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Summary of catch statistics by sub-area and assessment unit
for the northern Labrador Arctic charr and
Atlantic salmon fisheries in 1990

by

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Abstract

Catch and effort statistics for the northern Labrador Arctic charr fishery in 1990 are summarized. Total northern Labrador charr landings of 100 t were similar to those in 1989 but still 37% below the previous 10-year mean of 158 t. Charr landings from the Nain fishing region totaled 86 t or 86% of the northern Labrador catch. Within the Nain fishing region, effort declined by 10% but catch per unit effort increased by 12% over 1989 to the highest value since 1982. Landings of Arctic charr in the Nain assessment unit during 1990 represented 52% of the overall catch from the Nain fishing region, while the Voisey and Okak units contributed 23% and 19% respectively. Atlantic salmon landings at Nain are summarized for the period 1977 to 1990. Landings of salmon at Nain in 1990 totaled 13 t, the lowest value recorded since 1977.

Résumé

On présente un sommaire des statistiques sur les prises et l'effort de pêche de l'omble chevalier dans le nord du Labrador en 1990. Les débarquements totaux pour cette région, soit 100 t, équivalent à ceux de 1989, mais demeurent inférieurs de 37 % à la moyenne des dix dernières années (158 t). Les débarquements provenant de la zone de pêche de la baie Nain ont totalisé 86 t, ce qui représente 86 % de l'ensemble des prises dans le nord du Labrador. Dans cette zone, l'effort a diminué de 10 % depuis 1989, mais les prises par unité d'effort, qui elles ont augmenté de 12 % par rapport à l'année antérieure, étaient les plus élevées depuis 1982. En 1990, les débarquements d'omble chevalier de l'unité d'évaluation de la baie Nain ont représenté 52 % des prises totales de la zone de pêche de la baie Nain, tandis que celles des unités d'évaluation des baies Voisey et Okak représentaient respectivement 23 % et 19 % du total. On présente également un sommaire des débarquements de saumon de l'Atlantique dans la baie Nain de 1977 à 1990. Ces débarquements étaient de 13 t en 1990, les plus bas depuis 1977.

Introduction

Continuous records of commercial landings of anadromous Arctic charr (*Salvelinus alpinus*) from the northern Labrador coast are available since 1944. Catch statistics from the Nain and Makkovik Fishing Regions, and from subareas within the Nain Fishing Region (Fig. 1) exist since 1974. From 1977 to 1982 more than 200 t per year of Arctic charr were caught in northern Labrador but during the last five years (1986-90) annual landings have averaged only 102 t. The highest landings on record were 252 t in 1981, while the lowest during the past 30 years were 54 t in 1975. Much of the decline in landings in the Nain Fishing Region during the past six years can be attributed to a reduction in fishing effort. As stated in recent documents, catch levels of the early 1980s were not expected to be achieved in recent years without a substantial increase in effort directed towards the charr fishery, in conjunction with an expansion of the fishery into the northern fiord subareas as occurred in 1981 and 1982.

Although landings of Arctic charr from the northern Labrador fishery are approximately 57% lower now (1988-90) in comparison with the late 1970s and early 1980s (1977-83), this fishery is still one of the single largest commercial fisheries for anadromous Arctic charr in Canada. For the period 1978-87, commercial landings of anadromous Arctic charr from the Northwest Territories averaged about 138 t per year (Labrador charr fishery for the same period averaged 185 t per year); most of this came from the Central Arctic (48%) and Keewatin Region (25%) fisheries (Yaremchuk et al. 1989).

This paper summarizes catch statistic information for the 1990 northern Labrador Arctic charr fishery and updates previous reports (summarized in Dempson and Shears 1990) which have examined landings in the commercial fishery. Atlantic salmon landings from the Nain fishery, summarized for the first time last year, are also updated.

Methods

Information on the commercial landings of Arctic charr and Atlantic salmon from the Nain fishing region was obtained through purchase slips prepared by Fisheries Statistics and Systems Branch of the Department of Fisheries and Oceans and processed by Salmon and Charr Section of the Freshwater and Anadromous Fish Division. Information on landings from the Makkovik region were obtained directly from records provided by the Makkovik fish plant. Purchase slips from the Nain fishing region included the following information: name of the fisherperson, licence number, area where the fish were caught, date, weight of fish (by species) landed, and number of fish caught. Landed catches were converted to round weight (in kilograms) using the conversion factor: gutted head-on weight $\times 1.22 =$ round weight (Dempson 1984). Catch per unit effort estimates in this document, expressed in terms of kilograms per person-week fished, follow the conventional values used in past reports and were derived from the method initiated by Coady and Best (1976). By comparison, standardized catch rates, derived using the multiplicative model of Gavaris (1980), are also provided for the three assessment units. Catch rates were standardized to 1977 and week 31 (July 30-August 5).

Results and Discussion

Total northern Labrador Arctic charr landings

Figure 2 illustrates the commercial landings of Arctic charr from 1944 to 1990. Also shown are the landings from the Nain and Makkovik fishing regions since 1974. During the past 17 years, the Nain region has contributed about 85% of the total northern Labrador catch of Arctic charr averaging 135 t per year. Landings from both regions in 1990 totaled 100 t, the same as in 1989 but 9% and 37% below the previous five (110 t, 1985-89) and ten year (158 t, 1980-89) means (Table 1). Individually, landings in the Nain fishing region of 86 t in 1990 were about 2% higher than in 1989 but 7% and 36% below previous five (93 t, 1985-89) and ten year (134 t, 1980-89) means. While the number of people fishing has been relatively consistent during the past few years, effort in terms of person-weeks fished in 1990 was 10% lower than in 1989. The highest landings in the Nain region occurred in 1981 (231 t), of which 30% came from the northern fiord subareas of Hebron and Saglek.

Charr landings from the Makkovik region in 1990 were 9% below the previous year and totaled 13.5 t. The highest landings in the Makkovik region of 39 t occurred in 1982.

Catch and effort data - Nain fishing region assessment unit summary

Appendix 1 provides an updated summary of catch and effort statistics for all subareas within the Nain fishing region from 1974 to 1990. These subareas form component parts of larger assessment or stock units. Landings of Arctic charr in the Nain assessment unit during 1990 represented 52% of the overall catch from the Nain fishing region, while the Voisey and Okak units contributed 23% and 19% respectively.

Tables 2, 3, and 4 summarize catch and effort data for the Voisey, Nain, and Okak assessment units, respectively, from 1974 to 1990 while Figure 3 illustrates the trend in landings with respect to Total Allowable Catch (TAC) for these units. For the Voisey Unit, the highest catches occurred during the late 1970s as did the highest catch per unit of effort (CUE) (Fig. 4). Landings in 1990 were 20 t, an increase of 81% over 1989 and 9% higher than the previous ten year average of 18 t. The increased catch in 1990 is attributed to a large increase in the number of person-weeks fished (Table 2). CUE was lower than in 1989 but still moderately high. The 17 t TAC for the Voisey unit was exceeded by 17%. While the TAC had been derived for the Voisey unit, the Charr Management Plan for 1990 allocated a quota of 17 t to the Voisey Bay subarea only.

