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Status of Atlantic Salmon (*Salmo salar* L.) Stocks of the Newfoundland Region, 1989

by

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Abstract

Overall commercial catches (preliminary data) of small and large salmon in the Newfoundland Region in 1989 were similar to 1988; however, catches in both years were among the lowest on record. While catches in some individual SFAs increased over 1988, they still remained below the means in nearly all cases. The catch of grilse in the recreational fishery in insular Newfoundland in 1989 was the lowest during the 1974-89 period. The catch was 11% lower than that of 1987 when drought conditions resulted in the closure of 89 rivers, most from mid-July until the end of the angling season. In 1989, low water levels and high water temperatures resulted in the closure of 58 rivers mainly for varying time periods in August. Unlike 1987, most closures in 1989 occurred after the period of peak angling. Decreased angling catches in conjunction with low counts at most fishways and counting fences indicate that river escapements in 1989 were the lowest in recent years. There is some evidence that low marine survival could have contributed to low returns of small salmon in 1989. As well it is hypothesized that drought conditions in 1987 could have been a factor in low returns in 1989 and could impact negatively in the next few years. There were no river closures in Labrador; the recreational catches of grilse and large salmon were lower than in 1988 but exceeded the means. The similarity of commercial catches of small salmon in 1988 and 1989 and lower river escapements in 1988 indicate that abundance in 1989 in insular Newfoundland was lower than in 1988. Counts of large salmon at most counting facilities in insular Newfoundland in 1989 tended to be higher overall than in 1988 while commercial catch did not change, suggesting that the abundance of this component in 1989 was higher than in 1988. For Labrador, levels of catch of small salmon in the commercial and recreational fisheries suggest that abundance in 1989 was somewhat lower than in 1988. Commercial and recreational catches of large salmon in Labrador indicate that abundance in 1989 was similar to 1988.

Résumé

Les prises commerciales globales (données préliminaires) de saumons de petite et grande taille dans la région de Terre-Neuve en 1989 ont été semblables à celles de 1988; cependant, les prises au cours des deux années sont parmi les plus faibles jamais enregistrées. Bien que les prises dans certaines ZPS individuelles aient augmenté par rapport à 1988, elles demeurent inférieures aux moyennes dans presque tous les cas. Les prises de madeleineaux découlant de la pêche sportive dans l'île de Terre-Neuve en 1989 ont été les plus faibles de la période 1974-1989. Les prises étaient inférieures de 11 % à celles de 1987 alors que des conditions de sécheresse avaient entraîné la fermeture de 89 rivières, la plupart de la mi-juillet jusqu'à la fin de la saison de la pêche sportive. En 1989, un faible niveau des eaux et des températures de l'eau élevées ont entraîné la fermeture de 58 rivières, surtout pour des périodes de temps variables en août. Contrairement à 1987, la plupart des fermetures enregistrées en 1989 sont survenues après la haute saison de pêche sportive. Une diminution des prises de la pêche sportive combinée à des résultats faibles concernant le dénombrement des poissons dans la plupart des passes et des clôtures indiquent que la remonte en 1989 était la plus faible des dernières années. Certaines indications montrent qu'une faible survie en mer pourraient avoir contribuer à un faible retour du petit saumon en 1989. De plus, on émet l'hypothèse que les conditions de sécheresse qui ont régné en 1987 pourraient elles aussi avoir contribué au faible retour en 1989 et qu'elles pourraient continuer à avoir des répercussions négatives au cours des prochaines années. Il n'y a pas eu de fermeture de rivières au Labrador; les prises de la pêche sportive en madeleineaux et en saumons de grande taille ont été plus faibles qu'en 1988, mais supérieures aux moyennes. La ressemblance entre les prises commerciales de petits saumons en 1988 et 1989 et les faibles remontes en 1988 indiquent qu'en 1989, l'abondance du saumon dans l'île de Terre-Neuve était plus faible qu'en 1988. Les dénombrements de saumons de grande taille dans la plupart des installations de dénombrement de l'île de Terre-Neuve avaient tendance à être globalement plus élevés en 1989 qu'en 1988, tandis que les prises commerciales n'ont pas changé, ce qui laisse entendre que l'abondance de cette composante était plus élevée en 1989 qu'en 1988. Pour le Labrador, les taux de prise de saumons de petite taille par suite de la pêche sportive et commerciale indiqueraient que l'abondance était légèrement plus faible en 1989 qu'en 1988. Les prises commerciales et sportives de saumons de grande taille au Labrador indiquent que l'abondance était semblable en 1988 et en 1989.

Introduction

This paper presents the status of Atlantic salmon stocks of the Newfoundland Region (Fig. 1) in 1989. Catch and effort data for the commercial and recreational fisheries and fishway counts (insular Newfoundland) are examined in relation to historical data and the 1989 Management Plan.

Management measures in effect in the commercial fishery in 1989 were the same as for 1988 with the exception that 'allowance catches' were introduced for each Salmon Fishing Area (SFA) in 1989. The fishing season started June 5 and ended October 15. It was illegal to retain Atlantic salmon caught as by-catch and the mandatory carcass tagging program remained in effect. The number of licensed fishermen and the amount of licensed gear in the commercial fishery in 1989 are shown in Tables 1 and 2 respectively. The numbers of commercial fishermen and gear units in Labrador in 1989 increased slightly over 1988. In insular Newfoundland, numbers of fishermen and gear units showed a slight decrease.

For the recreational fishery, regulations in 1989 were the same as in 1988. There was a mandatory release of large salmon in insular Newfoundland; however, this regulation did not apply to Labrador. The maximum number of fish that could be retained per day was two and the maximum number that could be hooked and released was four. Angling ceased for the day when one or the other limit was attained. The mandatory carcass tagging program remained in effect as did the season bag limit of 15 fish.

The 1989 recreational fishing season was marked by the closure of a large number of rivers to angling as a result of low water levels and high water temperatures. These closures occurred mainly in the month of August. The rivers involved and the duration of closure for each river are shown in Table 3.

Methods

Commercial and recreational fishery catch and effort data and fishway and counting fence data were added to that presented in O'Connell et al. (1989). Commercial catch data for 1989 were preliminary. Effort in the commercial fishery was presented as the number of gear units (91.5 m of gill net or salmon trap) licensed to prosecute the fishery. Recreational fishing effort was presented as rod days (defined as any day or part thereof on which an angler fishes).

Data collection, the calculation of mean weights of small and large salmon in the commercial fishery, the breaking down of unsized catch into the small and large categories, and the estimation of numbers of small and large salmon followed procedures outlined in Ash and O'Connell (1987a, 1987b).

Means and 95% confidence intervals for ratio variables were calculated according to Cochran (1977).

Results

Insular Newfoundland

Commercial fishery: The commercial catch of small salmon (259 t) in the insular Newfoundland portion of the Newfoundland Region in 1989 (Table 4) was similar to 1988 (increased by 6%) but decreased from the 1974-88 (27%) and 1984-88 (22%) means (Table 5). The catch of large salmon (189 t) in 1989 was the same as in 1988 but decreased from the 1974-88 (52%) and 1984-88 (28%) means. Total catch was similar to 1988 (+3%) but was 40 and 25% below the 1974-88 and 1984-88 means respectively. Additional information, namely catch in terms of number and percent small (by weight and by number), is presented in Appendix 1a.

Recreational fishery: The catch of grilse (11,525) in 1989 (Table 4 and appendix 2a) was down 52% from 1988 and decreased by 46% from the 1974-88 mean and by 49% from the 1984-88 mean (Table 5). The 1989 catch was 11% lower than in 1987 in which year drought conditions resulted in the closure of 89 rivers, most from mid-July until the end of the angling season. In 1989, 58 rivers were closed because of low water levels and high water temperatures; however, the closures were mainly in August for varying periods of time (Table 3).

Effort expenditure in 1989 (Table 4 and Appendix 2a) was below 1989 (27%) and the 1974-88 (23%) and 1984-88 (26%) means (Table 5) as was catch per unit of effort (CPUE) (36, 32, and 32% respectively).

Labrador

Commercial fishery: The commercial catch of small salmon (107 t) in the Labrador portion of the Newfoundland Region in 1989 (Table 4 and Appendix 1b) was below 1988 (26%) and the 1974-88 mean (14%) but similar to the 1984-88 mean (-3%) (Table 5). The catch of large salmon (222 t) was similar to 1988 (+5%) and the 1984-88 mean (-1%) but below the 1974-88 mean (38%). Total commercial catch followed a similar pattern as that of large salmon.

Recreational fishery: There were no river closures in Labrador in 1989. The catch of grilse (3,511) in 1989 (Table 4 and Appendix 2b) decreased by 10% from 1988 but increased by 25% over each of the means (Table 5). The catch of large salmon (408) decreased by 11% from 1988, was similar to the 1974-88 mean (-4%), and increased over the 1984-88 mean (21%).

Effort expenditure in 1989 (Table 4 and Appendix 2b) was similar to 1988 (-4%) but increased over the 1974-88 (39%) and 1984-88 (26%) means (Table 5). CPUE was similar to 1988 (-5%) and the 1984-88 mean (+2%) but declined from the 1974-88 mean (-12%).

Newfoundland Region

Commercial fishery: The total catch of small salmon for the entire Newfoundland Region in 1989 (Table 4 and Appendix 1c) was similar to 1988 (-6%) but lower than the 1974-88 (23%) and 1984-88 (17%) means (Table 5). The total catch of large salmon was also similar to 1988 (+2%) but decreased by 46% from the

1974-88 mean and by 15% from the 1984-88 mean. Total catch (small and large salmon combined) was similar to 1988 (-2%), 37% below the 1974-88 mean, and 16% below the 1984-88 mean.

Recreational fishery: The total catch of grilse for the entire Newfoundland Region in 1989 (Table 4 and Appendix 2c) was below 1988 (46%) and the 1974-88 (38%) and 1984-88 (41%) means (Table 5). Because of regulations governing the retention of large salmon, comparisons for this component in terms of the entire Newfoundland Region are of no pertinent value; the same applies to total recreational catch.

Status by Salmon Fishing Area

Commercial catch data for each SFA of the Newfoundland Region are presented in Table 6 and Appendices 1d-n. Recreational catch and effort data are shown in Table 6 and Appendices 2d-n. Table 5 shows commercial and recreational catches and recreational effort and CPUE for each SFA, expressed as percentages in relation to 1988, the 1974-88 mean and the 1984-88 mean.

Labrador

SFA 1: The commercial catch of small salmon in 1989 increased over 1988 and both means. The catch of large salmon increased over 1988 and the 1984-88 mean and was similar to the 1974-88 mean.

In the recreational fishery the catch of grilse was similar to 1988 but below the two means. The catch of large salmon was below 1988 and both means. Effort was below 1988, above the 1974-88 mean, and similar to the 1984-88 mean. CPUE increased over 1988, decreased from the 1974-88 mean, and was similar to the 1984-88 mean.

SFA 2: The commercial catches of small and large salmon in 1989 decreased from 1988 and both means.

The recreational catch of grilse in 1989 decreased from 1988 and the means. The catch of large salmon was similar to 1988 but above the means. Effort was similar to 1988 and above both means. CPUE decreased from 1988 and the 1974-88 mean and was similar to the 1984-88 mean.

Insular Newfoundland

SFA 3: Commercial catches of small and large salmon decreased from 1988 and the two means.

Recreational catches of grilse, effort, and CPUE all decreased from 1988 and the means.

SFA 4: The commercial catch of small salmon increased over 1988 and was similar to the means. The commercial catch of large salmon increased over 1988 but was below the means.

In the recreational fishery, the catch of grilse was below 1988 and both means, as was effort and CPUE.

Counts of grilse and large salmon at fishways located in Exploits River and Salmon Brook (Gander River), and a counting fence installed just above head of tide in the main stem of Gander River for the first time in 1989, are presented in Tables 7 and 8 respectively. Table 9 shows counts in 1989 expressed as percentages in relation to 1988 and the 1979-88 and 1984-88 means. For the Exploits River, counts of grilse in 1989 decreased from 1988 and the means at both the Bishop's Falls and Great Rattling Brook fishways. The same was true for Salmon Brook. Large salmon counts decreased from 1988 and both means at Bishop's Falls, increased over 1988 but decreased from the means at Great Rattling Brook, and was similar to 1988 and increased over the means at Salmon Brook. The count of grilse at the counting fence in Gander River in 1989 was 7,685 and as well 451 large salmon were counted.

SFA 5: The commercial catch of small salmon in 1989 was similar to 1988 but decreased from the means. The catch of large salmon was below 1988 and both means.

The catch of grilse in the recreational fishery in 1989, effort, and CPUE were all below 1988 and the means.

Fishways in SFA 5 are located in Middle Brook and Terra Nova River (upper and lower). The count of grilse in Middle Brook in 1989 (Table 7) was below 1988 and both means (Table 9). The grilse count at the lower Terra Nova River fishway in 1989 decreased from 1988 (the highest count on record), was similar to the 1974-88 mean, and increased over the 1984-88 mean. The count of large salmon in Middle Brook in 1989 (Table 8) increased over 1988 but was below the means. The count of large salmon at the lower Terra Nova River fishway decreased from 1988 and increased over the means.

SFA 6: The commercial catch of small salmon in 1989 increased over 1988 but decreased form the means. The catch of large salmon was the same as in 1988 but lower than the means.

The catch of grilse in the recreational fishery in 1989 was below 1988 and the means. Effort was below 1988 but higher than the means while CPUE decreased from 1988 and both means.

SFA 7: The catch of small salmon in the commercial fishery in 1989 was the same as in 1988 but below the means. The catch of large salmon was below 1988 and both means.

The recreational catch of grilse in 1989 decreased from 1988 and the means. Effort was lower than for 1988 and the 1974-88 mean and was similar to the 1984-88 mean. CPUE was below 1988 and the means.

SFA 8: Catches of small and large salmon in the commercial fishery in 1989 were below 1988 and the means.

The catch of grilse in the recreational fishery in 1989 increased over 1988 and both means. The reverse was true for effort. CPUE increased over 1988 and the means.

SFA 9: The commercial catch of small salmon in 1989 was the same as in 1988 but below the means. The catch of large salmon decreased from 1988 and the 1974-88 mean and was similar to the 1984-88 mean.

In the recreational fishery, the catch of grilse in 1989 was similar to 1988 but below the means. Effort decreased from 1988 and the means while CPUE was the same as in 1988 but below the means.

A number of counting fences (Biscay Bay River, Northeast Brook, Trepassey, and Colinet River) and a fishway (Rocky River) have been operated in SFA 9 over the years. The count of grilse in Biscay Bay River and Northeast Brook, Trepassey in 1989 (Table 7) decreased from 1988 and the 1984-88 mean (Table 9). The count of grilse in Colinet River increased over 1988 and the mean, possibly the result of enhancement measures on that river in recent years. The count of large salmon in Biscay Bay River in 1989 (Table 8) increased over 1988 and the mean (Table 9). In Northeast Brook, Trepassey, the count of large salmon was similar to 1988 but below the mean. In Colinet River, the number of large salmon increased over 1988 and the mean. For the Rocky River fishway, the count of grilse in 1989 was lower than in 1988 with the reverse true for large salmon.

It should be noted that the counting fence in Biscay Bay River was washed out for a period of 39 hours beginning July 8, 1989; an estimated 100 fish (grilse and large salmon combined) escaped upstream during this period.

SFA 10: In 1989, the commercial catch of small salmon increased over 1988 and the means. The catch of large salmon exceeded 1988 and the 1984-88 mean but was below the 1974-88 mean.

The catch of grilse in the recreational fishery in 1989 as well as effort and CPUE were below 1988 and the means.

The count of grilse at the Northeast River, Placentia fishway in 1989 (Table 7) exceeded 1988 and the means (Table 9). Large salmon in 1989 (Table 8) increased over 1988 but decreased from the means (Table 9).

SFA 11: Commercial catches of small and large salmon in 1989 increased over 1988 but decreased from the means.

The recreational catch of grilse in 1989 was below 1988 and the means. Effort decreased from 1988 and the 1984-88 mean and was similar to the 1974-88 mean. CPUE decreased from 1988 and the means.

The count of grilse at the Conne River counting fence in 1989 (Table 7) decreased from 1988 and the mean (Table 9). The count of grilse at the Grand Bank fishway increased over 1988 but was similar to the mean. Large salmon in 1989 (Table 8) increased over 1988 and the mean in Grand Bank Brook while the reverse was true for Conne River (Table 9).

Discussion

Except for the introduction of 'allowance catches' the Management Plan in 1989 was a continuation of a five year Management Plan introduced in 1984 and variously modified over the period 1984-88. Major changes in the fisheries were put into effect under this plan. An analysis of the impacts of these management measures in terms of commercial catches and river escapements in the Newfoundland Region is provided by O'Connell et al. (1990). In the context of the 1984-88 Management Plan, the most pertinent comparisons of commercial and recreational catches and counts at counting facilities in 1989 is with the 1984-88 mean.

Except for the lower catch of small salmon in Labrador, overall commercial catches of small and large salmon in the Newfoundland Region in 1989 were similar to 1988; however, catches in both years were among the lowest on record. While catches in some SFAs increased over 1988, they still remained below the means in nearly all cases.

A comparison of 'allowance catches' with actual catches (in tonnes) for each SFA is as follows:

SFA	Allowance	Actual
1	80	107
2	350	223
3	270	152
4	170	130
5	55	36
6	45	27
7	25	13
8	25	11
9	10	7
10	35	38
11	50	34
Total	1,115	778

Actual catches exceeded 'allowance catches' only in SFAs 1 and 10. Total actual catch was 30% below total 'allowance catch'.

The catch of grilse in the recreational fishery in insular Newfoundland in 1989 was the lowest during the 1974-89 period. The catch was 11% lower than that of 1987 when drought conditions resulted in the closure of 89 rivers to angling; in the majority of cases in 1987 the closure period was from mid-July until the end of the angling season (September 7). In 1989, 58 rivers were closed to angling due to low water levels and high water temperatures with most closures occurring for varying periods of time in August. The closures in 1989 came after the period of peak angling catches which normally occur in July-early August in most rivers in insular Newfoundland. Decreased angling catches, generally unaffected by river closures, in conjunction with low counts at most fishways and counting fences indicate that river escapements in 1989 were the

lowest in recent years. Also, the grilse catch for 1987 was included in the calculation of the mean for 1984-88 which further underscores the low 1989 catches. Unlike 1987, water levels (Figs. 2-9) and temperatures (Figs. 9-17) in 1989 were such that fish could pass through all counting facilities prior to termination of counting in standardized week 36 (September 3-9).

In insular Newfoundland, the similarity of commercial catches of small salmon in 1988 and 1989 and lower river escapements in 1988 indicate that the abundance in 1989 was lower than in 1988. The implication is that the rate of exploitation in the commercial fishery was higher in 1989 than in 1988. Counts of large salmon at most counting facilities in 1989 tended to be higher overall than in 1988 while the overall commercial catch did not change, suggesting the abundance of this component in 1989 was higher than in 1988. For Labrador, levels of catch of small salmon in the commercial and recreational fisheries suggest that abundance in 1989 was somewhat lower than in 1988. Commercial and recreational catches of large salmon suggest that the abundance of this component in 1989 was similar to 1988.

Based on both average 1984 angling catches of grilse (used as an index of spawning escapement) and fishway counts, a modal smolt age of 3+ years, and the possible existence of an undefined stock-recruitment relationship, 1989 commercial catches and river escapements of small salmon in insular Newfoundland should have been average. A lower marine survival could have contributed to low returns in 1989. Survival of smolts (back to the river) in 1989 for Conne River in SFA 11 (Dempson 1989) and Northeast Brook, Trepassey in SFA 9 (O'Connell, unpublished data) was lower than for the previous two years. Also, return rates of smolts tagged with streamer tags in Conne River (Dempson 1989) and Carlin tagged smolts in Exploits River in SFA 4 (Bourgeois, unpublished data) were lower in 1989 than in 1988.

