DFO Atlantic Fisheries
Research Document 93/5

MPO Document de recherche sur
les pêches dans l'Atlantique 93/5

Summary of catch statistics for the northern Labrador Arctic charr and Atlantic salmon fisheries in 1992

by

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Abstract

Catch and effort statistics for the northern Labrador Arctic charr fishery in 1992 are summarized. Total northern Labrador charr landings of about 74 t were the third lowest on record and were 43% below the previous 10-year mean of 129 t. Charr landings from the Nain fishing region totalled 61 t or 82% of the northern Labrador catch. Within the Nain fishing region, effort (unstandardized) was similar to 1991, and catch per unit effort increased by 9% over 1991. Landings of Arctic charr in the Nain assessment unit during 1992 represented 32% of the overall catch from the Nain fishing region, while the Voisey unit contributed 15%, and the charr landings at Hebron Fiord (21 t) contributed 36% of the Nain region catch. Atlantic salmon landings at Nain are summarized for the period 1977 to 1992. The salmon fishery in northern Labrador was again low totalling only 3 t. Severe ice conditions along the north Labrador coast again impacted on fishing operations.

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 1992. Les débarquements totaux pour cette région, soit environ 74 t, se situent au troisième rang des plus bas enregistrés et sont inférieurs de 43 % à la moyenne des dix dernières années (129 t). Les débarquements d'omble chevalier provenant de la zone de pêche de Nain ont totalisé 61 t, ce qui représente 82 % des prises de tout le nord du Labrador. Dans la zone de Nain, l'effort (non normalisé) était comparable à celui de 1991 et les prises par unité d'effort ont augmenté de 9 % par rapport à l'année antérieure. En 1992, les débarquements d'omble chevalier de l'unité d'évaluation de la baie de Nain représentaient 32 % des prises totales de la zone de pêche de Nain, tandis que celles de l'unité d'évaluation de Voisey représentaient 15 % du total. Les débarquements d'omble chevalier provenant du fjord Hebron se chiffraient à 21 t et constituaient 36 % des prises de la zone de pêche de Nain. On présente également un sommaire des débarquements de saumon de l'Atlantique dans la zone de Nain de 1977 à 1992. La pêche du saumon dans le nord du Labrador s'est à nouveau soldée par des prises de 3 t seulement. L'abondance des glaces le long du nord du Labrador a une fois encore nui aux activités de pêche.

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 (1987-91) 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 seven years can be attributed to a reduction in fishing effort. However, recent assessments of the Voisey and Nain stock units have also indicated that current stock sizes are still below levels estimated for the late 1970's (Dempson 1991a, 1991b). Recent initiatives by the Labrador Inuit Association have explored the feasibility of developing in-river fisheries for Arctic charr in some of the northern fiord subareas.

This paper summarizes catch statistic information for the 1992 northern Labrador Arctic charr fishery and updates previous reports (summarized in Dempson and Shears 1991, 1992) which have examined landings in the commercial fishery. Atlantic salmon landings from the Nain fishery 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 Salmonid and Habitat Sciences 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 x 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 traditional values used in past reports and were derived from the method initiated by Coady and Best (1976).

Results and Discussion

Total northern Labrador Arctic charr landings

Figure 2 illustrates the commercial landings of Arctic charr from 1944 to 1992. Also shown are the landings from the Nain and Makkovik fishing regions since 1974. During the past 19 years, the Nain region has contributed about 84% of the total northern Labrador catch of Arctic charr averaging 127 t per year. Landings from both regions in 1992 totaled only 74 t, 6% more than in 1991 but 21% and 43% below the previous five (93 t, 1987-91) and ten year (129 t, 1982-91) means (Table 1). Individually, landings in the Nain fishing region of 61 t in 1992 were 11% higher than in 1991 but 24% and 44% below previous five (80 t, 1987-91) and ten year (108 t, 1982-91) means. The number of people fishing has been relatively consistent during the past few years and effort (unstandardized) in terms of person-weeks fished in 1992 was similar to 1991 and are among the lowest value recorded since 1974. It has declined by almost 60% from the 1981-85 average.