Landings from the Nain assessment unit in 1990 totaled 45 t thus virtually achieving the 47 t TAC (96%). This was 12% lower than in 1989 but only 10% below the previous ten year mean of 50 t. The number of person-weeks fished in 1990 was similar to that of 1989 and has been relatively consistent for the past five years (Table 3). CUE was 14% below that of the previous year but still relatively high in comparison with the early and mid-1980s (Fig. 4).

Landings from the Okak assessment unit totaled 16 t in 1990 (Table 4) (52% of the TAC), essentially the same as in 1989 but still almost 50% below the previous ten year mean of 31 t. Landings have been somewhat consistent since 1987. The number of person-weeks fished in 1990 declined by 39% from the previous year and was only a little more than one-third of what it had been during the late 1970s and early 1980s. CUE, however, increased by 58% over 1989 to the highest value since since 1986.

Standardized catch rates are summarized in Table 5. In general, standardized catch rates reflect similar trends indicated using conventional CUE values, particularly for the Voisey and Okak stock units (Fig. 5).

The Nain region commercial Arctic charr fishery showed an increase for the second year in a row in both catch and CUE even though the number of person-weeks fished in 1990 declined slightly again. CUE was moderately high in all assessment units suggesting that considerably greater catches could have materialized had there been a more concerted effort directed toward fishing this past year.

Nain region - Atlantic salmon landings

Atlantic salmon landings specifically from the Nain fishing region in SFA 1 are presented for the period 1977 to 1990. As pointed out last year (Dempson and Shears 1990), salmon caught in this area are for the most part not from 'local' rivers, that is rivers located within the Nain fishing region, although most of the salmon (> 74%) sampled between 1977-83 were characterized by river ages of 4 years or older (Reddin and Dempson 1986).

Appendix 2 summarizes the salmon landings by individual subareas within the Nain fishing region. Table 6 summarizes the salmon catches by assessment unit. Landings have ranged from a high of 60 t in 1980 to a low of 13 t in 1990 (Fig. 6). The 1990 salmon catch was 57% lower than the previous year and approximately 50% below the previous ten year mean of 28 t. Sixty-four percent of the salmon were caught in the Cutthroat subarea. On average over the period 1977 to 1989, the Nain fishing region contributed 31% of the total SFA 1 Atlantic salmon catch. In 1990, this value rose to about 40%.

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Table 1. Summary of northern Labrador Arctic charr landings (kg round) by fishing region, 1974-90.

Year	Nain Fishing Region			Makkovik Fishing Region			Total catch
	Catch	No. of fishermen	Fathoms of gear licensed	Catch as % of total	Catch	No. of fishermen	
1974	120,414	66		81	28,133		148,547
1975	44,118	85		82	9,542		53,660
1976	134,898	101		90	15,645		150,543
1977	186,165	128		88	24,205		210,370
1978	213,915	131	21,340	86	34,387	149	248,302
1979	175,263	142	21,320	82	37,693	110	212,956
1980	167,991	128	23,960	83	35,561	154	203,552
1981	231,221	122	21,700	92	20,733	154	251,954
1982	203,012	118	23,600	84	39,163	141	242,175
1983	149,732	119	24,400	84	29,100	148	178,832
1984	123,045	115	23,000	83	24,792	147	147,837
1985	107,120	95	19,000	76	33,945 ¹	132	141,065
1986	99,963	79	15,800	88	13,888	109	113,851
1987	97,379	72	14,400	91	9,965	130	107,344
1988	74,010	63	12,600	83	14,819	120	88,829
1989	84,837	72	14,400	85	14,808	126	99,645
1990	86,292	67	13,400	86	13,509	103	99,801

¹Includes 6,788 from spring fishery in Postville area.

Table 2. Catch (kg) and effort (person-weeks fished) statistics for the Voisey assessment units from 1974 to 1990. Quota area catch (QAC) refers to the landings from those subareas specifically under TAC regulation only, prior to the derivation of assessment units in 1985.

Year	TAC ¹	QAC	Catch	Effort	CUE	% Offshore	Unit as % of Nain Region Total
1974			29180			31	24
1975			3727			94	8
1976			14652	57	257	21	11
1977			24108	75	321	9	13
1978			36991	102	363	11	17
1979	22500	21880	40590	116	350	47	23
1980	22500	11557	19694	82	240	42	12
1981	16100	16325	23810	90	265	33	10
1982	16100	2688	13309	60	222	45	7
1983	16100	2953	25593	80	320	89	17
1984	16100	8133	20873	101	207	62	17
1985	23400		15648	57	275	91	15
1986	23400		16655	82	203	82	17
1987	17000		21242	101	210	41	22
1988	17000		14037	52	270	60	19
1989	17000		11019	32	344	100	13
1990	17000		19895	69	288	64	23

¹TAC applied only to Voisey Bay subarea from 1979 to 1984.

Table 3. Catch (kg) and effort (person-weeks fished) statistics for the Nain assessment unit from 1974 to 1990. Quota area catch (QAC) refers to the landings from those subareas specifically under TAC regulation only, prior to the derivation of assessment units in 1986.

Year	TAC ¹	QAC	Catch	Effort	CUE	% Offshore	Unit as % of Nain Region Total
1974			37745			18	31
1975			33830			8	77
1976			53313	196	272	5	40
1977			76255	291	262	7	41
1978			73763	314	235	4	34
1979	61000	52832	66844	336	199	18	38
1980	61000	50176	75055	390	192	30	45
1981	37160	37223	65632	278	236	24	28
1982	43660	39119	55617	235	237	22	27
1983	51000	19102	51202	289	177	34	34
1984	43200	29063	38900	244	159	37	32
1985	30500	36019	41158	252	163	48	38
1986	43000		37095	185	201	56	37
1987	47000		45872	200	229	61	47
1988	47000		38295	229	167	62	52
1989	47000		51465	183	281	41	61
1990	47000		45275	188	241	62	52

¹TAC applied only to Anaktalik Bay and Tikkoatokak Bay from 1979 to 1983 (1983 also includes 5 t for Nain Bay) but includes an offshore component from 1984 to 1985.

Table 4. Catch (kg) and effort (person-weeks fished) statistics for the Okak assessment unit from 1974 to 1990. Quota area catch (QAC) refers to the landings from those subareas specifically under TAC regulation only, prior to the derivation of assessment units in 1986.

Year	TAC	QAC	Catch	Effort	CUE	% Offshore	Unit as % of Nain Region Total
1974			46891			27	39
1975			5057			53	11
1976			25338	148	171	30	19
1977			42392	243	174	37	23
1978			76024	352	216	54	36
1979			43261	283	153	41	25
1980			49035	253	194	66	29
1981	27300	11049	47541	202	235	78	21
1982	27300	9031	34171	186	184	75	17
1983	21000	30732	48978	286	171	39	33
1984	27000	13864	18146	94	193	25	15
1985	27000	24746	33261	208	160	26	31
1986	42000		28896	172	168	30	29
1987	43000		19649	134	147	20	20
1988	31000		17450	136	128	28	24
1989	31000		16563	163	102	10	20
1990	31000		16125	100	161	22	19

Table 5. Standardized catch rates (C/E) with standard error (SE) for the Voisey, Nain, and Okak stock units, 1977-90.

