers
3	4%	4. Fish ladders in certain areas
3	4%	5. Remove upstream obstructions
3	4%	6. Open new spawning ground
2	3%	7. Increase the proportion of large salmon
45	5%	(E) Quality of Angling:
26	58%	1. Protect spawning ground
3	7%	2. Increased access to river systems
3	7%	3. Longer season
13	29%	4. Others
30	4%	(F) Habitat Protection:
13	43%	1. Protect spawning ground
11	37%	2. Less pollution
2	7%	3. Ban all-terrain vehicles
4	13%	4. Others
27	3%	(G) Closure of Commercial and Sport Fishery:
27	100%	1. Close commercial and sport fisheries until stocks rebuild
<u>If it is necessary to impose further restrictions to preserve the salmon resource would you prefer:</u>		
475	100%	(A) Reduction in season
202	43%	Yes
273	57%	No
509	100%	(B) Reduction in bag limit
348	68%	Yes
161	32%	No
440	100%	Reduction in licences
106	24%	Yes
334	76%	No

Table 4. (Cont'd)

Responses*	% Frequency	Questions and suggestions
545	100%	<u>Do you feel the angler should pay a greater share of the cost for salmon management?</u>
253	46%	Yes
292	54%	No
627	100%	<u>If you are interested in volunteering your assistance to help or manage salmon stocks in your area, please provide your name and address</u>
367	59%	Volunteers

\* Number of responses are not consistent because some anglers did not answer all questions posed.

## SUMMARY

The Atlantic salmon resource in Newfoundland and Labrador is considered to be relatively healthy. However, factors which have severely reduced or eliminated Atlantic salmon in many parts of the world are also beginning to strain the resource here. Salmon policies are currently under review and involvement of the general public and particularly resource users have been encouraged. Opportunities for involvement has been by way of public meeting, task force review of salmon management, interviews and questionnaires.

Licence sales continue to show a lasting popularity for the Atlantic salmon recreational fishery among residents of the province. Increased participation appears to have been coincidental but not necessarily as a result of the availability of a family licence in 1974. A decline in non-resident participation is also noted.

The 1977 interviews showed a high proportion of novice anglers in the sport fishery, that considerable travel was involved and expenditures of \$1000 per year were not unusual even among resident anglers. The life history of Atlantic salmon was not well understood by anglers but many felt that the numbers of salmon returning to the rivers were decreasing. Overfishing by the commercial fisheries and poaching were thought to have caused the decline up to 1977. With the exception of closures of spawning areas most felt the recreational fishery should remain unchanged.

The poor response to the 1979 questionnaires indicated a high degree of apathy among the angling population. Confidence in government's ability to manage the Atlantic salmon resource was not great. Poaching was identified as the most pressing problem and overfishing by the commercial fishery as responsible for recent stock declines. Anglers now agree with lower bag limits but strongly oppose reducing the fishing season or restricting number of participants in the sport fishery.

The difference in angler's opinions from 1977 to 1979 may reflect the change in methods by which the opinions were obtained. Extensive media coverage of events related to Atlantic salmon since 1977 and/or a growing concern among the angling population for the future of the Atlantic salmon resource may however offer alternate explanations. Whichever the reason, the necessity to gather current opinion for use in planning salmon management strategy seems apparent.

## ACKNOWLEDGMENTS

Thanks are expressed to the people who think that the Atlantic salmon is a resource worth preserving and took the time to suggest the methods by which it can best be accomplished. Special thanks to those who offered their time and energy to assist with the difficult task of salmon management.

The assistance of Frank Adams, Wildlife Division, Department of Tourism, Government of Newfoundland and Labrador is gratefully acknowledged.

Thanks to the editors and Janice Lannon and Karen Scott for typing.

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## APPENDIX 1: QUESTIONS USED IN INTERVIEWS WITH SALMON ANGLERS

Department of Fisheries and Oceans  
Fisheries and Marine Service

## 1977 Angler's Survey

Name \_\_\_\_\_ River \_\_\_\_\_  
 Licence No. \_\_\_\_\_ Date \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_

## ANGLER'S PROFILE

Resident \_\_\_\_\_ Non-resident \_\_\_\_\_  
 Community \_\_\_\_\_ Province (State) \_\_\_\_\_  
 Years Fishing Atlantic salmon \_\_\_\_\_  
 \_\_\_\_\_  
 In Nfld. or Lab. \_\_\_\_\_

Average Time Fished Per day \_\_\_\_\_/hours.