It is hypothesized that adverse environmental conditions (low water levels and high water temperatures) in rivers in 1987 could have contributed to low returns in 1989 and could impact negatively in the next few years.

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Table 1. The number of licensed commercial Atlantic salmon fishermen for each SFA and the total for the insular Newfoundland and Labrador portions of the Newfoundland Region.

	No. of fishermen by SFA												
Year	1	2	Nfld Region (Labrador)	3	4	5	6	7	8	9	10	11	Nfld Region (Insular)
1974	108	323	431	626	1203	693	519	513	320	135	331	314	4654
1975	187	421	608	732	1399	765	596	635	314	103	388	402	5334
1976	179	464	643	660	1234	685	525	518	308	103	335	354	4722
1977	196	432	628	621	1154	622	469	446	264	86	303	334	4299
1978	290	403	693	629	1148	621	473	459	261	87	284	326	4288
1979	272	410	682	630	1148	617	457	445	266	85	296	321	4265
1980	271	352	623	617	1163	591	446	449	246	81	279	311	4183
1981	266	350	616	602	1126	550	412	429	246	75	269	305	4014
1982	262	339	601	569	1047	493	394	375	239	71	255	279	3722
1983	273	417	690	578	1033	479	383	356	239	68	250	263	3649
1984	248	378	626	512	892	395	317	277	200	58	201	213	3065
1985	234	351	585	439	695	283	259	229	186	45	162	182	2480
1986	212	356	568	438	696	281	257	231	183	45	164	185	2480
1987	213	362	575	433	693	275	255	231	175	43	163	182	2450
1988	182	361	543	432	682	259	241	217	177	43	156	173	2380
1989	196	353	549	425	679	257	238	216	175	42	156	172	2360

Table 2. The amount of licensed commercial Atlantic salmon gear for each SFA and the total for the insular Newfoundland and Labrador portions of the Newfoundland Region.

	No. of gear units (91.5 m) by SFA												
Year	1	2	Nfld Region (Labrador)	3	4	5	6	7	8	9	10	11	Nfld Region (Insular)
1974	288	1900	2188	2371	3151	2014	1589	1861	1608	407	1031	1008	15040
1975	556	2164	2720	2704	3962	2565	2074	2567	1875	432	1330	1504	19013
1976	549	2418	2967	2528	3547	2354	2074	2276	1823	347	1207	1377	17533
1977	612	2253	2865	2364	3327	2163	1876	1973	1582	292	1063	1288	15928
1978	1001	2167	3168	2406	3371	2172	1901	2066	1588	287	1069	1298	16158
1979	979	2244	3223	2418	3349	2169	1853	1971	1617	283	1051	1279	15990
1980	1018	1958	2976	2378	3485	2320	1834	2024	1536	268	1003	1268	16116
1981	981	1948	2929	2309	3390	1944	1709	1954	1524	252	979	1254	15315
1982	1046	1828	2874	2083	3002	1551	1536	1548	1395	222	837	1097	13271
1983	1080	1879	2959	2315	3729	1661	1499	1402	1089	235	934	1069	13933
1984	992	1471	2463	1892	3124	1341	1160	1012	774	201	718	786	11008
1985	936	1402	2338	1750	2768	1122	1036	914	744	178	644	722	9878
1986	848	1424	2272	1752	2782	1124	1028	922	732	180	656	740	9916
1987	852	1471	2323	1730	2764	1100	1018	920	700	172	652	728	9784
1988	728	1430	2158	1724	2724	1036	964	862	704	172	624	692	9502
1989	784	1412	2196	1700	2716	1028	952	864	700	168	624	688	9440

Table 3. Periods of closure due to drought conditions for scheduled rivers in Newfoundland Region (Insular), 1989.

River Name	Period Closed	
SFA 3		
Western Brook, Hare Bay	Aug. 5 - Aug. 17	
Salmon River, Ariege Bay	Aug. 5 - Aug. 17	
Easter Brook, Canada Bay	July 15 - Sept. 4	
Northeast Brook, Chimney Bay	July 29 - Aug. 17	
Beaver Brook (Western Brook)	July 29 - Aug. 17	
Northwest Brook, Canada Bay	July 29 - Aug. 17	
Little Harbour Deep River	July 29 - Aug. 17	
Coney Arm River	July 15 - Aug. 17	
Main River, Sops Arm	July 22 - Aug. 17	
Wild Cove Brook, White Bay	July 29 - Sept. 4	
Western Arm Brook	July 29 - Sept. 4	
Middle Arm Brook	July 29 - Sept. 4	
Southern Arm Brook	July 29 - Sept. 4	
Southwest Brook, Baie Verte	July 15 - Sept. 4	
SFA 4		
East Brook, Burlington River	July 29 - Sept. 4	
Indian River	July 29 - Aug. 17	
Riverhead Brook, West Brook	July 29 - Aug. 17	
South Brook, Halls Bay	July 29 - Aug. 17	
Tommy's Arm River	July 29 - Aug. 17	
Northwest Arm Brook	July 15 - Aug. 25	
West Arm Brook, Western Arm	July 15 - July 28	Aug. 10 - Aug. 25
New Bay River, Point Leamington	Aug. 10 - Aug. 25	
Charles Brook	July 15 - Aug. 25	
Northern Arm Brook	July 15 - Aug. 17	
Peters River	July 15 - Aug. 25	
Exploits River (Gt. Rattling Brook)	July 15 - Aug. 25	
(Stoney Brook)	July 15 - Aug. 25	
Indian Arm Brook (Campbellton)	July 15 - Aug. 25	
Dog Bay River, Horwood River	Aug. 10 - Aug. 25	
Gander River (Northwest)	July 15 - July 18	
(Southwest)	July 15 - July 18	
(Soulis Brook)	July 15 - July 18	
Ragged Harbour River	Aug. 10 - Aug. 25	
Anchor Brook	Aug. 10 - Aug. 25	
Deadman's Brook	Aug. 10 - Aug. 25	
Windmill Brook	Aug. 10 - Aug. 25	

Table 3 Cont'd.

SFA 5		
Indian Bay Brook	Aug. 5 - Sept. 4	
Northwest River (Trinity)	Aug. 5 - Sept. 4	
Traverse Brook	Aug. 5 - Sept. 4	
Middle Brook	Aug. 5 - Sept. 4	
Gambo River	Aug. 5 - Aug. 17	
Northwest Brook, Alexander Bay	Aug. 5 - Aug. 17	
Terra Nova River (Maccles Brook)	Aug. 5 - Aug. 17	
Northwest River, Port Blandford	Aug. 10 - Aug. 17	
Salmon Brook, Port Blandford	Aug. 10 - Aug. 17	
Southwest Brook, Port Blandford	Aug. 10 - Aug. 17	
SFA 9		
Branch River	Aug 10 - Aug 17	
SFA 10		
Northeast River, Placentia	Aug. 10 - Aug. 27	
Pipers Hole River	Aug. 10 - Aug. 17	
Salmonier River, Lamaline	Aug. 10 - Aug. 17	
SFA 11		
Grand Bank River	Aug. 10 - Aug. 17	
Garnish River	Aug. 10 - Aug. 17	
Long Harbour River	Aug. 10 - Aug. 17	
Conne River	July 8 - July 14	
Grey River	July 8 - July 11	July 29 - Aug. 17
White Bear River	July 8 - July 14	July 29 - Aug. 17
Grandy's River	July 8 - July 14	July 29 - Aug. 17
Cinq Cerf Brook	July 8 - July 14	July 29 - Sept. 4

Table 4. Atlantic salmon commercial catch data and recreational catch and effort data for the whole Newfoundland Region and for the insular Newfoundland and Labrador portions of the Region, 1974-89. The 1974-88 and 1984-88 means and 95% confidence limits are included.

	Commercial catch (tonnes)[1]									Recreational catch (no.) and effort (rod days)										
	Small			Large			Total			Grilse (x10²)			Large Salmon	Total (x10²)	Effort (x10²)			CPUE		
Year	Ins NF	Lab	NF Reg	Ins NF	Lab	NF Reg	Ins NF	Lab	NF Reg	Ins NF	Lab	NF Reg	Lab	Lab	Ins Nf	Lab	NF Reg	Ins NF	Lab	NF Reg
1974	432	94	526	586	524	1110	1017	617	1634	155	18	173	512	23	679	28	707	0.23	0.82	0.25
1975	466	176	642	641	429	1070	1106	605	1711	161	29	190	173	31	602	20	622	0.27	1.52	0.31
1976	372	137	509	548	523	1071	922	661	1583	164	32	196	520	38	649	33	681	0.26	1.15	0.30
1977	352	117	469	651	481	1132	1004	599	1603	214	29	243	693	36	691	33	724	0.33	1.09	0.36
1978	171	56	227	380	375	755	550	430	980	197	21	218	584	27	636	38	674	0.32	0.70	0.34
1979	334	81	415	195	213	408	526	294	820	179	32	211	490	37	502	32	534	0.36	1.16	0.41
1980	498	209	707	538	579	1117	1034	788	1822	234	29	262	552	34	666	25	691	0.36	1.38	0.40
1981	379	224	603	556	538	1094	936	763	1699	304	35	339	300	38	779	19	797	0.40	2.06	0.44
1982	362	144	506	270	362	632	629	506	1135	260	28	288	541	34	852	31	883	0.31	1.08	0.34
1983	263	91	354	269	239	508	534	330	864	216	24	240	298	27	822	31	853	0.27	0.85	0.29
1984	241	48	289	240	170	410	482	217	699	248	20	268	325	23	797	31	829	0.31	0.73	0.33
1985	348	75	423	242	136	378	590	211	801	265	20	285	194	22	828	27	855	0.32	0.82	0.34
1986	392	126	518	282	271	553	674	397	1071	242	24	266	283	27	790	31	821	0.31	0.88	0.33
1987	434	155	589	357	327	684	794	482	1276	130	35	165	418	39	478	38	516	0.27	1.04	0.33
1988	244	144	388	189	212	401	434	357	791	240	39	279	459	44	736	45	781	0.33	0.97	0.36
1989	259	107	366	189	222	411	448	330	778	115	35	150	408	39	539	43	581	0.21	0.92	0.27
1974-88																				
$\bar{X}$	353	125	478	396	359	755	749	484	1233	214	28	242	423	32	700	31	731	0.31	1.04	0.34
±95% C.L.	50	29	73	95	82	171	129	103	224	27	4	27	85	4	64	4	63	0.02	0.15	0.03
1984-88																				
$\bar{X}$	332	110	441	262	223	485	595	333	928	225	28	253	336	31	726	34	760	0.31	0.90	0.34
±95% C.L	108	57	144	78	95	162	181	146	297	67	11	62	132	12	177	9	173	0.02	0.15	0.02

[1]Figures for 1989 are preliminary

Table 5. Commercial and recreational catches and recreational effort and catch per unit effort in 1989 for each SFA, the insular and Labrador portions of the Newfoundland Region, and the entire Newfoundland Region, expressed as percentages in relation to 1988, the 1974–88 mean, and the 1984–88 mean.

	Commercial catch (tonnes)									Recreational catch (no.)											
	Small			Large			Total			Grilse			Large salmon			Effort (rod days)			CPUE		
Salmon Fishing Area	1988	$\bar{x}$ 1974–88	$\bar{x}$ 1984–88	1988	$\bar{x}$ 1974–88	$\bar{x}$ 1984–88	1988	$\bar{x}$ 1974–88	$\bar{x}$ 1984–88	1988	$\bar{x}$ 1974–88	$\bar{x}$ 1984–88	1988	$\bar{x}$ 1974–88	$\bar{x}$ 1984–88	1988	$\bar{x}$ 1974–88	$\bar{x}$ 1984–88	1988	$\bar{x}$ 1974–88	$\bar{x}$ 1984–88
1	+27	+21	+47	+88	+2	+57	+65	+7	+53	−6	−85	−86	−28	−60	−34	−29	+30	+6	+28	−17	+9
2	−35	−23	−13	−16	−49	−17	−24	−42	−15	−12	−85	−85	−4	+77	+66	+6	+42	+32	−17	−10	−1
NF Region (Labrador)	−26	−14	−3	+5	−38	−1	−8	−32	+1	−10	+25	+25	−11	−4	+21	−4	+39	+26	−5	−12	+2
3	−22	−36	−26	−12	−36	−24	−17	−36	−25	−58	−47	−32				−44	−32	−17	−25	−23	−17
4	+21	−2	−6	+34	−33	−16	+26	−15	−9	−62	−57	−59				−35	−34	−37	−42	−38	−36
5	+4	−22	−27	−19	−70	−48	−8	−51	−38	−66	−49	−56				−37	−27	−35	−48	−32	−32
6	+21	−41	−38	0	−71	−43	+8	−58	−40	−43	−24	−30				−13	+14	+16	−38	−38	−43
7	0	−63	−31	−27	−75	−40	−19	−71	−38	−48	−34	−29				−25	−16	+2	−38	−29	−38
8	−14	−62	−52	−58	−85	−62	−42	−78	−57	+25	+23	+12				−30	−28	−31	+76	+67	+67
9	0	−43	−29	−33	−23	0	−13	−38	−24	−4	−24	−23				−16	−14	−12	0	−14	−10
10	+125	+19	+10	+83	−32	+12	+111	−2	+10	−21	−21	−24				−9	−38	−16	−14	+26	−10
11	+45	−45	−44	+64	−61	−32	+62	−55	−38	−41	−42	−46				−22	0	−18	−24	−41	−33
NF Region (Insular)	+6	−27	−22	0	−52	−28	+3	−40	−25	−52	−46	−49				−27	−23	−26	−36	−32	−32
NF Region (Total)	−6	−23	−17	+2	−46	−15	−2	−37	−16	−46	−38	−41				−26	−21	−24	−25	−21	−21

Table 6. Atlantic salmon commercial catch data and recreational catch and effort data for 1989 by Salmon Fishing Area (SFA) for the Newfoundland Region. Catches in 1988, the 1974–88 mean, and the 1984–88 mean (in parentheses).

Salmon Fishing Area	Commercial catch (tonnes)									Recreational catch (no.) and effort (rod days)														
	1989[1]			1988			Mean 1974–88 (1984–88)			1989					1988					Mean 1974–88 (1984–88)				
	Sm	Lge	Tot	Sm	Lge	Tot	Sm	Lge	Tot	Gr	Lge	Tot	Effort	CPUE	Gr	Lge	Tot	Effort	CPUE	Gr	Lge	Tot	Effort	CPUE
NF Reg. (Labrador)																								
1	28	79	107	22	42	65	23.1	77.2	100.4	857	98	955	998	0.96	915	136	1051	1408	0.75	636.1	247.3	883.4	767.7	1.15
							(19.0)	(50.4)	(69.8)											(684.8)	(148.6)	(833.4)	(941.8)	(0.88)
2	79	143	223	122	170	292	102.0	281.4	383.4	2654	310	2964	3284	0.90	3016	323	3339	3096	1.08	2129.1	175.5	2304.7	2306.7	1.00
							(90.6)	(172.8)	(263.0)											(2067.2)	(187.2)	(2254.4)	(2488.0)	(0.91)
NF Reg. (Insular)																								
3	77	75	152	99	85	184	120.1	118.1	238.3	738			1672	0.44	1756			2979	0.59	1398.3	12.7	1407.7	2448.5	0.57
							(104.2)	(98.6)	(202.8)											(1080.4)	(0.0)	(1080.4)	(2026.6)	(0.53)
4	82	47	130	68	35	103	83.3	70.3	153.6	3786			17767	0.21	9854			27413	0.36	8784.1	344.5	9036.7	26771.6	0.34
							(87.4)	(56.0)	(143.4)											(9338.0)	(15.0)	(9341.0)	(28317.8)	(0.33)
5	24	13	36	23	16	39	30.6	43.3	73.8	1417			6617	0.21	4166			10497	0.40	2758.5	44.5	2791.1	9058.7	0.31
							(32.8)	(25.2)	(58.0)											(3214.0)	(1.0)	(3214.2)	(10258.0)	(0.31)
6	17	10	27	14	10	25	28.9	35.0	63.9	246			2959	0.08	429			3392	0.13	323.1	9.7	330.2	2597.9	0.13
							(27.4)	(17.4)	(45.2)											(350.4)	(5.0)	351.4	(2553.6)	(0.14)
7	5	8	13	5	11	16	13.6	31.7	45.3	66			1226	0.05	128			1645	0.08	99.3	5.0	103.0	1452.5	0.07
							(7.2)	(13.4)	(21.0)											(93.2)	(4.0)	(94.0)	(1198.6)	(0.08)
8	6	5	11	7	12	19	15.6	33.5	49.1	99			330	0.30	79			474	0.17	80.5	1.3	81.5	459.2	0.18
							(12.6)	(13.0)	(25.6)											(88.4)	(0.0)	(88.4)	(481.2)	(0.18)
9	5	2	7	5	3	8	8.7	2.6	11.3	1315			7039	0.19	1373			7157	0.19	1733.1	26.4	1752.5	8138.7	0.22
							(7.0)	(2.0)	(9.2)											(1710.4)	(5.0)	(1711.4)	(8019.4)	(0.21)
10	27	11	38	12	6	18	22.6	16.1	38.8	898			4709	0.19	1142			5198	0.22	1135.7	21.4	1151.4	7584.1	0.15
							(24.6)	(9.8)	(34.4)											(1177.8)	(2.0)	(1178.2)	(5636.2)	(0.21)
11	16	18	34	11	11	21	29.1	45.6	74.8	2960			11543	0.26	5033			14811	0.34	5076.7	31.2	5099.6	11527.2	0.44
							(28.6)	(26.6)	(55.2)											(5450.0)	(15.0)	(5453.0)	(14090.0)	(0.39)

[1]Preliminary

Table 7. Counts of grilse from fishways and counting fences in insular Newfoundland 1955-89 by Salmon Fishing Area (SFA); also shown are means ($\bar{X}$), standard deviations (SD), and coefficients of variation (CV).

	Fishways									Counting fences				
	SFA 4			SFA 5			SFA 9	SFA 10	SFA 11	SFA 4	SFA 9			SFA 11
Year	1A	1B	2	3	4	5	6	7	8	9	10	11	12	13
1955						53								
1956				324[a]	558	32								
1957			642	28[a]	141	21								
1958			1072	332[a]	677	10								
1959	886		591	295[a]	394	120								
1960	1013	94	291		490	86								
1961	839	319	41		318	74								
1962		1037			496	284								
1963	1202	491			551	372								
1964		1752			419	246								
1965	1228	587			474	334								
1966	829[a]	942			368	134								
1967	1372	822			613	373								
1968		1334			715	409		57[a]						
1969	979	892			658	463								
1970		1023			754	563								
1971	961	902	714		580	316		159						
1972	794	495a	541	838	609	330		236						
1973	205		970	1079[a]	455	340		399[a]						
1974	2538		862	770[a]		161		224						
1975	9010	6012		1119[a]		782		186[a]						
1976	4106	3037				346		294						
1977	6058	4294				371								
1978	3757	2633	755	1412	810	436		390						
1979	6693	3923	404[a]	1283[a]	569	455		454						
1980		4550	997	1703	842	422		433						
1981	9015[a]	4286	2459	2415	1115	619		334[a]						
1982	7654[a]	2836	1425	1281	963	625		86[a]					133	
1983		3031[a]	978	1195	1210	853		233			2330		272	
1984	17389	6398a	1081	1379	1232	911		419			2430	89	359	
1985	16648	5987	1663	904	1557	960		384			1377[a]	124	170	
1986	9674	3065	1064	1036	1051	726		725	211		2516	158	296	7515
1987	8977	2316	493a	914	974	570	80	325a	155a		1302a	91	368	9687
1988	8972	3436	1562	772	1737	795	307	543	149		1695	97	202[a]	7118
1989	7192	1694	596	496	1138	668	167	706	175	7685	889[a]	62	431	4469
1979-88														
$\bar{X}$	11392.2	3799.9	1302.4	1288.8	1125.0	693.6		455.95						
SD	4479.1	1158.9	560.1	509.5	337.3	186.0		151.0						
CV	39.32	30.50	43.01	39.53	29.98	26.82		33.12						
N	6	8	9	9	10	10		7						
1984-88														
$\bar{X}$	12332.0	3701.0	1172.6	1001.0	1013.2	792.4		517.8	171.7		2213.7	111.8	298.3	8106.7
SD	4295.7	1593.6	467.5	231.0	327.6	154.9		154.1	34.2		451.2	29.4	91.3	1382.9
CV	34.83	43.06	39.87	23.08	32.33	19.55		29.76	19.92		20.38	26.30	30.61	17.06
N	5	4	5	5	5	5		4	3		3	5	4	3

1 Exploits River
(a) Bishop's Falls
(b) Gt. Rattling Brook
2 Gander River (Salmon Brook)
3 Middle Brook
4 L. Terra Nova River
5 U. Terra Nova River
6 Rocky River
7 Northeast River (Placentia)
8 Grand Bank Brook
9 Gander River
10 Biscay Bay River
11 Northeast Brook (Trepassey)
12 Colinet River
13 Conne River

[a]Partial counts: not included in means

Table 8. Counts of large salmon from fishways and counting fences in insular Newfoundland 1955–89 by Salmon Fishing Area (SFA); also shown are means ($\bar{X}$), standard deviations (SD), and coefficients of variation (CV).

