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**Proceedings of the Newfoundland and
Labrador Region Salmonid Stock
Assessment Meeting**

**Compte rendu de la réunion
d'évaluation des stocks de
salmonidés de la Région de Terre-
Neuve et du Labrador**

**November 8, 2005
80 East White Hills Road, Northwest
Atlantic Fisheries Centre, St. John's,
NL**

**Le 8 novembre 2005
80 East White Hills Road, Centre des
pêches de l'Atlantique Nord-Ouest, St.
John's, T.-N.-L.**

**Meeting Chairperson
C. Bourgeois**

**Président de réunion
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TABLE OF CONTENTS

Summary	v
Introduction	1
Summary of Salmon Stock Status	2
Overview of Presentations	4
Summaries of Information Presented	5
Acknowledgements	9
Appendix 1: Agenda - November 2004 Meeting	10
Appendix 2: List of Participants	11
Appendix 3: Summary Sheets	12

SUMMARY

The thirteenth annual Salmonid Stock Assessment Meeting for the Newfoundland and Labrador Region was held in St. John's, Newfoundland and Labrador, November 8, 2005. The general status of Newfoundland and Labrador salmon stocks, based on scientific data compiled during 2005 was presented. The main focus of the scientific data was on the trends in adult salmon returns in Newfoundland and Labrador, Newfoundland smolt production along with harvests of salmonids in Labrador. In addition, the results of an adjusted freshwater production method used in determining conservation limits for Labrador Atlantic salmon rivers were discussed. Other information presented were Marine Conditions in Newfoundland and Labrador, and also a review of Newfoundland aquaculture site locations. Local knowledge and experiences of anglers and aboriginal fishers were shared throughout the assessment meeting. This proceedings report summarizes each of the various presentations and discussions and provides an account of the general status of Atlantic salmon stocks in Newfoundland and Labrador in 2005. The agenda of the meeting, a list of attendees and detailed summary sheets for the various salmon stocks assessed are appended.

SOMMAIRE

La treizième réunion annuelle d'évaluation des stocks de salmonidés de la Région de Terre-Neuve et du Labrador a été tenue à St. John's, Terre-Neuve et Labrador, le 8 novembre 2005. Le présent compte rendu, qui expose l'état général des stocks de saumons de Terre-Neuve et du Labrador, s'appuie sur les données scientifiques compilées en 2005. Ces données sont surtout axées sur les tendances relatives aux remontes de saumons adultes à Terre-Neuve et au Labrador, sur la production de saumoneaux à Terre-Neuve ainsi que sur les prélèvements de salmonidés au Labrador. Ce rapport traite aussi des résultats d'une méthode ajustée de la production en eau douce que l'on a utilisée pour établir des limites de conservation pour les cours d'eau du Labrador fréquentés par le saumon atlantique. Le compte rendu contient également des renseignements sur les conditions marines observées à Terre-Neuve et au Labrador ainsi qu'un examen des sites aquicoles recensés à Terre-Neuve. Les connaissances et les expériences des pêcheurs à la ligne et des pêcheurs autochtones locaux ont été partagés durant toute la réunion. Le présent compte rendu résume chacun des exposés et des discussions et dresse un bilan de l'état général des stocks de saumons atlantiques dans les eaux de Terre-Neuve et du Labrador en 2005. Le lecteur trouvera aussi en annexe l'ordre du jour de la réunion, la liste des participants et des résumés détaillés pour les divers stocks de saumon évalués.

INTRODUCTION

The thirteenth annual Newfoundland and Labrador Region Salmonid Stock Assessment meeting was held at the Northwest Atlantic Fisheries Centre in St. John's, Newfoundland and Labrador, November 8, 2005, to review information on the status of Newfoundland and Labrador Atlantic salmon stocks in 2005. In addition to Department of Fisheries and Oceans (DFO) scientific staff, the meeting was also attended by invited participants: DFO Policy and Economics Branch, Scientist Emeritus (DFO), Government of Newfoundland and Labrador Department of Fisheries and Aquaculture, Newfoundland and Labrador Wildlife Federation, Salmon Association of Eastern Newfoundland and Labrador, Salmonid Council of Newfoundland and Labrador, Labrador Métis Nation, Miawpukek First Nation, Labrador Inuit Association, Department of Biology (MUN), Federation of Newfoundland Indians, and Outdoor Rights and Conservation Association (ORCA).

This report provides information concerning the status of Atlantic salmon stocks in Newfoundland and Labrador in 2005. Summaries of each of the presentations with comments and recommendations are given. Summary sheets of the various salmon stocks assessed are appended.

Complete details of the data and methodologies used in the assessments are published in the Department of Fisheries and Oceans Canadian Science Advisory Secretariat Research Document series, while the overall report on the status of stocks is contained in Science Advisory Report 2005/052, Stock Assessment of Newfoundland and Labrador Atlantic Salmon which is available at www.dfo-mpo.gc.ca/csas.

A copy of the agenda for the November 2005 meeting is provided in Appendix 1. Participants attending the assessment sessions, in whole or in part are listed in Appendix 2. Furthermore, individual stock status assessments are provided in the summary sheets in Appendix 3.

SUMMARY OF SALMON STOCK STATUS

SUMMARY

Labrador (SFA 1-2 & 14B)

- In Labrador, returns of small salmon increased substantially in 2005.
- While better overall in 2005, returns of large salmon still appear to be lower than prior to the closure of the commercial fishery.

Labrador SFA 1

- There is concern for the salmon stock at English River in that salmon may not be able to maintain a viable population on this river.

Newfoundland (SFAs 3-14A)

- In Newfoundland, with the exception of most monitored rivers in Notre Dame and Bonavista Bays, there was a general decline in returns of small and large salmon compared to 2004 and the moratorium means.
- Abundance of salmon during the moratorium years continues to be lower than prior to the closure of the commercial fisheries.
- There is concern with the low level of large salmon spawners in the Bay St. George area (SFA13).

Northeast and eastern Newfoundland (SFAs 3-8)

- In spite of greatly increased spawning in 1992-1996, subsequent returns of small and large salmon are still low.
- Conservation requirements were achieved in three (Campbellton, Gander and Middle Brook) of six assessed rivers.
- Exploits River, Terra Nova River and Northwest River (Port Blandford) have yet to achieve conservation requirements due mainly to habitat expansion.
- Campbellton River and Middle Brook have met or exceeded conservation requirements in each year of assessment during the commercial salmon fishery moratorium.

- Gander River has met or exceeded conservation requirements in only seven of the last 14 years.
- The lower Exploits River has achieved conservation requirements ten out of 14 years. The number of spawners in the middle Exploits has increased since the moratorium while the number of spawners in the upper Exploits has declined since 1997.
- Northwest River (Port Blandford) had record returns in 2005.

Southern Newfoundland (SFA 9-11)

- Returns of large salmon fell by 40 to 60% in three monitored rivers by comparison with 2004. Conservation requirements were only met at Northeast Brook (Trepassey).

Southwest Newfoundland (SFA 12 -13)

- Decreases in returns of small salmon were observed in five out of the seven rivers assessed in SFA 13 in 2005 relative to 2004. Returns of large salmon were similar or lower than 2004 in five of the seven rivers.
- Total population sizes remain low and in particular 2SW maiden salmon.
- Conservation requirements were only achieved in two out of seven rivers assessed.
- Declines in % conservation met from 2004 in 2005 ranged from 34-52% for Highlands, Crabbes, Middle Barchois and Robinsons rivers.