	Voisey Unit		Nain Unit		Okak Unit	
	C/E	SE	C/E	SE	C/E	SE
1977	320	56	316	63	410	76
1978	390	66	278	56	401	83
1979	410	70	381	74	311	56
1980	315	55	499	93	403	74
1981	313	52	525	100	450	86
1982	209	36	593	111	449	90
1983	457	83	476	88	382	68
1984	272	45	474	88	376	78
1985	356	60	488	89	226	43
1986	260	43	406	76	285	54
1987	276	56	560	102	204	39
1988	311	51	354	64	178	33
1989	388	74	550	99	136	26
1990	349	64	448	83	307	63

Table 6. Commercial Arctic charr and Atlantic salmon landings by stock unit, 1977-90, for the Nain Region of northern Labrador. Total also includes landings from subareas other than those within stock units.

Year	Voisey Unit		Nain Unit		Okak Unit		Total	
	Charr	Salmon	Charr	Salmon	Charr	Salmon	Charr	Salmon
1977	24108	209	76255	14943	42392	18468	186165	41581
1978	36991	462	73763	15216	76024	22177	213915	48945
1979	40590	327	66844	12658	43261	13126	175263	35722
1980	19694	120	75055	21134	49035	30050	167991	60332
1981	23810	104	65632	16665	47541	23121	231221	48124
1982	13309	139	55617	11737	34171	15383	203012	32974
1983	25593	701	51202	7480	48978	7589	149732	20105
1984	20873	193	38900	3177	18146	7166	123045	15596
1985	15648	333	41158	3819	33261	9210	107120	14653
1986	16655	109	37095	5371	28896	12828	99963	20090
1987	21242	191	45872	2979	19649	10770	97379	14414
1988	14037	157	38295	4813	17450	14607	74010	20090
1989	11019	146	51465	6034	16563	20855	84837	29960
1990	19895	111	45275	4035	16125	8492	86292	12892

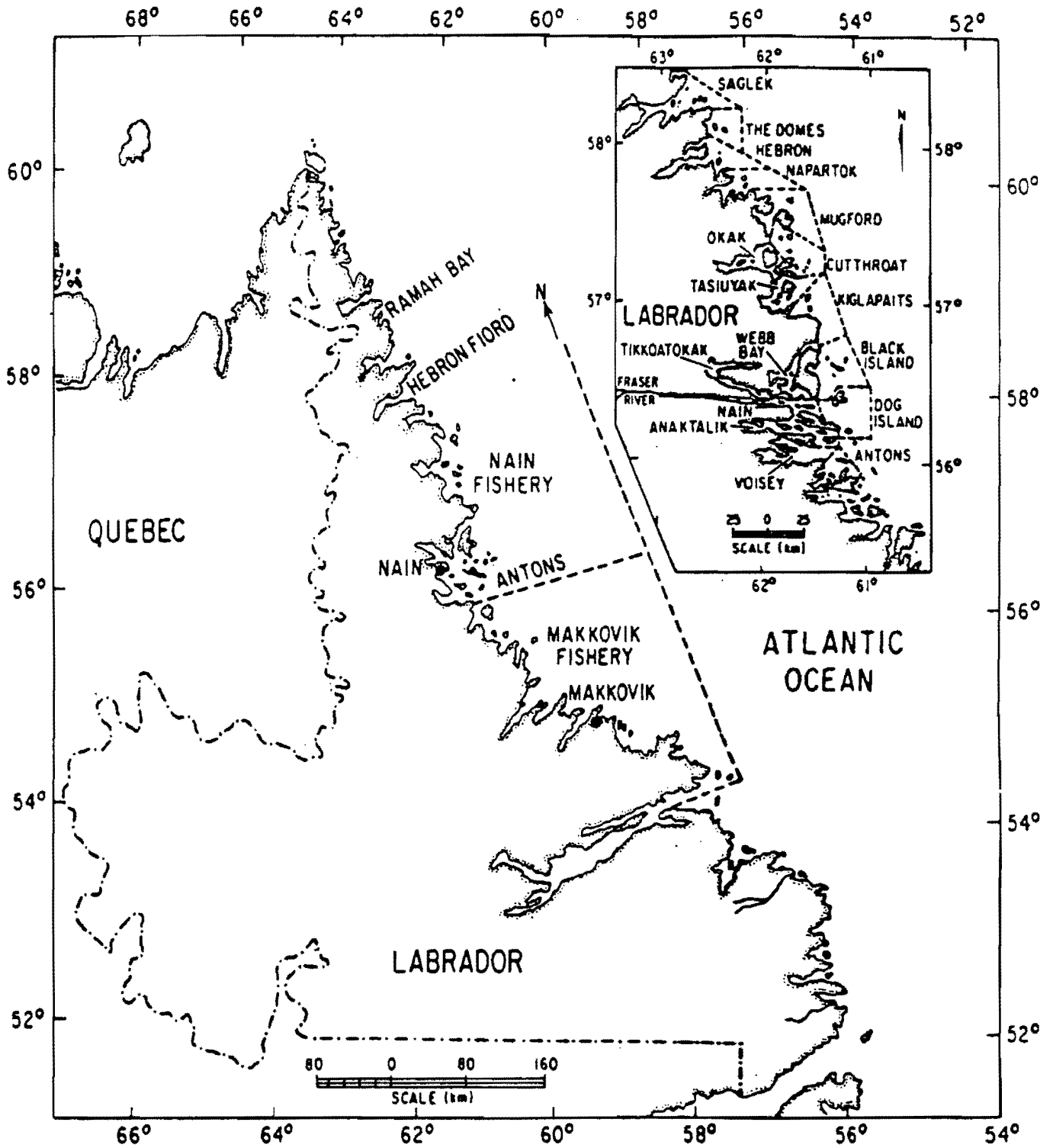


Fig. 1. Location of the Nain and Makkovik Fishing Regions in northern Labrador. Insert illustrates the location of subareas within the Nain Fishing Region.