	Fishways									Counting fences				
	SFA 4			SFA 5			SFA 9	SFA 10	SFA 11	SFA 4	SFA 9			SFA 11
Year	1A	1B	2	3	4	5	6	7	8	9	10	11	12	13
1955						24								
1956				56[a]	36	44								
1957			323	2[a]	41	1								
1958			502	231[a]	195	0								
1959	119[a]		290	13[a]	67	20								
1960	157	9	183		217	0								
1961	118	53	15		99	1								
1962		31			275	4								
1963	65	37			320	35								
1964		116			297	18								
1965	203	190			254	51								
1966	506[a]	470			220	2								
1967	710	382			359	42								
1968		687			374	28		11[a]						
1969	498	290			393	136								
1970		199			470	170								
1971	300	261	494		277	121		21						
1972	113	234[a]	53	10	348	202		34						
1973	89		135	9[a]	299	222		64[a]						
1974	411		8	77[a]		122		9						
1975	1441	544		9[a]		48		36[a]						
1976	493	121				37		56						
1977	584	221				262								
1978	302	78	52	16	20	88		32						
1979	276	119	6[a]	54[a]	170	30		37						
1980		418	15	91	40	15		34						
1981	1695[a]	514	33	38	90	28		62[a]						
1982	133a	123	18	20	19	8		36[a]					116	
1983		223[a]	12	75	57	76		22			88		43	
1984	355	111[a]	38	57	107	98		44			83	33	97	
1985	181	38	26	27	112	60		0			21[a]	41	42	
1986	353	174	12	15	140	58		39	4		101	30	31	397
1987	310	41	9a	19	56	38	1	16a	2a		106a	30	55	498
1988	147	10	24	14	206	45	6	11	2		58	19	14[a]	418
1989	89	14	24	19	142	51	9	15	7	451	104[a]	18	81	319
1979–88														
$\bar{X}$	270.3	179.6	20.8	39.6	99.7	45.6		26.7						
SD	88.1	186.5	10.1	28.3	59.6	27.9		16.3						
CV	32.59	103.84	48.56	71.47	59.78	61.18		61.05						
N	6	8	9	9	10	10		7						
1984–88														
$\bar{X}$	269.2	65.8	21.8	26.4	124.2	59.8		23.5	2.7		80.7	30.6	56.3	437.7
SD	98.4	73.5	11.7	17.9	54.9	23.2		21.4	1.2		21.6	7.9	28.9	53.3
CV	36.55	111.70	53.67	67.80	44.20	38.80		91.06	44.40		26.77	25.82	51.33	12.18
N	5	4	5	5	5	5		4	3		3	5	4	3

1 Exploits River
(a) Bishop's Falls
(b) Gt. Rattling Brook
2 Gander River (Salmon Brook)
3 Middle Brook
4 L. Terra Nova River
5 U. Terra Nova River
6 Rocky River
7 Northeast River (Placentia)
8 Grand Bank Brook
9 Gander River
10 Biscay Bay River
11 Northeast Brook (Trepassey)
12 Colinet River
13 Conne River

[a]Partial counts: not included in means

Table 9. Counts of grilse and large salmon from fishways and counting fences in insular Newfoundland for 1989 expressed as percentages in relation to 1988, the 1979-88 mean and the 1984-88 mean.

	Grilse			Large Salmon		
	1988	$\bar{x}$ 1979-88	$\bar{x}$ 1984-88	1988	$\bar{x}$ 1979-88	$\bar{x}$ 1984-88
Fishways						
SFA 4						
Bishops Falls (Exploits River)	-20	-37	-42	-39	-67	-67
Gt. Rattling Bk. (Exploits River)	-51	-55	-54	+40	-92	-79
Salmon Brook (Gander River)	-62	-54	-49	0	+15	+10
SFA 5						
Middle Brook	-36	-62	-50	+36	-52	-28
Lower Terra Nova River	-34	+1	+12	-31	+42	+14
Upper Terra Nova River	-16	-4	-16	+13	+12	-15
SFA 9						
Rocky River	-46			+50		
SFA 10						
Northeast River (Plac.)	+30	+55	+36	+36	-44	-36
SFA 11						
Grand Bank Brook	+17		+2	+250		+159
Counting Fences						
SFA 9						
Biscay Bay River	-48		-60	+79		+29
Northeast Bk. (Trepassey)	-36		-46	-5		-41
Colinet River	+113		+44	+479		+44
SFA 11						
Conne River	-37		-45	-24		-27

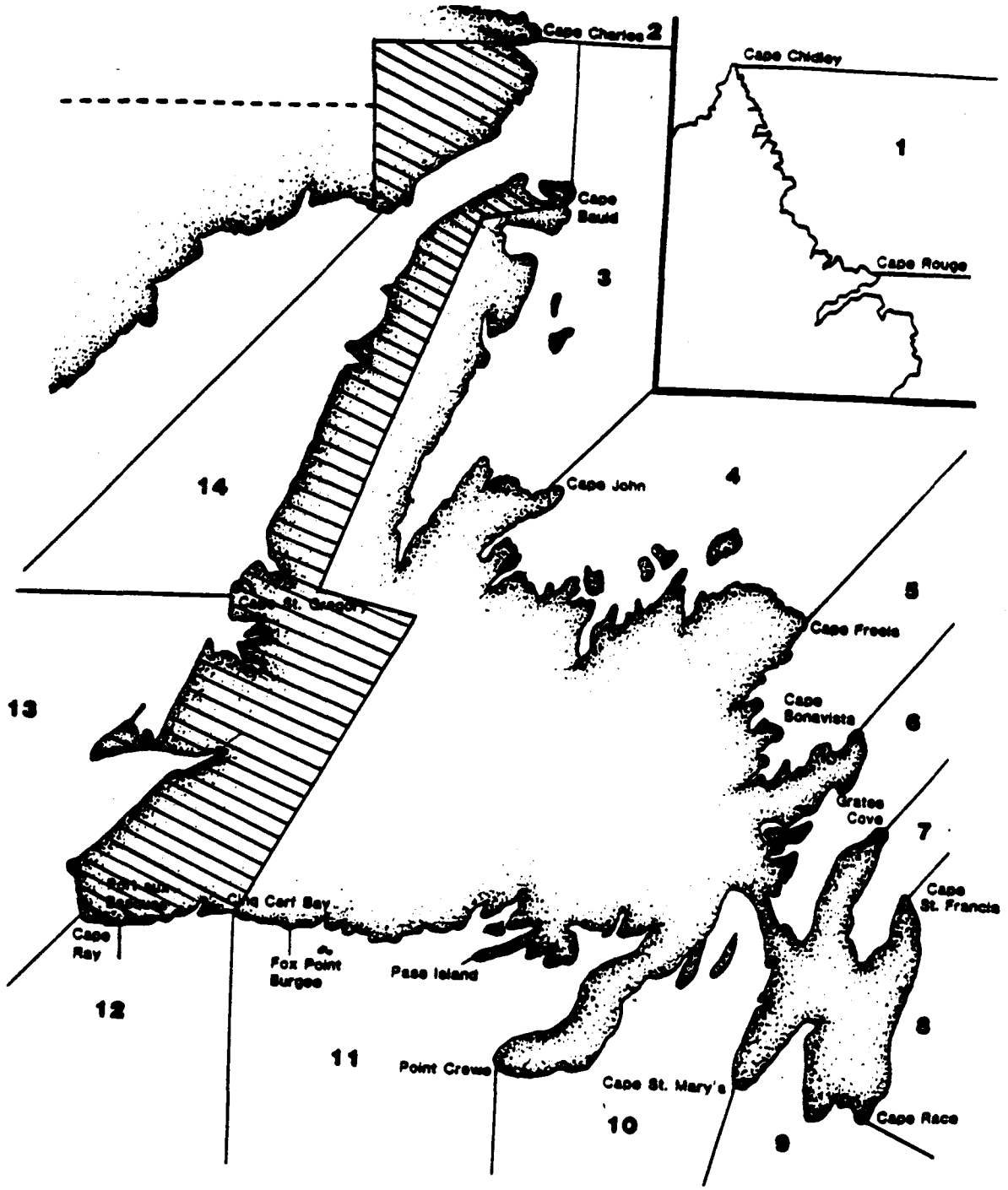

Fig. 1. Boundaries of Salmon Fishing Areas in insular Newfoundland and Labrador. Cross-hatched portion denotes area belonging to the Gulf Region.

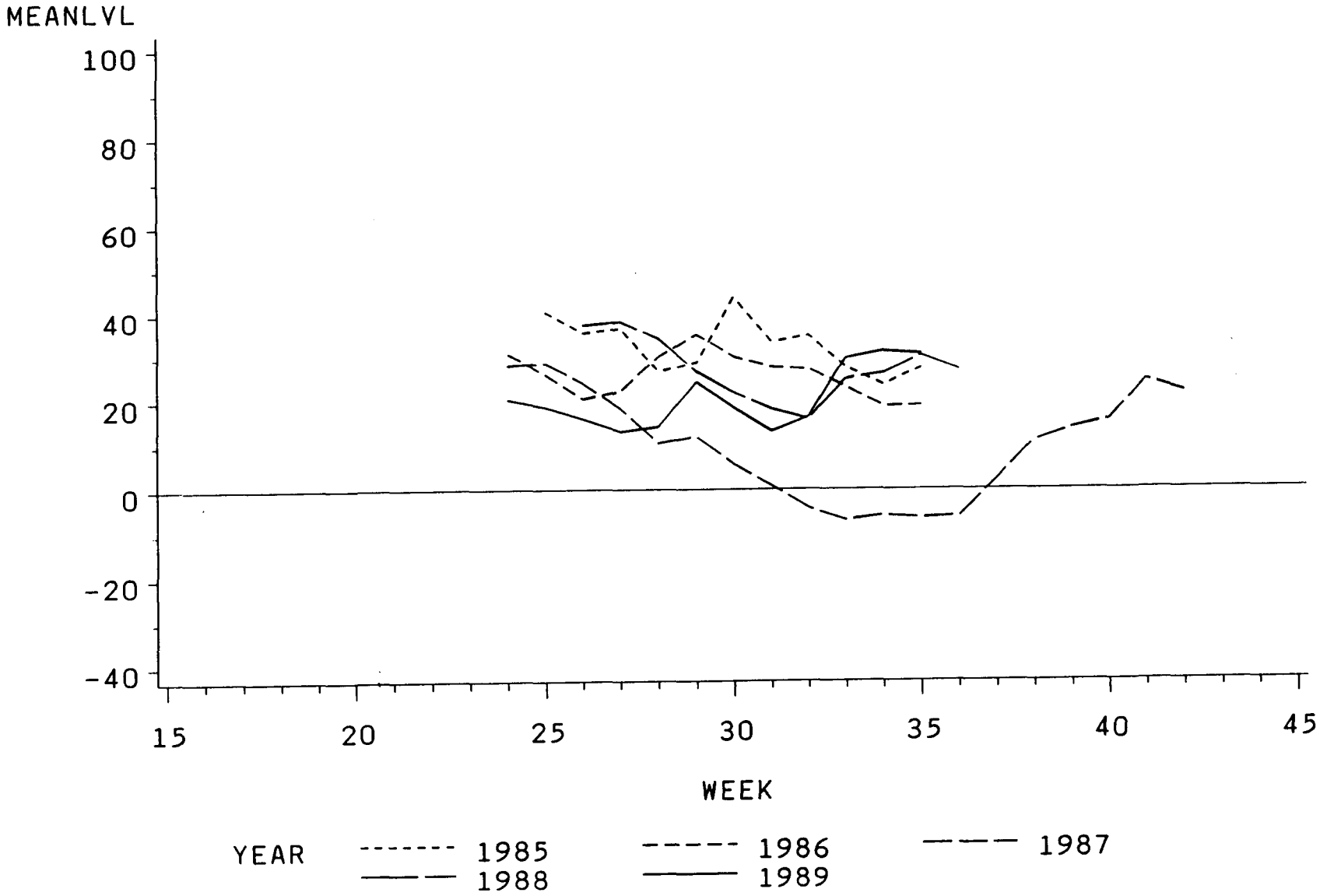

Figure 2. Average water levels (cm) by standardized week for Salmon Brook fishway, 1985-89.

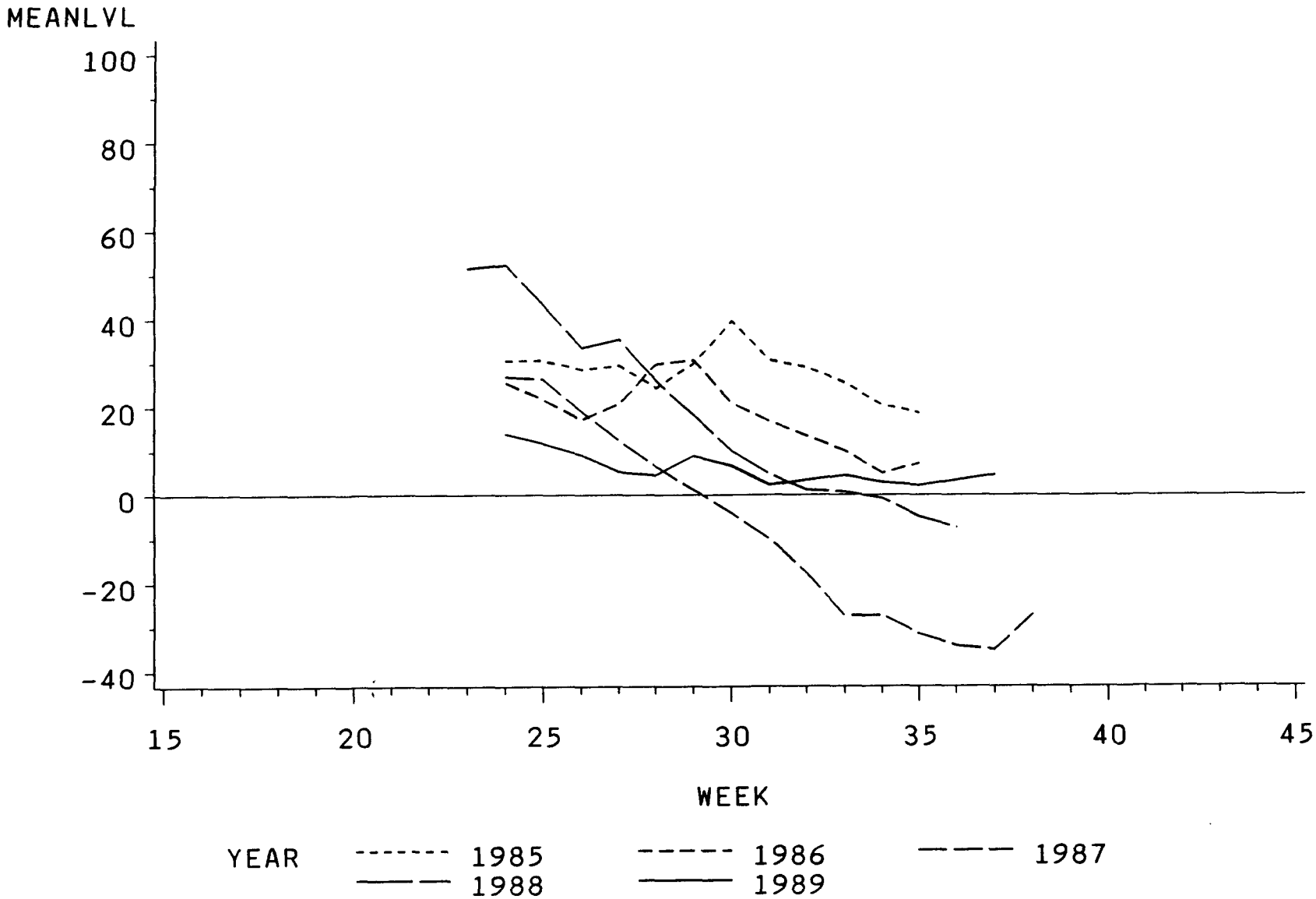

Figure 3. Average water levels (cm) by standardized week for Middle Brook fishway, 1985-89.

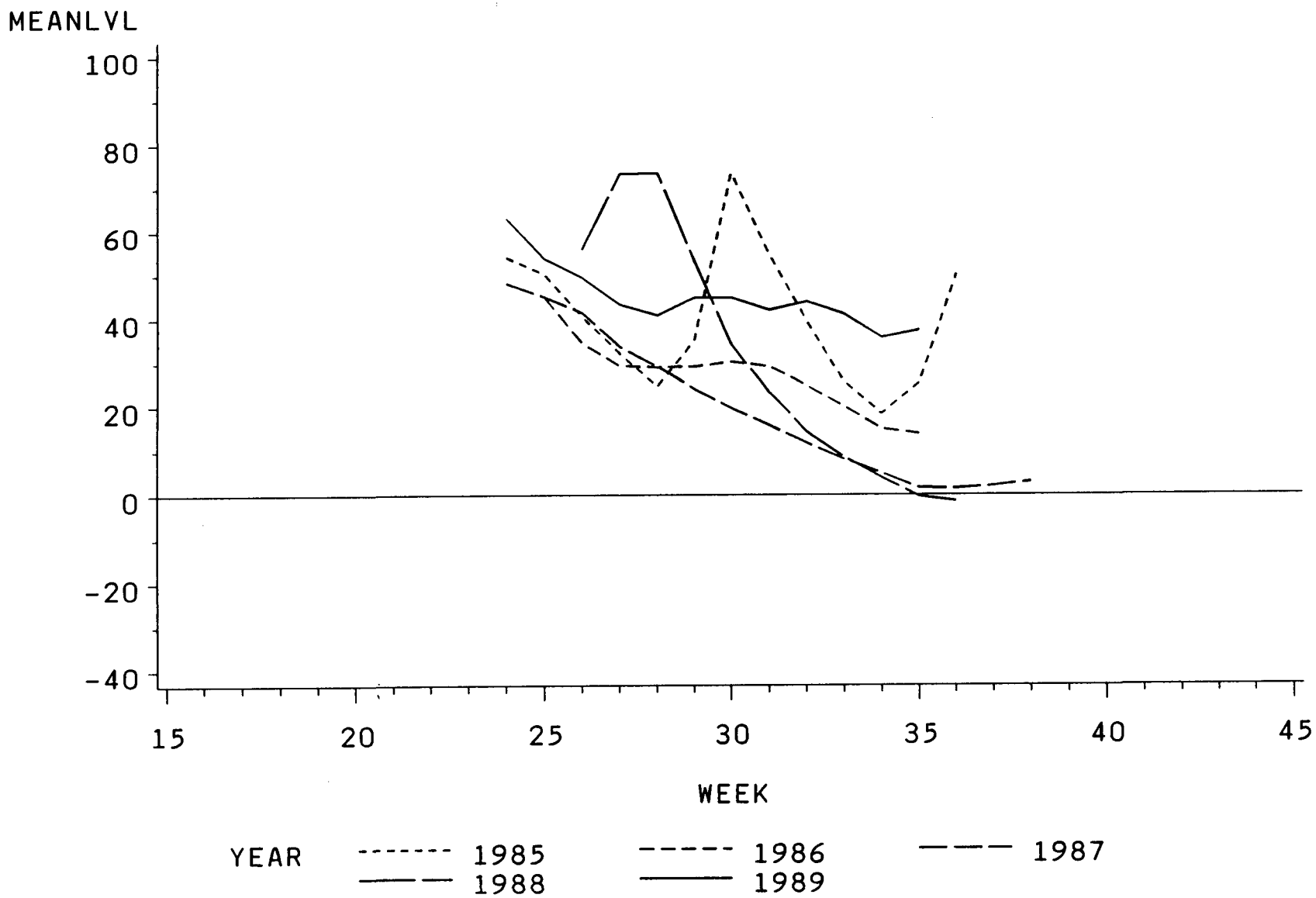

Figure 4. Average water levels (cm) by standardized week for Lower Terra Nova River, 1985-89.