Northwest Newfoundland (SFA 14A)

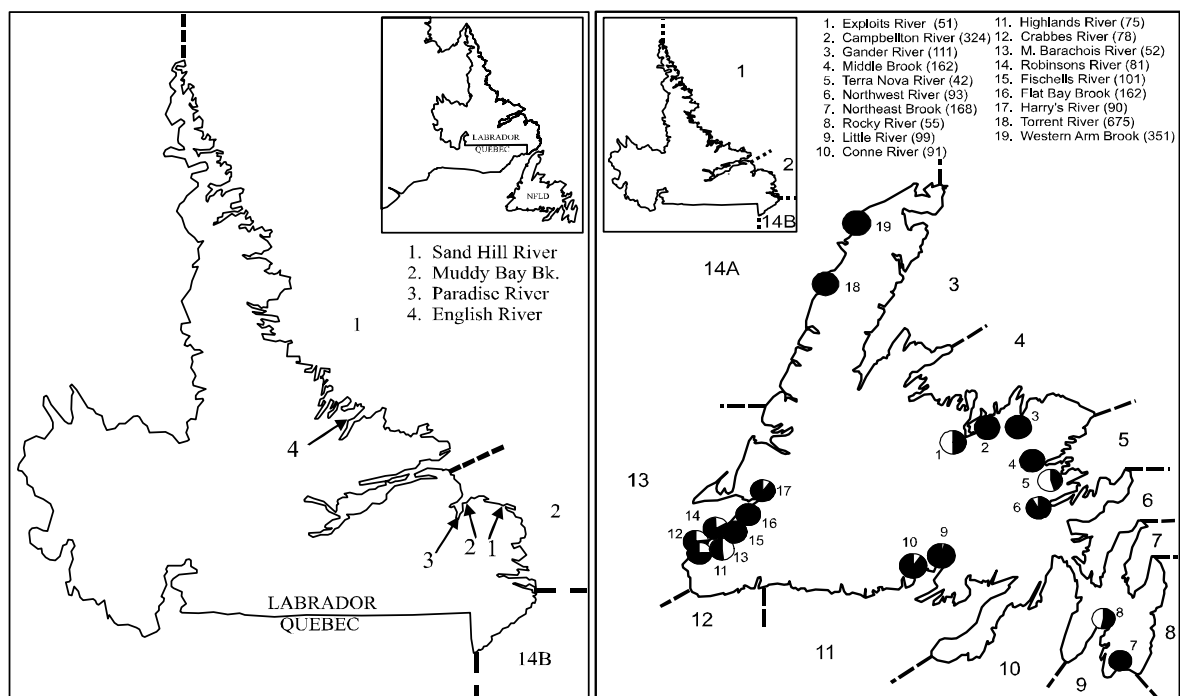
- Decreases in returns of small salmon were observed in both rivers assessed in SFA 14A.
- Conservation requirements were exceeded in the assessed rivers in 2005.

OVERVIEW OF PRESENTATIONS

There were a total of 8 presentations given, three being information items. One presentation concerned Newfoundland salmon stocks and smolt production and three were concerning Labrador salmon stocks. Labrador salmon stock returns and environmental conditions, an update on the harvest of salmonids in various fisheries in Labrador, and an update on the egg deposition levels for Labrador Rivers were presented and have been summarized in this report. There was concern in previous years in the mortalities occurring at sea and possible changes in environmental conditions. This year a presentation was given on marine conditions in Newfoundland and Labrador. Information was provided concerning aquaculture and a review of site location was given. The effect that farmed salmon could pose on wild salmon was discussed. Information was again provided on the findings in experimental ponds in Newfoundland. Furthermore, there was a discussion on the practice of Stewardship Management Plans and the continuation of stewardship in future years.

Nineteen (19) salmon stocks were assessed relative to conservation requirements in insular Newfoundland (plus three sections for Exploits River); four Labrador stocks (English River; Muddy Bay Brook, Paradise River and Sand Hill River) were not assessed relative to conservation. Results of these individual rivers are provided in the Summary Sheets (Appendix 3).

The following maps illustrate the Salmon Fishing Areas of the Newfoundland and Labrador Region, the individual rivers assessed and percent of conservation egg requirements (in brackets) achieved in 2005.



SUMMARIES OF INFORMATION PRESENTED

1. Status of Atlantic Salmon (*Salmo salar* L.) Stocks of Insular Newfoundland, (SFAs 3-14A), 2005

Presenter: M. F. O'Connell, Department of Fisheries and Oceans Canada

Authors: M. F. O'Connell, J. B. Dempson, D. G. Reddin, C. E. Bourgeois, T. R. Porter, N. M. Cochrane, and D. Caines

Summary: The commercial Atlantic salmon fishery moratorium, implemented in insular Newfoundland in 1992, entered its 14th year in 2005. Small salmon returns to rivers on the northeast and east coasts in 2005 generally improved or remained similar relative to 2004 and the moratorium means. Returns to south coast (SFA 11), Bay St. George, and northwest coast rivers declined from 2004 and in most instances also declined from the means. With the exception of Notre Dame Bay (SFA 4), there was an overall decline in returns of large salmon in 2005 compared to 2004, accompanied by decreases from the means in half these cases. Conservation egg requirements were met or exceeded in ten out of 23 rivers or sections of rivers in 2004. In 2005, 57 (36%) out of 158 scheduled rivers in insular Newfoundland were closed to angling for varying periods of time due to low water levels and high water temperatures. Sea survival in 2005 decreased from 2004 for all rivers except Campbellton where the highest survival on record (11.4%) occurred; the lowest survival (2.5%) occurred in Conne River. Smolt production in 2005 decreased from 2004 in four out of five rivers, with Rocky River being the only one to show an increase. Where smolt production declined in 2005, returns of small salmon in 2006 are expected to be lower unless there is a compensatory increase in marine survival.

Comments:

- There are many different factors that are effecting the population which may be more important some years more than others.
- Smolt production does not necessarily provide higher returns the next year.
- There is a lack of information on marine survival.
- Climate affects the productivity of salmon (ex. Low water)
- The Humber River bag limit should be reduced to 5 fish and Exploits be increased to 5 fish, to level out angling pressure.

Recommendations:

2. Harvests of salmonids in various fisheries and returns to rivers in Labrador, 2005 / Conservation limits for Labrador Atlantic salmon rivers – Adjusted freshwater production method

Presenter: *D. G. Reddin & J. B. Dempson, Department of Fisheries and Oceans*

Co-author: *R. J. Poole, Department of Fisheries and Oceans*

Summary: In 2005, angling and food fishery catches were recorded, and returns to four counting fences were enumerated. Water flows in 2005 were above average early in the spring dropping in early summer to below average remaining low well into the fall. Landings in the four fisheries for Food, Social and Ceremonial purposes totalled 32 tonnes in 2004 (figures are unavailable for 2005). In Northern Labrador (SFA 1), angling catches increased for small while declining for large salmon. Effort increased and overall catch rates declined compared to those of 2005. In Southern Labrador, landings of small and large salmon were higher than in 2003 while overall effort increased and catch rate remained comparable to 2004.

A total of 337 small and 28 large salmon returned to English River in 2005. Returns of small were 502% higher than in 2004 while large were 12% higher. For Southwest Brook (Paradise River), a total of 858 small and 54 large salmon returned to the river in 2005. Returns of small were 40% higher than in 2004 while large remained unchanged compared to values in 2004. For Muddy Bay Brook (Dykes River), a total of 520 small and 20 large salmon returned to the river in 2005. Returns of small salmon were 15% higher than in 2003 while large were 29% lower. For Sand Hill River, a total of 7,007 small and 875 large salmon returned to the mainstem of the river (exclusive of Northwest Tributary) in 2005. Returns of small increased by 75% over those of 2004 while large were 45% higher than in 2004. When landings in the former commercial fishery are taken into account, overall production appears to be growing although for large salmon is still lower than prior to the closure of the commercial fishery in 1998.

An alternate approach to derive preliminary conservation spawning requirements for Labrador salmon rivers was illustrated. The approach modifies the conventional method currently used for insular Newfoundland by using known measured smolt production from Sand Hill River adjusted in relation to observed changes at Western Arm Brook; the closest river to Sand Hill with a long time series of smolt production data. Smolt numbers were allowed to vary from 46,000 – 86,000 while egg-to-smolt survival varied from 0.33 to 1.30%. Using a uniform distribution, a distribution of number of smolts per unit was obtained as well as a distribution of required number of eggs per unit. The median value for the number of eggs per unit habitat was 152 (95% CL = 80 to 370), a value 37% less than the 240 eggs per unit used for fluvial habitat in insular Newfoundland. Various approaches were presented to reconcile input parameter values. Owing to uncertainty and lack of baseline data specific to Labrador rivers, it was concluded that conservation requirements for Sand Hill River could be less than those estimated had the Newfoundland model been applied. Other methods being examined are stock and recruit methods developed by Myers (hockey stick model) and

Beverton-Holt stock and recruit methodology. These provide estimates of egg deposition ranging from around 150 to 180 eggs per m².