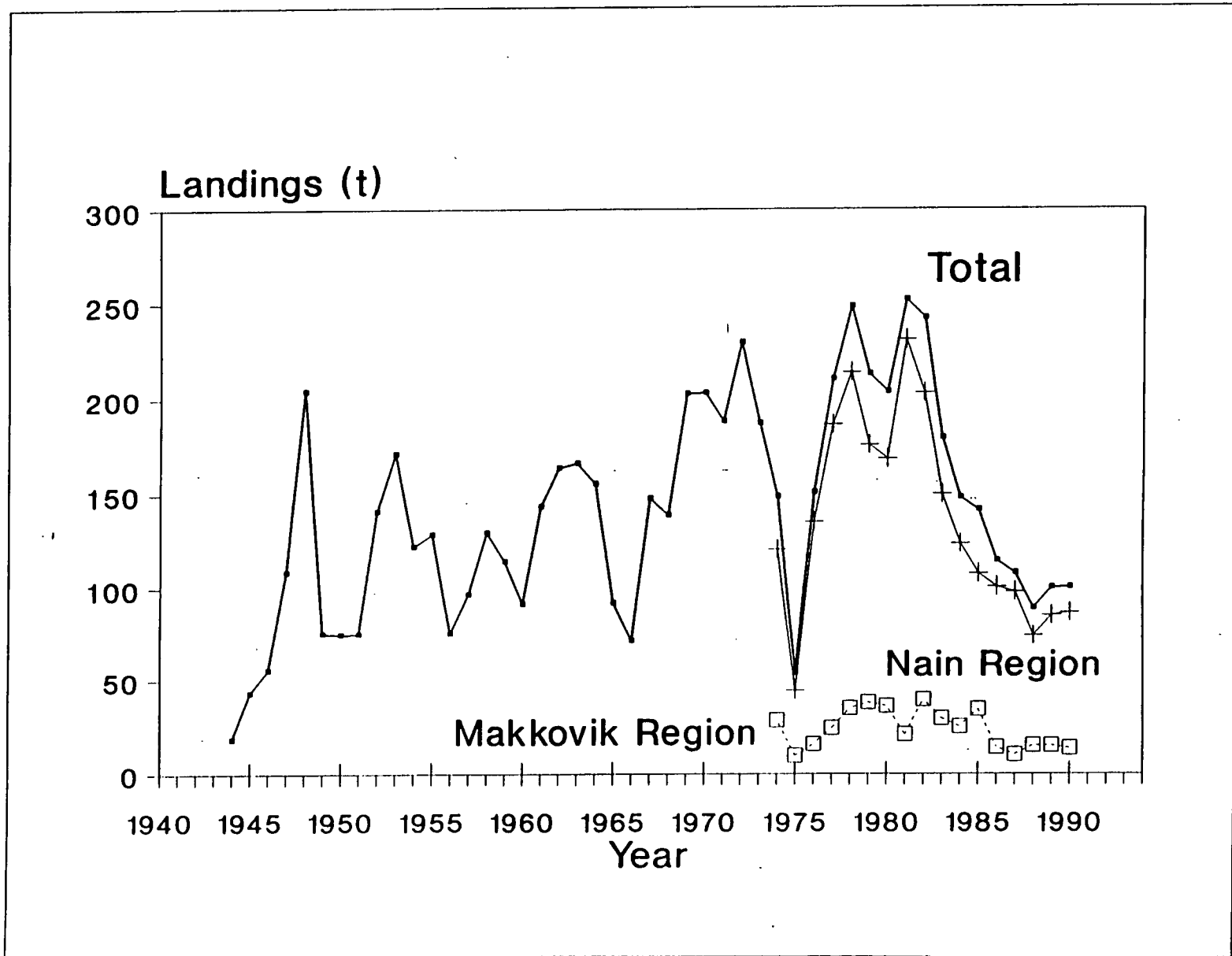


Fig. 2. Summary of northern Labrador Arctic charr landings (metric tonnes), 1944-90.

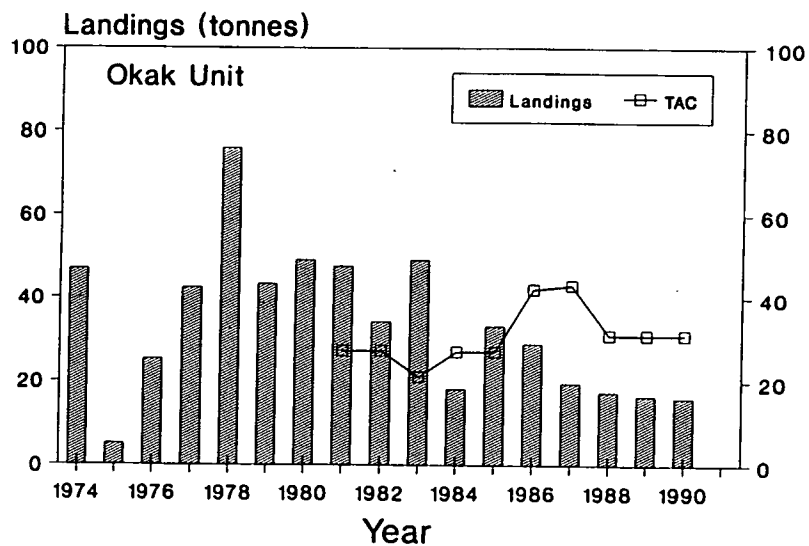
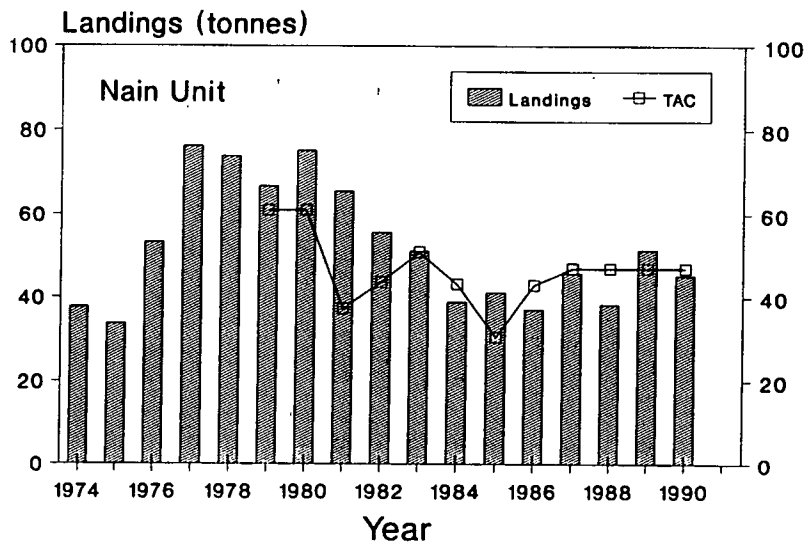
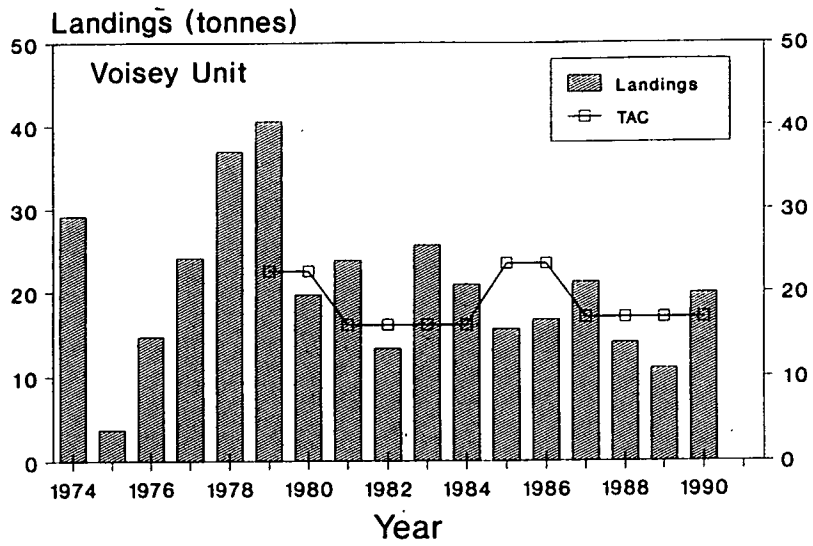


Fig. 3. Summary of total landings with respect to total allowable catch for the Voisey, Nain, and Okak stock units.