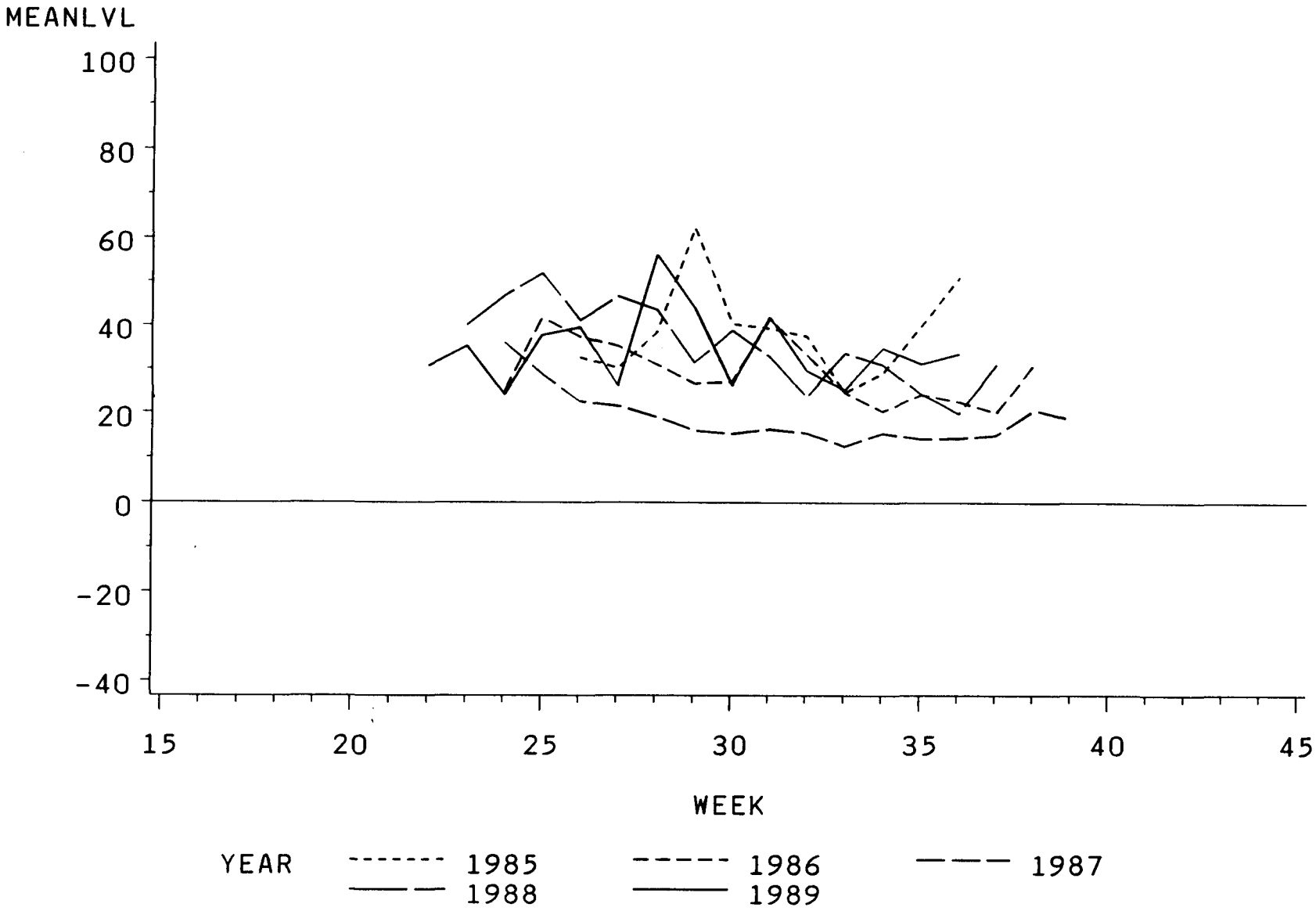

Figure 5. Average water levels (cm) by standardized week for Biscay Bay River counting fence, 1985-89.

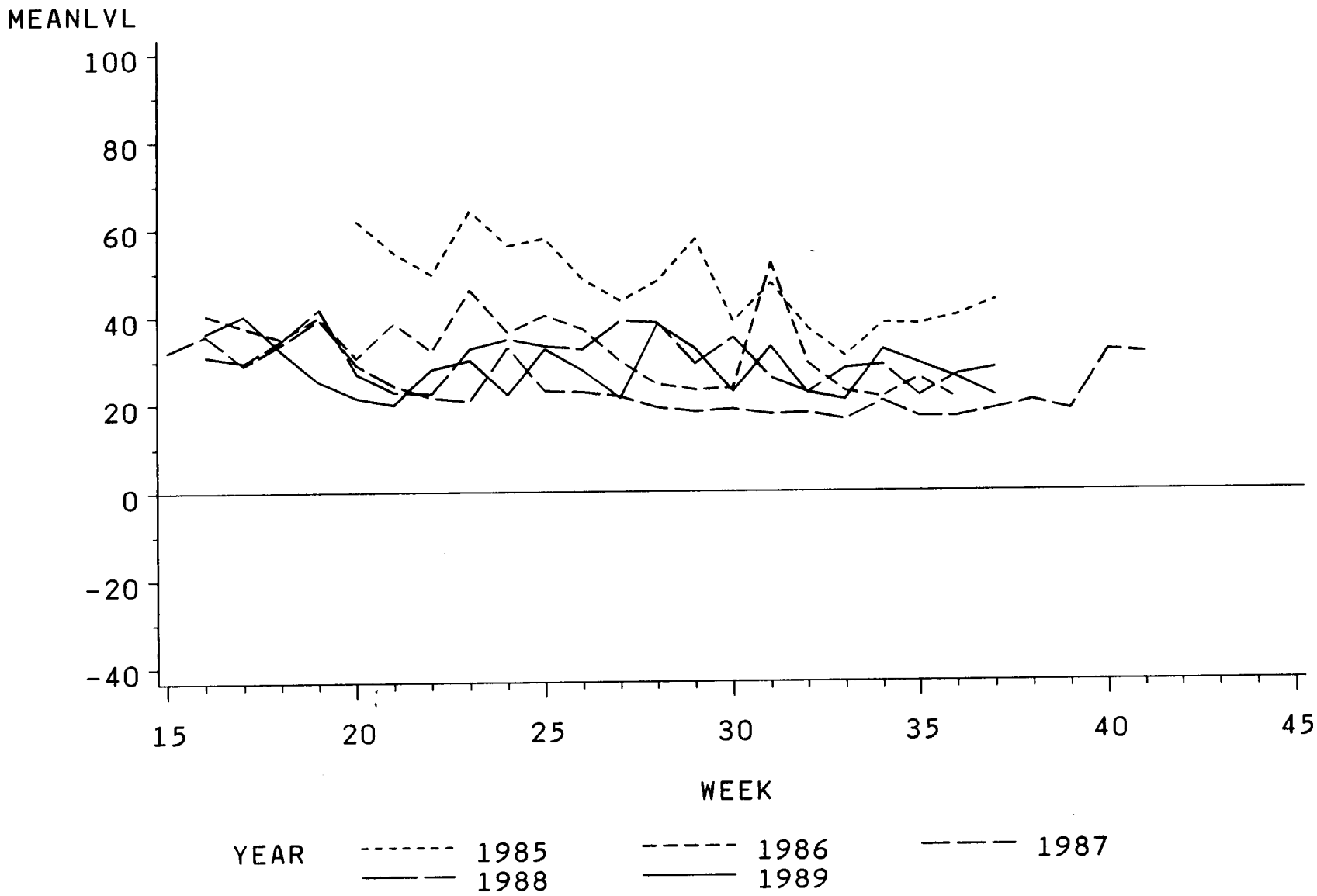

Figure 6. Average water levels (cm) by standardized week for Northeast River (Trepassey) counting fence, 1985-89.

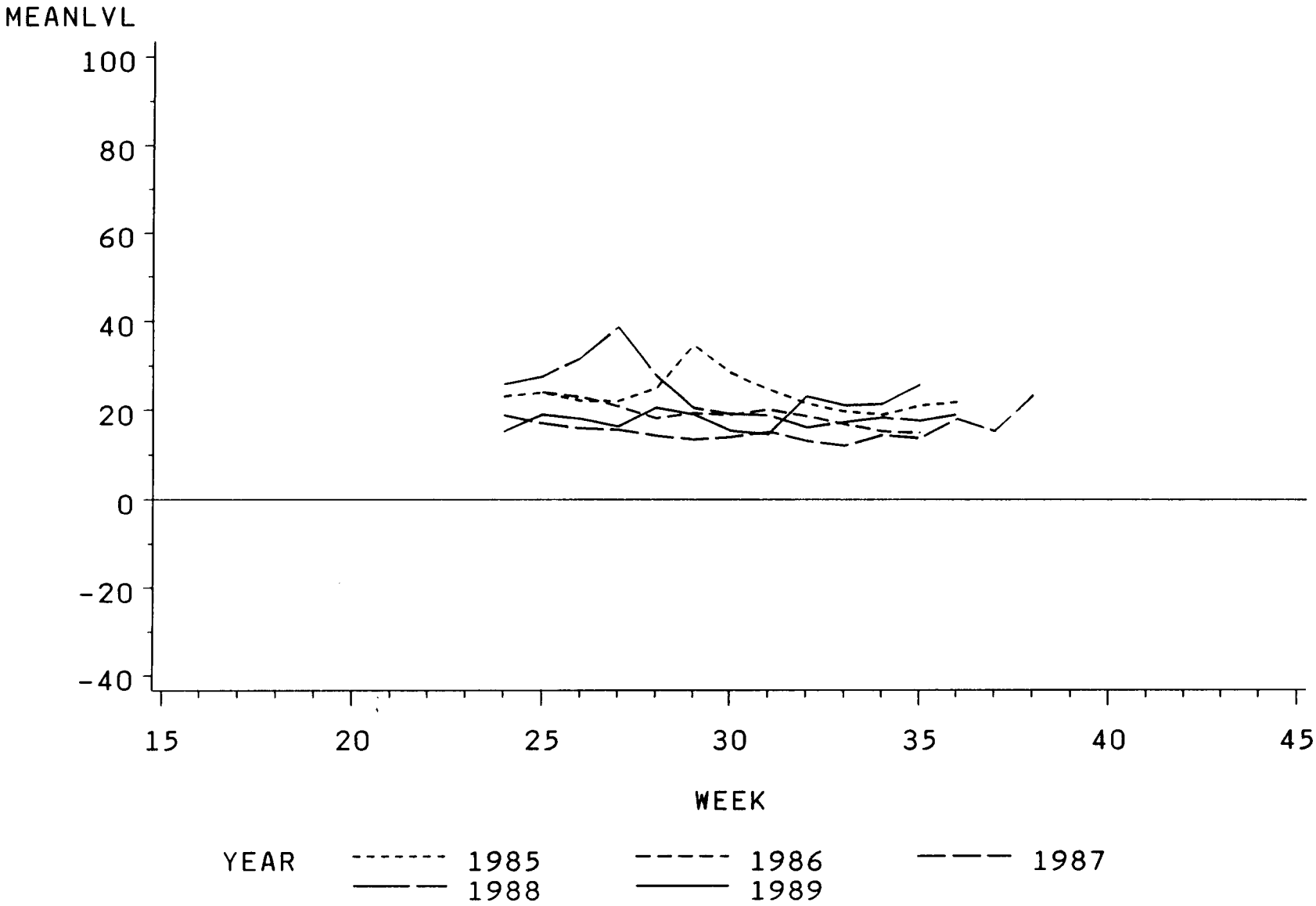

Figure 7. Average water levels (cm) by standardized week for Northeast River (Placentia) fishway, 1985-89.

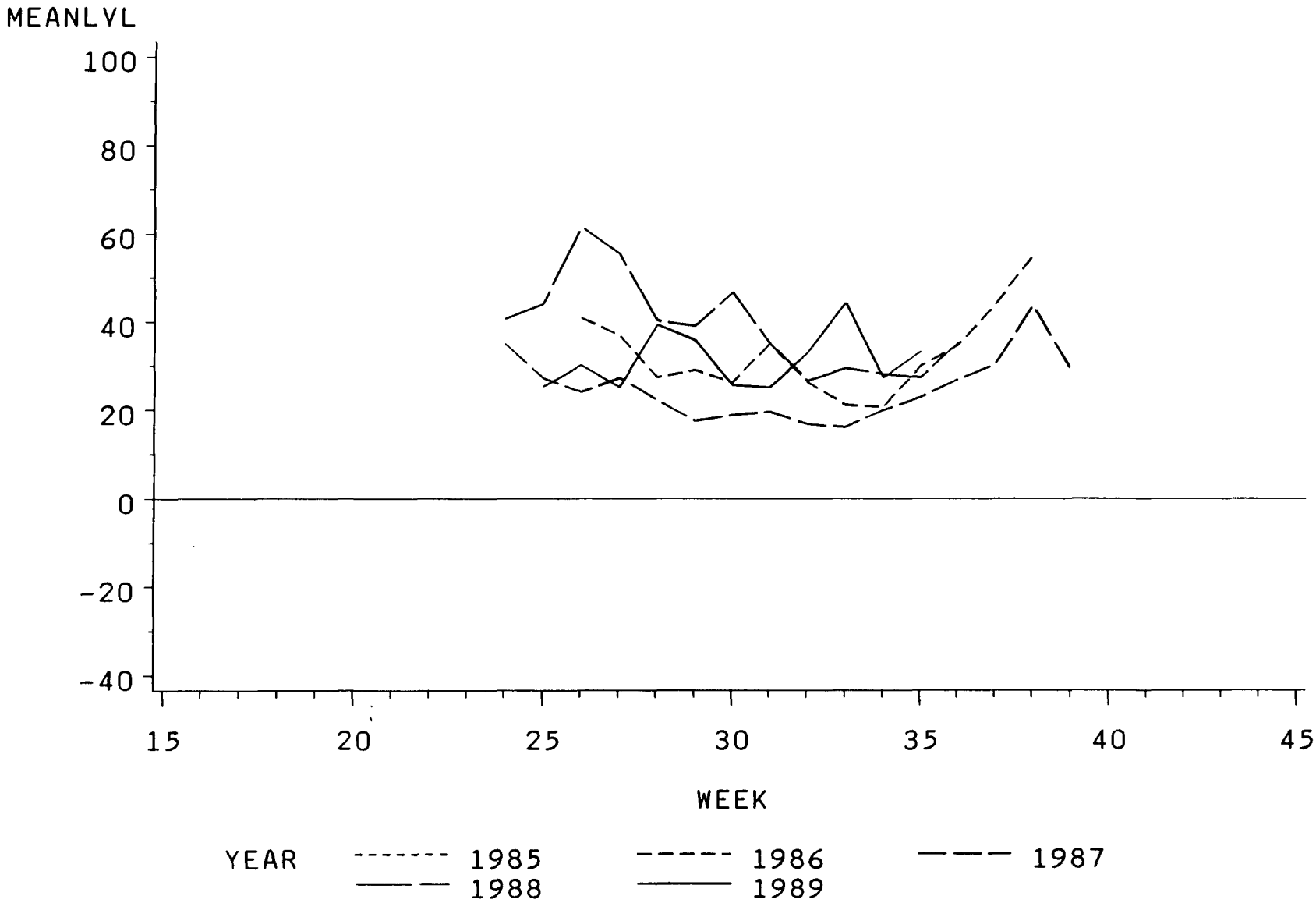

Figure 8. Average water levels (cm) by standardized week for Grand Bank Brook fishway, 1985-89.

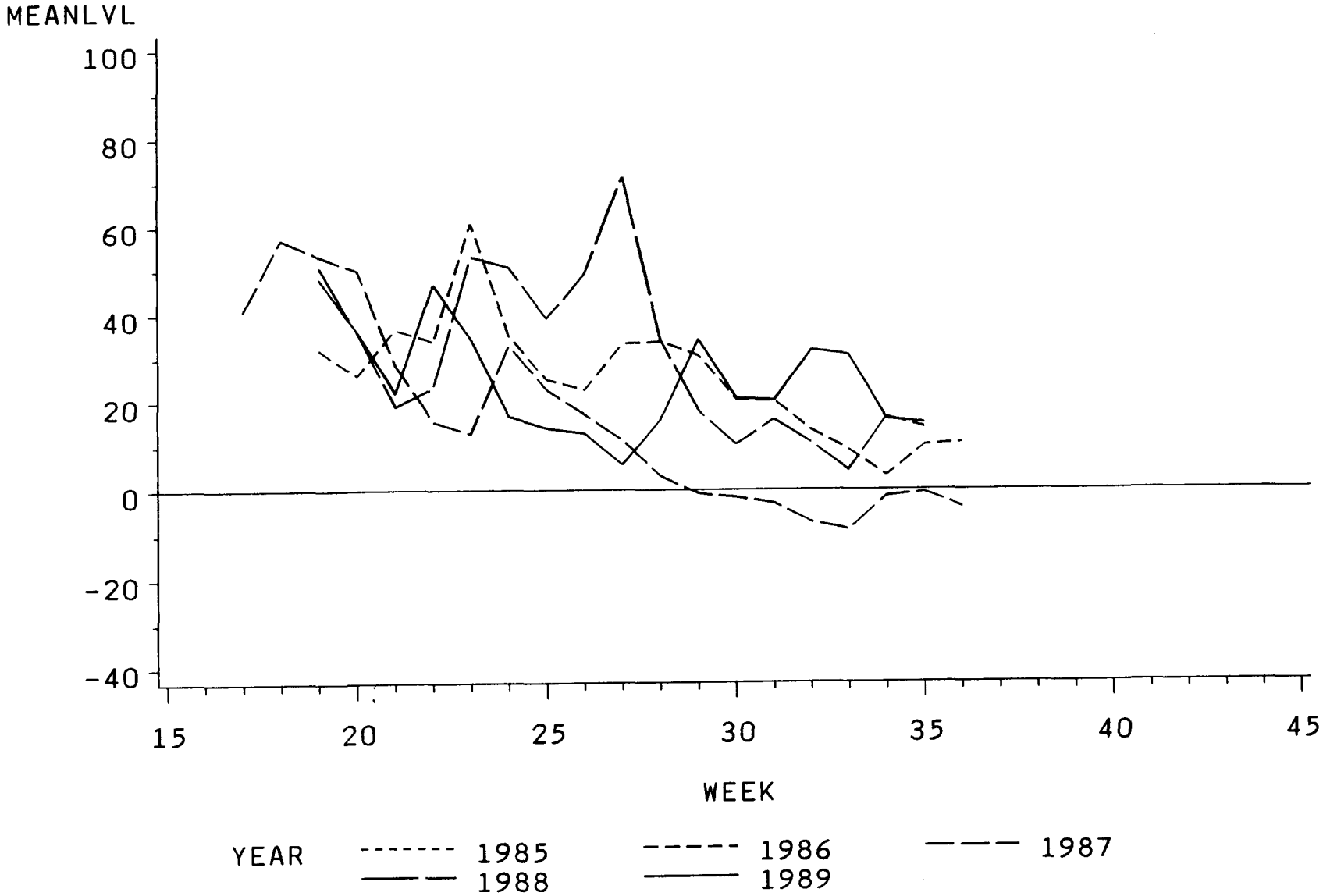

Figure 9. Average water levels (cm) by standardized week for Conne River counting fence, 1985-89.