Comments:

- There continues to be a great deal of concern about the status of salmon stocks in Labrador rivers particularly in Lake Melville where there is high fishing effort in the food fisheries. Elsewhere, food and angling fisheries landings and particularly hook-and-release fishing continue to increase in Labrador. There have also been some changes in Management Plans that take into account increased effort. It is important to note that the food fisheries have moved closer to the communities than was the case during commercial fishing. Hook-and-release fishing is 75% of the angling in Labrador and if mortality rates are higher than the assumed 10% it could impact on spawning escapement. Where angling is frequently from a boat and where rivers descend quickly from higher mountain ranges, it is possible for hook-and-release fishing to result in higher mortality rates than the assumed value of 10%.
- Record landings occurred in FSC fisheries in Labrador in 2004.
- Angling catch statistics come from camp logbooks for northern Labrador and a mix of license stub return data and camp data in Southern Labrador. However, it is important to note that license stub data from 2005 is not yet available for southern Labrador. Current year estimate for southern Labrador comes from camp data for Eagle and Sand Hill rivers compared to previous years License Stub Return data.
- It appears that 3 out of the 4 rivers have achieved the 240 egg per m² reference conservation level in 2005.

Recommendations:

1. DFO should continue to support the assessment projects in Labrador at least at current levels. A river should be monitored for smolt and adults similar to some rivers in Newfoundland.
2. A stock inventory project should be initiated for a river(s) in Lake Melville where stock status remains largely unknown.
3. There should be a project in Labrador rivers to determine hook-and-release mortality rates taking into consideration the use of boats and large size of the rivers.
4. There should be habitat data collected in Labrador to provide baseline information when determining an appropriate reference level for these rivers.
5. Efforts should continue to refine the conservation levels presented for Labrador such that they can be finalized.

3. Marine Environmental Conditions-update for 2005

Presenter: *Eugene Colbourne, Department of Fisheries and Oceans Canada*

Summary: The North Atlantic Oscillation (NAO) index for 2005 was above normal. However, arctic outflow to the Northwest Atlantic was weaker-than-normal as the most significant pressure anomalies were shifted to the east. Air temperatures have been warmer than normal for 6 out of the past 9 months up to September of 2005. Data on sea ice extent on the Newfoundland and Labrador Shelf for 2005 are not yet available. However, preliminary analysis indicates less-than-normal sea-ice extent and duration during the winter and spring of 2005.

Ocean temperatures at Station 27 off St. John's Newfoundland for the first eight months of 2005 were above normal with surface values during the summer (August) comparable to the record highs of 2004. Oceanographic data collected during the spring and summer of 2005 on the Newfoundland Shelf generally showed above normal temperatures, particularly on the Grand Bank and off the south coast of Newfoundland. Observations from the mid-summer oceanographic survey indicated that the area of the cold-intermediate-layer (CIL <0°C) shelf water increased slightly over 2004 but was below normal for the 11th consecutive year off Cape Bonavista. In general, water temperatures on the Newfoundland and Labrador Shelf remained above normal during 2004 and the first half of 2005, continuing the warm trend that started during the late 1990s.

Preliminary analyses have shown strong associations between marine environmental conditions and marine survival of salmon, adult salmon run timing and abundance of both large and small salmon. For example, salmon run-times are significantly correlated with both sea-surface temperature in eastern Newfoundland waters and spring sea-ice cover with later run-times associates with cold conditions and extensive ice cover. There is insufficient information at present to quantify these relationships. However, based on historical data the current marine environment in Newfoundland and Labrador waters is favourable for survival of Atlantic salmon.

Comments:

- There should be a cross reference between environmental data and seal data.
- The distribution and size of capelin in Labrador improved in 2004 and may be related to temperature.
- There is an increase in the number of ring seals and Harps seals to some extent.

Recommendations:

ACKNOWLEDGEMENTS

Thanks are extended to all who participated at the November meeting, particularly those from outside DFO who gave up their own time to attend and contribute to the sessions. Dale Richards kindly assisted with co-ordinating the meeting.

APPENDIX 1

Agenda
Atlantic Salmon 2005 Stock Status Update

E.B. Dunne Boardroom, NWAFC
8 November 2005

0900 - Introduction (Bourgeois)

0915 - Data Review:

- Returns to Newfoundland Rivers, smolt production and marine survival trends (O'Connell)
- Returns to Labrador Rivers (Reddin)
- Marine Conditions – NL (Colbourne)

Coffee Break (1030)

- Harvests of salmonids in various fisheries in Labrador (update) (Reddin)
- Egg deposition levels for Labrador Rivers (update) (Reddin & Dempson)

1230 - 1300 Lunch

1300 -Review of Aquaculture Site Locations (Salmonids) (Perry)

Coffee (3:00)

- Stewardship Management Plans (C. Bourgeois)
- Experimental Ponds (R. Knoechel)
- Review Stock Status report
 Manuscripts for upgrade to Research Documents
- Other Business

APPENDIX 2

List of individuals who participated, in whole or in part, at the November 2005 salmonid stock assessment meetings.

NAME	AFFILIATION & ADDRESS	PHONE	FAX	E-MAIL
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APPENDIX 3

Summary Sheets

STOCK: Muddy Bay Brook (Dykes River SFA 2)					213 km ²	
Year	2002	2003	2004	2005 ²	MIN ¹	MAX ¹
Total returns to river						
Small	106	394	454	520	106	520
Large	11	31	28	20	11	31
Recreational harvest (small salmon)						
Retained	9	13	30	1	9	30
Released	4	2	17	0	0	17
Recreational harvest (large salmon)						
Retained	0	0	0	0	0	0
Released	2	0	0	0	0	2
Spawners						
Small	106	394	454	519	106	519
Large	11	31	28	20	11	31
¹ Min and max are for the period of record except recreational harvest is since 1994.						
² Preliminary						
Note: Any changes from previous years are due to the updating of preliminary data.						

Recreational catches: catches are from License stub return data - no way of knowing if upstream or downstream of fence.

Data and methodology: complete counts of salmon were obtained at a fish counting fence. Counts were adjusted in 2003 for fence overshoots.

State of the stock: returns of small salmon have increased from 2002 to 2005, whereas, large salmon returns increase from 2002 to 2003 but decreased in 2004 and 2005

Forecast: No forecast available.

STOCK: Southwest Brook (Paradise River SFA 2)		385 km ²							
CONSERVATION REQUIREMENT:									
Year	1998	1999	2001	2002	2003	2004	2005²	MIN ¹	MAX ¹
Total returns to river									
Small	110	331	323	235	158	615	858	110	858
Large	4	43	32	34	16	54	54	4	54
Recreational harvest (small salmon)									
Retained	0	0	0	0	0	0	0	0	0
Released	0	0	0	0	0	0	0	0	0
Recreational harvest (large salmon)									
Retained	0	0	0	0	0	0	0	0	0
Released	0	0	0	0	0	0	0	0	0
Spawners									
Small	110	331	321	231	156	615	858	110	858
Large	4	43	32	34	16	54	54	4	54
¹ Min and max are for the period of record except recreational harvest is since 1994. ² Preliminary Note: Any changes from previous years are due to the updating of preliminary data and biological characteristics information.									

Recreational catches: catches are not recorded separately for Southwest Brook which is a tributary of Paradise River.

Data and methodology: complete counts of salmon were obtained at a fish counting fence. Counts were adjusted in 1998, 2003 and 2005 for fence overshoots.

State of the stock: 2005 returns show an increase for small over previous years while large remain the same as 2004

Forecast: No forecast available.

STOCK: Sand Hill River (SFA 2)		1155 km²							
CONSERVATION REQUIREMENT:									
Year	1994	1995	1996	2002	2003	2004	2005 ²	MIN ¹	MAX ¹
Total returns to river									
Small	2180	2796	3319	3141	3171	4008	7007	2038	7007
Large	730	560	414	561	627	604	875	138	875
Recreational harvest (small salmon)									
Retained	279	289	321	155	212	109	177	109	321
Released	326	340	702	679	608	647	925	326	925
Recreational harvest (large salmon)									
Retained	29	28	20	1	7	1	5	0	28
Released	7	14	36	68	60	86	104	0	104
Spawners									
Small	1868	2473	2928	2918	2898	3934	6735	1819	6735
Large	700	531	390	553	614	595	860	136	860
¹ Min and max are for the period of record except recreational harvest which is since 1994.									
² Preliminary									
Note: Any changes from previous years are due to the updating of preliminary data and biological characteristics information.									

Recreational catches: catches are from angling camps on Sand Hill River and observations of counting fence staff.