Amount of money spend annually to angle Atlantic salmon \_\_\_\_\_

Major Recreational Activity Yes \_\_\_\_\_  
 No \_\_\_\_\_

Knowledge of the biology of Atlantic salmon. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Opinion

- Do you think the population of Atlantic salmon has declined or increased during recent years? \_\_\_\_\_  
 Why? \_\_\_\_\_  
 \_\_\_\_\_
- Do you think this river is adequately protected, i.e. habitat destruction, poaching, etc. \_\_\_\_\_  
 If no, do you have any suggestions for improvements? \_\_\_\_\_  
 \_\_\_\_\_

3. How would you feel about having a shorter angling season? \_\_\_\_\_  
\_\_\_\_\_
4. Do you agree or disagree with closing sections of rivers to anglers? \_\_\_\_\_  
\_\_\_\_\_
5. Do you agree or disagree with restricting the number of anglers? \_\_\_\_\_  
\_\_\_\_\_
6. Do you agree or disagree with reducing the daily bag limit? \_\_\_\_\_  
\_\_\_\_\_
7. Did you submit the return from your previous year's Atlantic salmon fishing licence? \_\_\_\_\_  
\_\_\_\_\_

APPENDIX 2: QUESTIONNAIRE ATTACHED TO THE 1979 ATLANTIC  
SALMON ANGLING LICENCE

1979 NEWFOUNDLAND AND LABRADOR DEPT OF TOURISM

PLEASE COMPLETE THE FOLLOWING QUESTIONS AND MAIL AS SOON AS POSSIBLE.

1. Do you feel that our Atlantic salmon resource is adequately managed?  
Yes \_\_\_\_\_ No \_\_\_\_\_
2. How can the following be improved?
  - a. Salmon stocks
  - b. Management
  - c. Quality of angling
3. If it is necessary to impose further restrictions to preserve the salmon resource would you prefer?
 

a. Reduction in season	Yes _____	No _____
b. Reduction in bag limit	Yes _____	No _____
c. Reduction in licences	Yes _____	No _____
d. Others _____		
4. Do you feel the anglers should pay a greater share of the cost for salmon management?  
Yes \_\_\_\_\_ No \_\_\_\_\_
5. If you are interested in volunteering your assistance to help or manage salmon stocks in your area please provide your name and address.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## APPENDIX 3: ANGLERS' PROPOSALS FOR ATLANTIC SALMON MANAGEMENT

June 12, 1979

Salmon and Char Management  
P.O. Box 5667  
St. John's, Newfoundland

Dear Sir,

Many thanks for your letter dated 4 June 1979.

Owing to having a lot of extra work on our fish plant this spring, I had no time to attend the meeting at Corner Brook.

However, we are only having one party from Nova Scotia to our camp this summer. We had several parties from the U.S.A. wanting to come up to our camp but I thought it was time to tell people that we have no salmon left and the trout are coming to an end very fast.

Eight years ago we were established on the Gilberts River and fished the Shinnies as well. At that time both rivers were teeming with fish, but they slowly started to clean up on them with nets. This practice got into full swing when the fish plants along the coast started purchasing sea trout from the fishermen.

One fisherman in Gilberts Bay had nets all around the bay and slowly after five years there were no sea trout left. The only salmon we took by fly had twine marks around his neck showing that he was one of the lucky ones that broke loose.

Last year we made several trips to Shinnies River with American fishermen but only saw one or two small trout in the entire river. At one time the entire river was teeming with trout and salmon. I have seen Shinnies River so dry with fish that one could almost walk in the river on snowshoes on the backs of the sea trout and salmon.

In the mouth of the Gilberts River it is the same story. Nets left overnight have taken just about every fish that has tried to reach the river. Our last little fishing spot was into the foot of Gilberts Lake. Again, this was discovered and as many as 200 trout were taken at one time. This little spot, like the other places we used to fish, no longer attracts people coming a long way to fish.