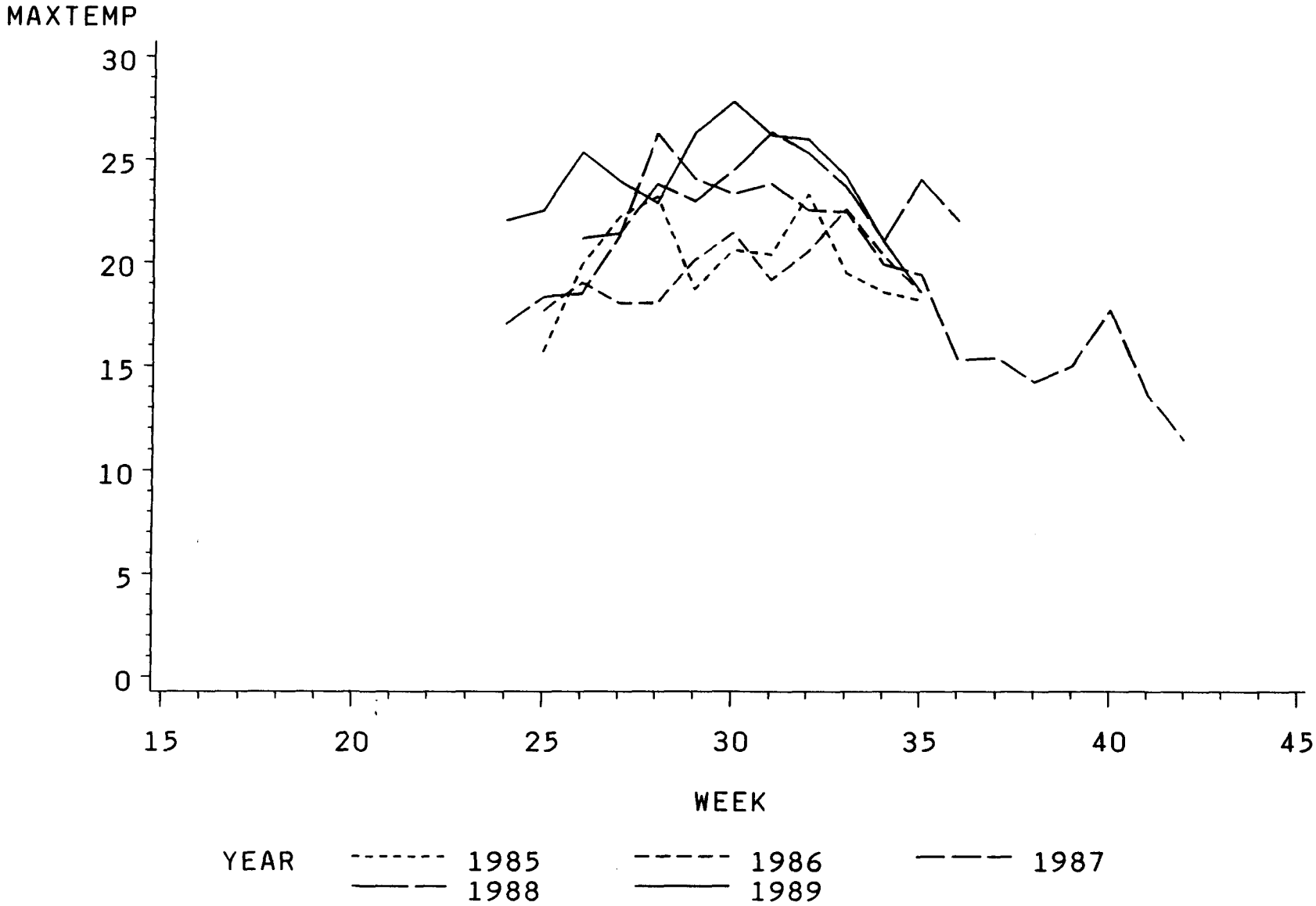

Figure 10. Average maximum water temperatures (^{o}C) by standardized week for Salmon Brook fishway, 1985-89.

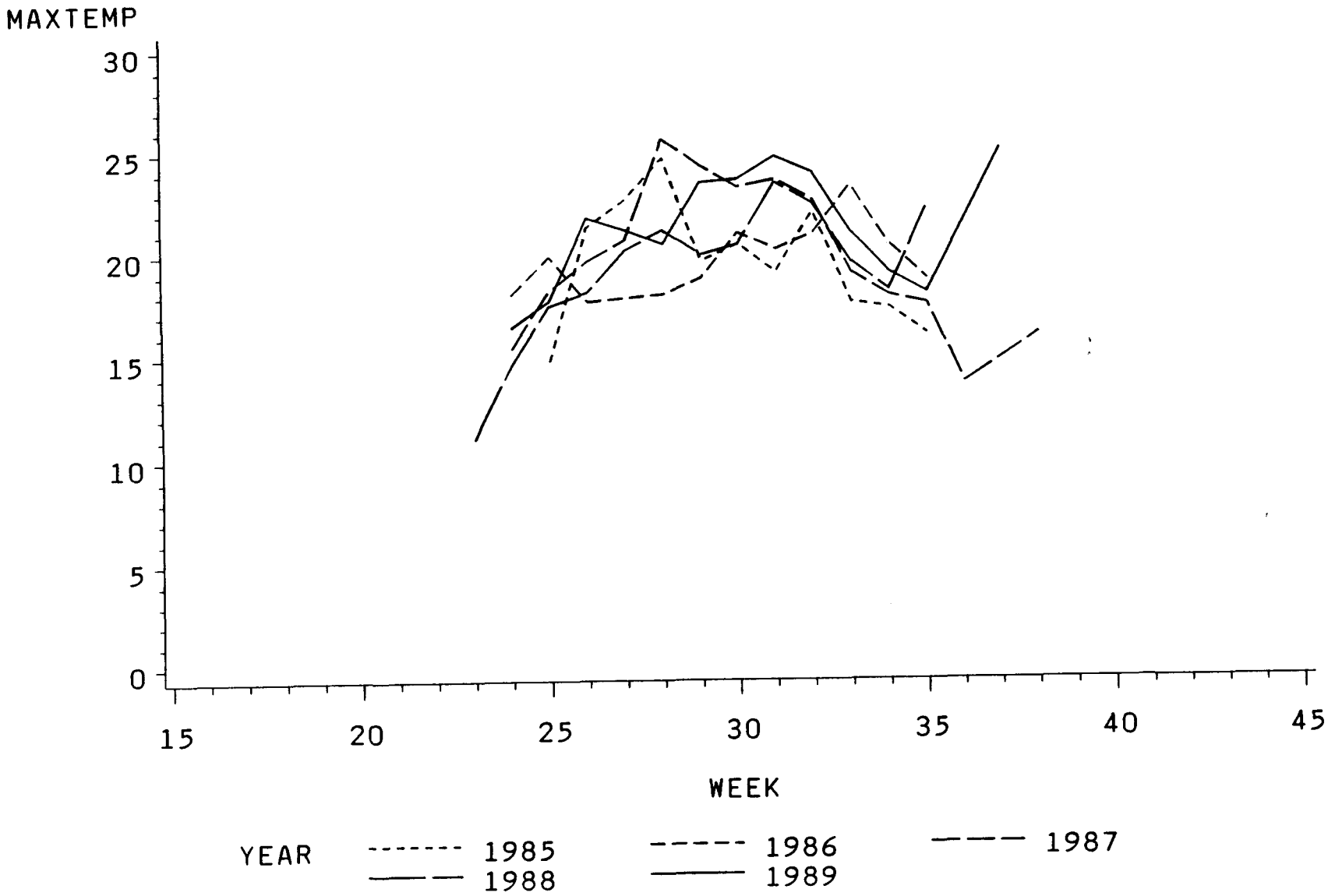

Figure 11. Average maximum water temperatures (^{o}C) by standardized week for Middle Brook fishway, 1985-89.

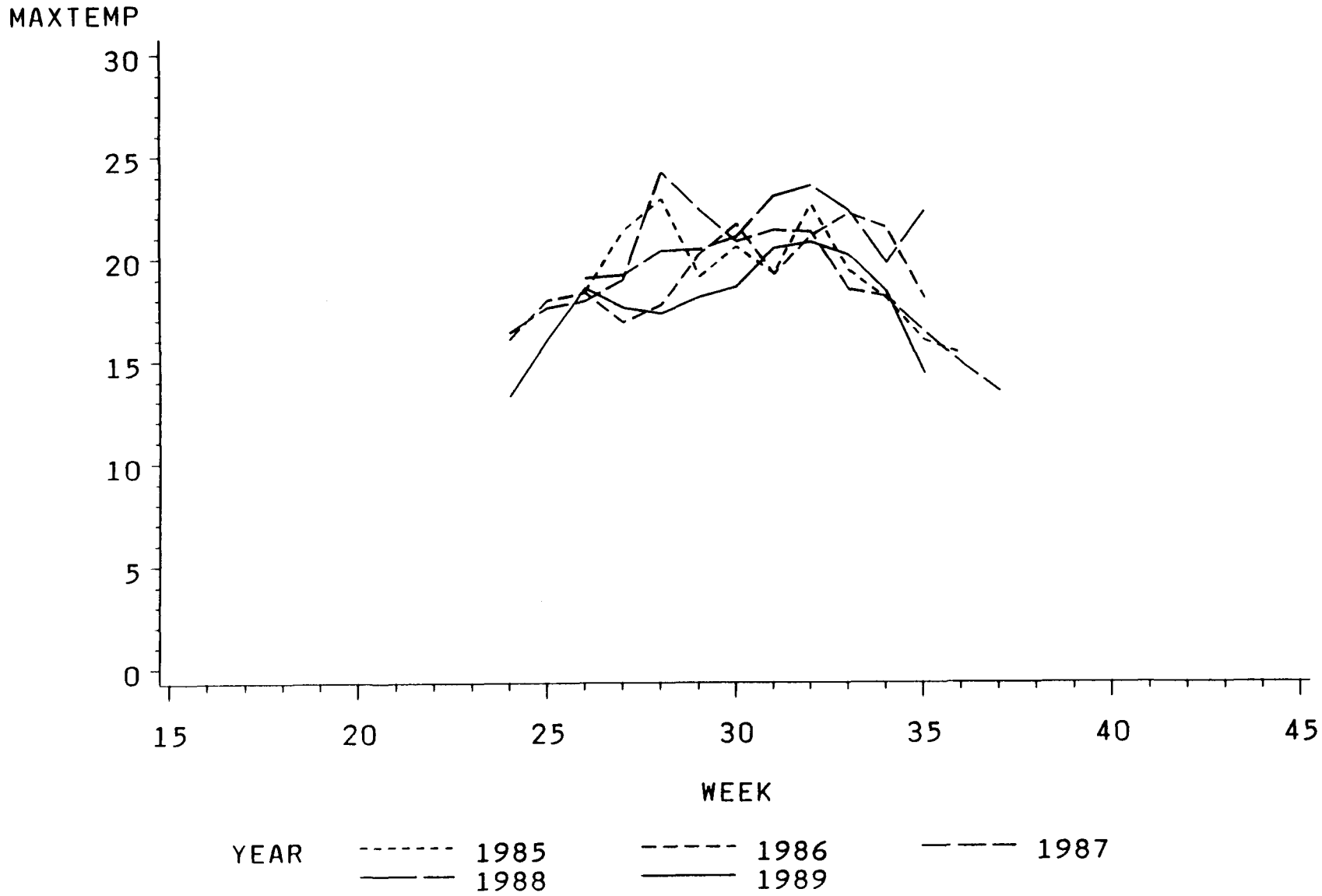

Figure 12. Average maximum water temperatures (^{o}C) by standardized week for Lower Terra Nova River fishway, 1985-89.

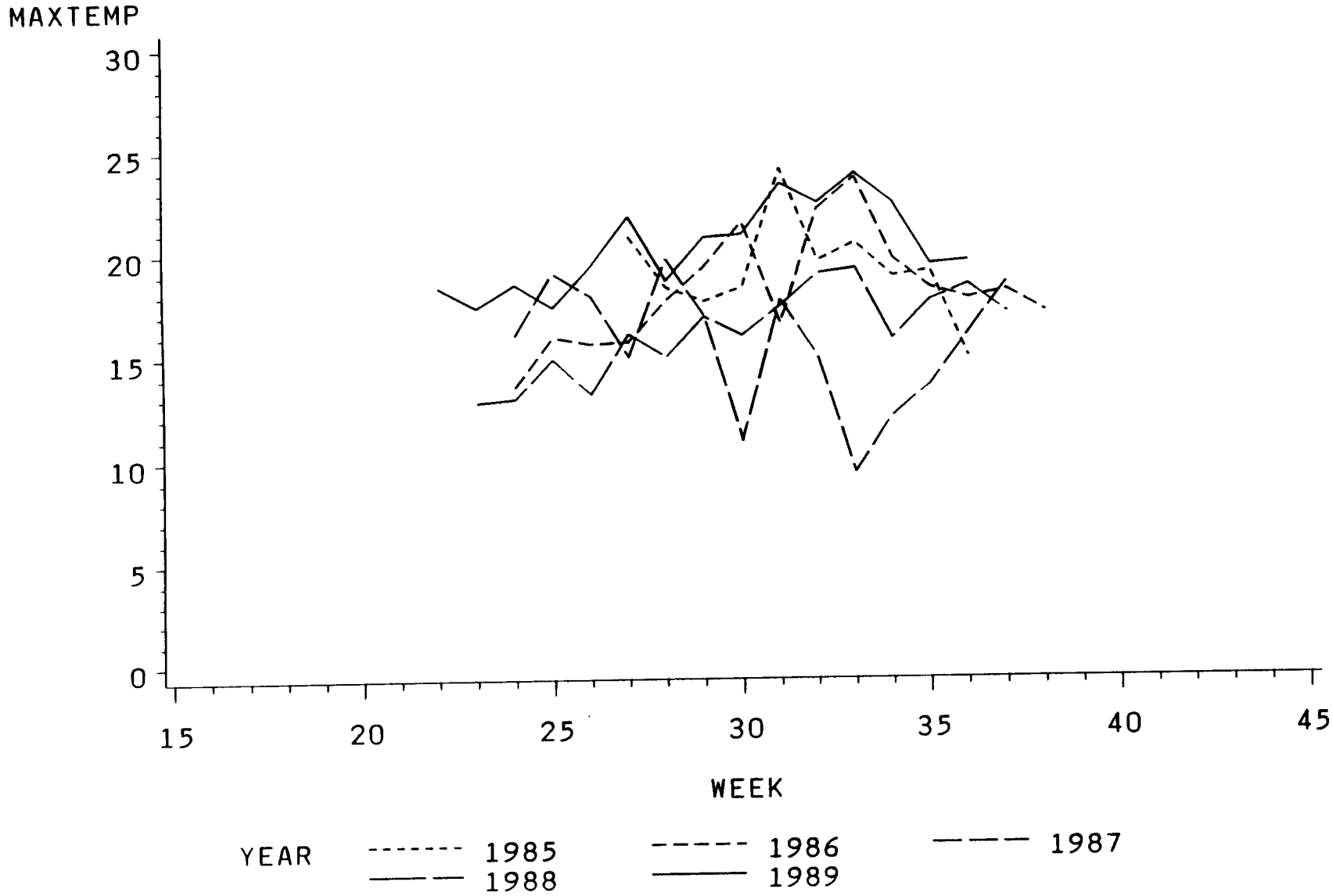

Figure 13. Average maximum water temperatures (^{o}C) by standardized week for Biscay Bay River counting fence, 1985-89.

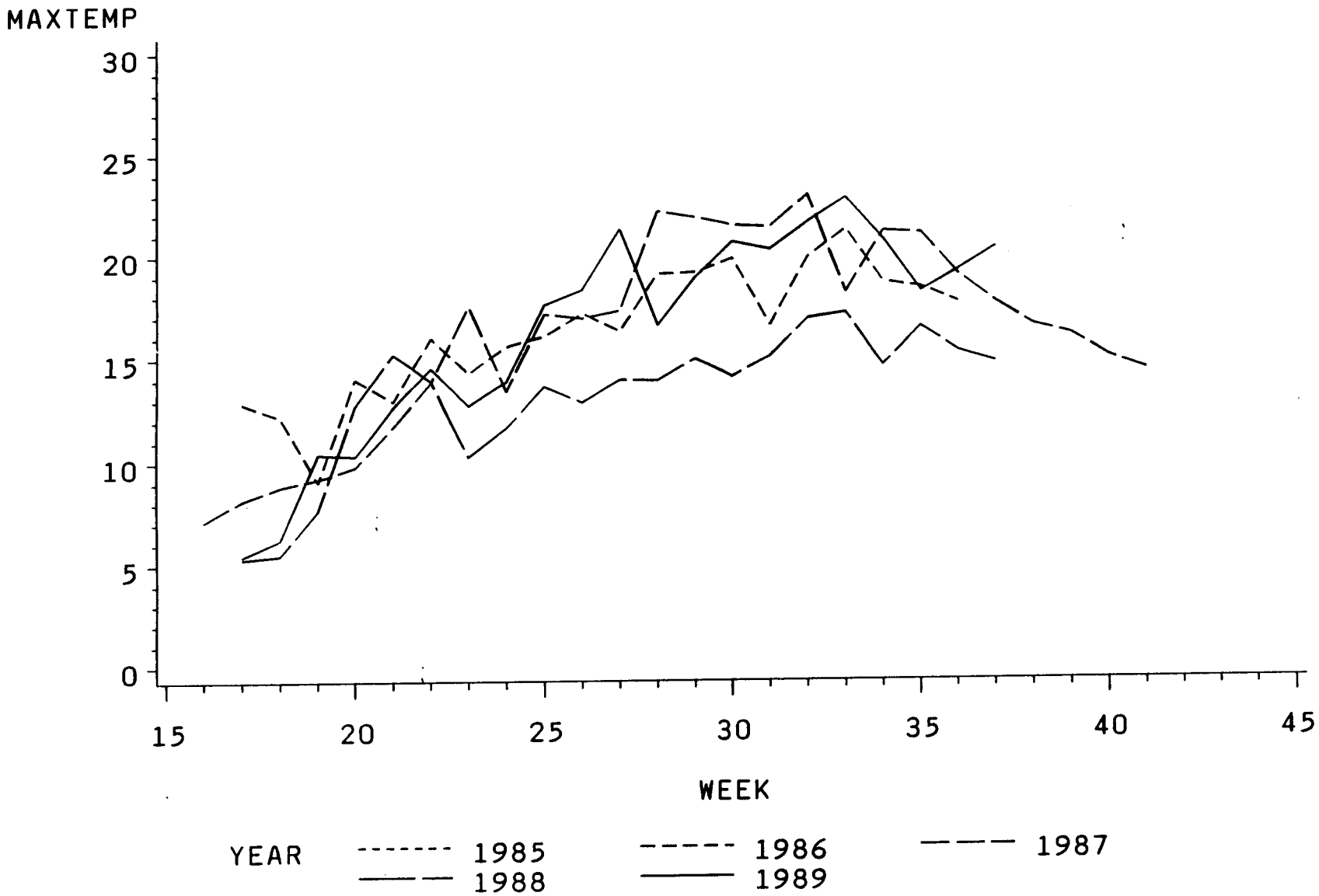

Figure 14. Average maximum water temperatures (^{o}C) by standardized week for Northeast River (Trepassey) counting fence, 1985-89.