Data and methodology: counts of salmon were obtained at a fish counting fence. Total river returns were adjusted for periods of non reporting for all years except 2005

State of the stock: numbers of both small and large were up significantly in 2005

Forecast: No forecast available.

STOCK: English River (SFA 1)		Accessible drainage area=125 km ²							
Year	1999	2000	2001	2002	2003	2004	2005	MIN ¹	MAX ¹
Total returns to river									
Small	59	367	224	190	108	56	337	56	367
Large	48	15	41	31	19	25	28	15	48
Recreational harvest (small salmon)									
Retained	5	8	5	1	0	2	0	0	15
Released	0	0	0	0	0	0	0	0	0
Recreational harvest (large salmon)									
Retained	2	0	0	0	0	0	0	0	2
Released	0	0	0	0	0	0	0	0	0
Other Removals									
Small	0	0	10	5	21	0	0	0	21
Large	0	0	2	2	2	0	0	0	4
Spawners									
Small	54	359	209	184	87	54	337	54	359
Large	46	15	39	29	17	25	28	15	46
¹ Min and max are for the period of record.									
² Preliminary									
Note: Any changes from previous years are due to the updating of preliminary data and biological characteristics information.									

Recreational catches: observations from counting fence workers.

Data and methodology: complete counts of salmon were obtained at fish counting fence. Total returns to river for 2003-2005 include fish counted below fence on swim-thru before removal.

State of the stock: returns have increased from previous years.

Forecast: No forecast available.

STOCK: Exploits River		Drainage area: 11602 km ²						
CONSERVATION REQUIREMENT: 95.9 million eggs (equivalent to 56,670 small salmon) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha.								
Year	2000	2001	2002	2003	2004*	2005*	MIN	MAX
Total returns:								
Small	12063	19370	15589	29,198	27093	27832	4470	29956
Large	684	1347	890	1,336	949	1966	89	2236
Recreational harvest (small salmon)								
Retained	1467	2430	2730	3633	2647	2581	577	4407
Released	2899	2967	3551	2975	2037	2886	1145	5672
Recreational harvest (large salmon)								
Retained	0	0	0	0	0	0	0	83
Released	252	289	331	198	227	259	0	350
Other Removals	40	59	51	62	11	24	0	117
Broodstock removal	0	0	0	0	0	0	0	5111
Spaw ners	10919	17902	13310	26522	25158	26878	2326	30559
Fry Stocked	0	0	0	0	0	0	0	6416567
Egg conservation requirement								
% met	21	34	25	51	48	51	6	69
Low er	56	91	56	141	136	99	26	215
Middle	16	27	23	39	37	51	2	43
Upper	2	5	3	7	2	4	0	125
Min and max are for the period of record since 1974.								
* Preliminary								

Data and methodology: There are 35 million m² units of fluvial habitat and 34,000 ha of lacustrine habitat. Conservation egg requirements are to come from small salmon. Previous fry releases are backcalculated to eggs for % of conservation egg deposition achieved in areas stocked. Total returns to the river are based on the count at Bishop Falls fishway plus angling below the fishway.

State of Stock: Overall returns to the Exploits River, have improved during the moratorium years; however returns to the upper section of the watershed are extremely low and all efforts should be made to increase escapement to this section of the watershed.

Forecast : No quantitative forecast available

STOCK:		Campbellton River (SFA 4)		Drainage area: 296 km ² (accessible)						
CONSERVATION REQUIREMENT: 2.916 million eggs (~ 1,480 small salmon) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha										
Year	1998	1999	2000	2001	2002	2003	2004 ²	2005 ²	MIN ¹	MAX ¹
Total returns to river										
Small	3275	3076	1798	2151	1974	2219	2726	3746	1798	4001
Large	402	493	208	119	123	152	161	276	119	560
Recreational harvest (small salmon)										
Retained	337	433	226	148	136	170	242	184	13	365
Released	209	242	176	29	57	20	73	71	20	372
Recreational harvest (large salmon)										
Retained	-	-	-	-	-	-	-	-	0	0
Released	4	46	51	9	6	0	7	15	0	51
Precocious post smolts										
	51	83	208	228	253	147	365	364	13	365
Spawners										
Small	2866	2536	1345	1772	1579	1900	2112	3191	1346	3675
Large	401	491	203	118	122	152	160	275	118	557
Egg conservation requirement										
% met	315	312	152	148	138	191	211	324	138	324
Smolt count										
	50441	47256	35596	37170	32630	35089	32780	30123	30123	62050
% Sea survival (corrected) (Adult return year)										
	4.88	5.03	3.66	5.35	5.14	6.02	7.27	9.90	2.25	9.90
¹ Min and max are for the period of record since 1993.										
² Preliminary										
³ Recreational catch for 2005 was calculated by using the mean from 2000 to 2004.										

Note: Any changes from previous reports are due to the updating of preliminary data and biological characteristics information.

Recreational catches: Using the mean recreational catch from 2000 to 2004 a predicted total of 184 small salmon were retained in 2005 and 71 released.

Data and methodology: Smolts were enumerated at a counting fence. Returning adults salmon are enumerated at a fish counting fence with a video camera system. A hook-and-release mortality rate of 10 % was used in the calculations of spawning escapements for the years 1993-04. Recreational data for 1997-03 were from the License Stub Return System in 2004 figures are preliminary and for 2005 the mean from 2000-04 was used. Sea survival is corrected to exclude previous spawners in the upstream migration. Previous spawners were estimated patterns in 1999 from survival patterns in previous years. The egg conservation requirement for years of low sample numbers from the recreational fishery was calculated using the average whole weight of females and percent female by combining samples from 1993 to 2005.

State of the stock: Conservation requirements were met from 1993 to 2005.

Forecast: No forecast available.

STOCK:		Gander River (SFA 4)		Drainage area:		6,398 km ²						
CONSERVATION REQUIREMENT:		46.211 million eggs (21,828 small salmon) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha										
Year	1996	1997	1998	1999	2000	2001	2002	2003	2004 ²	2005 ²	MIN ¹	MAX ¹
Total returns to river												
Small	24191	10637	19060	18742	14074	12517	13444	13657	18521	17828	6745	26205
Large	1753	1883	3649	4815	1942	1682	1898	1853	2668	2461	473	4815
Recreational harvest (small salmon)												
Retained	4537	1381	2737	2429	1318	1865	1726	1735	1444 ²	1618 ²	1318	4537
Released	3323	1522	2531	848	684	756	678	664	730 ²	702 ²	664	3323
Recreational harvest (large salmon)												
Retained	-	-	-	-	-	-	-	-	-	-	-	-
Released	685	236	284	215	110	180	184	65	92 ²	126 ²	65	685
Spawners												
Small	19322	9103	16070	16228	12756	10471	11650	11787	16495	16140	5565	24739
Large	1685	1860	3621	4794	1931	1735	1880	1911	2648	2449	473	4794
Egg conservation requirement												
% met	115	61	110	121	86	84	91	96	114	111	36	128
¹ Min and max are for the period of record since 1984 except recreational harvest is since 1994. ² Preliminary Note: Any changes from previous years are due to the updating of preliminary data and biological characteristics information.												

Recreational catches: The number of small salmon retained in 2005 was 1618 and the number released was 702. Angling catches for 2005 are the means for the period 2000-2004.

Data and methodology: Complete counts of salmon were obtained at a fish counting fence during 1989-99, and have historically been counted at a fishway located on a tributary, Salmon Brook. Returns to the entire Gander River for 2000 - 2005 were estimated from relationships between counts at the Salmon Brook fishway and total returns to the counting fence for the period 1989-1999. Recreational fishery data for 1994-2005 are from the License Stub Return System; data for 2004 and 2005 are preliminary. Data for large salmon for 1997 are incomplete. A hook-and-release mortality of 10% was used in the calculation of total returns and spawning escapements for the years 1993-2005.

State of the stock: Conservation requirement in terms of eggs was achieved in 2005 for the second consecutive year. In terms of small salmon, conservation requirement was met only in 1993. Conservation egg requirement was achieved in seven of the 14 moratorium years. Using Salmon Brook as an indicator of returns to the entire river, it is likely that returns of small salmon of a magnitude similar to or greater than those in 1992-2005 occurred in pre-moratorium years.

Forecast: No forecast available.