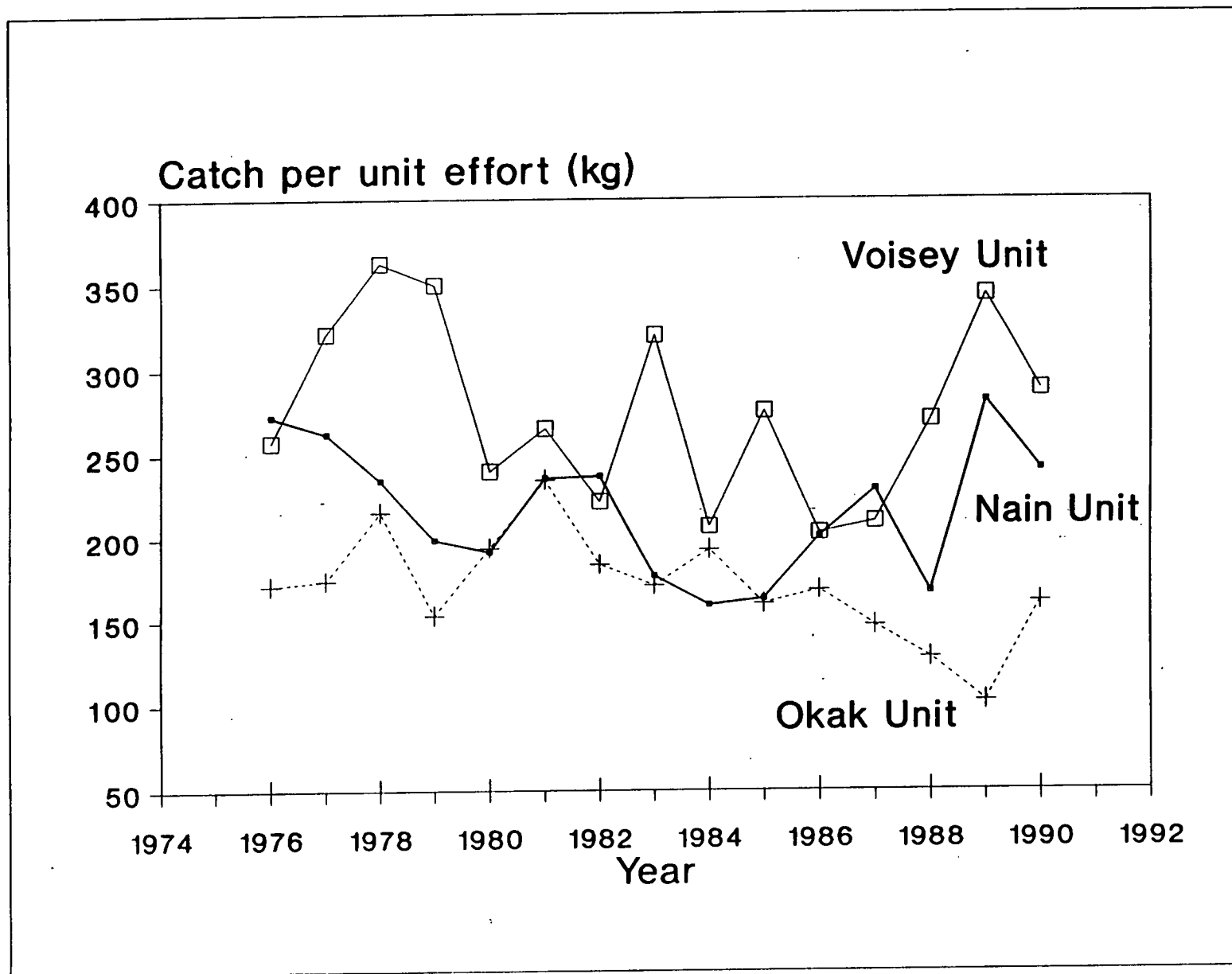


Fig. 4. Trend in conventional catch per unit effort over time for the Voisey, Nain, and Okak stock units.

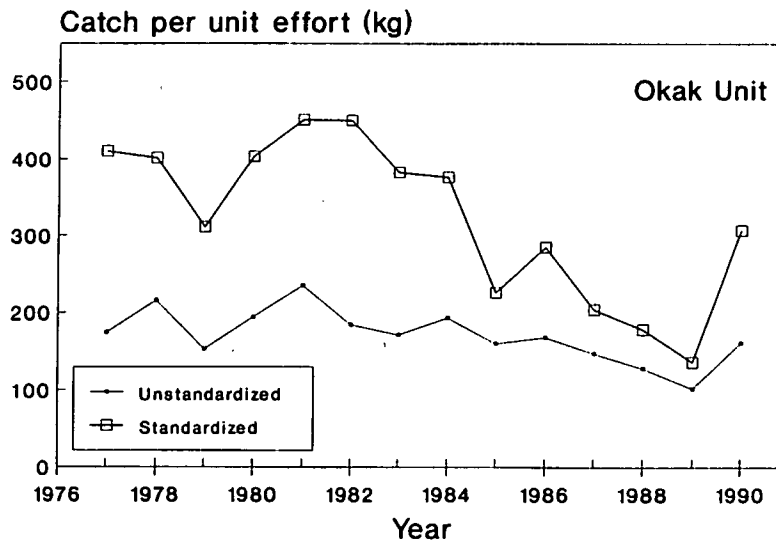
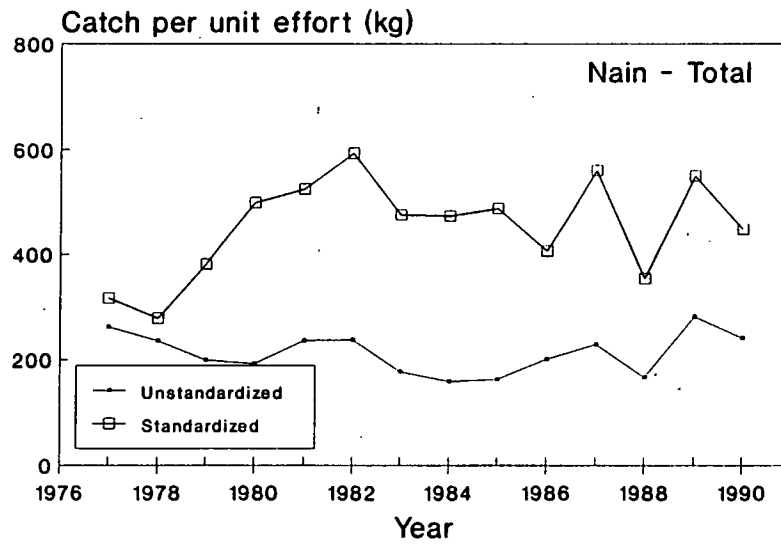
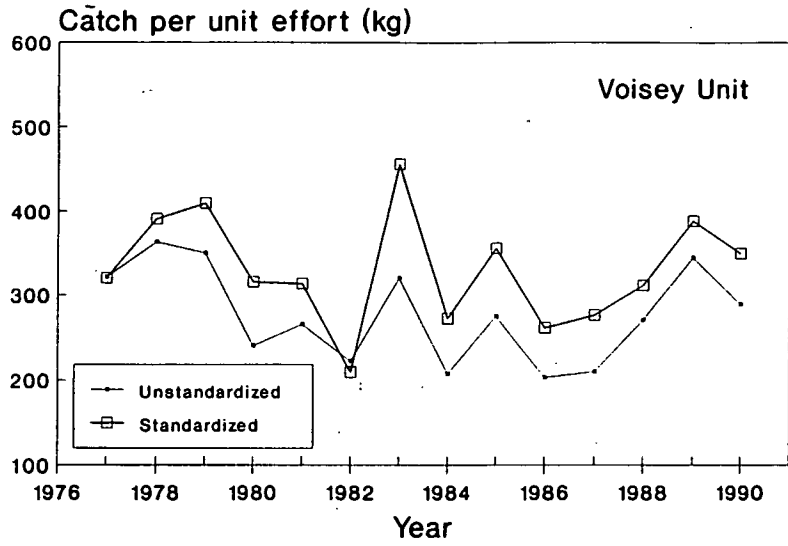


