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Research Document 2001/035

Document de recherche 2001/035

Harvests of salmonids in various fisheries in Labrador, 2000

Prises de saumons et conditions environnementales au Labrador en 2000

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ISSN 1480-4883
Ottawa, 2001

Canada

ABSTRACT

Information is presented on catch statistics for Labrador in angling fisheries and aboriginal food fisheries in 2000 along with environmental data collected at gauging stations on selected rivers. Total return information is summarized from counting facilities. Total landings of 6,675 salmon and 15,613 kg were recorded for the food fisheries in Labrador. Landings recorded by the angling fishery were 2,251 small salmon retained, 6,086 small salmon released, 412 large salmon retained and 1,126 large salmon released. Labrador rivers were high in the spring and low throughout most of the summer. Low water continued well into the fall.

RÉSUMÉ

Ce document présente des statistiques sur les saumons capturés dans la pêche à la ligne et la pêche autochtone de subsistance au Labrador en 2000, ainsi que des données environnementales recueillies à des stations hydrométriques sur certaines rivières. Des données sur la remonte totale obtenues grâce à des installations de dénombrement sont résumées. Les pêches de subsistance du Labrador ont enregistré des débarquements de 6 675 saumons, pour un poids de 15 613 kg. Dans la pêche à la ligne, 2 251 petits saumons ont été conservés et 6 086 petits saumons ont été remis à l'eau, tandis que 412 gros saumons ont été conservés et 1 126 gros saumons ont été relâchés. Le niveau des rivières du Labrador était élevé au printemps et bas durant la plus grande partie de l'été. Les faibles niveaux d'eau se sont maintenus pendant une bonne partie de l'automne.

INTRODUCTION

In 1992, several major changes were introduced to the management of Atlantic salmon in Newfoundland and Labrador. A five-year moratorium was placed on commercial salmon fishing in the island portion of the province, quotas for the Labrador commercial fishery, first introduced in 1990, were further reduced and a voluntary retirement of commercial salmon licences was instituted for all of the province. Beginning in 1997, the commercial fishery was closed in the Straits area of Labrador which is Salmon Fishing Area (SFA) 14B and then in 1998, it was closed in the remaining SFAs 1 & 2 (Fig. 1). Fishers were offered a buyout which most accepted. In 1999 and 2000, a food fishery of 10 tonnes was available for members of the Labrador Inuit Association including Lake Melville, which is also in Salmon Fishing Area (SFA) 1. The Innu Nation fishes for salmon in Lake Melville and from the community of Davis Inlet. Beginning in 2000, residents of Labrador were allowed to fish for trout with an allowance of four salmon. The west Greenland commercial salmon fishery which was closed for the 1993 and 1994 fishing seasons was re-opened in 1995 and closed again in 1999 leaving only a small subsistence food fishery in 2000. Although there have been no recent tagging studies to document the distribution of Labrador salmon at sea, some Labrador origin multi-sea winter salmon may be caught in the Greenland fishery similar to what was shown for Labrador stocks in earlier studies by Pratt et al. 1974.

There are also harvests of salmon in the angling fishery in Labrador. In the angling fishery, in 1992 and 1993, a quota on the number of fish that could be retained was introduced and a quota provided in each SFA. The quota was assigned for an entire SFA and was not administered on an individual river basis. Only hook-and-release fishing was permitted after the quota was caught. In 1994, quotas for the angling fishery were eliminated. In place of quotas, for Labrador, the season bag limit for retained salmon was lowered from eight to six fish, only two of which could be large salmon. In 1995 and 1996, the season bag limit for the angling fishery remained at six fish but only one large salmon could be retained. In 1999 and 2000, the angling fishery was restricted to a seasonal limit of four salmon retained, one of which could be large, and a daily limit of four salmon hooked-and-released. In 1999, use of barbless hooks became mandatory.

The purpose of this paper is to document harvests of salmon in food and angling fisheries in 2000 in Labrador.

METHODS

Angling fisheries

Catch and effort data from the angling fishery in northern (SFA 1) and southern Labrador (SFA 2) were collected by Department of Fisheries and Oceans (DFO) enforcement staff in conjunction with angling reports submitted by commercial sports camp operators and processed by DFO Science Branch (Fig. 1). Procedures for the collection and compilation of angling and commercial fishery data are described by Ash and O'Connell (1987). For purposes of separating 2SW salmon from 1SW salmon in angling fisheries, small salmon are defined as those salmon less than 63 cm and will be mainly 1SW (grilse) in age. Large salmon are those salmon equal to or greater than 63 cm and will be mainly 2SW and older in age.

In 1994, a new system, viz. the License Stub Return System (LSRS) was initiated for collecting angling statistics in Newfoundland and Labrador. It is based on attaching to the provincial angling licence a detachable stub upon which the angler can record details of where and when the fishing activity took place, and the numbers of salmon caught and released (O'Connell et al. 1998). Because of concerns over a lack of comparability of DFO angling statistics and the LSRS data, DFO data will continue to be used for Labrador in SFAs 1 & 2. For SFA 14B rivers, the catch statistics for 1996-2000 were derived from the License Stub Return System. All 2000 year statistics are preliminary. Tags were issued to anglers to identify legally caught fish.