In the first place I would suggest if we are to live with a few salmon and sea trout in this part of Labrador the law must stop all netting inside the entrance or narrows of a bay. Sea trout and salmon do not enter a bay in the ships run, but trim the shore and the eddy tides. The sea trout is in search of capelin which they usually find around the sandy beaches. If the nets are set in those areas they will take every fish to the last one depending on the size of the mesh the fisherman uses.

I have spent 43 years in coastal Labrador and always had a big interest in the sea trout. In my years as a trapper I have followed those fish from the salt water far into the head waters of our coast and always was impressed when paddling up some big lakes to find my only company was the big schools of sea trout on both sides of my little canoe, making the same speed day after day. In those days people took only enough of those fish to eat, they could never overfish them with the old hemp twine net. Today things are different with the new nylon nets which are invisible in freshwater or any bay.

As the situation appears now, there is no hope for sport fishing in southern coastal Labrador. If the proper steps are taken now, the sea trout will come back again in about ten years.

September 5, 1979

Fisheries Management

Dear Sirs,

I had taken one trip only to Upper Humber, not to fish but just to have a look at salmon pools. I wish that some of the fishery officers were there to see as many salmon as I saw that day. In all of my fishing for 30 years I never saw so many fish jumping in pools.

Now, re the law of taking only 2 grilse per day. I agree it is enough but it still could stand to be 4 per day as most fishermen only average 1 fish per day. As for only 2 grilse per day and releasing all over 6 pounds, I think this is the most foolish thing I ever hear of. I would say 2 grilse per day or 1 salmon, whichever comes first.

As we all know the big fish will be hooked 8 out of 10 times. A fish played for 40 to 60 minutes will be played out too much and be too weak to be released. I think this should be given some consideration.

June 14, 1979

Fisheries Management Program  
P.O. Box 5667  
St. John's, Newfoundland

Dear Sirs,

I am indeed happy to see some concern in regard to the preservation of our dwindling inland fisheries, and that something positive is being done about it.

Your questionnaire, in my opinion, is a step in the right direction and I would like to explain more fully what I have noted on the questionnaire.

I have watched so-called anglers jig or hook salmon by foul hooking and have advised both them and the game wardens of their actions; but to very little avail. On one occasion I was standing about 20 feet from a person who let his hook sink about a foot then a little quick pull and a salmon was soon pulled in with the hook just above the front fin on the back. The game warden was talking with this so-called angler at the time the salmon was hooked and said, "that's okay, he was hooked accidentally, you can keep it." On another occasion I saw two salmon taken in a similar manner while two game wardens were standing on the opposite side of the river with their backs towards the "jigger" and when I told them about it about 10 minutes later they said they could do nothing about it, they didn't see it.

There are numerous cases where the culprit is fined a minimum fine of a few dollars after he had made probably two or three hundred dollars from illegal sales.

Again I saw 15 salmon taken from a swimming hole in the river by the swimmers and when I told a man who was supposed to be looking after the river he said, "They were going to die anyway, the water is too warm".

I am in an area now where the nearest salmon river is several miles distance but I am near enough to hear of similar stories about illegal fishing. I know that we have some game wardens and I can name several, who would almost give their lives to stop this illegal fishing. I also know that game wardens cannot be everywhere on the river; but my gripe is with those who turn a blind eye and we have several of these.

I am not prepared to mention names, but I would like to see better management particularly at the local level and I mention the above to give you some idea of what's happening at some local levels.

January 3, 1980

Dear Sirs,

Last season the rivers were closed several times especially here on the west coast of the Island. I agree with closure of rivers if there is danger to the salmon, but the absence of sports fishermen on the rivers provides the poacher with freedom to take salmon where he wishes, unless there are wardens or guardians around to stop him.

Most people interested in salmon conservation agree that there are simply not enough river guardians or wardens employed to look after the salmon.

I have been sports fishing here on the west coast for about five years and I have been approached only once by a guardian to check my licence or my catch.

I was more impressed by the patrol of the Bellevue River on the Avalon Peninsula. This river has only been licenced for a few years, I understand, and the salmon population is steadily increasing. While I was there last summer, a guardian was always present and it seems to me that the river is well patrolled.

I think we definitely need a far greater number of patrols on the rivers in western Newfoundland. I also agree with the bag limit of two (grilse) salmon per day. I think there also should be a season limit on the number of grilse a fisherman can catch, say 20 for example.