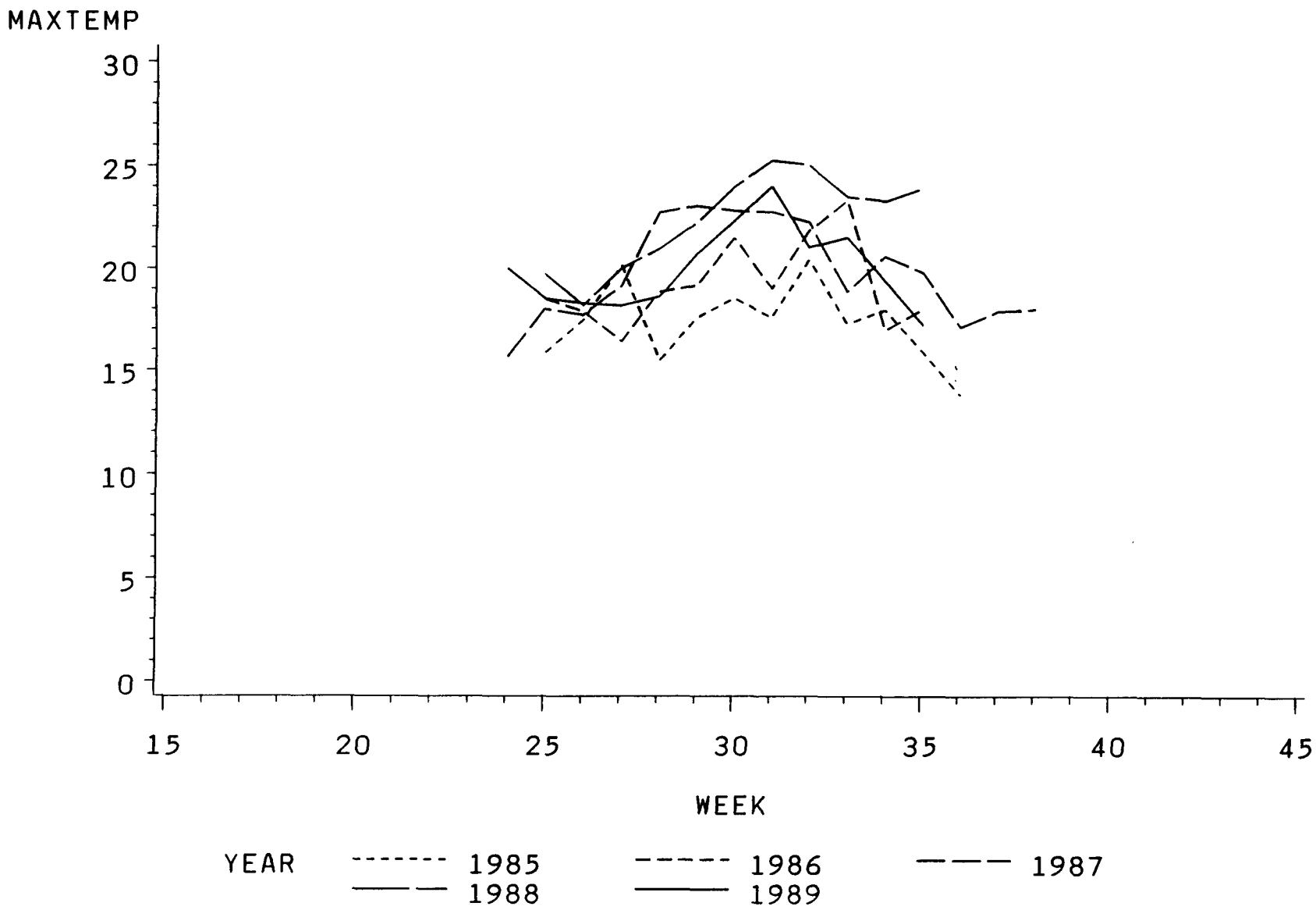

Figure 15. Average maximum water temperatures (^{o}C) by standardized week for Northeast River (Placentia) fishway, 1985-89.

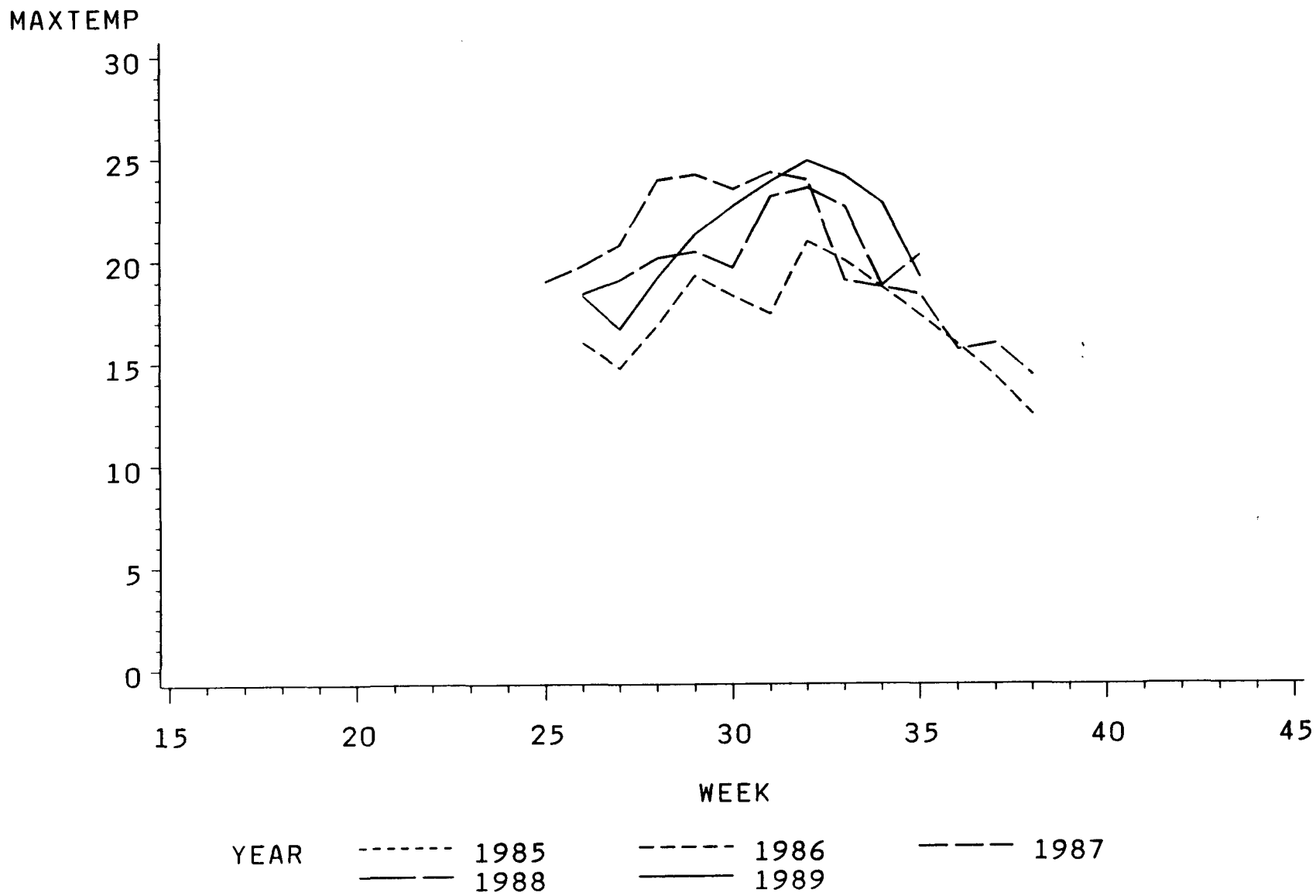

Figure 16. Average maximum water temperatures (^{o}C) by standardized week for Grand Bank Brook fishway, 1985-89.

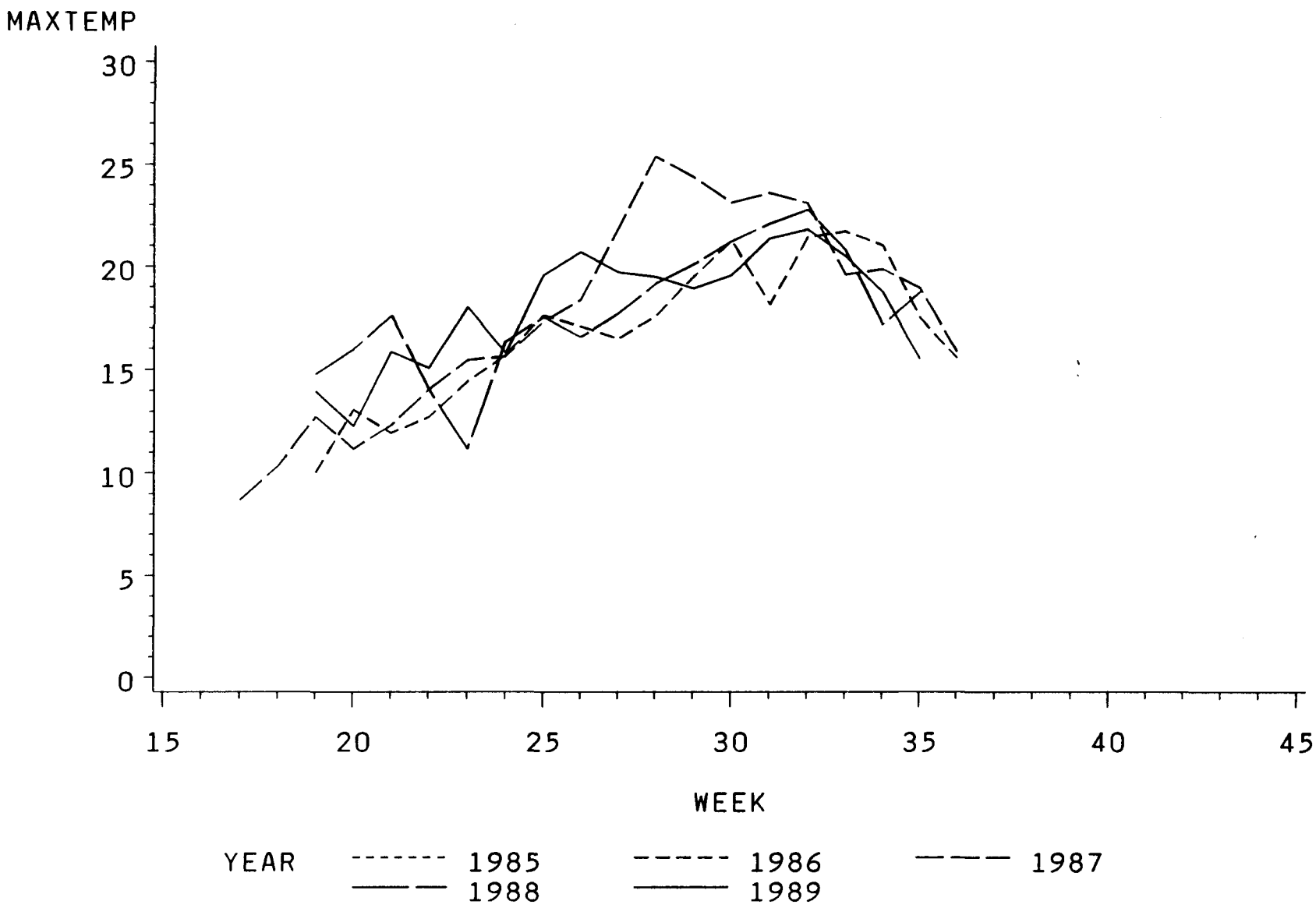

Figure 17. Average maximum water temperatures (^{o}C) by standardized week for Conne River counting fence, 1985-89.

Appendix 1a. Summary of commercial Atlantic salmon catch and effort data for insular Newfoundland (Newfoundland Region), 1974-89. Weight in metric tonnes.

INSULAR NEWFOUNDLAND (NFLD REGION)

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	432	231372	586	123464	1017	354836	42.48	65.21	15040
1975	466	245898	641	138352	1106	384250	42.13	63.99	19013
1976	372	199752	548	124172	922	323924	40.35	61.67	17533
1977	352	179273	651	138857	1004	318130	35.06	56.35	15928
1978	171	86859	380	80323	550	167182	31.09	51.95	16158
1979	334	168148	195	43441	526	211589	63.50	79.47	15990
1980	498	240126	538	113730	1034	353856	48.16	67.86	16116
1981	379	201068	556	116613	936	317681	40.49	63.29	15315
1982	362	189032	270	62038	629	251070	57.55	75.29	13271
1983	263	140138	269	60756	534	200894	49.25	69.76	13933
1984	241	130131	240	54283	482	184414	50.00	70.56	11008
1985	348	191216	242	57537	590	248753	58.98	76.87	9878
1986	392	200267	282	60699	674	260966	58.16	76.74	9916
1987	434	225025	357	77945	794	302970	54.66	74.27	9784
1988	244	131736	189	42841	434	174577	56.22	75.46	9502
1989[1]	259	144608	189	45658	448	190266	57.81	76.00	9440
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	352.53	184002.73	396.27	86336.73	748.80	270339.47	*47.08	*68.06	13892.33
S.D.:	90.74	45557.95	170.73	35394.13	233.58	71686.84	* 1.45	* 1.21	3142.17
95% LCL:	302.28	158771.07	301.71	66734.17	619.44	230636.67	*44.23	*65.68	12152.08
95% UCL:	402.79	209234.39	490.82	105939.30	878.16	310042.26	*49.93	*70.44	15632.58
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	331.80	175675.00	262.00	58661.00	594.80	234336.00	*55.78	*74.97	10017.60
S.D.:	87.01	42680.80	62.53	12715.43	145.39	54062.41	* 1.63	* 1.25	576.87
95% LCL:	223.78	122688.28	184.38	42875.24	414.30	167219.41	*52.59	*72.53	9301.44
95% UCL:	439.82	228661.72	339.62	74446.76	775.30	301452.59	*58.98	*77.41	10733.76

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1b. Summary of commercial Atlantic salmon catch and effort data for the Labrador portion of Newfoundland Region, 1974-89. Weight in metric tonnes.

LABRADOR (NFLD REGION)

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	94	46993	524	106902	617	153895	15.24	30.54	2188
1975	176	92497	429	99769	605	192266	29.09	48.11	2720
1976	137	65057	523	116351	661	181408	20.73	35.86	2967
1977	117	58335	481	98316	599	156651	19.53	37.24	2865
1978	56	29630	375	79758	430	109388	13.02	27.09	3168
1979	81	38520	213	48364	294	86884	27.55	44.33	3223
1980	209	94986	579	115817	788	210803	26.52	45.06	2976
1981	224	108022	538	104728	763	212750	29.36	50.77	2929
1982	144	72070	362	77277	506	149347	28.46	48.26	2874
1983	91	46149	239	52723	330	98872	27.58	46.68	2959
1984	48	23169	170	36984	217	60153	22.12	38.52	2463
1985	75	39899	136	30041	211	69940	35.55	57.05	2338
1986	126	63100	271	53223	397	116323	31.74	54.25	2272
1987	155	78065	327	68056	482	146121	32.16	53.42	2323
1988	144	76022	212	45007	357	121029	40.34	62.81	2158
1989[1]	107	53460	222	49557	330	103017	32.42	51.89	2196
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	125.13	62167.60	358.60	75554.40	483.80	137722.00	*25.86	*45.14	2694.87
S.D.:	52.46	25053.84	147.88	29942.90	185.14	48494.23	* 1.42	* 1.88	366.98
95% LCL:	96.08	48291.86	276.70	58970.92	381.26	110864.12	*23.09	*41.46	2491.62
95% UCL:	154.19	76043.34	440.50	92137.88	586.34	164579.88	*28.64	*48.82	2898.12
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	109.60	56051.00	223.20	46662.20	332.80	102713.20	*32.93	*54.57	2310.80
S.D.:	46.11	23849.83	76.84	14776.76	117.49	36367.52	* 2.32	* 2.77	110.57
95% LCL:	52.35	26442.27	127.80	28317.37	186.94	57564.20	*28.38	*49.14	2173.53
95% UCL:	166.85	85659.73	318.60	65007.03	478.66	147862.20	*37.48	*60.00	2448.07

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1c. Summary of commercial Atlantic salmon catch and effort data for the entire Newfoundland Region, 1974-89. Weight in metric tonnes.

NFLD. & LABRADOR (NFLD REGION)

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	526	278365	1110	230366	1634	508731	32.19	54.72	17228
1975	642	338395	1070	238121	1711	576516	37.52	58.70	21733
1976	509	264809	1071	240523	1583	505332	32.15	52.40	20500
1977	469	237608	1132	237173	1603	474781	29.26	50.05	18793
1978	227	116489	755	160081	980	276570	23.16	42.12	19326
1979	415	206668	408	91805	820	298473	50.61	69.24	19213
1980	707	335112	1117	229547	1822	564659	38.80	59.35	19092
1981	603	309090	1094	221341	1699	530431	35.49	58.27	18244
1982	506	261102	632	139315	1135	400417	44.58	65.21	16145
1983	354	186287	508	113479	864	299766	40.97	62.14	16892
1984	289	153300	410	91267	699	244567	41.34	62.68	13471
1985	423	231115	378	87578	801	318693	52.81	72.52	12216
1986	518	263367	553	113922	1071	377289	48.37	69.81	12188
1987	589	303090	684	146001	1276	449091	46.16	67.49	12107
1988	388	207758	401	87848	791	295606	49.05	70.28	11660
1989[1]	366	198068	411	95215	778	293283	47.04	67.53	11636
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	477.67	246170.33	754.87	161891.13	1232.60	408061.47	*38.75	*60.33	16587.20
S.D.:	131.53	64299.19	309.62	63682.60	404.29	114330.72	* 1.58	* 1.57	3415.19
95% LCL:	404.82	210559.09	583.39	126621.38	1008.69	344740.93	*35.66	*57.25	14695.74
95% UCL:	550.51	281781.58	926.34	197160.89	1456.51	471382.00	*41.84	*63.40	18478.66
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	441.40	231726.00	485.20	105323.20	927.60	337049.20	*47.59	*68.75	12328.40
S.D.:	116.26	56611.50	130.72	25231.30	239.21	78708.41	* 2.32	* 1.95	677.06
95% LCL:	297.06	161444.80	322.91	73999.42	630.63	239335.47	*43.03	*64.93	11487.85
95% UCL:	585.74	302007.20	647.49	136646.98	1224.57	434762.93	*52.14	*72.58	13168.95

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1d. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 1, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 1

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	12	6211	35	7113	47	13324	25.53	46.62	288
1975	42	22105	76	17603	118	39708	35.59	55.67	556
1976	30	14124	139	30882	169	45006	17.75	31.38	549
1977	25	12363	98	20046	123	32409	20.33	38.15	612
1978	28	14530	124	26321	151	40851	18.54	35.57	1001
1979	16	7419	72	16444	88	23863	18.18	31.09	979
1980	41	18587	112	22337	153	40924	26.80	45.42	1018
1981	20	9616	123	24853	143	34469	13.99	27.90	981
1982	18	9174	66	14006	84	23180	21.43	39.58	1046
1983	20	9907	61	13239	81	23146	24.69	42.80	1080
1984	16	7683	32	6832	48	14515	33.33	52.93	992
1985	21	11054	51	11349	72	22403	29.17	49.34	936
1986	24	11794	65	12821	89	24615	26.97	47.91	848
1987	12	6248	62	13080	75	19328	16.00	32.33	852
1988	22	11682	42	9020	65	20702	33.85	56.43	728
1989[1]	28	13964	79	17631	107	31595	26.17	44.20	784
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	23.13	11499.80	77.20	16396.40	100.40	27896.20	*23.04	*41.22	831.07
S.D.:	9.07	4456.93	34.12	7205.78	39.55	10183.93	* 1.84	* 2.61	233.41
95% LCL:	18.11	9031.39	58.30	12405.58	78.50	22255.97	*19.44	*36.11	701.79
95% UCL:	28.16	13968.21	96.10	20387.22	122.30	33536.43	*26.64	*46.34	960.34
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	19.00	9692.20	50.40	10620.40	69.80	20312.60	*27.22	*47.72	871.20
S.D.:	4.90	2555.91	13.76	2661.60	14.99	3795.18	* 3.20	* 3.94	100.26
95% LCL:	12.92	6519.12	33.32	7316.12	51.19	15601.01	*20.94	*39.99	746.74
95% UCL:	25.08	12865.28	67.48	13924.68	88.41	25024.19	*33.50	*55.44	995.66