The Management Plan for the angling fishery was as follows:

Season: 15 June to 15 September
Catch limits: four salmon per season, one of which can be large
Hook & release limits: four per day

Food fisheries

In 2000, there were three food fisheries for salmon in Labrador: 1 – LIA (Labrador Inuit Association) food fishery in Lake Melville and northern Labrador coastal communities of Rigolet, Makkovik, Hopedale, Postville, and Nain. 2 – Innu Nation food fishery in Davis Inlet and in Lake Melville from the community of Sheshatshiu. 3 – Labrador resident food fishery in Lake Melville and coastal communities in southern Labrador from Cartwright to Cape St. Charles. The LIA and Innu food fisheries were self-regulated by these groups and the resident food fishery was regulated by DFO Fishery Officers and Guardian staff. Tags for salmon were issued on an individual fisher basis to identify legally caught fish. Catch statistics were derived from logbooks issued to each fisher.

A summary of the year 2000 Management Plans for the three food fisheries as they pertain to salmon follows:

LIA

The Management Plan of the resident food fishery is as follows:

Catch limits: up to ten salmon per licence, 10 tonnes of salmon for season
Season: May 22 to July 10 and July 24 to August 19 in Lake Melville and 1 June to 30 September for coastal communities; although dates vary by community within these dates.

INNU NATION

The guidelines for the Innu Nation food fishery were as follows:

Catch limits: thirty per household, 1500 total for season
Season: mid-June to end of 1st week of August and mid-June to end of July for Sheshatshiu in Lake Melville.

LABRADOR RESIDENT

Catch limits: four salmon per licence with no limit on trout and charr
Season: 15 July to 31 August in southern Labrador and in Lake Melville it was mid-June to 2 July and 24 July to 19 August

Total returns to rivers

Total returns to rivers in Labrador are available for six river systems and one tributary. Total returns have been previously reported by Lowe & Mullins (1996) for Forteau Brook and Mullins & Caines (1998) for Pinware River (updated by Mullins, pers. comm.), by Reddin et al. (1996) for Sand Hill River, by Reddin & Short (2000) for Big Brook, and by Reddin et al. (2000) for English River. Total returns to rivers include counts at counting fence traps plus downstream angling catches including estimates of hook and release mortalities with mortalities assessed at 10% of the number of salmon hooked and released.

Environmental data

Environmental data consisting of water flow conditions are collected annually from a system of gauging stations set on various rivers which are operated by Environment Canada; several of these stations have automated data collection platforms with provision for downloading data via satellite. The Province of Newfoundland and Labrador through the Department of Environment and Labour is responsible for downloading the data and provides it in near-real time; albeit with no quality control. Data is archived by Environment Canada after quality control and made available from the Environment Canada Hydat CD-Rom for the period of record up to and including 1997. As data for 2000 was unavailable from Environment Canada, the data from the Provincial system was used. Flow data from Alexis, Eagle and Ugjoktok rivers were selected to be representative of conditions on Labrador salmon rivers in 2000.

RESULTS

Angling fishery data

In 2000, the total Labrador angling catch was 9,875 salmon including hooked and released fish which is considerably higher than levels experienced in previous years. The catch of small salmon was 8,337 (2,251 retained and 6,086 released) and large salmon was 1,538 (412 retained and 1,126 released). In SFA 1, the total catch (small and large salmon combined) of 1,475 increased considerably over 1999. In SFA 2, the total catch of 6,009 was 20% higher than in 1999. The total catch of 2,391 salmon in SFA 14B was only slightly higher than the previous year. The proportion of salmon released by anglers in Labrador, which has been increasing over time, was 73% of the total catch, and was the highest value reported to date. In total, there were 7,212 small and large salmon reported to have been hooked and released in 2000 (Tables 1-4).

Food fisheries data

In 2000, the following preliminary landings of salmon were reported for the food fisheries in Labrador:

	Small salmon		Large salmon		Total	
	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Northern Labrador & Lake Melville (SFA 1)						
LIA	3,187	6,293	860	3,417	4,047	9,709
Innu	806	1,580	194	788	1,000	2,367
Resident	118	238	38	160	156	398
Total	4,111	8,111	1,092	4,365	5,203	12,474
Southern Labrador (SFA 2)						
Resident	1,212	2,242	260	897	1,472	3,139
TOTAL	5,323	10,353	1,352	5,262	6,675	15,613

In total, there were 6,675 salmon reported by food fisheries in Labrador with a total weight of 15,613 kg. Reporting rates for the various fisheries were 100% for the Innu Nation food fishery in Sheshatshiu, 67% for the LIA food fishery and 86% for the resident food fishery.

In 2000, preliminary landing information is also available for charr and trout from the resident food fishery:

	Charr		Trout	
SFA	**Number**	**Weight (kg)**	**Number**	**Weight (kg)**
1	109	118	2,550	1,825
2	7,238	6,657	12,903	9,340
Total	7,347	6,774	15,453	11,165

In total, there were 7,347 charr and 15,453 brook trout landed in the resident food fishery in Lake Melville (SFA 1) and southern Labrador (SFA 2). The response rate was 82%. The total numbers of charr and trout landed in Labrador are unknown as there is no reporting system for recreational fishing.