I cannot, however, agree with the policy of releasing all salmon over six pounds. Those salmon, in most cases, probably will stand little chance of survival if they have been played for a long period of time, and have been released. Maybe the gaff should be outlawed as a means of securing a salmon after it has been played. I hope the rivers will be better patrolled under provincial jurisdiction.

January 26, 1980

Dear Sir,

I would like to see a few changes made in the Salmon Management. First of all there should be a salmon hatchery to help build up the salmon stocks. There should also be tags for each angler and no more than twenty for each. The season should be opened on May 24th as in the past. More wardens and guardians should be put on the rivers especially when rivers close because of low water levels. I cannot see much point in closing the rivers when the big runs of salmon are on if there is not anyone around to keep the poaching down. As long as there are anglers on the river along with wardens, the poacher is going to think twice. Maybe if we had to pay \$15.00 for a licence it would help to pay some of the cost to improve Salmon Management. In conclusion, I would like to see more controlled fishing on the high seas by foreign countries, thus improving our salmon stocks.

June 29, 1979

Inland Salmon  
Freshwater and Anadromous Fisheries  
Management Program  
Fisheries and Oceans  
P.O. Box 5667  
St. John's, Newfoundland

Dear Sirs,

As a citizen of Bay D'Espoir, I have become very concerned about the future of our sports salmon fishing on Conne River and have some suggestions I am sure would help preserve our sport for a long time to come. Closing the river as you have done at present is not a good way to do this because it only makes it more accessible to the late night poachers, and only a few guardians are left to guard a very long stretch of river.

I would like to see the river used the way it was in the early 1950's, prior to the Cross-Country road. Back then, we were open to some non-resident tourists and now because of the overcrowding and anglers on the river all night long they have stayed away.

What I would like to see, if not permanently, at least for about 3 or 5 years, is licences issued to residents only. Residents could mean, besides people who live here for 3 months or more, those who happen to work in the area for any given season. This would give us a chance to encourage some paying, non-resident tourists back to the area again. This would give our guides a summer job and I presume there are quite a few guides in Conne River who still hold their licences for such purposes. This would help our continuous cry of creating jobs, at least for a short period, and if our wildlife was managed the same way, it would extend their jobs into the fall season. It would also allow us to let it be known that we have some wonderful trout fishing in Long Pond.

This would not necessarily mean we would have to have expensive tourist cabins because our sports fishing for both salmon and trout is accessible by roads and boat. I suggest these people could be looked after by our already operating motel and restaurant services.

Then, besides our regular river patrol, I would suggest by a screening through our area fisheries officer, who usually knows the anglers of the area, accept some volunteer help, issue the fisheries badge of authority to these anglers, swear them under oath of the guardian, then when he is fishing and sees some wrong doing he can do something about it. I am sure this would be very effective because only a small percentage of anglers become poachers.

I know and am quite sure you people in the Department of Fisheries know, that you can never deplete our salmon stocks by fly fishing, because in any given salmon pool, only a very small number of them are tempted to take a fly, and a good number of them get away. It is not the fly fishing that is going to hurt the future salmon.

I would never hope to see the salmon sports fisherman issued licenses the way the big game are, by draw. This would only create more problems, because then some of us would not be allowed to fish and some fishermen from around the province would come here to do so. But issue licenses to all the area residents of Bay d'Espoir for Conne River, plus a number of tourists we could attract. If you want, you could do the same for all other rivers, my concern right now is "Conne River", this may be an experiment we could learn from for the future.

Hope you will read this with your most meaningful concern, and that together we can manage our rivers so that we will be able to continue our traditional sport and at the same time carry it over to our future sportsmen. This will not be done by closing it to the serious anglers and turning it into a poachers paradise.

There is another good way our river can be wisely managed, if only we had the finances, and that is to put the dam back in Twillick Steady again. That way we would have water reserved for a dry spell and could control the flow of water, which would give the salmon a boost they need and make it very hard for the poachers.

Do away with the family licenses then you would be sure of correct quotas. Also if the quota remains at 4 fish per day the fee could probably be worth \$10.00 to a sincere angler, and poachers should be banned from obtaining a license for a period of 3 years. The law should be so that it would be an offence to fish for salmon before 6 a.m. or after 9 p.m. This way, there would not be people on the river at 2 and 3 a.m. and sometimes all night, and would also help the officers in their patrol.