STOCK: Middle Brook (SFA 5) Drainage area: 276 km²											
CONSERVATION REQUIREMENT: 2.3 million eggs (~ 1,012 small salmon) calculated as fluvial area x 2.4 eggs/m² and lacustrine area x 368 eggs/ha											
Year	1997	1998	1999	2000	2001	2002	2003	2004²	2005²	MIN¹	MAX¹
Total returns to river											
Small	1352	2625	1948	1749	1525	916	1183	1504	1567	626	2625
Large	262	196	130	190	62	69	74	88	62	13	262
Recreational harvest (small salmon)											
Retained	163	275	180	112	391	117	97	167 ²	177 ²	84	391
Released	54	73	83	25	458	28	29	50 ²	118 ²	19	458
Recreational harvest (large salmon)											
Retained	-	-	-	-	-	-	-	-	-	-	-
Released	9	8	15	23	13	1	2	2 ²	8 ²	2	31
Spawners											
Small	1184	2342	1760	1635	1088	796	1083	1332	1378	461	2342
Large	261	195	129	187	61	69	74	88	61	13	261
Egg conservation requirement											
% met	193	301	222	217	132	101	134	164	162	49	301

¹ Min and max are for the period of record since 1984 except recreational harvest is since 1994.
² Preliminary
Note: Any changes from previous years are due to the updating of preliminary data and biological characteristics information.

Recreational catches: A total of 177 small salmon was retained in 2005 and 118 were released. Angling catches for 2005 are the means for the period 2000-2004.

Data and methodology: Complete counts are available from a fishway located on the lower river. Recreational fishery data were obtained from the License Stub Return System; data for 2004 and 2005 are preliminary. A hook-and-release mortality of 10% was used in the calculation of total returns and spawning escapements for the years 1993-2005.

State of the stock: Conservation requirement in terms of eggs and small salmon was met for all years since the moratorium started in 1992 except for small salmon (79%) in 2002. Egg deposition was below conservation requirement for pre-salmon moratorium years 1985-1991. Counts of small salmon similar to or higher than those observed during the moratorium years occurred in pre-salmon moratorium years. The 2005 count of 1421 small salmon was 4% higher than in 2004, 6% lower than the 1992-1996 mean and 2% lower than the 1997-2004 mean. The 2005 count of 62 large salmon was 30% lower than in 2004, and 44% and 54% lower than the 1992-1996 and 1997-2004 means respectively.

Forecast: No forecast available.

STOCK:		Terra Nova River (SFA 5)				Drainage area:				1,883 km ²	
CONSERVATION REQUIREMENT:		14.3 million eggs (~ 7,094 small salmon) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha									
Year	1997	1998	1999	2000	2001	2002	2003	2004 ²	2005 ²	MIN ¹	MAX ¹
Total returns to river											
Small	1732	1868	1892	1629	2261	1435	2271	2999	2392	1127	3050
Large	528	394	344	232	330	271	330	397	314	56	637
Recreational harvest (small salmon)											
Retained	389	187	120	146	254	146	105	114 ²	153 ²	105	645
Released	221	365	229	464	312	142	133	236 ²	257 ²	133	464
Recreational harvest (large salmon)											
Retained	-	-	-	-	-	-	-	-	-	-	-
Released	13	66	10	71	4	7	10	4 ²	19 ²	4	71
Broodstock removal ³											
Small	352	270	239	132	254	0	0	0	0	64	352
Large	29	0	3	5	21	0	0	0	0	0	44
Spawners											
Small	1063	1425	1542	1425	1786	1311	2179	2893	2253	815	2893
Large	497	387	340	224	309	271	329	397	312	56	588
Egg conservation requirement											
% met	31	33	33	27	36	28	42	55	42	14	55

¹ Min and max are for the period of record since 1984 except recreational harvest is since 1994.
² Preliminary
³ In 1994-2001, a number of adults were removed as broodstock for an incubation facility for subsequent fry stocking back to Terra Nova River above Mollyguajeck Falls; these adults were deducted from spawning escapements and the calculation of percent of conservation requirement presented above.
Note: Any changes from previous years are due to the updating of preliminary data and biological characteristics information.

Recreational catches: A total of 153 small salmon was retained in 2005 and 257 were released. Angling catches for 2005 are the means for the period 2000-2004.

Data and methodology: Counts are available from a fishway located on the lower river. Returns to the river in 2000 were estimated based on the relationship between counts at the upper fishway and total returns to the lower fishway for previous years. Recreational fishery data for 1997-2005 are from the License Stub Return System; data for 2004 and 2005 are preliminary. A hook-and-release mortality of 10% was used in the calculation of total returns and spawning escapements for the years 1993-2005.

State of the stock: The proportion of conservation requirement achieved in 2005 was 42%. The 2005 count of 2322 small salmon was 21% lower than in 2004. Although this river has never achieved conservation requirement, egg depositions during the moratorium years 1992-2005 were generally higher than in pre-moratorium years. It should be noted that accessible rearing habitat for anadromous Atlantic salmon above the lower fishway more than doubled in 1985 with the opening of the area above Mollyguajeck Falls.

Forecast: No forecast available.

STOCK:	Northwest River (SFA 5)					Drainage Area:		689 km ²			
CONSERVATION REQUIREMENT:	4.07 million eggs (equivalent to 1,726 small salmon)										
Management Target 2002-2005	700 salmon										
Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total returns:											
Small	498	593	466	540	314	272	102	443	1,012	1207	1210
Large	135	203	182	104	93	106	50	114	273	265	305
Recreational Harvest(small salmon)								0			
retained	97	0	0	0	0	0	0	0	51	65	78
released	0	7	0	0	0	0	0	0	0	0	0
Recreational Harvest(large salmon)											
retained	0	0	0	0	0	0	0	0	0	0	0
released	0	0	0	0	0	0	0	0	0	0	0
Other removals											
Small	5	1	0	0	1	2	0	1	2	3	13
Large	1	8	0	0	1	0	0	1	0	1	3
Spawners											
Small	396	592	466	540	313	270	102	442	959	1163	1119
Large	134	195	182	104	92	106	50	113	273	264	302
Conservation Requirement											
% eggs met	37	55	46	42	28	27	11	37	81	92	93
Smolt Count	-	-	-	-	-	11281	-	-	-	-	-
Smolt-to-adult Survival	-	-	-	-	-	1	-	-	-	-	-

Note: Any changes from previous reports are due to the updating of preliminary data and biological characteristics information.

Data and methodology:

Counts of adults have been available from a counting fence since 1995. A smolt population estimate was conducted in 2000. Angling data for 2003 provided by Parks Canada.

State of the stock:

Conservation egg deposition has not been met during the time series from 1995. A single smolt population estimate resulted in the lowest sea survival recorded on any river studied.

Forecast:

No forecast available.

STOCK:		Northeast Brook, Trepassey (SFA 9)										Drainage area:		21 km ²	
CONSERVATION REQUIREMENT:		0.14 million eggs (~ 51 small salmon) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha													
Year		1996	1997	1998	1999	2000	2001	2002	2003	2004 ²	2005 ²	MIN ¹	MAX ¹		
Total returns to river															
Small		73	50	91	95	83	56	65	115	70	69	49	158		
Large		15	9	11	18	14	8	2	11	11	5	2	41		
Recreational harvest (small salmon)															
Retained															
Released															
Recreational harvest (large salmon)															
Retained															
Released															
Spawners															
Small		73	50	91	95	83	56	65	115	70	69	49	158		
Large		15	9	11	18	14	8	2	11	11	5	2	41		
Egg conservation requirement															
% met		196	135	256	248	216	157	156	303	183	168	126	368		
Smolt count															
		1749	1829	1727	1419	1740	916	2076	1064	1571	1384	792	2076		
% Sea survival															
(Adult return year)		9.2	2.9	5.0	5.5	5.8	3.2	7.1	5.5	6.6	4.4	2.6	9.2		
¹ Min and max are for the period of record since 1984.															
² Preliminary															

Data and methodology: Counts of adults and smolts have been available from a counting fence since 1984 and 1986. Up until a few years ago, this small system was part of a group of experimental rivers involved in research on stock-recruitment relationships and definition of smolt production in terms of various habitat types. The system has become an important indicator of smolt (year i) to (small salmon year i + 1) survival (repeat spawners included).