Undoubtedly, the extremely poor environmental conditions experienced in 1991 contributed to the decreased effort and general failure of the fishery. Conditions in 1992 were, for the most part, similar to 1991. A commercial fishery in the Hebron Fiord occurred again in 1992 with landings totaling 21 t and contributing 3% of the Nain region catch of Arctic charr. An experimental in-river fishery at Southwest Brook, Saglek Fiord, harvested 2.2 t of charr. This represented 28% of the total number of commercial sized charr (fish > 45 cm) that entered the river during the 18 days of the fishery (August 3-20), (Fig. 3) but only 4% of the entire run enumerated during that period (N = 31687).

Charr landings from the Makkovik region in 1992 decreased by 14% from the previous year and totaled 13 t. The highest landings in the Makkovik region of 39 t occurred in 1982. Concern has been expressed about the amount of small charr being caught at Makkovik, Postville, and Hopedale.

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 1992 (experimental harvests are not included in the appendix - refer to Table 5). Some of these subareas form component parts of larger assessment or stock units. The Nain fishing region is composed of three primary assessment units (Voisey, Nain, and Okak) in addition to other subareas which are not, at present, component parts of larger assessment units or stock complexes. These primary assessment units have contributed an average of 80% of the commercial production of Arctic charr from the Nain fishing region over the period 1974-91.

Landings of Arctic charr in the Nain assessment unit during 1992 represented 32% of the overall catch from the Nain fishing region, while the Voisey unit contributed 15%. The Okak unit was essentially not fished in 1992.

Tables 2, 3, and 4 summarize catch and effort data for the Voisey, Nain, and Okak assessment units, respectively, from 1974 to 1992 while Figure 4 illustrates the trend in landings with respect to Total Allowable Catch (TAC). For the Voisey Unit, the highest catches occurred during the late 1970's (Fig. 4) as did the highest catch per unit of effort (CUE) (Fig. 5). Landings in 1992 were 9 t, a decrease of 15% from 1991. Effort also declined in 1992 resulting in an increased catch rate relative to the previous year (Table 2 & 6). Only 66% of the 14 t TAC for the Voisey unit was obtained in 1992.

Landings from the Nain assessment unit in 1992 totaled 20 t, 23% more than landings in 1991 but only 42% of the 47 t TAC (Table 3). Again, severe ice conditions contributed to this failure by preventing fisherpersons from accessing traditional fishing berths. The number of person-weeks fished in the Nain unit during 1992 decreased by 12% over that of 1991. CUE (unstandardized) increased over the previous year (Fig. 5) while standardized catch rates were comparable with 1991 (Fig. 5, Table 6).

Landings from the Okak assessment unit totaled 180 kg in 1992 the lowest ever recorded. There was virtually no effort directed to this unit in 1992.

A summary of harvests from specific experimental river harvests are provided in Table 5.

Standardized catch rates are summarized in Table 6. Catches have been standardized to 1977, week 31 (July 30 - Aug 5). Standardized and unstandardized catch rates are illustrated in Fig. 5.

Nain region - Atlantic salmon landings

Atlantic salmon landings specifically from the Nain fishing region in SFA 1 are presented for the period 1977 to 1992. Salmon caught in this area are, for the most part, not from 'local' rivers (Dempson and Shears 1991), 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 7 summarizes the salmon catches by assessment units. Landings have ranged from a high of 60 t in 1980 to a low of only 3 t in 1991 and 1992, the lowest values recorded (Fig. 6).

References

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Table 1. Summary of northern Labrador Arctic charr landings (kg round) by fishing region, 1974-92.