If the rivers are closed because of poaching or for reasons of low water or high temperatures or because of large numbers of people from all over the Island and local people cannot get a chance to fish their traditional pools, then I think you will see some of our best anglers become discouraged and turn to poaching also. I am sure there are many of us who do not want to see this happen and feel sure with the proper management we could continue fishing every year, the stocks would continue to grow and we could also bring a few much needed tourist dollars to this area.

Trusting I will hear from you.



December 7, 1979

Inland Salmon Fisheries Management Program  
P.O. Box 5667  
St. John's, Newfoundland

Recently while cleaning my wallet I came across my Newfoundland fishing licence and thought I would drop you a letter while I am in the mood.

Over the past twenty years I had many trips to Newfoundland and fished many of the rivers on the south coast and most on the west coast. We had some great trips and others which have been the opposite. Last summer a friend and myself spent a week at the Lucky Strike Lodge and fished the Pinware. The lodge is clean, comfortable, good food and good people.

As far as improving sport fishing a few thoughts:

#### I. COMMERCIAL FISHING

Not enough salmon are getting back into rivers. There are too many nets around the estuaries of the rivers. The only salmon you see are from 3-5 pounds in size. Most of these show severe net burns. What size mesh is used in these nets? If all the larger salmon are exterminated maybe they can be reintroduced into some of the rivers. Re Cod Traps: These are used during the salmon season for the sole purpose of catching salmon. These are used for example off the St. Genevieve River and as many as 40-50 salmon are sold each day. Surely there must be some fishery officer who knows this goes on and should put a stop to it.

#### II. GUIDES

The trip over on the boat is inexpensive but is uncomfortable and tiresome. The cost of licence is reasonable and no one complains of this. The lodging is usually standard and no problem. The money for guides is not always a good value. Some are adequate and do a good job, some are terrible. You may have to drive for miles to find one and have him turn out to be a lazy good-for-nothing. I know that the money for guides is resented by many and turns them off from returning to Newfoundland.

#### III. LOCAL FISHERMEN AND WARDENS

In recent years there are many local fishermen on the rivers and of course they have every right. But this group does interfere with the sportsman who comes from out of the province. The latter spends varying amounts of money and has only a few days to fish. The local lads may get to the river early say four a.m. Few have any fishing manners - they grab the best spots and have no intention of leaving that spot until they catch their limit. It just would not occur to them to step aside and let someone else have a go.

I think this is enough griping from me but I think that unless there are changes, I have had my last fishing trip to Newfoundland. Why don't you give some thought to having selected rivers set aside for sportsmen as is done in New Brunswick and Scotland and many other places? This fishing is expensive but a section of river is yours for the day and you do not have to get up at four a.m. to find a rock to stand on. Fishing is usually good and free of aggravations and that is what we look for.

September 11, 1979

Fisheries Management Program  
P.O. Box 5667  
St. John's, Newfoundland

Dear Sirs - To Whom it May Concern,

At present I am in St. John's and I had decided earlier to write you. I am 72 years old and have been an angler, as regards to salmon fishing for quite some time. I have never been as disgusted in all my life as I was this past season. What has been done and the way regulations have been carried out has been just ridiculous. Foolish questions, such as, what to do to improve the situation by reducing the season or the number of salmon caught by anglers, should not be asked. The most salmon taken are by poachers and there is nothing done about it. At Point Leamington there is one of the better rivers, for a small river, and there are two or three poachers in that vicinity. Apparently no one gives a hoot about the smaller rivers just as long as they can get a few salmon in the larger ones.

There were as many salmon out our way this year as ever and as many entered the rivers as ever, but where did they go? If something doesn't change when my grandchildren grow up and hear someone mention salmon they will ask what it is. Closing rivers or cutting down on the salmon limit or licences is not the answer at all. The small mesh nets are some answer to it, but don't come back and say that laws are passed on small mesh nets because that is just another bluff.

As I said, I have fished the rivers around our vicinity for quite some time. I caught twelve salmon this season; there were poachers who took that many a day. I certainly wish that I could sit down with some of you people for a little while and describe to you what is going on. Not that it would make much difference, I know, as I said the small rivers cannot survive more than a couple of years longer with what went on this summer from jigging to netting and every conceivable thing, and it went on everywhere. I am not sure who is to blame, the government or the crowd that the government has looking after the fisheries (inland). Some of them are not worried too much, as long as their cheques are in the mail every two weeks. It's an awful mess now and the only way to preserve it is to throw out the old bunch in every district and put in a new crowd.