Total returns to rivers

Total returns of small and large salmon are listed in Table 5 for those years of available data. On the rivers with time series information, declines were observed for small and large salmon on Forteau Brook (1994-97), increasing small salmon for Sand Hill River (1970-73 & 1994-96) and increasing trends for small salmon at Southwest Brook (Paradise River, 1998-99) while large salmon declined on Sand Hill River and Southwest Brook. In 2000, small salmon increased on

Big Brook (1997 & 1999-2000) and English River (1999-2000) while large salmon were declining.

Environmental data

Daily water flows on Alexis River in 2000 were higher than mean, minimum and maximum flows at the 1st of June dropping quickly to slightly above average until late July when they declined to below average. During August and September, water flow was below minimum values (Fig. 2). Daily water flows on Eagle River in 2000 were higher than the mean but below the maximum until about 1st of August when they declined below average remaining below average but above minimum values until mid-September after which they declined to below the minimum (Fig. 3). Daily flow conditions on Ugjotok River in 2000 were highly variable but mainly above average and below the maximum values until mid-July then dropping below the mean but remaining above minimum values (Fig. 4).

ACKNOWLEDGEMENTS

The assistance of the staff of DFO Goose Bay, DFO Fisheries Officers and Guardians, and Aboriginal Guardians and staff is gratefully acknowledged.

REFERENCES

Ash, E. G. M., and M. F. O'Connell. 1987. Atlantic salmon fishery in Newfoundland and Labrador, commercial and recreational, 1985. Can. Data Rep. Fish. Aquat. Sci. 672: v + 284 p.

Lowe, S. L., and C. C. Mullins. 1996. Status of Atlantic salmon (Salmo salar L.) stock on the Forteau River, 1995. DFO, CSAS Res. Doc. 96/87, 31 p.

Mullins, C. C., and D. Caines. 1998. Status of Atlantic salmon (Salmo salar L.) stock of Pinware River, Labrador, 1997. DFO, CSAS Res. Doc. 98/116, 37 p.

O'Connell, M. F. N. M. Cochrane, E. G. M. Ash, and C. C. Mullins. MS 1998. An analysis of the License Stub Return System in the Newfoundland Region, 1994-97. DFO, CSAS Res. Doc. 98/111, 67 p.

Pratt, J. D., G. M. Hare, and H. P. Murphy. 1974. Investigations of production and harvest of an Atlantic salmon population, Sandhill River, Labrador. Fish. Mar. Serv. Res. Dev. Branch Nfld. Reg. Tech. Rep. Ser. No. NEW/ T-74-1: iii + 27 p.

Reddin, D.G., P.B. Short, M.F. O'Connell, and A.D. Walsh. 1996. Atlantic salmon stock status for Sand Hill River, Labrador, 1995. DFO, Atlantic Fisheries Res. Doc. 96/82. 32 p.

Reddin, D. G., C. C. Mullins, M. F. O'Connell, and N. M. Cochrane. 1998. Status of Atlantic salmon (Salmo salar L.) stocks in Labrador, 1997. DFO, CSAS Res. Doc. 98/118, 63 p.

Reddin, D. G., P. B. Short, G. Sheppard, and S. Lowe. 2000. The stock status of Atlantic salmon (Salmo salar L.) in English River, Labrador, 1999. DFO, CSAS Res. Doc. 2000/046, 20 p.

Reddin, D. G., and P. B. Short. 2000. The stock status of Atlantic salmon (Salmo salar L.) in Big Brook (Michaels River), Labrador, 1999. DFO, CSAS Res. Doc. 2000/045, 32 p.