Fig. 5. Comparison of conventional and standardized catch rates for the Voisey, Nain, and Okak stock units.

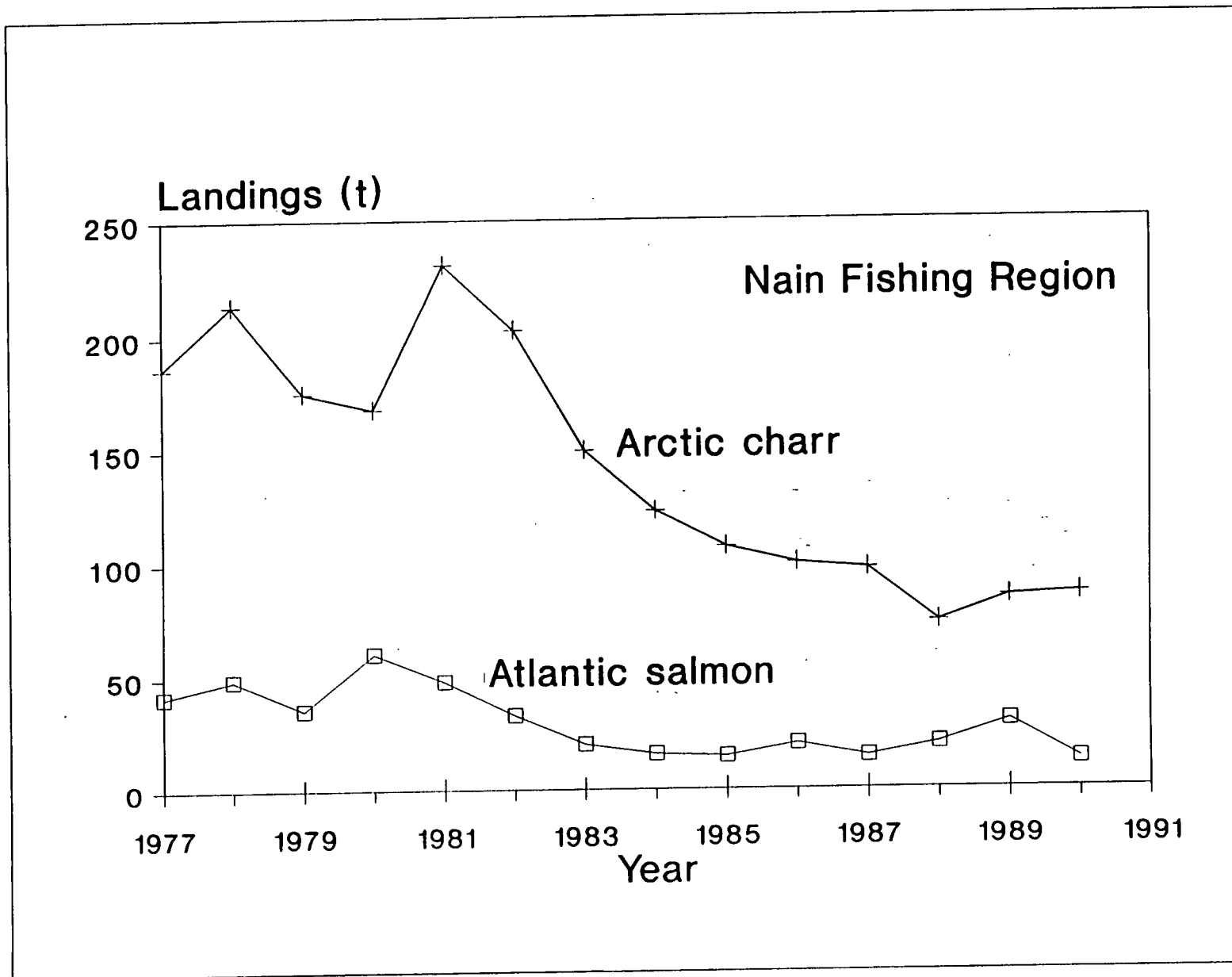


Fig. 6. Summary of Nain Region Arctic charr and Atlantic salmon landings (metric tonnes), 1977-1990.

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1990.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION.

----- AREA=ANTONS -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	9135	3489	3172	2111	4011	19371	8460	7870	6191
EFFORT (PERSON-WKS)	34	20	6	20	17	63	32	38	24
C/E (KG)	269	174	529	106	236	307	264	207	258
% > 2.3 KG			21	24	28	22	14	13	12
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	23062	13099	14212	13589	8611	8460	11019	12659	
EFFORT (PERSON-WKS)	63	82	51	67	55	29	32	45	
C/E (KG)	366	160	279	203	157	292	344	281	
% > 2.3 KG	9	7							
----- AREA=VOISEY BAY -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS						22500	22500	16100	16100
CATCH (KG)	20045	238	12232	22488	33597	21880	11557	16325	7688
EFFORT (PERSON-WKS)	64	2	45	56	85	59	52	53	38
C/E (KG)	313	119	272	402	395	371	222	308	202
% > 2.3 KG			42	35	34	32	17	16	17
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS	16000	16000	23400						
CATCH (KG)	2953	8113	1435	3065	12630	5577		7236	
EFFORT (PERSON-WKS)	17	24	6	22	54	26		24	
C/E (KG)	174	338	239	139	234	215		301	
% > 2.3 KG	17	16							
RIVER FISHERY							169		
----- AREA=ANAKTAKLIK BAY -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS						21500	21500	8660	8660
CATCH (KG)	7821	2548	14670	21604	13075	14913	8045	9157	10836
EFFORT (PERSON-WKS)	28	10	45	63	55	76	53	32	27
C/E (KG)	279	255	326	343	238	196	152	286	401
% > 2.3 KG			36	38	27	20	12	10	11
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS	11000	6100	8400		5000	5000	5000	5000	
CATCH (KG)	2359	3980	7477	180	2002	1075	1175	454	
EFFORT (PERSON-WKS)	24	34	39	7	18	12	13	5	
C/E (KG)	98	117	192	26	111	90	90	91	
% > 2.3 KG	11	12							

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1990.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