I guess you may have a job to read some of this writing and sentences, but I get so riled up when I begin to think about what is happening and that no one seems to care that I can't see straight. Not that it matters much to me, there are still plenty of salmon left for me, I may never catch another one. Probably ten years from now someone would like to have a salmon, but according to what is going on now they will be scarce by then.

I would like to be able to talk to someone that really understands what is going on. If you feel like answering this letter or would like to contact me sometime when I am in St. John's, I would be glad to do so.

October 5, 1979

Dear Sir,

I really enjoyed participating in your program this past summer and would be more than willing to take part again in the years to come. I am also interested in volunteering to help manage salmon stocks in the Gander area. I enjoyed being a member of "SPAWN" and "The Atlantic Salmon Association" of which I have been a member of the latter for three years. I have some suggestions which comes to mind that could be implemented to help conserve and preserve the Atlantic salmon.

1. I believe the fee for an angling licence which is now \$5.00 for residents of Newfoundland for a season is too small. If it were increased to say \$15.00 or \$20.00 or more, the extra revenue collected should go toward paying more wardens and guardians to curb poaching. I think the only people who would disagree are those that only go out to try their luck five or six times a season.

2. I have caught some fish with scars on them apparently caused by the propellers of boats running the Gander River. The waters of the Gander River were unusually low this past season and the boats had to run shallow pools where salmon were present. The boats should not be permitted to travel in these areas when the water gets down below a certain level.

3. Most sports fishermen I have talked to said that the size of salmon are getting smaller supposedly due to the commercial fishery taking most of the big spawners.

4. If the daily bag limit of two grilse per day is going to stay, then I suggest the commercial salmon fishery should have their catch reduced or a quota should be imposed. The commercial fisherman should take his nets up when his quota is reached or his season could be shortened or the mesh size of his nets be increased to allow more larger fish to escape. A large problem with the salmon also is the by-catch. An angler told me he knows of a commercial fisherman who caught 1200 salmon in a cod trap. This is poaching on the high seas as far as I am concerned. These fish should be released unharmed. Also herring nets, mackerel nets and squid traps, cod traps should not be permitted at all in areas of the ocean where salmon usually migrate when the main run is on. A quota of say twenty or twenty-five salmon per season could be imposed on the sports fisherman. This would be hard to control unless everyone had to report his catch to a warden or guardian posted in certain areas.

5. I would like to suggest a licence system for boats used on salmon rivers. A fee could be set for motorized boats and a lesser fee for non motorized boats. A fluorescent plate could be issued to place on the bow of the boats. Wardens or sports fishermen could record their numbers if they are poaching as the plate could easily be seen at night with a light.

6. The season for the sports fisherman could be closed earlier or closed altogether in prime spawning areas and extended to September 15 or so in non spawning areas. A fair number of larger fish enter the Gander River system for example after the first of September. Closing of spawning areas would allow the fish to spawn in peace.

7. No one should be permitted on the river to fish within 3/4 of an hour before sunrise and 3/4 of an hour after sunset.

8. A personal friend knows of a fisherman who acquired his commercial salmon licence this past summer and went up to Traverse Pond and netted 80 salmon and sold them to a fish plant in Valleyfield. Acts like this are intolerable and should be severely dealt with. Also this river was closed most of the summer due to low water, thus there weren't any people around to disturb the poachers.

9. A fish hatchery for salmon would be great to increase salmon stocks but this wouldn't work if the commercial salmon fishery is allowed to stay as it is today.

10. In the Gander River system, most of the poaching is done from boats. Check points could be set up below Glenwood and above the run out at Gander Bay to check boats for nets, illegal gear, too many salmon etc. This would put a stop to most poaching.

11. If the sports and commercial fishery is to be abandoned for 2 years then all countries fishing for salmon on the high seas should have their fishery for salmon abandoned also.

12. The lowering of the bag limit for the sports fisherman is a good thing in a way, but why should we pay such a high price. We are scape goats for the commercial fishery. Also the new law of taking only 2 grilse is not very encouraging when the commercial fishery takes most of the mature salmon. It is the hope of all sports fishermen, to hook and land a large salmon.