Table 1. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 1, Labrador, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	801	347	.	347	311	.	311	658	.	658	0.82
1975	245	379	.	379	117	.	117	496	.	496	2.02
1976	928	891	.	891	368	.	368	1259	.	1259	1.36
1977	809	688	.	688	533	.	533	1221	.	1221	1.51
1978	704	875	.	875	432	.	432	1307	.	1307	1.86
1979	1367	905	.	905	430	.	430	1335	.	1335	0.98
1980	780	704	.	704	232	.	232	936	.	936	1.20
1981	422	669	.	669	195	.	195	864	.	864	2.05
1982	831	834	.	834	379	.	379	1213	.	1213	1.46
1983	834	488	.	488	137	.	137	625	.	625	0.75
1984	1074	702	.	702	222	.	222	924	.	924	0.86
1985	946	642	.	642	135	.	135	777	.	777	0.82
1986	741	421	.	421	129	.	129	550	.	550	0.74
1987	1011	854	.	854	141	.	141	995	.	995	0.98
1988	1629	1278	.	1278	171	.	171	1449	.	1449	0.89
1989	1296	1269	.	1269	144	.	144	1413	.	1413	1.09
1990	1245	563	.	563	115	.	115	678	.	678	0.54
1991	1056	130	.	130	8	.	8	138	.	138	0.13
1992	899	283	29	312	335	0	335	618	29	647	0.72
1993	422	121	124	245	22	25	47	143	149	292	0.69
1994	1036	453	933	1386	114	96	210	567	1029	1596	1.54
1995	880	500	854	1354	92	97	189	592	951	1543	1.75
1996	879	260	62	322	50	17	67	310	79	389	0.44
1997	1266	300	133	433	46	25	71	346	158	504	0.40
1998	813	256	448	704	61	109	170	317	557	874	1.08
1999	954	350	353	703	109	97	206	459	450	909	0.95
2000**	1103	363	801	1164	79	232	311	442	1033	1475	1.34
84-89 $\bar{X}$	1116.2	861.0	.	861.0	157.0	.	157.0	1018.0	.	1018.0	0.91
95% CL	324.5	365.8	.	365.8	36.7	.	36.7	372.1	.	372.1	0.12
N	6	6	0	6	6	0	6	6	0	6	6
86-91 $\bar{X}$	1163.0	752.5	.	752.5	118.0	.	118.0	870.5	.	870.5	0.75
95% CL	316.4	489.3	.	489.3	59.8	.	59.8	539.5	.	539.5	0.36
N	6	6	0	6	6	0	6	6	0	6	6
92-97 $\bar{X}$	897.0	319.5	355.8	675.3	109.8	43.3	153.2	429.3	399.2	828.5	0.92
95% CL	290.0	144.7	439.8	568.4	121.0	44.3	117.8	201.4	483.6	615.4	0.6
N	6	6	6	6	6	6	6	6	6	6	6

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992 - 1996 AND ON RETAINED FISH ONLY PRIOR TO 1992.
**PRELIMINARY

Table 2. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 2, Labrador, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	1978	1414	.	1414	201	.	201	1615	.	1615	0.82
1975	1784	2524	.	2524	56	.	56	2580	.	2580	1.45
1976	2331	2337	.	2337	152	.	152	2489	.	2489	1.07
1977	2507	2244	.	2244	160	.	160	2404	.	2404	0.96
1978	3131	1243	.	1243	152	.	152	1395	.	1395	0.45
1979	1817	2312	.	2312	60	.	60	2372	.	2372	1.31
1980	1692	2158	.	2158	320	.	320	2478	.	2478	1.46
1981	1423	2824	.	2824	105	.	105	2929	.	2929	2.06
1982	2290	1999	.	1999	162	.	162	2161	.	2161	0.94
1983	2294	1884	.	1884	161	.	161	2045	.	2045	0.89
1984	2057	1246	.	1246	103	.	103	1349	.	1349	0.66
1985	1756	1367	.	1367	59	.	59	1426	.	1426	0.81
1986	2310	1972	.	1972	154	.	154	2126	.	2126	0.92
1987	2750	2625	.	2625	277	.	277	2902	.	2902	1.06
1988	2875	2653	.	2653	288	.	288	2941	.	2941	1.02
1989	2986	2242	.	2242	264	.	264	2506	.	2506	0.84
1990	2607	1680	.	1680	144	.	144	1824	.	1824	0.70
1991	2427	1041	.	1041	36	.	36	1077	.	1077	0.44
1992	2813	1599	158	1757	208	10	218	1807	168	1975	0.70
1993	3600	1340	1255	2595	114	36	150	1454	1291	2745	0.76
1994	3352	1511	1716	3227	259	184	443	1770	1900	3670	1.09
1995	3544	1280	1727	3007	246	219	465	1526	1946	3472	0.98
1996	6271	1991	2610	4601	255	296	551	2246	2906	5152	0.82
1997	5256	1729	1264	2993	152	118	270	1881	1382	3263	0.62
1998	5050	1628	2273	3901	242	356	598	1870	2629	4499	0.89
1999	5607	1531	2804	4335	229	452	681	1760	3256	5016	0.89
2000**	4664	1398	3851	5249	338	470	808	1736	4321	6057	1.30
84-89 $\bar{X}$	2455.7	2017.5	.	2017.5	190.8	.	190.8	2208.3	.	2208.3	0.90
95% CL	517.1	637.4	.	637.4	103.6	.	103.6	736.8	.	736.8	0.15
N	6	6	0	6	6	0	6	6	0	6	6
86-91 $\bar{X}$	2659.2	2035.5	.	2035.5	193.8	.	193.8	2229.3	.	2229.3	0.84
95% CL	273.8	645.5	.	645.5	104.6	.	104.6	747.9	.	747.9	0.23
N	6	6	0	6	6	0	6	6	0	6	6
92-97 $\bar{X}$	4139.3	1575.0	1455.0	3030.0	205.7	143.8	349.5	1780.7	1598.8	3379.5	0.82
95% CL	1393.7	275.2	844.2	975.5	63.3	115.6	166.7	296.5	951.5	1113.1	0.18
N	6	6	6	6	6	6	6	6	6	6	6