	Nain Fishing Region				Makkovik Fishing Region			
Year	Catch	No. of Fishermen	Fathoms of gear licensed	Catch as % of total	Catch	No. of Fishermen	Fathoms of gear licensed	Total Catch
1974	120414	66		81	28133			148547
1975	44118	85		82	9542			53660
1976	134898	101		90	15645			150543
1977	186165	128		88	24205			210370
1978	213915	131	21340	86	34387	149	29300	248302
1979	175263	142	21320	82	37693	110	21225	212956
1980	167991	128	23960	83	35561	154	30635	203552
1981	231221	122	21700	92	20733	154	30990	251954
1982	203012	118	23600	84	39163	141	28200	242175
1983	149732	119	24400	84	29100	148	29600	178832
1984	123045	115	23000	83	24792	147	29400	147837
1985	107120	95	19000	76	33945	132	26400	141065
1986	99963	79	15800	88	13888	109	21800	113851
1987	97379	72	14400	91	9965	130	26000	107344
1988	74010	63	12600	83	14819	120	24000	88829
1989	85970	72	14400	85	14808	126	25200	100778
1990	86292	67	13400	86	13509	103	20600	99801
1991	54614	65	13000	78	15137	96	19200	69751
1992	60754	62	12400	82	13044	96	19200	73798
Avg. 1987-91	79653				13648			93301
Avg. 1982-91	108114				20913			129026
Avg. 1974-92	127151			84	22530			149681

For 1985, Makkovik Region, catch includes 6788 kg from spring fishery in Postville area.
Catch for Nain Fishing Region includes in-river harvest in 1989, 1991, and 1992, and the trap net fishery at Nachvak Fiord in 1986.

Table 2. Catch (kg-round) and effort (person-weeks) statistics for the Voisey assessment unit from 1974 to 1992. 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	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		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
1991	17000		10971	60	183	26	20
1992	14000		9284	39	238	96	15
Avg. 1987-91			15433				
Avg. 1982-91			16924				
Avg.			19541				

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

Table 3. Catch (kg) and effort (person-weeks) statistics for the Nain assessment unit from 1974 to 1992. 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			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	43600	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
1991	47000		15892	149	107	10	29
1992	47000		19555	131	149	46	32
Avg. 1987-91			39360				
Avg. 1982-91			42077				
Avg.			48566				

TAC 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) statistics for the Okak assessment unit from 1974 to 1992. 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
1991	31000		4432	31	143	7	8
1992	31000		180	13	14	100	<1
Avg. 1987-91			14844				
Avg. 1982-91			23767				
Avg.			30178				

Table 5. Summary of Arctic charr landings (kg-round) from various experimental fisheries in northern Labrador.

		Type of Fishery		
Year	Area	Trap-net	River gill net	In-river trap
1986	Nachvak Fiord	1777		
1989	Voisey Bay		169	
	Nain Bay		345	
	Tikkoatokak Bay		473	
	Webb Bay		146	
1991	Saglek Fiord			159
1992	Saglek Fiord			2201

* Note these catches are included in the overall summary in Table 1.

Table 6. Standardized catch rates (C/E, kg/person-week fished) with standard error (SE) for the Voisey, Nain, and Okak stock units, 1977-92.

	Voisey Unit		Nain Unit		Okak Unit	
Year	C/E	SE	C/E	SE	C/E	SE
1977	317	53	288	60	421	81
1978	388	63	259	57	415	89
1979	407	66	408	89	319	59
1980	313	53	440	84	416	79
1981	311	49	475	93	463	91
1982	215	35	531	102	464	96
1983	457	80	417	79	393	72
1984	278	44	416	79	389	83
1985	353	57	482	90	232	46
1986	259	41	363	70	292	57
1987	272	53	494	92	210	41
1988	309	49	326	60	183	35
1989	383	71	461	88	138	27
1990	346	61	397	75	318	67
1991	199	32	281	56	139	35
1992	321	63	274	57		

Table 7. Commercial Arctic charr and Atlantic salmon landings by stock unit, 1977-92 for the Nain Region of northern Labrador. Total also includes landings from subareas other than those within stock units. Total includes harvest from various experimental fisheries, but these are not included in individual stock unit summaries.