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1e. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 2, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 2

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	82	40782	489	99789	570	140571	14.39	29.01	1900
1975	134	70392	353	82166	487	152558	27.52	46.14	2164
1976	107	50933	384	85469	492	136402	21.75	37.34	2418
1977	92	45972	383	78270	476	124242	19.33	37.00	2253
1978	28	15100	251	53437	279	68537	10.04	22.03	2167
1979	65	31101	141	31920	206	63021	31.55	49.35	2244
1980	168	76399	467	93480	635	169879	26.46	44.97	1958
1981	204	98406	415	79875	620	178281	32.90	55.20	1948
1982	126	62896	296	63271	422	126167	29.86	49.85	1828
1983	71	36242	178	39484	249	75726	28.51	47.86	1879
1984	32	15486	138	30152	169	45638	18.93	33.93	1471
1985	54	28845	85	18692	139	47537	38.85	60.68	1402
1986	102	51306	206	40402	308	91708	33.12	55.94	1424
1987	143	71817	265	54976	407	126793	35.14	56.64	1471
1988	122	64340	170	35987	292	100327	41.78	64.13	1430
1989[1]	79	39496	143	31926	223	71422	35.43	55.30	1412
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	102.00	50667.80	281.40	59158.00	383.40	109825.80	*26.60	*46.13	1863.80
S.D.:	49.26	23610.08	128.29	25923.81	162.00	43102.50	* 1.72	* 2.24	349.23
95% LCL:	74.72	37591.67	210.35	44800.44	293.68	85954.06	*23.24	*41.74	1670.38
95% UCL:	129.28	63743.93	352.45	73515.56	473.12	133697.54	*29.97	*50.53	2057.22
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	90.60	46358.80	172.80	36041.80	263.00	82400.60	*34.45	*56.26	1439.60
S.D.:	46.46	23747.53	68.06	13353.12	109.33	35162.58	* 2.59	* 3.05	30.50
95% LCL:	32.92	16877.07	88.30	19464.37	127.27	38747.49	*29.37	*50.29	1401.73
95% UCL:	148.28	75840.53	257.30	52619.23	398.73	126053.71	*39.53	*62.23	1477.47

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1f. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 3, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 3

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	66	33129	83	18492	149	51621	44.30	64.18	2371
1975	119	59495	121	26850	240	86345	49.58	68.90	2704
1976	169	88837	174	40514	343	129351	49.27	68.68	2528
1977	122	61215	240	51168	363	112383	33.61	54.47	2364
1978	49	24384	82	17463	131	41847	37.40	58.27	2406
1979	204	101970	65	15509	269	117479	75.84	86.80	2418
1980	167	79798	165	34637	332	114435	50.30	69.73	2378
1981	174	93658	175	36148	349	129806	49.86	72.15	2309
1982	111	58977	79	17262	190	76239	58.42	77.36	2083
1983	100	55136	94	20601	194	75737	51.55	72.80	2315
1984	58	31539	88	19540	146	51079	39.73	61.75	1892
1985	73	40484	50	11394	123	51878	59.35	78.04	1750
1986	102	53685	90	18538	192	72223	53.13	74.33	1752
1987	189	95777	180	38316	369	134093	51.22	71.43	1730
1988	99	52459	85	18380	184	70839	53.80	74.05	1724
1989[1]	77	42851	75	18675	152	61526	50.66	69.65	1700
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	120.13	62036.20	118.07	25654.13	238.27	87690.33	*50.42	*70.74	2181.60
S.D.:	49.72	24842.81	54.87	11606.35	91.13	32403.12	* 2.82	* 2.25	329.35
95% LCL:	92.60	48277.34	87.68	19226.11	187.80	69744.30	*44.90	*66.33	1999.19
95% UCL:	147.67	75795.06	148.46	32082.15	288.74	105636.37	*55.94	*75.16	2364.01
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	104.20	54788.80	98.60	21233.60	202.80	76022.40	*51.38	*72.07	1769.60
S.D.:	50.82	24656.94	48.37	10085.93	97.07	33980.23	* 2.25	* 1.92	69.50
95% LCL:	41.11	24178.07	38.55	8712.28	82.30	33837.14	*46.97	*68.30	1683.31
95% UCL:	167.29	85399.53	158.65	33754.92	323.30	118207.66	*55.79	*75.84	1855.89

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1g. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 4, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 4

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	54	26821	52	11456	105	38277	51.43	70.07	3151
1975	142	71225	103	22950	246	94175	57.72	75.63	3962
1976	57	30249	60	14303	117	44552	48.72	67.90	3547
1977	85	44691	96	20371	181	65062	46.96	68.69	3327
1978	36	17821	68	14564	104	32385	34.62	55.03	3371
1979	45	21524	33	7403	78	28927	57.69	74.41	3349
1980	135	64024	110	24029	245	88053	55.10	72.71	3485
1981	87	44106	128	26632	215	70738	40.47	62.35	3390
1982	98	50764	69	16022	166	66786	59.04	76.01	3002
1983	74	37560	56	12789	130	50349	56.92	74.60	3729
1984	73	38857	50	10976	123	49833	59.35	77.97	3124
1985	68	37957	43	10019	111	47976	61.26	79.12	2768
1986	119	59902	81	17047	200	76949	59.50	77.85	2782
1987	109	54935	71	15087	180	70022	60.56	78.45	2764
1988	68	36005	35	8161	103	44166	66.02	81.52	2724
1989[1]	82	45631	47	10689	130	56320	63.08	81.02	2716
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	83.33	42429.40	70.33	15453.93	153.60	57883.33	*54.25	*73.30	3231.67
S.D.:	31.85	15507.90	28.28	5822.62	54.88	19807.71	* 2.09	* 1.56	375.70
95% LCL:	65.69	33840.56	54.67	12229.15	123.21	46913.10	*50.16	*70.24	3023.59
95% UCL:	100.97	51018.24	86.00	18678.72	183.99	68853.57	*58.35	*76.36	3439.75
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	87.40	45531.20	56.00	12258.00	143.40	57789.20	*60.95	*78.79	2832.40
S.D.:	24.62	11040.98	19.34	3687.13	43.71	14679.33	* 0.99	* 0.58	164.43
95% LCL:	56.83	31824.21	31.99	7680.55	89.14	39565.33	*59.01	*77.66	2628.27
95% UCL:	117.97	59238.19	80.01	16835.45	197.66	76013.07	*62.89	*79.92	3036.53

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1h. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 5, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 5

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	31	15344	35	7551	65	22895	47.69	67.02	2014
1975	48	28024	112	24380	160	52404	30.00	53.48	2565
1976	13	6284	44	10811	57	17095	22.81	36.76	2354
1977	38	18031	90	19150	128	37181	29.69	48.50	2163
1978	22	11578	59	12785	81	24363	27.16	47.52	2172
1979	11	5342	18	3849	28	9191	39.29	58.12	2169
1980	40	18246	47	10609	87	28855	45.98	63.23	2320
1981	28	14252	65	14366	93	28618	30.11	49.80	1944
1982	37	18607	23	6089	60	24696	61.67	75.34	1551
1983	27	13723	31	7288	58	21011	46.55	65.31	1661
1984	25	13390	33	7756	58	21146	43.10	63.32	1341
1985	41	21323	31	7518	72	28841	56.94	73.93	1122
1986	36	18044	25	6062	61	24106	59.02	74.85	1124
1987	39	21588	21	5794	60	27382	65.00	78.84	1100
1988	23	12774	16	4523	39	17297	58.97	73.85	1036
1989[1]	24	13169	13	3143	36	16312	66.67	80.73	1028
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	30.60	15770.00	43.33	9902.07	73.80	25672.07	*41.46	*61.43	1775.73
S.D.:	10.60	5836.61	27.70	5726.41	33.46	9816.90	* 3.74	* 3.25	528.40
95% LCL:	24.73	12537.47	27.99	6730.57	55.27	20235.11	*34.14	*55.06	1483.09
95% UCL:	36.47	19002.53	58.67	13073.56	92.33	31109.03	*48.79	*67.80	2068.38
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	32.80	17423.80	25.20	6330.60	58.00	23754.40	*56.55	*73.35	1144.60
S.D.:	8.26	4207.77	7.01	1329.40	11.94	4681.30	* 3.65	* 2.48	115.42
95% LCL:	22.55	12200.01	16.49	4680.20	43.18	17942.73	*49.39	*68.49	1001.30
95% UCL:	43.05	22647.59	33.91	7981.00	72.82	29566.07	*63.71	*78.20	1287.90

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1i. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 6, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 6

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	74	39102	94	19185	168	58287	44.05	67.09	1589
1975	40	21994	67	14171	106	36165	37.74	60.82	2074
1976	21	10204	33	6648	54	16852	38.89	60.55	2074
1977	34	15236	57	11849	90	27085	37.78	56.25	1876
1978	21	10193	55	10689	76	20882	27.63	48.81	1901
1979	20	9661	9	1757	29	11418	68.97	84.61	1853
1980	29	14568	35	6919	63	21487	46.03	67.80	1834
1981	23	12843	50	10356	73	23199	31.51	55.36	1709
1982	23	12006	20	4278	43	16284	53.49	73.73	1536
1983	11	6432	18	4086	30	10518	36.67	61.15	1499
1984	19	10436	15	3532	34	13968	55.88	74.71	1160
1985	46	26911	19	4462	65	31373	70.77	85.78	1036
1986	31	16227	23	4715	54	20942	57.41	77.49	1028
1987	27	15197	20	4365	48	19562	56.25	77.69	1018
1988	14	8464	10	2180	25	10644	56.00	79.52	964
1989[1]	17	9881	10	2702	27	12583	62.96	78.53	952
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	28.87	15298.27	35.00	7279.47	63.87	22577.73	*45.20	*67.76	1543.40
S.D.:	15.58	8440.28	24.58	4960.53	37.02	12342.07	* 3.12	* 2.88	404.90
95% LCL:	20.24	10623.73	21.39	4532.14	43.37	15742.24	*39.07	*62.10	1319.15
95% UCL:	37.49	19972.80	48.61	10026.79	84.37	29413.22	*51.32	*73.41	1767.65
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	27.40	15447.00	17.40	3850.80	45.20	19297.80	*60.62	*80.05	1041.20
S.D.:	12.34	7175.77	5.03	1034.17	15.90	7935.34	* 3.66	* 2.40	72.13
95% LCL:	12.08	6538.54	11.16	2566.92	25.47	9446.35	*53.44	*75.34	951.65
95% UCL:	42.72	24355.46	23.64	5134.68	64.93	29149.25	*67.80	*84.75	1130.75

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1j. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 7, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 7

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	43	21478	83	17277	126	38755	34.13	55.42	1861
1975	19	9819	56	12153	75	21972	25.33	44.69	2567
1976	15	7983	33	7042	48	15025	31.25	53.13	2276
1977	23	11318	56	11875	78	23193	29.49	48.80	1973
1978	10	4771	40	8572	50	13343	20.00	35.76	2066
1979	5	2347	7	1418	11	3765	45.45	62.34	1971
1980	22	10012	52	10747	74	20759	29.73	48.23	2024
1981	18	9363	55	11168	73	20531	24.66	45.60	1954
1982	6	3091	11	2425	17	5516	35.29	56.04	1548
1983	7	3741	16	3478	23	7219	30.43	51.82	1402
1984	6	3962	12	2736	19	6698	31.58	59.15	1012
1985	8	4685	16	3582	25	8267	32.00	56.67	914
1986	7	3417	12	2634	19	6051	36.84	56.47	922
1987	10	4811	16	3510	26	8321	38.46	57.82	920
1988	5	2870	11	2467	16	5337	31.25	53.78	862
1989[1]	5	2627	8	1935	13	4562	38.46	57.58	864
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	13.60	6911.20	31.73	6738.93	45.33	13650.13	*30.00	*50.63	1618.13
S.D.:	10.29	5024.96	23.64	4891.30	33.37	9740.36	* 1.45	* 1.76	571.92
95% LCL:	7.90	4128.19	18.64	4029.95	26.85	8255.56	*27.16	*47.18	1301.38
95% UCL:	19.30	9694.21	44.82	9447.91	63.81	19044.70	*32.84	*54.08	1934.88
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	7.20	3949.00	13.40	2985.80	21.00	6934.80	*34.29	*56.94	926.00
S.D.:	1.92	826.46	2.41	520.95	4.30	1331.02	* 1.59	* 0.77	54.06
95% LCL:	4.81	2922.97	10.41	2339.06	15.66	5282.39	*31.16	*55.43	858.89
95% UCL:	9.59	4975.03	16.39	3632.54	26.34	8587.21	*37.41	*58.45	993.11

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1k. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 8, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 8

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	50	27847	84	18210	134	46057	37.31	60.46	1608
1975	28	14513	83	17669	111	32182	25.23	45.10	1875
1976	17	9128	50	10628	67	19756	25.37	46.20	1823
1977	15	7915	55	11754	70	19669	21.43	40.24	1582
1978	3	1487	28	5901	31	7388	9.68	20.13	1588
1979	5	2719	9	1881	14	4600	35.71	59.11	1617
1980	22	10362	67	13953	89	24315	24.72	42.62	1536
1981	13	6940	38	8644	51	15584	25.49	44.53	1524
1982	9	3457	9	2238	17	5695	52.94	60.70	1395
1983	9	4836	15	3441	24	8277	37.50	58.43	1089
1984	15	8156	16	3898	31	12054	48.39	67.66	774
1985	15	6604	16	4589	31	11193	48.39	59.00	744
1986	16	8029	8	2010	24	10039	66.67	79.98	732
1987	10	5498	13	2766	23	8264	43.48	66.53	700
1988	7	3853	12	2712	19	6565	36.84	58.69	704
1989[1]	6	3476	5	1241	11	4717	54.55	73.69	700
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	15.60	8089.60	33.53	7352.93	49.07	15442.53	*31.79	*52.39	1286.07
S.D.:	11.50	6383.99	27.51	5755.97	37.31	11497.02	* 2.89	* 3.26	442.57
95% LCL:	9.23	4553.91	18.30	4165.06	28.40	9075.06	*26.13	*46.00	1040.96
95% UCL:	21.97	11625.29	48.77	10540.80	69.73	21810.00	*37.46	*58.77	1531.18
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	12.60	6428.00	13.00	3195.00	25.60	9623.00	*49.22	*66.80	730.80
S.D.:	3.91	1808.02	3.32	1031.87	5.27	2221.82	* 4.36	* 3.89	30.45
95% LCL:	7.74	4183.41	8.88	1913.97	19.05	6864.69	*40.67	*59.17	693.00
95% UCL:	17.46	8672.59	17.12	4476.03	32.15	12381.31	*57.77	*74.43	768.60

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 11. Summary of commercial Atlantic salmon catch and effort data Salmon Fishing Area 9, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 9

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	8	4396	2	420	10	4816	80.00	91.28	407
1975	6	3395	3	628	9	4023	66.67	84.39	432
1976	5	2833	1	310	7	3143	71.43	90.14	347
1977	4	2454	1	266	6	2720	66.67	90.22	292
1978	7	3702	5	1013	11	4715	63.64	78.52	287
1979	21	11445	6	1239	26	12684	80.77	90.23	283
1980	12	6153	3	522	14	6675	85.71	92.18	268
1981	13	7024	4	834	17	7858	76.47	89.39	252
1982	13	6706	2	395	14	7101	92.86	94.44	222
1983	7	3891	2	447	9	4338	77.78	89.70	235
1984	10	5203	2	336	12	5539	83.33	93.93	201
1985	9	4849	2	483	11	5332	81.82	90.94	178
1986	6	3131	2	418	8	3549	75.00	88.22	180
1987	5	2907	1	300	7	3207	71.43	90.65	172
1988	5	2787	3	663	8	3450	62.50	80.78	172
1989[1]	5	2644	2	554	7	3198	71.43	82.68	168
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	8.73	4725.07	2.60	551.60	11.27	5276.67	*77.51	*89.55	261.87
S.D.:	4.51	2369.59	1.45	281.49	5.09	2557.37	* 2.21	* 1.05	82.50
95% LCL:	6.23	3412.70	1.79	395.70	8.45	3860.30	*73.19	*87.50	216.18
95% UCL:	11.23	6037.43	3.41	707.50	14.09	6693.03	*81.84	*91.60	307.56
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	7.00	3775.40	2.00	440.00	9.20	4215.40	*76.09	*89.56	180.60
S.D.:	2.35	1155.09	0.71	143.59	2.17	1123.11	* 3.80	* 2.12	11.95
95% LCL:	4.09	2341.39	1.12	261.73	6.51	2821.10	*68.63	*85.41	165.76
95% UCL:	9.91	5209.41	2.88	618.27	11.89	5609.70	*83.54	*93.71	195.44

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1m. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 10, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 10

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	62	36686	36	7880	99	44566	62.63	82.32	1031
1975	15	9604	16	3304	31	12908	48.39	74.40	1330
1976	19	11266	20	4269	39	15535	48.72	72.52	1207
1977	19	11366	17	3677	36	15043	52.78	75.56	1063
1978	13	7416	22	4782	35	12198	37.14	60.80	1069
1979	5	3129	14	3106	20	6235	25.00	50.18	1051
1980	35	19347	28	5916	63	25263	55.56	76.58	1003
1981	8	4698	11	2226	19	6924	42.11	67.85	979
1982	30	16820	16	3526	46	20346	65.22	82.67	837
1983	10	5084	12	2767	22	7851	45.45	64.76	934
1984	18	9632	8	1724	26	11356	69.23	84.82	718
1985	40	22460	11	2261	51	24721	78.43	90.85	644
1986	34	15627	15	3471	49	19098	69.39	81.83	656
1987	19	10075	9	1986	28	12061	67.86	83.53	652
1988	12	6831	6	1348	18	8179	66.67	83.52	624
1989[1]	27	15227	11	2677	38	17904	71.05	85.05	624
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	22.60	12669.40	16.07	3482.87	38.80	16152.27	*58.25	*78.44	919.87
S.D.:	15.11	8643.85	7.93	1716.55	21.28	9905.07	* 3.22	* 2.16	221.39
95% LCL:	14.23	7882.12	11.67	2532.18	27.02	10666.48	*51.93	*74.20	797.25
95% UCL:	30.97	17456.68	20.46	4433.55	50.58	21638.06	*64.57	*82.67	1042.48
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	24.60	12925.00	9.80	2158.00	34.40	15083.00	*71.51	*85.69	658.80
S.D.:	11.82	6211.28	3.42	807.56	14.74	6702.60	* 2.58	* 2.24	35.32
95% LCL:	9.92	5213.91	5.55	1155.44	16.10	6761.95	*66.46	*81.30	614.96
95% UCL:	39.28	20636.09	14.05	3160.56	52.70	23404.05	*76.56	*90.08	702.64

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 1n. Summary of commercial Atlantic salmon catch and effort data for Salmon Fishing Area 11, 1974-89. Weight in metric tonnes.