13. Commercial salmon fishermen claim there are no great number of salmon; sure they would have taken salmon if they cleaned their nets regularly. The water was so-called "dirty water" with a lot of algae and sea weed caused by above normal sunshine and warm water. It is mainly their own fault they didn't catch salmon.

14. I fished mostly at First Pond Bar on the lower Gander River this past summer and the shoreline was covered in litter -- broken glass, tin cans, plastic bags, beer bottles, etc. It was a bad state. This litter eventually will be washed into the bottom of the river system and could effect the salmon migration and spawning somewhat. Anyone caught littering should be dealt with. I feel it is the responsibility of the individual person to dispose of his own litter by taking it home again and disposing of it.

15. The rocks on the bottom of the Gander River this year were covered in a green slime or algae supposedly caused by sewage disposal plants at Glenwood and Appleton. There must be some way to get rid of this. The larvae of some insects cling to rocks which is food for young salmon and the algae will kill this source of food and also deprives the water of a lot of oxygen.

16. Large industries polluting rivers could be given some kind of tax incentives to clean up the rivers.

17. Any sports fishermen who report poachers should be given protection from those people being reported as they may incur damage to you and your personal property if they find out who reported them. They may try to get back at you by assault, slashing tires, breaking windshields, etc.

18. I suggest anyone who sells salmon commercially must have a special permit to do so and be willing to produce it on demand by a business or private individual. Anyone without a permit would be suspected of poaching. The person purchasing it should be issued a receipt with the permit number on it.

19. Certain pools in some rivers with slow water could have a "dry fly only" rule.

20. No one should be allowed to cast up stream with nothing but a dry fly. A wet fly especially a double hook will sink more readily as it passes through the pool or the use of double hooks be banned.

21. Recreational swimming should not be permitted on streams holding migrating salmon.

22. I would like to see fish wardens moved to different areas away from his home territory. For example, a warden on the Humber River could be put on Traverse Brook and a warden from that area could be put on the Humber River. This way he doesn't know anyone on the other rivers thus he can enforce the laws much better. A warden working in his home town has to live with the poachers all year round and they could be the best of friends and as likely as not would ignore any poaching that is going on. The wardens and guardians should have a course in the ways of the poachers and the places where poaching is carried out.

23. The use of sinking fly lines should be banned.

24. Periodic checks should be carried out on the trails leading from the rivers where a lot of people congregate to fish. Sports fishermen could have their catches inspected to see if they have more than their limit. A heavy fine should be imposed on people who do so and those who won't have their pack sacks inspected. What brings this to mind are incidences when the fishing is good and people were catching more than their limit or those who continue to fish after their quota is reached for the day.

25. The wardens are being paid by the Federal Government. If they were changed and put under provincial authority -- they could be employed on a permanent basis and would be flexible in that they could be employed as game wardens to protect moose and caribou populations.

I hope that some of these ideas will be implemented. Thank you.

November 11, 1979

Inland Salmon,  
Fisheries Management Program,  
St. John's, Newfoundland .

Dear Sirs:

With reference to the enclosed questionnaire, I have worked on a number of salmon rivers in Scotland which were both smaller and less suited to salmon angling than a large number of Newfoundland Rivers and yet produced a large number of angled salmon annually in spite of inshore netting which in some instances was directed from shoal "spotters" on the cliff tops.

The main problem in Newfoundland is that there is an inadequate water level in the majority of smaller rivers when the salmon arrive in coastal waters to make their spawning runs. This results in:

1. Salmon concentrate in the salt water off the river mouths and are thus easy prey to inshore fisherman (I acknowledge that this practice must continue to support the all powerful commercial fisherman but feel there should be a greater input from the sector to maintain the salmon stocks).
2. Salmon which do venture into the fresh water are easily jigged and netted in spite of the vigilance of fishery officers and anglers.
3. High water temperatures result in increased susceptibility to fatigue and exhaustion often resulting in death before spawning.

In the Central area a large number of rivers could be greatly improved along the same lines of management as is applied to Scottish Rivers. Conne, Twillick, Indian Arm, Western Arm, West Brook, South Brook, Burnt Berry, Indian River, Point Leamington, in fact almost all rivers in this area have large ponds at their head waters. All these ponds, with the exception of Indian River Pond already have logging dams at their outlet.