State of the stock: Conservation egg requirement has been met every year in the time series, but the lowest level achieved occurred in 1992. In terms of small salmon, the lowest percentage of conservation requirement achieved also occurred in 1992. The maximum number of smolts counted was 2,076 in 2002 while the lowest was 792 in 1995. Highest sea survival prior to the commercial salmon-fishing moratorium (8.1%) was recorded in 1987. Lowest survival (2.6%) occurred in 1992. Since the start of the moratorium in 1992, sea survival rose to a peak of 9.2% in 1996 only to plummet to 2.9% in 1997; an improvement over this low was noted for 1998-2000 but dropped again to 3.2% in 2001. Sea survival in 2005 decreased 33% from that of 2004.

Forecast: No forecast available.

STOCK:		Rocky River (SFA 9)		Drainage area:		296 km ²		
CONSERVATION REQUIREMENT:		3.4 million eggs (~ 881 small salmon) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha						
Year	2000	2001	2002	2003	2004	2005	MIN ¹	MAX ¹
Total returns to river								
Small	277	233	276	402	169	427	80	435
Large	104	60	78	73	235	95	1	235
Recreational harvest (small salmon)								
Retained	N/A	N/A	0	0	0	0	0	0
Released	N/A	N/A	5	5	0	5	0	5
Recreational harvest (large salmon)								
Retained	N/A	N/A	0	0	0	0	0	0
Released	N/A	N/A	0	0	0	0	0	0
Broodstock removal								
	0	0	0	0		0	0	76
Spawners								
Small	277	233	276	401	169	427	158	435
Large	104	60	78	73	235	95	1	89
Fry stocked								
	0	0	0	0	0	0	81983	434500
Egg conservation requirement								
% met	34	33	40	50	51	55	17	56
Smolt count								
	7616	9392	10144	4440	13047	15847	4440	16900
% Sea survival								
(Adult return year)	2.1	3	3	4	4	3	1.8	4.2

¹ Min and max are for the period of record since 1987.
² Preliminary
smolt to adult survival for 2001 -2005 is smolt to small salmon

Background: Rocky River was stocked with salmon fry from 1983 to 1987 with the first returns to the reconstructed fishway realized in 1987. Also in 1987 140 adult salmon were transferred into Rocky River from Little Salmonier River.

Data and Methodology: Fluvial habitat consists of 1.08 million m² and lacustrine habitat includes 2200 ha. Biological characteristics used in calculations are those for Rocky River stock. Previous fry releases are backcalculated to eggs for % of target egg achieved in areas stocked. Complete adult counts are available from a trap installed in the fishway. Smolts have been enumerated annually since 1990. Sea survival is smolt to 1SW salmon returns to the fishway prior to 2001.

Recreational fisheries: 2002 was the first time a recreational fishery (hook and release only) was opened on Rocky River.

State of the stock: Stock is still in the development phase.

Forecast: There is no forecast for this stock.

STOCK:	Conne River (SFA 11)		Drainage area:		602 km ²				
MANAGEMENT TARGET:	7.8 million eggs (~ 4,000 small salmon) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha								
CONSERVATION REQUIREMENT:	4.34 million eggs (~ 2,475 small salmon)								
Year	1999	2000	2001	2002	2003	2004	2005 ²	MIN ¹	MAX ¹
Total returns to home waters									
Small	2358	5177	1503	2573	1953	3818	1978	1503	10155
Large	241	216	140	167	51	175	105	51	516
First Peoples' harvest									
Small	0	0	0	0	0	0	0	0	948
Large	0	0	0	0	0	0	0	0	11
Recreational harvest (small salmon)									
Retained	-	730	215	275	180	444	75	108	3302
Released	-	-	-	-	-	-	-	0	80
Recreational harvest (large salmon)									
Retained	-	-	-	-	-	-	-	0	27
Released	-	-	2	-	-	-	-	0	0
Broodstock removal									
Small	0	0	0	0	0	0	0	25	245
Large	0	0	0	0	0	0	0	0	1
Spawners									
Small	2349	4431	1286	2295	1770	3366	1898	1286	7823
Large	240	216	140	167	51	174	105	51	488
Management Target									
% met	68	117	37	63	45	89	51	37	219
Egg conservation requirement									
% met	122	210	67	113	81	160	91	67	394
Smolt estimate									
	63658	60777	86898	81806	71479	79667	66196	55765	100983
% Sea survival									
(Adult return year)	3.4	8.1	2.5	3.0	2.4	5.3	2.5	2.4	10.2

¹ Min and max are for the period of record since 1974. First Peoples' harvest in salt water includes some salmon from other rivers. First Peoples' fishery quota of 1200 fish has been in effect since 1986, but was reduced to 500 fish for 1993. First Peoples' fishery and recreational fishery were closed again in 1998 and 1999.

² Preliminary

Data and methodology: Smolt estimates are derived from mark-recapture surveys. Returning adult salmon are enumerated at a fish counting fence. Angling harvests for Conne River are from DFO statistics. A video camera system was introduced in 1993.

State of the stock: The Management Target, which is higher than the conservation egg requirement, was met from 1986 to 1990 and again in 1996 and 2000, with 51% achieved in 2005. Sea survival to small salmon returns decreased from 5.3% (2004 returns) to 2.5% (2004), the third lowest value recorded. In contrast with the Management Target, the Conservation egg requirement was met or exceeded from 1986-1990, in 1993, and again from 1995 - 2000, and again in 2002 and 2004, with 91% attained in 2005.

Forecast: Based on the point estimate of the number of smolts that migrated in 2005, a marine survival rate of 3.7% would be required in order for the conservation requirement to be attained in 2006, while a survival of about 6.0% would be needed to meet the Management Target. In view of the sea survival rates that have resulted over the past 17 years, and without any consideration of the trend for lower survivals during the past decade, the probability of achieving the above returns are 47% and 29%, for the conservation and management targets, respectively. These probabilities drop to 31% and 20%, respectively, if survival values during the past 10 years only are considered.

STOCK:		Little River (SFA 11) Drainage Area:										
CONSERVATION REQUIREMENT:		0.306 million eggs (equivalent to 230 small salmon)										
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total returns:	84	135	801	478	313	356	616	161	528	335	687	231
Small	73	118	674	399	264	307	564	125	487	322	656	216
Large	11	17	127	79	49	49	52	36	41	13	31	15
Recreational Harvest(small salmon)	-	-	-	-	-	-	-	-	-	-	-	-
retained	-	-	-	-	-	-	-	-	-	-	-	-
released	-	-	-	-	-	-	-	-	-	-	-	-
Recreational Harvest(large salmon)	-	-	-	-	-	-	-	-	-	-	-	-
retained	-	-	-	-	-	-	-	-	-	-	-	-
released	-	-	-	-	-	-	-	-	-	-	-	-
Other removals	0	5	19	14	9	10	3	0	6	0	0	0
Small	0	5	18	13	7	8	3	0	5	0	0	0
Large	0	0	1	1	2	2	0	0	1	0	0	0
Brood stock removals:	0	85	119	3	188	258	352	0	0	0	0	0
Spawners	84	45	663	461	116	88	261	161	522	335	687	231
Small	73	33	538	383	N/A	57	N/A	125	482	322	656	216
Large	11	12	125	78	N/A	31	N/A	36	40	13	31	15
Fry Stocked	118472	0	92528	145921	0	306180	298458	288897	0	0	0	0
Conservation Requirement	37	56	288	200	231	38	263	69	224	144	295	99
% eggs met												
Smolt Count	501	2712	4449	2521	3320	1177	2703	4983	9963	8570	4640	

Note: Any changes from previous reports are due to the updating of preliminary data and biological characteristics information.

Recreational catches: The river is presently closed to angling.

Data and methodology: Returns to the river are assessed by a counting fence.

State of the stock: Returns of salmon are considered to be minimum values as salmon are often observed spawning below the counting fence.

Forecast: No forecast available.

STOCK:		Highlands River (SFA 13)		Drainage area:		183 km ²			
CONSERVATION REQUIREMENT:		1.5 million eggs calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha							
Year	1999	2000	2001	2002	2003	2004	2005 ²	MIN ¹	MAX ¹
Total returns to home waters									
Small	146	58	75	169	294	507	101	58	507
Large	82	67	65	87	166	252	153	29	252
Recreational harvest (small salmon)									
Retained							1		
Released									
Recreational harvest (large salmon)									
Retained									
Released									
Spawners									
Small	146	58	75	169	294	507	101	58	507
Large	82	67	65	87	166	252	152	29	252
Conservation requirement									
% met	49	34	35	53	99	155	75	28	155
Smolt count									
	9634	13120	-	-	-	-	-	5922	15839
% Sea survival									
Small	2.5	0.6	0.6	-	-	-	-	0.6	3.2
Large	1.2	1.1	0.7	0.7	-	-	-	0.4	1.4
	(Adult return year)								
¹ Min and max are for the period of record since 1974.									
² Preliminary									

Data and methodology: Counts of smolt and adult salmon were obtained with a fish counting fence in 1980 - 82 and in 1993 - 2000. Adults salmon only have been enumerated since 2001. Sea survival was calculated for small salmon returning in year i + 1 and for large salmon returning in year i + 2, by dividing the number of returning adults by the number of smolts in year i.