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992 - 1996 AND ON RETAINED FISH ONLY PRIOR TO 1992.
**PRELIMINARY

Table 3. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14B, Labrador, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	2713	740	.	740	291	.	291	1031	.	1031	0.38
1975	2180	1069	.	1069	154	.	154	1223	.	1223	0.56
1976	3896	2498	.	2498	310	.	310	2808	.	2808	0.72
1977	3918	1662	.	1662	593	.	593	2255	.	2255	0.58
1978	2413	573	.	573	183	.	183	756	.	756	0.31
1979	2149	901	.	901	119	.	119	1020	.	1020	0.47
1980	2476	938	.	938	337	.	337	1275	.	1275	0.51
1981	3353	1698	.	1698	220	.	220	1918	.	1918	0.57
1982	3279	1271	.	1271	80	.	80	1351	.	1351	0.41
1983	3529	2000	.	2000	130	.	130	2130	.	2130	0.60
1984	3997	987	.	987	185	.	185	1172	.	1172	0.29
1985	3664	1092	.	1092	100	.	100	1192	.	1192	0.33
1986	4643	1071	.	1071	184	.	184	1255	.	1255	0.27
1987	4993	1887	.	1887	215	.	215	2102	.	2102	0.42
1988	5707	1592	.	1592	251	.	251	1843	.	1843	0.32
1989	4895	1173	.	1173	53	.	53	1226	.	1226	0.25
1990	5075	1066	.	1066	98	.	98	1164	.	1164	0.23
1991	4017	1152	.	1152	49	.	49	1201	.	1201	0.30
1992	4630	856	64	920	238	0	238	1094	64	1158	0.25
1993	5296	1047	414	1461	242	30	272	1289	444	1733	0.33
1994	5909	693	86	779	101	11	112	794	97	891	0.15
1995	5422	817	227	1044	208	84	292	1025	311	1336	0.25
1996**		891	952	1843	99	140	239	990	1092	2082	
1997**		556	509	1065	*	335	335	556	844	1400	
1998**		1009	1117	2126	*	289	289	1009	1406	2415	
1999**		482	1264	1746	*	521	521	482	1785	2267	
2000**		501	1466	1967	*	424	424	501	1890	2391	
84-89 $\bar{X}$	4649.8	1300.3	.	1300.3	164.7	.	164.7	1465.0	.	1465.0	0.32
95% CL	770.4	375.4	.	375.4	77.7	.	77.7	422.5	.	422.5	0.07
N	6	6	0	6	6	0	6	6	0	6	6
86-91 $\bar{X}$	4888.3	1323.5	.	1323.5	141.7	.	141.7	1465.2	.	1465.2	0.30
95% CL	581.7	354.9	.	354.9	90.9	.	90.9	422.5	.	422.5	0.07
N	6	6	0	6	6	0	6	6	0	6	6
92-95 $\bar{X}$	5314.3	853.3	197.8	1051.0	197.3	31.3	228.5	1050.5	229.0	1279.5	0.24
95% CL	838.8	233.4	256.5	467.7	104.9	59.3	128.6	325.0	287.0	562.2	0.12
N	4	4	4	4	4	4	4	4	4	4	4
97-99 $\bar{X}$		682.3	963.3	1645.7	.	381.7	381.7	682.3	1345.0	2027.3	
95% CL		708.8	994.4	1335.5	.	305.2	305.2	708.8	1176.2	1362.2	
N		3	3	3	0	3	3	3	3	3	

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-95 AND ON RETAINED FISH ONLY PRIOR TO 1992.

*NOT ALLOWED TO RETAIN LARGE SALMON IN SFA 14B, 1997-2000.