SALMON FISHING AREA 11

YEAR	SMALL WEIGHT	SMALL NUMBER	LARGE WEIGHT	LARGE NUMBER	TOTAL WEIGHT	TOTAL NUMBER	PERCENT SMALL(W)	PERCENT SMALL(N)	POTENTIAL EFFORT
1974	44	26569	117	22993	161	49562	27.33	53.61	1008
1975	49	27829	80	16247	128	44076	38.28	63.14	1504
1976	56	32968	133	29647	190	62615	29.47	52.65	1377
1977	12	7047	39	8747	52	15794	23.08	44.62	1288
1978	10	5507	21	4554	31	10061	32.26	54.74	1298
1979	18	10011	34	7279	51	17290	35.29	57.90	1279
1980	36	17616	31	6398	67	24014	53.73	73.36	1268
1981	15	8184	30	6239	46	14423	32.61	56.74	1254
1982	35	18604	41	9803	76	28407	46.05	65.49	1097
1983	18	9735	25	5859	44	15594	40.91	62.43	1069
1984	17	8956	16	3785	33	12741	51.52	70.29	786
1985	48	25943	54	13229	101	39172	47.52	66.23	722
1986	41	22205	26	5804	67	28009	61.19	79.28	740
1987	26	14237	26	5821	53	20058	49.06	70.98	728
1988	11	5693	11	2407	22	8100	50.00	70.28	692
1989[1]	16	9102	18	4042	34	13144	47.06	69.25	688
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1974-1988):									
MEAN:	29.07	16073.60	45.60	9920.80	74.80	25994.40	*38.86	*61.83	1074.00
S.D.:	15.83	9148.17	36.37	7646.05	49.38	16075.16	* 3.54	* 3.30	276.93
95% LCL:	20.30	11007.01	25.46	5686.14	47.45	17091.39	*31.93	*55.36	920.62
95% UCL:	37.83	21140.19	65.74	14155.46	102.15	34897.41	*45.79	*68.31	1227.38
MEANS,STANDARD DEVIATIONS AND CONFIDENCE INTERVALS (1984-1988):									
MEAN:	28.60	15406.80	26.60	6209.20	55.20	21616.00	*51.81	*71.27	733.60
S.D.:	15.66	8581.47	16.64	4181.09	30.97	12379.00	* 4.37	* 4.18	34.22
95% LCL:	9.16	4753.21	5.95	1018.53	16.75	6247.90	*43.25	*63.08	691.12
95% UCL:	48.04	26060.39	47.25	11399.87	93.65	36984.10	*60.37	*79.47	776.08

NOTE: FLAGGED VALUES INDICATE CALCULATIONS OBTAINED USING RATIO ESTIMATORS

[1]Preliminary figures

Appendix 2a. Summary of recreational Atlantic salmon catch and effort data for Newfoundland Region, (insular), 1974-89.

NEWFOUNDLAND REGION (INSULAR)

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	67894	15518	171	15689	0.23	99
1975	60191	16059	245	16304	0.27	98
1976	64853	16402	320	16722	0.26	98
1977	69057	21375	1186	22561	0.33	93
1978	63599	19723	616	20339	0.32	97
1979	50199	17849	379	18228	0.36	98
1980	66625	23373	720	24093	0.36	96
1981	77884	30428	552	30980	0.40	98
1982	85200	25987	531	26518	0.31	98
1983	82167	21616	695	22311	0.27	97
1984	79740	24831	47	24878	0.31	100
1985	82783	26527	*	26527	0.32	100
1986	79009	24182	*	24182	0.31	100
1987	47809	13013	*	13013	0.27	100
1988	73566	23960	*	23960	0.33	100
1989	53862	11525	*	11525	0.21	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	72581.4	22502.6	47.0	22512.0	0.31	100
$\bar{X}\pm$95%CL	±17683.1	±6704.2	.	±6710.6	±0.02	±0.12
N	5	5	1	5	5	5
74-88	70038.4	21389.5	496.5	21753.7	0.31	98
$\bar{X}\pm$95%CL	±6380.1	±2699.6	±212.4	±2729.9	±0.02	±0.93
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2b. Summary of recreational Atlantic salmon catch and effort data for Newfoundland Region (Labrador), 1974-89.

NEWFOUNDLAND REGION (LABRADOR)

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	2779	1761	512	2273	0.82	92
1975	2029	2903	173	3076	1.52	91
1976	3259	3228	520	3748	1.15	85
1977	3316	2932	693	3625	1.09	82
1978	3835	2118	584	2702	0.70	83
1979	3184	3217	490	3707	1.16	81
1980	2472	2862	552	3414	1.38	85
1981	1845	3493	300	3793	2.06	91
1982	3121	2833	541	3374	1.08	87
1983	3128	2372	298	2670	0.85	90
1984	3131	1948	325	2273	0.73	88
1985	2702	2009	194	2203	0.82	91
1986	3051	2393	283	2676	0.88	88
1987	3761	3479	418	3897	1.04	85
1988	4504	3931	459	4390	0.97	88
1989	4282	3511	408	3919	0.92	91

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	3429.8	2752.0	335.8	3087.8	0.90	88
$\bar{X}\pm$95%CL	±883.7	±1118.5	±131.6	±1236.5	±0.15	±2.31
N	5	5	5	5	5	5
74-88	3074.5	2765.3	422.8	3188.1	1.04	87
$\bar{X}\pm$95%CL	±374.4	±357.6	±84.7	±380.1	±0.15	±2.16
N	15	15	15	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2c. Summary of recreational Atlantic salmon catch and effort data for Newfoundland Region (total), 1974-89.

NEWFOUNDLAND REGION (TOTAL)

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	70673	17279	683	17962	0.25	97
1975	62220	18962	418	19380	0.31	98
1976	68112	19630	840	20470	0.30	96
1977	72373	24307	1879	26186	0.36	91
1978	67434	21841	1200	23041	0.34	95
1979	53383	21066	869	21935	0.41	96
1980	69097	26235	1272	27507	0.40	94
1981	79729	33921	852	34773	0.44	97
1982	88321	28820	1072	29892	0.34	97
1983	85295	23988	993	24981	0.29	97
1984	82871	26779	372	27151	0.33	98
1985	85485	28536	194	28730	0.34	99
1986	82060	26575	283	26858	0.33	99
1987	51570	16492	418	16910	0.33	98
1988	78070	27891	459	28350	0.36	97
1989	58144	15036	408	15444	0.27	99

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	76011.2	25254.6	345.2	25599.8	0.34	99
$\bar{X}$±95%CL	±17283.3	±6163.7	±132.7	±6110.2	±0.02	±0.79
N	5	5	5	5	5	5
74-88	73112.9	24154.8	786.9	24941.7	0.34	97
$\bar{X}$±95%CL	±6328.4	±2711.9	±252.2	±2731.5	±0.03	±1.07
N	15	15	15	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2d. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 1, 1974-89.

SALMON FISHING AREA :01

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	469	101	268	369	0.79	67
1975	245	379	117	496	2.02	46
1976	928	891	368	1259	1.36	51
1977	809	688	533	1221	1.51	63
1978	694	875	432	1307	1.88	61
1979	1101	595	323	918	0.83	73
1980	711	677	231	908	1.28	72
1981	414	660	195	855	2.07	78
1982	742	784	363	1147	1.55	65
1983	694	468	136	604	0.87	85
1984	832	681	212	893	1.07	69
1985	946	642	135	777	0.82	83
1986	568	369	125	494	0.87	84
1987	955	817	135	952	1.00	73
1988	1408	915	136	1051	0.75	86
1989	998	857	98	955	0.96	90

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	941.8	684.8	148.6	833.4	0.88	80.03
$\bar{X}\pm$95%CL	±377.3	±257.5	±44.4	±265.8	±0.18	±8.95
N	5	5	5	5	5	5
74-88	767.7	636.1	247.3	883.4	1.15	71.18
$\bar{X}\pm$95%CL	±159.5	±125.2	±71.9	±161.8	±0.22	±5.94
N	15	15	15	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2e. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 2, 1974-89.

SALMON FISHING AREA :02

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	2310	1660	244	1904	0.82	96
1975	1784	2524	56	2580	1.45	97
1976	2331	2337	152	2489	1.07	94
1977	2507	2244	160	2404	0.96	94
1978	3141	1243	152	1395	0.44	94
1979	2083	2622	167	2789	1.34	88
1980	1761	2185	321	2506	1.42	89
1981	1431	2833	105	2938	2.05	95
1982	2379	2049	178	2227	0.94	94
1983	2434	1904	162	2066	0.85	93
1984	2299	1267	113	1380	0.60	94
1985	1756	1367	59	1426	0.81	96
1986	2483	2024	158	2182	0.88	90
1987	2806	2662	283	2945	1.05	88
1988	3096	3016	323	3339	1.08	89
1989	3284	2654	310	2964	0.90	91

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	2488.0	2067.2	187.2	2254.4	0.91	90.79
$\bar{X}\pm$95%CL	±633.8	±959.1	±139.4	±1094.7	±0.25	±3.97
N	5	5	5	5	5	5
74-88	2306.7	2129.1	175.5	2304.7	1.00	92.90
$\bar{X}\pm$95%CL	±271.0	±311.2	±46.3	±329.9	±0.19	±1.76
N	15	15	15	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2f. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 3, 1974-89.

SALMON FISHING AREA :03

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	1890	839	4	843	0.45	100
1975	1948	1107	0	1107	0.57	100
1976	2284	947	1	948	0.42	100
1977	2249	1530	4	1534	0.68	100
1978	2030	758	1	759	0.37	100
1979	2514	2040	0	2040	0.81	100
1980	2585	1743	37	1780	0.69	98
1981	3113	2358	3	2361	0.76	100
1982	3907	2634	88	2722	0.70	96
1983	4075	1617	2	1619	0.40	100
1984	2248	1001	0	1001	0.45	100
1985	2355	1310	*	1310	0.56	100
1986	1430	772	*	772	0.54	100
1987	1121	563	*	563	0.50	100
1988	2979	1756	*	1756	0.59	100
1989	1672	738	*	738	0.44	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	2026.6	1080.4	0.0	1080.4	0.53	100.00
$\bar{X}\pm$95%CL	±929.2	±581.8	.	±581.8	±0.08	±0.00
N	5	5	1	5	5	5
74-88	2448.5	1398.3	12.7	1407.7	0.57	99.32
$\bar{X}\pm$95%CL	±448.2	±345.2	±18.2	±353.1	±0.09	±0.87
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2g. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 4, 1974-89.

SALMON FISHING AREA :04

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	22038	5373	82	5455	0.25	99
1975	22384	5943	166	6109	0.27	97
1976	24787	6683	188	6871	0.28	97
1977	28117	8396	1086	9482	0.34	86
1978	24131	8774	502	9276	0.38	94
1979	21496	8026	327	8353	0.39	96
1980	25172	9414	507	9921	0.39	94
1981	32282	13536	361	13897	0.43	96
1982	32929	9973	258	10231	0.31	98
1983	26649	8954	297	9251	0.35	97
1984	29633	9900	15	9915	0.33	100
1985	34329	12190	*	12190	0.36	100
1986	31650	9293	*	9293	0.29	100
1987	18564	5453	*	5453	0.29	100
1988	27413	9854	*	9854	0.36	100
1989	17767	3786	*	3786	0.21	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	28317.8	9338.0	15.0	9341.0	0.33	99.97
$\bar{X}\pm$95%CL	±7473.8	±3029.5	.	±3030.5	±0.04	±0.09
N	5	5	1	5	5	5
74-88	26771.6	8784.1	344.5	9036.7	0.34	97.14
$\bar{X}\pm$95%CL	±2605.6	±1278.4	±195.3	±1298.6	±0.03	±1.89
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2h. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 5, 1974-89.

SALMON FISHING AREA :05

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	9335	1637	21	1658	0.18	99
1975	7527	1988	23	2011	0.27	99
1976	6975	1898	65	1963	0.28	97
1977	10572	4616	44	4660	0.44	98
1978	9108	2858	28	2886	0.32	99
1979	3926	1331	20	1351	0.34	99
1980	8155	2702	29	2731	0.33	98
1981	8863	3488	35	3523	0.40	99
1982	9935	2433	53	2486	0.25	99
1983	10195	2357	170	2527	0.25	93
1984	12403	2703	1	2704	0.22	100
1985	11613	3484	*	3484	0.30	100
1986	11510	4053	*	4053	0.35	100
1987	5267	1664	*	1664	0.32	100
1988	10497	4166	*	4166	0.40	100
1989	6617	1417	*	1417	0.21	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	10258.0	3214.0	1.0	3214.2	0.31	99.99
$\bar{X}\pm$95%CL	±3564.9	±1294.4	.	±1294.2	±0.09	±0.02
N	5	5	1	5	5	5
74-88	9058.7	2758.5	44.5	2791.1	0.31	98.77
$\bar{X}\pm$95%CL	±1311.1	±559.2	±30.3	±555.7	±0.04	±0.95
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2i. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 6, 1974-89.

SALMON FISHING AREA :06

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	2685	303	1	304	0.11	100
1975	1851	94	1	95	0.05	100
1976	2864	247	2	249	0.09	98
1977	1869	401	19	420	0.22	93
1978	2237	296	7	303	0.14	98
1979	1766	244	2	246	0.14	99
1980	2807	320	14	334	0.12	95
1981	3406	605	29	634	0.19	92
1982	3031	288	17	305	0.10	97
1983	3684	296	10	306	0.08	97
1984	3218	312	5	317	0.10	98
1985	2256	429	*	429	0.19	100
1986	2596	445	*	445	0.17	100
1987	1306	137	*	137	0.10	100
1988	3392	429	*	429	0.13	100
1989	2959	246	*	246	0.08	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	2553.6	350.4	5.0	351.4	0.14	99.69
$\bar{X}\pm$95%CL	±1037.2	±162.3	.	±161.8	±0.05	±0.88
N	5	5	1	5	5	5
74-88	2597.9	323.1	9.7	330.2	0.13	97.76
$\bar{X}\pm$95%CL	±387.5	±70.2	±6.1	±72.8	±0.02	±1.50
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2j. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 7, 1974-89.

SALMON FISHING AREA :07

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	2019	133	2	135	0.07	98
1975	1436	40	0	40	0.03	100
1976	1128	30	0	30	0.03	100
1977	1775	78	1	79	0.04	97
1978	1786	99	1	100	0.06	99
1979	1332	125	0	125	0.09	100
1980	1546	102	1	103	0.07	99
1981	1348	123	2	125	0.09	98
1982	1621	155	10	165	0.10	92
1983	1804	139	34	173	0.10	82
1984	1381	96	4	100	0.07	97
1985	1635	112	*	112	0.07	100
1986	700	102	*	102	0.15	100
1987	632	28	*	28	0.04	100
1988	1645	128	*	128	0.08	100
1989	1226	66	*	66	0.05	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	1198.6	93.2	4.0	94.0	0.08	99.17
$\bar{X}\pm$95%CL	±618.5	±47.7	.	±47.8	±0.03	±2.06
N	5	5	1	5	5	5
74-88	1452.5	99.3	5.0	103.0	0.07	96.45
$\bar{X}\pm$95%CL	±216.7	±21.9	±6.7	±24.3	±0.01	±4.25
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2k. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 8, 1974-89.

SALMON FISHING AREA :08

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	659	51	0	51	0.08	100
1975	527	87	0	87	0.17	100
1976	514	80	0	80	0.16	100
1977	530	81	0	81	0.15	100
1978	269	44	0	44	0.16	100
1979	331	100	0	100	0.30	100
1980	316	120	0	120	0.38	100
1981	384	77	0	77	0.20	100
1982	538	85	9	94	0.17	90
1983	414	41	5	46	0.11	94
1984	357	79	0	79	0.22	100
1985	611	103	*	103	0.17	100
1986	696	138	*	138	0.20	100
1987	268	43	*	43	0.16	100
1988	474	79	*	79	0.17	100
1989	330	99	*	99	0.30	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	481.2	88.4	0.0	88.4	0.18	100.00
$\bar{X}\pm$95%CL	±218.5	±43.5	.	±43.5	±0.03	±0.00
N	5	5	1	5	5	5
74-88	459.2	80.5	1.3	81.5	0.18	98.87
$\bar{X}\pm$95%CL	±76.3	±15.5	±2.0	±15.4	±0.04	±1.73
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 21. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 9, 1974-89.

SALMON FISHING AREA :09

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	9162	1494	9	1503	0.16	100
1975	10046	1872	6	1878	0.19	100
1976	8809	1623	12	1635	0.19	99
1977	8766	1080	9	1089	0.12	99
1978	7224	1303	17	1320	0.18	98
1979	5859	1704	15	1719	0.29	99
1980	6446	2379	61	2440	0.38	97
1981	6343	1862	52	1914	0.30	98
1982	8574	1825	33	1858	0.22	98
1983	10754	2303	71	2374	0.22	96
1984	8754	2264	5	2269	0.26	100
1985	9385	1750	*	1750	0.19	100
1986	8807	2298	*	2298	0.26	100
1987	5994	867	*	867	0.14	100
1988	7157	1373	*	1373	0.19	100
1989	7039	1315	*	1315	0.19	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	8019.4	1710.4	5.0	1711.4	0.21	99.95
$\bar{X}$±95%CL	±1741.7	±754.9	.	±756.3	±0.06	±0.14
N	5	5	1	5	5	5
74-88	8138.7	1733.1	26.4	1752.5	0.22	98.93
$\bar{X}$±95%CL	±845.3	±254.2	±16.2	±261.0	±0.03	±0.72
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2m. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 10, 1974-89.

SALMON FISHING AREA :10

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	10987	1212	14	1226	0.11	99
1975	5999	427	9	436	0.07	99
1976	8811	730	10	740	0.08	98
1977	7213	1097	5	1102	0.15	99
1978	8764	1595	42	1637	0.19	96
1979	6405	849	8	857	0.13	100
1980	9588	1524	27	1551	0.16	97
1981	9309	1317	29	1346	0.14	98
1982	9331	1256	10	1266	0.14	99
1983	9173	1140	79	1219	0.13	94
1984	6361	1457	2	1459	0.23	100
1985	6887	1326	*	1326	0.19	100
1986	6387	1535	*	1535	0.24	100
1987	3348	429	*	429	0.13	100
1988	5198	1142	*	1142	0.22	100
1989	4709	898	*	898	0.19	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

84-88	5636.2	1177.8	2.0	1178.2	0.21	99.97
$\bar{X}\pm$95%CL	±1764.9	±551.6	.	±552.0	±0.04	±0.10
N	5	5	1	5	5	5
74-88	7584.1	1135.7	21.4	1151.4	0.15	98.69
$\bar{X}\pm$95%CL	±1128.5	±207.4	±15.2	±210.4	±0.03	±1.00
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

Appendix 2n. Summary of recreational Atlantic salmon catch and effort data for Salmon Fishing Area 11, 1974-89.

SALMON FISHING AREA :11

YEAR	EFFORT ROD DAYS	GRILSE <63 CM	SALMON ≥63 CM	TOTAL CATCH	CPUE	PERCENT GRILSE
1974	9119	4476	38	4514	0.50	99
1975	8473	4501	40	4541	0.54	99
1976	8681	4164	42	4206	0.48	99
1977	7966	4096	18	4114	0.52	100
1978	8050	3996	18	4014	0.50	100
1979	6570	3430	7	3437	0.52	100
1980	10010	5069	44	5113	0.51	99
1981	12836	7062	41	7103	0.55	99
1982	15334	7338	53	7391	0.48	99
1983	15419	4769	27	4796	0.31	100
1984	15385	7019	15	7034	0.46	100
1985	13712	5823	*	5823	0.42	100
1986	15233	5546	*	5546	0.36	100
1987	11309	3829	*	3829	0.34	100
1988	14811	5033	*	5033	0.34	100
1989	11543	2960	*	2960	0.26	100

MEANS, 95% CONFIDENCE LIMITS, N'S:

$\bar{X}$ 84-88	14090.0	5450.0	15.0	5453.0	0.39	99.94
$\bar{X}\pm$95%CL	±2094.3	±1444.2	.	±1450.5	±0.07	±0.16
N	5	5	1	5	5	5
$\bar{X}$ 74-88	11527.2	5076.7	31.2	5099.6	0.44	99.55
$\bar{X}\pm$95%CL	±1815.4	±688.3	±9.9	±691.2	±0.05	±0.22
N	15	15	11	15	15	15

PERCENT GRILSE IS CALCULATED BY SMOLT CLASS.
IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.
* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.