State of the stock: The number of large salmon returning increased coincident with the closure of the commercial salmon fishery in 1992, but fell in each of the next four years following the peak in 1997. Returns of small and large salmon are highly variable, but have increased in each of the past several years. Returns of small and large salmon in 2005 were the lowest since 2000 following the highest returns ever in 2004. The conservation spawning requirements were achieved in 1997, essentially met in 2003 (99%), and exceeded in 2004. Only 75% of conservation was attained in 2005. Note that reports indicate upwards of 12 salmon were observed passing up river prior to fence installation in 2005, but these numbers can't be fully reconciled. However, assuming the numbers are correct and all fish were large salmon, then the percentage conservation achieved would increase to 80%. There was one small salmon reported angled above the fence in 2005.

Forecast: No forecast was made as smolts have not been monitored since 2000.

STOCK:		Crabbes River (SFA 13)					Drainage area: 551 km²			
CONSERVATION REQUIREMENT:		4.6 million eggs (spawners not defined) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha								
Year	1999	2000	2001	2002	2003	2004	2005²	MIN¹	MAX¹	
Total returns to river										
Small	717	1027	688 ³	627	1104	2150 ²	844	111	2150	
Large	265	156	180 ³	134	265	275 ²	306	15	397	
Recreational harvest (small salmon)										
Retained	-	-	-	-	-	-	-	26	561	
Released	76	31	46	129	62	221 ²	-	0	278	
Recreational harvest (large salmon)										
Retained	-	-	-	-	-	-	-	14	127	
Released	18	42	42	52	49	67 ²	-	0	119	
Spawners										
Small	709	1024	683 ³	614	1098	2128	844	64	2128	
Large	263	152	176 ³	129	260	268	306	15	346	
Egg conservation requirement										
% met	66	63	53 ³	43	81	123	78	3	123	

¹ Min and max are for the period of record since 1974.
² Preliminary
³ Minimum

Data and methodology: Visual counts of salmon were made by snorkelers in August 1996 to 2005. Adjustment factors were applied to the visual counts to give an estimate of the total number of salmon in the river. The numbers for 2005 are adjusted counts, not total returns, as the angling data are not yet available for 2005. The percent target achieved will be somewhat lower for 2005 when the angling data are subtracted. The angling data for 1996-2004 are from the License Stub Return System. A 10% hook and release mortality is assumed.

State of the stock: Crabbes River attained 78% of its conservation level egg deposition in 2005. This estimate is 37% lower than last year and 8% higher than the 1996-2004 mean.

Forecast: No forecast available.

STOCK:	Middle Barachois Brook (SFA 13)						Drainage area:	241 km ²		
CONSERVATION REQUIREMENT:	2.1 million eggs (spawners not defined) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha									
Year	1999	2000	2001	2002	2003	2004	2005²	MIN¹	MAX¹	
Total returns to river										
Small	563	1142	937 ³	569	743	1086 ²	596	134	1619	
Large	66	155	142 ³	164	107	100 ²	100	0	1159	
Recreational harvest (small salmon)										
Retained	-	-	-	43	-	-	-	51	534	
Released	22	3	26	107	96	83 ²	65	0	195	
Recreational harvest (large salmon)										
Retained	-	-	-	-	-	-	-	0	117	
Released	2	0	9	40	61	43 ²	27	0	81	
Spawners										
Small	560	1142	934 ³	515	733	1078	590	83	1329	
Large	66	155	141 ³	160	101	96	97	0	1057	
Egg conservation requirement										
% met	43	95	80 ³	61	61	79	52	9	254	
¹ Min and max are for the period of record since 1974. ² Preliminary ³ Minimum										

Data and methodology:

Visual counts of salmon were made by snorkelers in August 1996, 1997, 1999 to 2005. Adjustment factors were applied to visual counts to give estimates of the total numbers of salmon in the river. This river was open to hook-and-release angling again in 2005 (June 15 to Sept. 7). Angling data are from the License Stub Return System, 1996-2004. The 1996-2004 mean number of released fish was used for 2005. A 10% hook-and-release mortality was assumed.

State of the stock:

In 2005, Middle Barachois Brook attained 52% of its conservation level egg deposition. This estimate is 34% lower than 2004, 27% lower than the 1996-2004 mean and is the lowest on record since 1999. The returns of small and large salmon were lower than the average returns for 1996-2004, 31% and 17% respectively.

Forecast:

No forecast available.

STOCK:		Robinsons River (SFA 13)		Drainage area:		439 km ²			
CONSERVATION REQUIREMENT: 3.3 million eggs (spawners not defined) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha									
Year	1999	2000	2001	2002	2003	2004	2005²	MIN¹	MAX¹
Total returns to river									
Small	1452	1501	1909 ³	909	1211	1976 ²	1114	274	3186
Large	204	320	232 ³	201	188	167 ²	98	21	733
Recreational harvest (small salmon)									
Retained	0	153	106	123	106	132 ²		3	905
Released	529	553	268	283	389	330 ²		0	634
Recreational harvest (large salmon)									
Retained	-	-	-	-	-	-		0	210
Released	38	44	134	34	147	80 ²		7	184
Spawners									
Small	1399	1293	1776 ³	758	1066	1811	1114	158	2281
Large	200	316	219 ³	198	173	159	98	21	604
Egg conservation requirement									
% met	118	135	142 ³	82	94	132	81	9	174
¹ Min and max are for the period of record since 1974.									
² Preliminary									
³ Minimum									

Data and methodology: Visual counts of salmon were made by snorkelers in August 1996, 1997, 1999 to 2005. Adjustment factors were applied to visual counts to give estimates of the total numbers of salmon in the river. This river was open to retention angling again in 2005 with an extended season, June 15 to September 7. Angling data are from the License Stub Return System, 1996-2004. A 10% hook-and-release mortality was assumed. The numbers for 2005 are adjusted counts, not total returns, as the 2005 angling data are not yet available.

State of the stock: In 2005, Robinsons River attained 81% of its conservation level egg deposition. This estimate is 39% lower than in 2004, 25% lower than the 1996-2004 mean and will decrease further when the angling data are subtracted. The counts of both small and large salmon to the river decreased from 2004 and the mean.

Forecast: No forecast available.

STOCK:		Fischells Brook (SFA 13)		Drainage area:		360 km ²				
CONSERVATION REQUIREMENT:		3.6 million eggs (spawners not defined) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha								
Year	1998	1999	2000	2001	2002	2003	2004	2005²	MIN¹	MAX¹
Total returns to river										
Small	205	1264	1800	248 ³	414 ⁴	1071	1254	1387	42	1800
Large	72	246	276	45 ³	42	180	190	167	0	455
Recreational harvest (small salmon)										
Retained	8	-	-	34	-	-	-	-	17	374
Released	27	-	-	3	-	-	-	-	0	162
Recreational harvest (large salmon)										
Retained	-	-	-	-	-	-	-	-	0	66
Released	4	-	-	7	-	-	-	-	0	150
Spawners										
Small	194	1264	1800	214 ³	399	1046	1254	1387	25	1800
Large	72	246	276	44 ³	42	180	190	167	0	415
Egg conservation requirement										
% met	23	110	142	18 ³	28	86	99	101	1	142
¹ Min and max are for the period of record since 1974. ² Preliminary ³ Minimum ⁴ Includes 15 salmon removed from poachers net in 2002 and 25 in 2003										

Data and methodology:

Visual counts of salmon were made by snorkelers in August each year 1997 to 2005. Adjustment factors were applied to visual counts to give estimates of the total numbers of salmon in the river at the time of the survey. Angling data are from the License Stub Return System. The river was closed to angling in 1999, 2000, 2002 to 2004 and was open to hook-and-release fishing in 2005, from June 15 to September 7. A 10% hook-and-release mortality was assumed. The 2005 angling data are not yet available.