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

Table 4. Atlantic salmon recreational fishery catch and effort data for Labrador (SFAs 1, 2, &14B), 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	5492	2501	.	2501	803	.	803	3304	.	3304	0.60
1975	4209	3972	.	3972	327	.	327	4299	.	4299	1.02
1976	7155	5726	.	5726	830	.	830	6556	.	6556	0.92
1977	7234	4594	.	4594	1286	.	1286	5880	.	5880	0.81
1978	6248	2691	.	2691	767	.	767	3458	.	3458	0.55
1979	5333	4118	.	4118	609	.	609	4727	.	4727	0.89
1980	4948	3800	.	3800	889	.	889	4689	.	4689	0.95
1981	5198	5191	.	5191	520	.	520	5711	.	5711	1.10
1982	6400	4104	.	4104	621	.	621	4725	.	4725	0.74
1983	6657	4372	.	4372	428	.	428	4800	.	4800	0.72
1984	7128	2935	.	2935	510	.	510	3445	.	3445	0.48
1985	6366	3101	.	3101	294	.	294	3395	.	3395	0.53
1986	7694	3464	.	3464	467	.	467	3931	.	3931	0.51
1987	8754	5366	.	5366	633	.	633	5999	.	5999	0.69
1988	10211	5523	.	5523	710	.	710	6233	.	6233	0.61
1989	9177	4684	.	4684	461	.	461	5145	.	5145	0.56
1990	8927	3309	.	3309	357	.	357	3666	.	3666	0.41
1991	7500	2323	.	2323	93	.	93	2416	.	2416	0.32
1992	8342	2738	251	2989	781	10	791	3519	261	3780	0.45
1993	9318	2508	1793	4301	378	91	469	2886	1884	4770	0.51
1994	10297	2657	2735	5392	474	291	765	3131	3026	6157	0.60
1995	9846	2597	2808	5405	546	400	946	3143	3208	6351	0.65
1996**		3142	3624	6766	404	453	857	3546	4077	7623	
1997**		2585	1906	4491	198	478	676	2783	2384	5167	
1998**		2893	3838	6731	303	754	1057	3196	4592	7788	
1999**		2363	4421	6784	338	1070	1408	2701	5491	8192	
2000**		2251	6086	8337	412	1126	1538	2663	7212	9875	
84-89 $\bar{X}$	8221.7	4178.8	.	4178.8	512.5	.	512.5	4691.3	.	4691.3	0.57
95% CL	1489.7	1214.2	.	1214.2	152.8	.	152.8	1336.3	.	1336.3	0.08
N	6	6	0	6	6	0	6	6	0	6	6
86-91 $\bar{X}$	8710.5	4111.5	.	4111.5	453.5	.	453.5	4565.0	.	4565.0	0.52
95% CL	1051.3	1340.5	.	1340.5	228.8	.	228.8	1557.1	.	1557.1	0.13
N	6	6	0	6	6	0	6	6	0	6	6
92-95 $\bar{X}$	9450.8	2625.0	1896.8	4521.8	544.8	198.0	742.8	3169.8	2094.8	5264.5	0.56
95% CL	1337.2	154.4	1894.2	1822.3	273.5	285.0	317.0	415.6	2156.9	1932.3	0.13
N	4	4	4	4	4	4	4	4	4	4	4

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-95 AND ON RETAINED FISH ONLY PRIOR TO 1992.

**DATA ARE A COMBINATION OF LICENSE STUB RETURN (SFA 14B)AND RIVER GUARDIAN (SFA's 1 & 2) METHODS.

2000 DATA ARE PRELIMINARY.

Table 5. Summary of total returns to rivers in Labrador. Total returns include angling catches below counting facilities plus count from counting fence or mark-recapture population estimate.

	Forteau Brook		Pinware River		Sand Hill River		Paradise River & Southwest Brook				Big Brook		English River	
Year	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
1970	-	-	-	-	3600	1387	-	-	-	-	-	-	-	-
1971	-	-	-	-	3596	266	-	-	-	-	-	-	-	-
1972	-	-	-	-	2038	175	-	-	-	-	-	-	-	-
1973	-	-	-	-	4761	504	-	-	-	-	-	-	-	-
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1994	458	77	-	-	2180	730	-	-	-	-	-	-	-	-
1995	461	147	-	-	2796	560	-	-	-	-	-	-	-	-
1996	-	-	-	-	3319	414	-	-	-	-	-	-	-	-
1997	223	56	874	179	-	-	-	-	-	-	530	104	-	-
1998	-	-	-	-	-	-	-	-	110	4	-	-	-	-
1999	-	-	-	-	-	-	4681	491	331	43	790	194	59	48
2000	-	-	-	-	-	-	-	-	-	-	982	151	367	15

Fig. 1. Labrador with location of Salmon Fishing Areas and location of rivers mentioned in the text.