----- AREA=DOG ISLAND -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	2659	653	212	2039	386	1440	3048	1516	1105
EFFORT (PERSON-WKS)	38	40	11	49	25	61	86	37	38
C/E (KG)	70	16	19	42	15	24	35	41	29
% > 2.3 KG			11	9	8	15	11	14	7
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	6858	6666	6882	3289	16881	11735	2794	7219	
EFFORT (PERSON-WKS)	62	66	62	32	86	88	27	44	
C/E (KG)	111	101	111	103	196	133	103	164	
% > 2.3 KG	8	10							
----- AREA=NAIN BAY -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	12461		3119	8464				5450	85
EFFORT (PERSON-WKS)	37		10	28				29	1
C/E (KG)	337		312	302				188	85
% > 2.3 KG			16	15				4	
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS	5000								
CATCH (KG)	532	1886	2667	6437	3806	5179	20734	10265	
EFFORT (PERSON-WKS)	8	15	32	39	15	33	61	61	
C/E (KG)	67	126	83	165	254	157	340	168	
% > 2.3 KG	2	6							
RIVER FISHERY							345		
----- AREA=TIKKOATOKAK BAY -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS						39500	39500	28500	35000
CATCH (KG)	9960	27695	31568	39483	55061	37919	42131	28066	28283
EFFORT (PERSON-WKS)	28	76	81	94	147	108	130	80	75
C/E (KG)	356	364	390	420	374	351	324	351	377
% > 2.3 KG			19	20	18	14	10	5	7
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS	35000	26000	12500		16000	16000	16000	16000	
CATCH (KG)	16211	8618	6243	3841	3608	2240	2636	1491	
EFFORT (PERSON-WKS)	65	43	24	16	12	12	13	12	
C/E (KG)	249	200	260	240	301	187	203	124	
% > 2.3 KG	8	5							
RIVER FISHERY							473		

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1990.
SUMMARY OF CATCH AND EFFORT DATA FOR THE MAIN FISHING REGION

----- AREA=WEBB BAY -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	580	833	4550	2516	3472	3035	3008	8100	4607
EFFORT (PERSON-WKS)	1	5	15	21	16	9	8	29	27
C/E (KG)	580	167	303	120	217	337	376	279	171
% > 2.3 KG			21	19	20	39	39	27	11
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS					9000	9000	9000	9000	
CATCH (KG)	15055	10476	5143	5890	8424	6041	5904	4859	
EFFORT (PERSON-WKS)	56	43	35	34	27	33	17	10	
C/E (KG)	269	244	147	173	312	183	347	486	
% > 2.3 KG	5	7							
RIVER FISHERY							146		
----- AREA=BLACK ISLAND -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	4264	2101	2725	3389	2966	10632	20051	14413	11602
EFFORT (PERSON-WKS)	60	62	48	65	81	92	130	94	79
C/E (KG)	71	34	57	52	37	116	154	153	147
% > 2.3 KG			8	10	14	7	6	7	8
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	11028	7913	12750	17458	11151	12024	18222	20987	
EFFORT (PERSON-WKS)	87	62	68	72	50	61	60	65	
C/E (KG)	127	128	188	242	223	197	304	323	
% > 2.3 KG	4	5							
----- AREA=KIGLAPAITS -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	5131	1504	6089	5435	12097	17606	16543	21911	8326
EFFORT (PERSON-WKS)	26	32	59	57	103	120	95	99	34
C/E (KG)	197	47	103	95	117	147	174	221	245
% > 2.3 KG			25	25	34	14	18	12	16
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	20625	11431	6184	6983	1620	862	2065	1051	
EFFORT (PERSON-WKS)	103	55	41	55	14	9	22	10	
C/E (KG)	200	208	151	127	116	96	118	105	
% > 2.3 KG	12	9							

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1990.
SUMMARY OF CATCH AND EFFORT DATA FOR THE MAIN FISHING REGION

----- AREA=TASIUYAK -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	1467		281		2280	1837	1137		1060
EFFORT (PERSON-WKS)	15		2		9	11	8		6
C/E (KG)	98		141		253	167	142		177
% > 2.3 KG			21		71	34	14		11
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	1259	3423	4724	6749	8997	2823	3186	3302	
EFFORT (PERSON-WKS)	7	23	36	26	61	22	23	17	
C/E (KG)	180	149	131	260	147	128	139	194	
% > 2.3 KG	13	5							
----- AREA=MUGFORD -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)			1970	1374	1148	170	513		
EFFORT (PERSON-WKS)			15	9	7	2	5		
C/E (KG)			131	153	164	85	103		
% > 2.3 KG			30	36	32	16	15		
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	15								
EFFORT (PERSON-WKS)	1								
C/E (KG)	15								
% > 2.3 KG									
----- AREA=OKAK BAY -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	34250	2354	17812	27592	36125	26171	17434	27300	27300
EFFORT (PERSON-WKS)	105	15	52	107	104	123	65	11049	9031
C/E (KG)	326	157	343	258	347	213	268	240	26
% > 2.3 KG			29	26	18	11	8	10	347
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	21000	27000	27000	27000	26000	22000	26000	26000	
EFFORT (PERSON-WKS)	30732	13864	24746	20141	15695	12608	14973	12497	
C/E (KG)	147	30	119	91	71	51	84	45	
% > 2.3 KG	209	462	208	221	221	247	178	278	
	7	2							

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1990.
SUMMARY OF CATCH AND EFFORT DATA FOR THE MAIN FISHING REGION

----- AREA=CUTTHROAT -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	12641	2703	7526	15488	41146	17803	32397	37263	25699
EFFORT (PERSON-WKS)	95	47	103	130	267	161	205	172	164
C/E (KG)	133	58	73	119	154	111	158	217	157
% > 2.3 KG			17	25	25	12	12	13	15
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	19043	4570	8515	8756	3954	4842	1591	3628	
EFFORT (PERSON-WKS)	164	65	106	89	70	89	84	55	
C/E (KG)	116	70	80	98	56	54	19	66	
% > 2.3 KG	10	7							
----- AREA=NAPARTOK -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)			28972	28039	8551	2486	752	291	16485
EFFORT (PERSON-WKS)			124	126	50	33	11	3	60
C/E (KG)			234	223	171	75	68	97	275
% > 2.3 KG			14	22	20	16	13	12	8
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)									
EFFORT (PERSON-WKS)									
C/E (KG)									
% > 2.3 KG									
----- AREA=HEBRON FIORD -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)				5957			2915	39901	29072
EFFORT (PERSON-WKS)				37				106	37822
C/E (KG)				161				376	386
% > 2.3 KG				16			19	34	23
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS		20000							
CATCH (KG)		19531				543		643	
EFFORT (PERSON-WKS)		112				6		1	
C/E (KG)		174				91		643	
% > 2.3 KG									

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1990.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