Under the management system as used in Scotland small dams (3 to 4 feet high) are located at such sites and incorporate a regular overflow plus a manual sluice gate. Sluice gates are closed in the fall and the water level allowed to rise so that by spring the water has backed up in the pond by 3 - 4 feet. These sluices are kept closed until salmon shoals hit the coast, regardless of how low the river level becomes due to dry weather conditions. When the sluice gates are partially opened it is possible to maintain, even from a small pond, a 3- 6" increase in water level in the river for over a month, thus allowing salmon to ascent the river to the headwaters in relative safety.



This system decreases the opportunity of poaching and inshore netting, increases the quality of angling, allows a larger proportion of salmon to reach the spawning area, increases the chances of the larger fish reaching the spawning grounds and would therefore result in an increased number of offspring the following year.

The creating of these dams at the headwaters also facilitates the catching and stripping of mature fish for hatchery management programs or could be used to enhance the use of practices such as the Whitlock box to protect newly hatched fry. I feel that immediate spawning areas should be closed to angling at all times and should add that the above mentioned dams can easily be constructed with no holding water below them so as to ensure fish do not congregate below them and thus increase the poaching risk.

All of the previously mentioned rivers could employ the system for a very modest investment. Greater protection could also be provided to salmon while ascending rivers by the creation of more "holding" water. I have seen pools created in apparently shallow waters by simply filling wire mesh or nylon mesh "bags" with gravel and small boulders to form croys. These concentrate current and after winter floods pools are gouged out where none existed before. The effort is, however, greater but again relatively cheap and simple to implement.

I feel that the present proposals to close rivers until stocks recover and to further limit the daily angled catch are negative and will only postpone the eventual disappearance of the Atlantic Salmon from Newfoundland waters. A ban on angling can only lead to increased poaching and I am confident that sport anglers are now acutely aware of the plight of their quarry and are completely intolerant of any illegal fishing practices.

June 10, 1979

Inland Salmon  
Freshwater & Anadromous Fisheries Management Program  
Fisheries & Oceans  
P.O. Box 5667  
St. John's, Newfoundland

Dear Sir:

Your questionnaire, however valid, does not allow sufficient space to include my comments on a question I feel so strongly about. In response to your first question, the answer is a definite "NO", the Atlantic Salmon resource management program appears to be influenced primarily by politics, with little or no regard for the economical or ecological aspects. Question two can be summed up as follows:

- a. Halt commercial Salmon fishing in Newfoundland;
- b. Institute a policy of returning by-catches to the water "dead or alive". The recent by-catch of "dead" salmon in cod traps in Salmonier are indicative of this wide-spread disregard by commercial fishermen for the plight of the species;
- c. Increase the numbers and patrolling activity of Wardens, having them also inspect returning commercial fishing boats for infractions. It seems ludicrous to charge one angler for jigging one salmon when a commercial boat may pick up a by-catch of hundreds;
- d. Institute the New Brunswick style "Crown Reserve Waters" whereby anglers compete, by lottery, for three day stints on certain waters. The income (\$5/day/angler) more than pays for the ratio of one Warden per two six-man stretches. Excess funds garnered in this fashion should be earmarked for river improvement, hatchery and stocking programs;
- e. Increase the license fee for residents to \$10.00 immediately and reduce the bag limit to 3 fish per day, and
- f. Increase the fee, and step up promotion for non-resident anglers, whose contribution to the local economy (for fish previously caught by commercial interests) would far exceed the economic benefit presently provided by commercial interest.

The historical record in Maine, where pollution, dams and greedy commercial interests resulted in the near extinction of *Salmo Salar* until anglers banded together to finance the species gradual return, indicates that anglers are willing to support, both morally and financially, any program of Salmon enhancement, whereas commercial fishermen "lose all interest" once a species has slipped below a profitable level.

As an avid sportfisherman and Biologist, with some training in environmental economics, I feel that the overwhelming criteria for Salmon production and harvesting should be to maximize benefits for the greatest number of citizens. The attached paper and associated references indicate that only in the Canadian Maritimes do we continue to harvest a resource in the least economic fashion, with benefits accruing to only a small portion of the population.