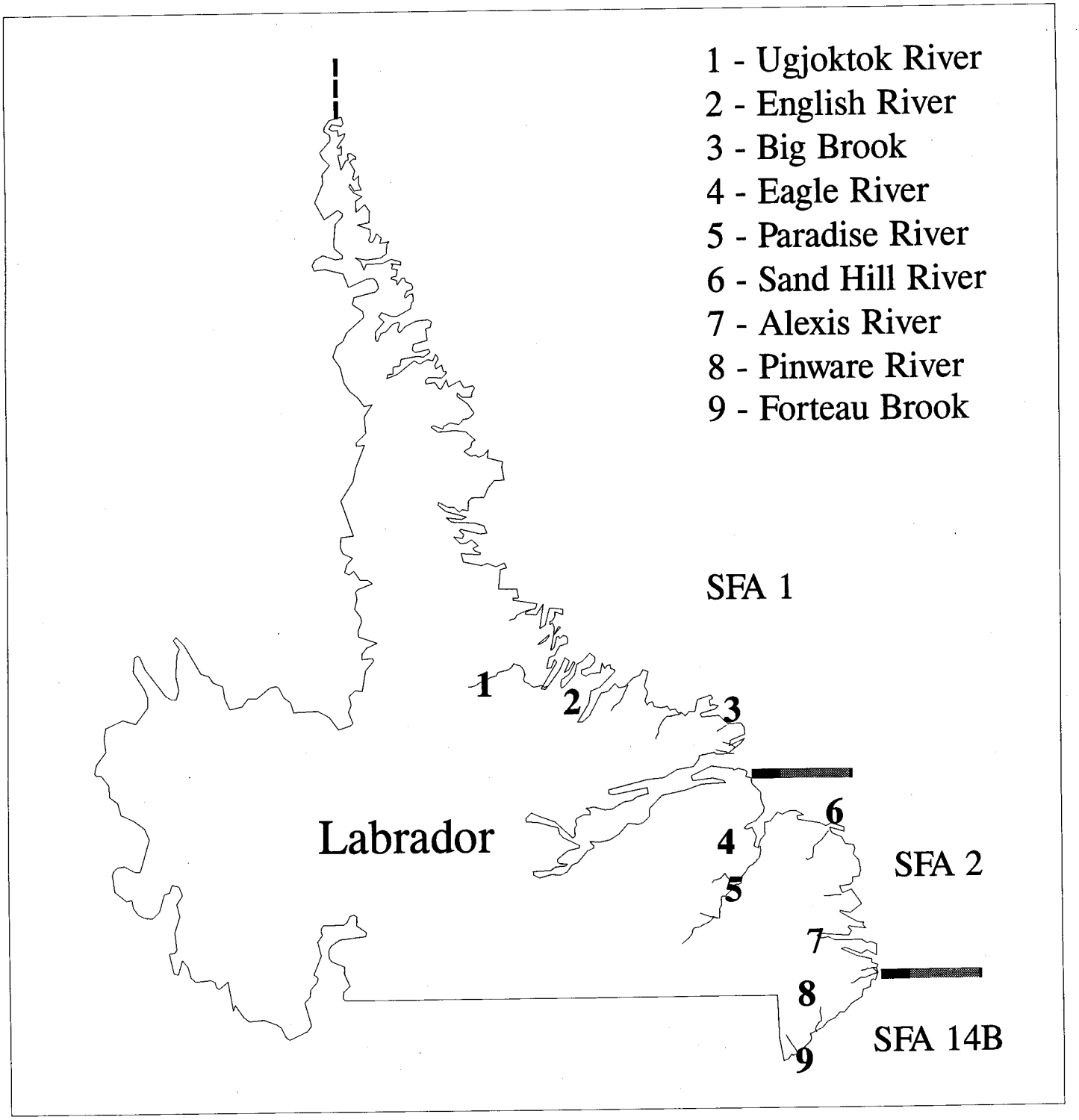

Fig. 2. Alexis River Flow Data, 1978-97 & 2000

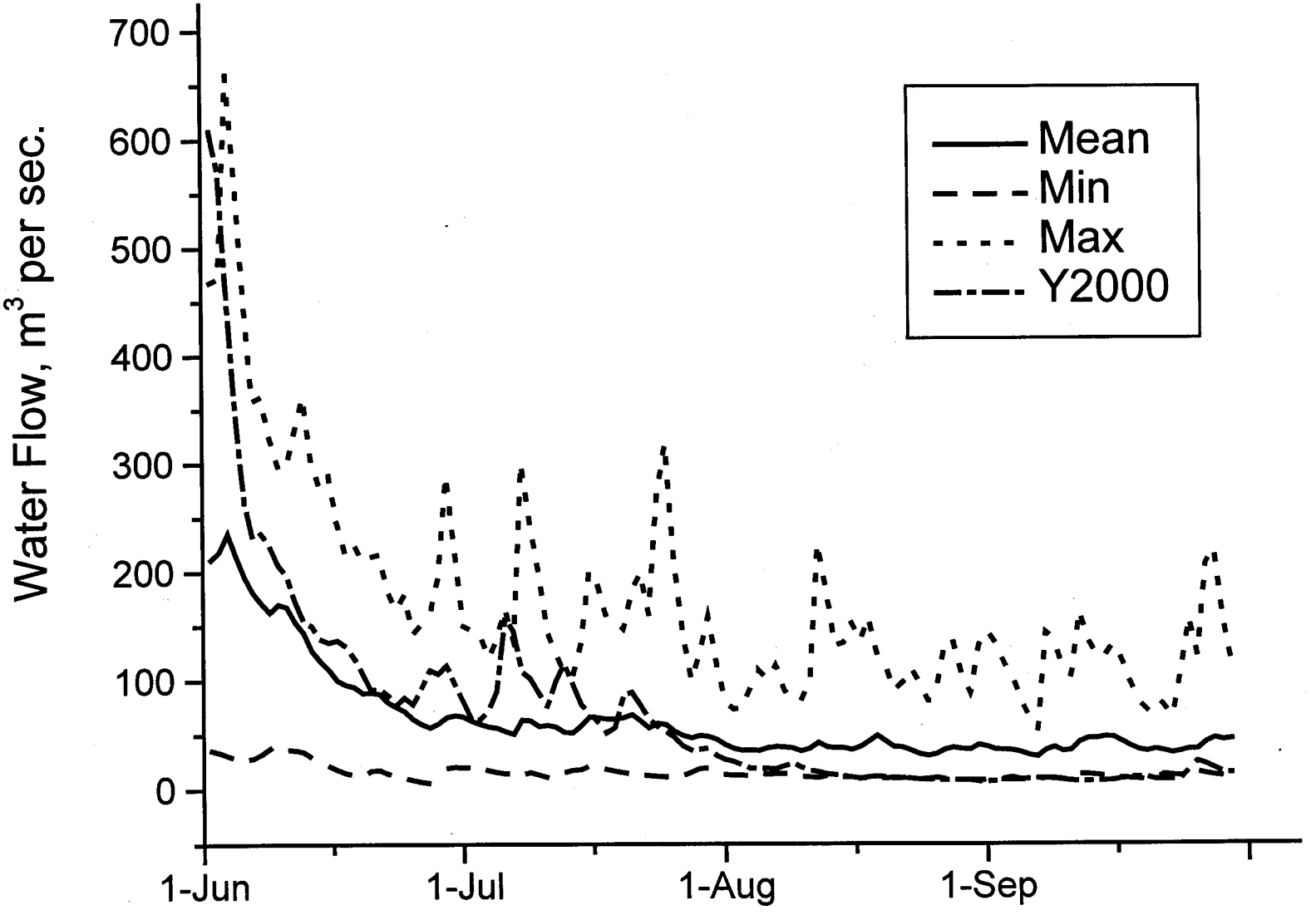