----- AREA=DOMES -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)									
EFFORT (PERSON-WKS)								5187	2643
C/E (KG)								19	14
% > 2.3 KG								273	189
								36	17
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)		976							
EFFORT (PERSON-WKS)		10							
C/E (KG)		98							
% > 2.3 KG									
----- AREA=SAGLEK FIORD -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)									
EFFORT (PERSON-WKS)								24722	23791
C/E (KG)								77	118
% > 2.3 KG								321	202
								18	7
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)		5389							
EFFORT (PERSON-WKS)		40							
C/E (KG)		135							
% > 2.3 KG									
----- AREA=RAMAH -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)									7758
EFFORT (PERSON-WKS)									26
C/E (KG)									298
% > 2.3 KG									20
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)		3110							
EFFORT (PERSON-WKS)		25							
C/E (KG)		124							
% > 2.3 KG									

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1990.
SUMMARY OF CATCH AND EFFORT DATA FOR THE MAIN FISHING REGION

----- AREA=NACHVAK -----									
	1974	1975	1976	1977	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)									
EFFORT (PERSON-WKS)									
C/E (KG)									
% > 2.3 KG									
	1983	1984	1985	1986	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)			6142	1808					
EFFORT (PERSON-WKS)			18	4					
C/E (KG)			341	452					
% > 2.3 KG									
TRAP NET FISHERY				1777					
----- AREA=MAIN FISHERY -----									
	1974	1975	1976	1977*	1978	1979	1980	1981	1982
QUOTAS									
CATCH (KG)	120414	44118	134898	186165	213915	175263	167991	231221	203012
EFFORT (PERSON-WKS)	531	309	616	863	966	918	880	914	856
C/E (KG)	227	143	219	216	221	191	191	253	237
% > 2.3 KG			24	25	25	17	12	16	13
	1983	1984	1985	1986**	1987	1988	1989	1990	
QUOTAS									
CATCH (KG)	149732	123045	107120	99963	97379	73937	84837	86292	
EFFORT (PERSON-WKS)	804	729	637	554	533	465	436	394	
C/E (KG)	186	169	168	180	183	159	195	219	
% > 2.3 KG	8	6							
RIVER FISHERY							1133		

* Includes 186 kg unaccounted for by area

** Total also includes trap net catch from Nachvak Fiord

APPENDIX 2, HAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1990.

----- AREA=HAIN BAY -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)					90		2	2	9	43		7	118	35
EFFORT (PERSON-WKS)					9		1	1	2	6		1	11	10
C/E (KG)					10		2	2	5	7		7	11	4

----- AREA=DOG ISLAND -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	5999	5337	6877	9220	8022	4476	3931	618	772	473	965	703	1106	1564
EFFORT (PERSON-WKS)	76	66	101	110	78	62	70	32	21	20	36	36	23	30
C/E (KG)	79	81	68	84	103	72	56	19	37	24	27	20	48	52

----- AREA=BLACK ISLAND -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	8659	9710	5557	11844	8374	6944	2940	2394	2842	4790	1928	3980	4686	2217
EFFORT (PERSON-WKS)	98	103	116	139	99	96	78	55	67	86	54	57	64	66
C/E (KG)	88	94	48	85	85	72	38	44	42	56	36	70	73	34

----- AREA=OKAK BAY -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	842	1011	1055	335	1364	92	653	153	465	428	171	283	775	280
EFFORT (PERSON-WKS)	51	51	66	36	34	11	75	19	52	44	29	30	64	29
C/E (KG)	17	20	16	9	40	8	9	8	9	10	6	9	12	10

----- AREA=NAPARTOK BAY -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	2174	3423	4402	929	193	432								
EFFORT (PERSON-WKS)	72	32	33	8	3	33								
C/E (KG)	30	107	133	116	64	13								

----- AREA=HEBRON FIORD -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	430				334	350		2242						
EFFORT (PERSON-WKS)	31				33	24		70						
C/E (KG)	14				10	15		32						

APPENDIX 2, HAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1990.

----- AREA=SAGLEK FIORD -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)					498	78		67						
EFFORT (PERSON-WKS)					26	11		9						
C/E (KG)					19	7		7						

----- AREA=ANTONS -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	126	51	293	85	59	88	638	139	333	104	182	148	146	101
EFFORT (PERSON-WKS)	10	7	34	10	12	10	40	18	19	16	23	19	20	20
C/E (KG)	13	7	9	9	5	9	16	8	18	7	8	8	7	5

----- AREA=NACHVAK FIORD -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)														
EFFORT (PERSON-WKS)														
C/E (KG)														

----- AREA=VOISEY BAY -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	83	410	33	35	45	51	62	55		5	10	10		10
EFFORT (PERSON-WKS)	14	20	5	7	9	9	9	5		1	2	2		2
C/E (KG)	6	21	7	5	5	6	7	11		5	5	5		5

----- AREA=ANAKTALIK BAY -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	27	12	92	11			14	9	5					
EFFORT (PERSON-WKS)	4	3	12	3			2	2	2					
C/E (KG)	7	4	8	4			7	5	3					

----- AREA=TIKKOATOKAK BAY -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	22	25	13	57	6	53	105	12	18	5	7	20	10	17
EFFORT (PERSON-WKS)	5	3	3	4	1	8	11	3	4	1	2	4	3	4
C/E (KG)	4	8	4	14	6	7	10	4	5	5	4	5	3	4

APPENDIX 2, HAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1990.

----- AREA=WEBB BAY -----

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	236	131	118	2	173	264	487	142	173	59	79	103	114	202
EFFORT (PERSON-WKS)	17	9	6	1	19	20	42	17	15	12	9	10	12	9
C/E (KG)	14	15	20	2	9	13	12	8	12	5	9	10	10	22

----- AREA=KIGLAPAITS -----

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	5357	7544	5183	7690	5177	3743	4231	2502	1255	1459	336	346	2430	179
EFFORT (PERSON-WKS)	47	86	117	94	94	35	90	39	38	48	14	6	24	9
C/E (KG)	114	88	44	82	55	107	47	64	33	30	24	58	101	20

----- AREA=TASIUYAK -----

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)		3	18	248			105	58	35	324	138	167	495	75
EFFORT (PERSON-WKS)		1	2	5			2	7	6	15	19	9	12	10
C/E (KG)		3	9	50			53	8	6	22	7	19	41	8

----- AREA=CUTTHROAT -----

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	17626	21166	12072	29716	21757	15291	6936	7013	8745	12400	10599	14323	20080	8212
EFFORT (PERSON-WKS)	135	174	153	199	165	157	122	50	82	101	87	108	126	57
C/E (KG)	131	122	79	149	132	97	57	140	107	123	122	133	159	144

----- AREA=MUGFORD -----

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)		121	8	159										
EFFORT (PERSON-WKS)		7	2	3										
C/E (KG)		17	4	53										

----- AREA=DOMES -----

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)					2033	1107		164						
EFFORT (PERSON-WKS)					16	14		9						
C/E (KG)					127	79		18						

APPENDIX 2, NAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1990.

----- AREA=RAMAH BAY -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)						5		27						
EFFORT (PERSON-WKS)						1		3						
C/E (KG)						5		9						
----- AREA=MAIN FISHERY -----														
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CATCH (KG)	41581	48945	35722	60332	48124	32974	20105	15596	14653	20090	14414	20090	29960	12892
EFFORT (PERSON-WKS)	560	562	650	619	598	491	542	339	308	350	275	282	359	246
C/E (KG)	74	87	55	97	80	67	37	46	48	57	52	71	83	52