State of the stock:

In 2005, Fischells Brook achieved 101% of its conservation level egg deposition. This estimate is similar to 2004 and 46% higher than the 1997-2004 mean. The estimate will decrease slightly when the 2005 angling data are available and the 10% hook-and-release mortality is applied.

Forecast:

No forecast available.

STOCK:	Flat Bay Brook (SFA 13)		Drainage area:		635 km ²				
CONSERVATION REQUIREMENT: 3.8 million eggs (spawners not defined) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha									
Year	1999	2000	2001	2002	2003	2004	2005 ²	MIN ¹	MAX ¹
Total returns to river									
Small	2276	2397	1150 ³	1612	1540	1998 ²	2356	179	2397
Large	235	494	176 ³	198	193	185 ²	299	5	494
Recreational harvest (small salmon)									
Retained	-	146	170	224	82	66 ²		0	609
Released	389	1165	280	150	329	134 ²		0	1165
Recreational harvest (large salmon)									
Retained	-	-	-	-	-	-		0	59
Released	36	276	34	33	58	15 ²		0	276
Spawners									
Small	2237	2134	952 ³	1373	1425	1919	2356	107	2237
Large	231	466	173 ³	195	187	183	299	1	466
Egg conservation requirement									
% met	149	167	71 ³	97	99	126	162	4	167
¹ Min and max are for the period of record since 1974.									
² Preliminary									
³ Minimum									

Data and methodology:

Visual counts of salmon were made by snorkelers in August each year 1996, and 1998 to 2005. Adjustment factors were applied to the visual counts to derive an estimate of the number of salmon in the river at the time of the survey. This river was open to retention angling again in 2005 with an extended retention season (June 15 to September 7). Angling data are from the License Stub Return System. A 10% hook-and-release mortality was assumed. The 2005 numbers are adjusted counts, not total returns, as the 2005 angling data are not yet available

State of the stock:

In 2005, Flat Bay Brook attained 162% of its conservation level egg deposition. This estimate is 29% higher than the estimate for 2004 and 47% above the average egg deposition, 1996-2004. This number will decrease somewhat when the angling data are subtracted.

Forecast:

No forecast available.

STOCK:	Harry's River (SFA 13)		Drainage area:		816 km ²						
CONSERVATION REQUIREMENT: 7.8 million eggs calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 368 eggs/ha											
Year	1997	1998	1999	2000	2001	2002	2003	2004²	2005²	MIN¹	MAX¹
Total returns to river											
Small	1747	1659	1713	1271	1028	1640	2334	2828	2495	888	2828
Large	201	191	176	49	132	285	422	498	453	16	498
Recreational harvest (small salmon)											
Retained	2	-	-	-	-	-	91	155	155	2	319
Released	884	625	702	796	518	400	237	248	248	23	1411
Recreational harvest (large salmon)											
Retained	-	-	-	-	-	-	-	-	-	0	0
Released	174	138	47	78	51	75	132	105	105	28	220
Spawners											
Small	1657	1596	1643	1191	976	1600	2211	2639	2310	573	2639
Large	184	177	171	41	127	277	403	487	442	13	487
Egg conservation requirement											
% met	50	49	49	29	33	60 ³	84	101	90	13	101
Spawners on Pinchgut Brook tributary											
Small	613	593	608	441	200	592	352	292		200	749
Large	68	63	63	15	3	23	22	15		3	68
¹ Min and max are for the period of record since 1974.											
² Preliminary											
³ The percent met in 2002 is at least 60% based on information suggesting that a higher proportion of large salmon spawn below George's Lake than in the tributaries. The percentage met is likely between 60 & 77% if an adjustment could also be made small salmon spawning in the mainstem below George's Lake. There is considerable uncertainty with such an adjustment for small at this time because the dispersion of spawners from the mainstem into the lower tributaries may be later than for Pinchgut Brook.											
Note: Any changes from previous reports are due to the updating of preliminary data and biological characteristics information.											

Recreational catches: The fishery was limited to catch and release angling from 1996 to 2002 but was expanded in 2003-2005 to permit a limited retention fishery as part of an overall conservation/recovery/ stewardship program. The in-season review on July 5 indicated the returns to the river would meet or exceed the 2002 returns, therefore the river was opened to retention angling on July 7. The retention fishery was restricted to a daily retention of one small salmon and a seasonal limit of two small salmon. The area above Home Pool and tributaries of the main stem were closed to all angling.

Data and methodology : Total returns to Harry's River in 2003 - 2005 were determined from a counting fence operated at the mouth of the river. Spawning escapements were determined by subtracting angling removals. Estimates of total spawners in 1992-2002 were derived from counts of small and large salmon at a fish counting fence operated on Pinchgut Brook tributary adjusted for the percentage of the total spawning activity observed on Pinchgut Brook tributary during surveys conducted in the fall of 1995-1997. Recreational fishery data for 1994-2005 are from the License Stub Return System; data for 2004 and 2005 are preliminary. Spawners in 2001-2002 include an adjustment for small and large salmon observed in snorkel surveys of the lower part of the mainstem below George's Lake in mid-August. A hook-and-release mortality of 10% was used in the calculation of total returns and spawning escapements for the years 1993-2005.

State of the stock : The stock has shown some major signs of improvement since 1992 with increased juvenile densities and proportion of large salmon but growth has been slow in spite of fisheries management changes. The conservation requirement achieved in 2004 (101%) is the highest on record with 2005 being the second highest. The low water levels experienced in recent years, incidence of poaching and the unknown effects of forest spraying and other human activity in the area create continued uncertainty for the stock.

STOCK:		Western Arm Brook (SFA 14A)								Drainage area:		149 km ²
CONSERVATION REQUIREMENT:		0.91 million eggs (~ 292 small salmon) calculated as fluvial area x 2.4 eggs/m ² and lacustrine area x 105 eggs/ha										
Year	1998	1999	2000	2001	2002	2003	2004 ³	2005 ³	MIN ¹	MAX ¹		
Total returns to home waters												
Small	1718	1046	1492	563	1465	1406	1151	1019	233	1718		
Large	128	22	120	28	48	23	74	43	0	128		
Recreational harvest (small salmon)⁴												
Retained	-	-	21	24	-	-	-	-	0	24		
Released	-	-	0	0	-	-	-	-	0	0		
Recreational harvest (large salmon)												
Retained	-	-	-	-	-	-	-	-	-	-		
Released	-	-	-	-	-	-	-	-	-	-		
Known removals above counting fence												
Small	68	1	3	6	2	20	2	30	0	346		
Large	0	0	0	0	0	2	1	1	0	3		
Spawners												
Small	1650	1045	1468	533	1463	1386	1149	989	117	1650		
Large	128	22	120	28	48	21	73	42	0	128		
Egg conservation requirement												
% met	625	370	567	193	510	466	425	351	30	625		
Smolt count												
	17139	13500	12706	16013	14999	12086	17323	8607	6232	23845		
% Sea survival²												
(Adult return year)	7.2	6.1	11.1	4.4	9.1	9.4	9.5	5.9	2.2	12.1		
¹ Min and max are for the period of record since 1974. ² Sea survival is from smolt to returns as small salmon. ³ Preliminary ⁴ Biological sampling by angling Note: Any changes from previous reports are due to the updating of preliminary data and biological characteristics information.												

Recreational catches: The river has been closed to angling since 1989. The angling that took place in 2000-2001 from the mouth of the river to 0.5km upstream was part of a biological sampling experiment. The purpose of this experiment was to collect biological information from up to 100 small salmon.

Data and methodology: Counts of smolts and adult salmon were obtained at a fish counting fence located at the mouth of the river in 1971-2005. A hook-and-release mortality of 10% was used in the calculation of spawning escapements for the years 1985-89 when there was a recreational fishery.

State of the stock: Returns of small salmon in 2005 were 11% lower than those in 2004 while returns of large salmon were 42% lower. The percentage of the conservation requirement achieved in 2005 was 17% lower than in 2004 but was 82% higher than in 2001 which was the second lowest year since 1992. The low percentage of conservation requirement achieved in 2001 and 1997 indicates that the status of this stock can fluctuate widely from one year to the next. Smolt production in 2005 was 50% lower than in 2004 and 64% lower than the maximum production value (23845) achieved in 1997.

Forecast: No forecast available.