Fig. 4. Ugjoktok River, 1979-97 & 2000

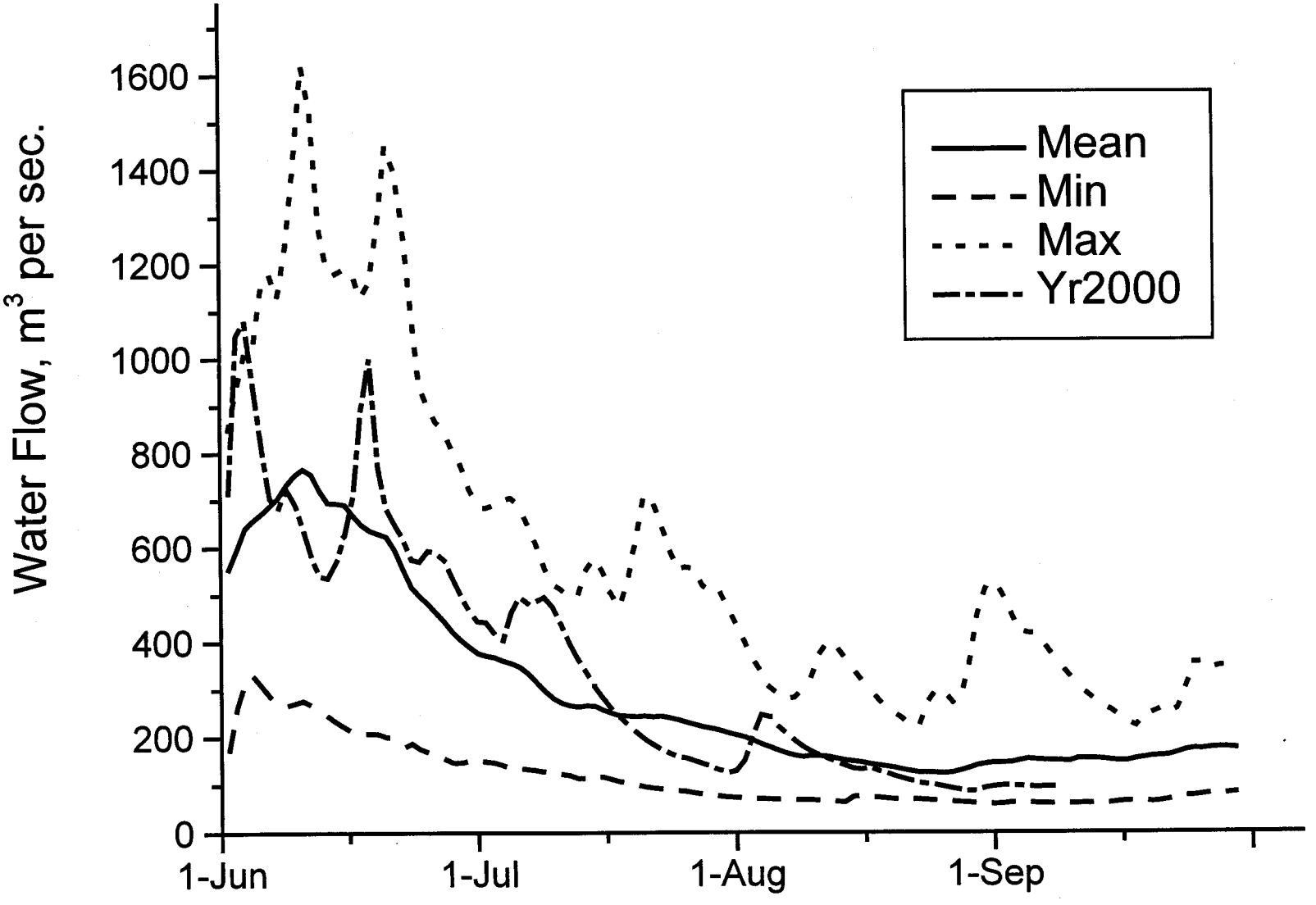

Fig. 3. Eagle River Flow Data, 1967-97 & 2000