	Voisey Unit		Nain Unit		Okak Unit		Total	
Year	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	85970	29960
1990	19895	111	45275	4035	16125	8492	86292	12892
1991	10971	19	15892	878	4432	1590	54614	2688
1992	9284	23	19555	687	180	1770	60754	2671

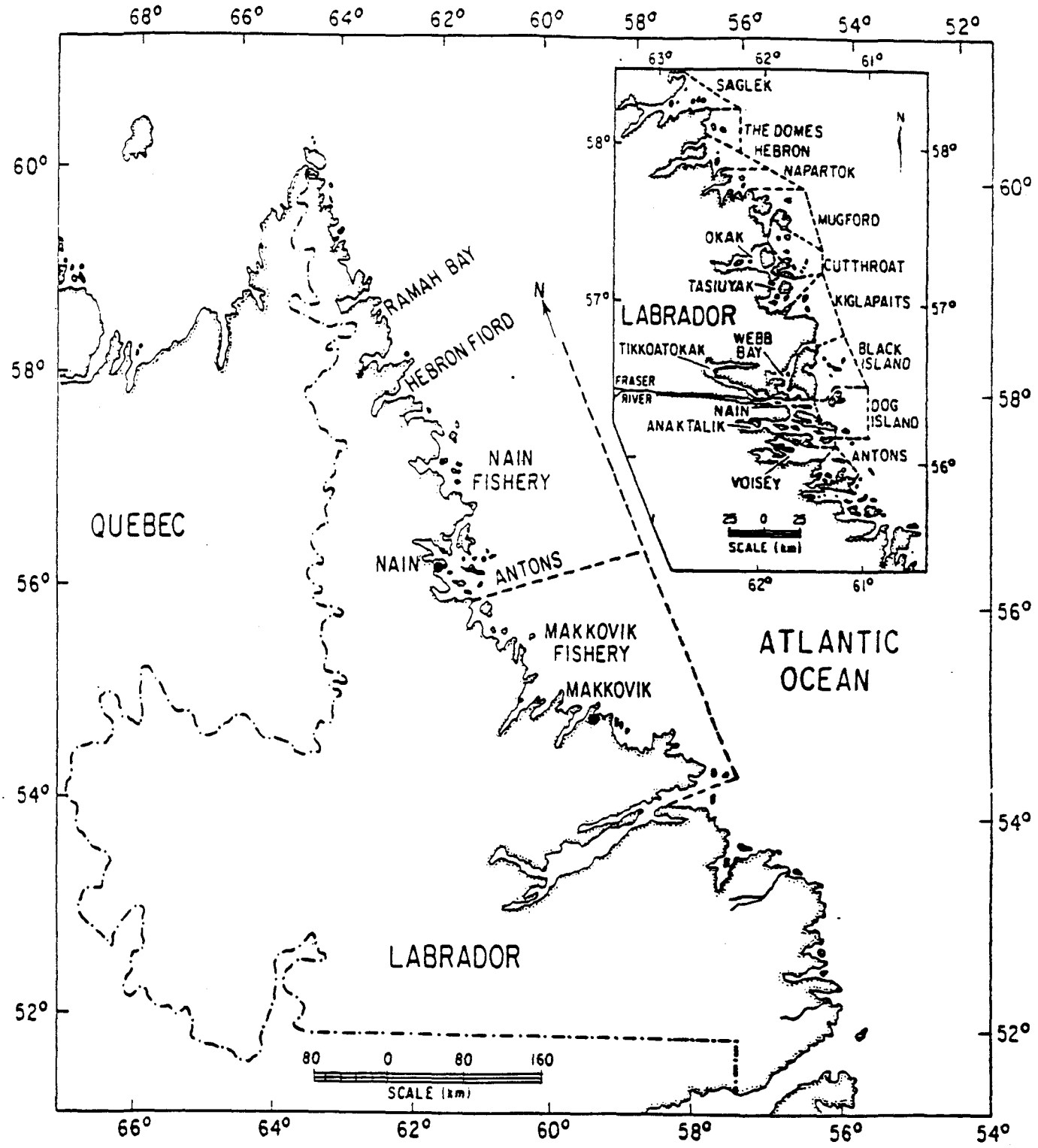


Fig. 1. Location of the Nain and Makkovik Fishing Regions in northern Labrador. Insert illustrates the location of subareas within the Nain Fishing Region.

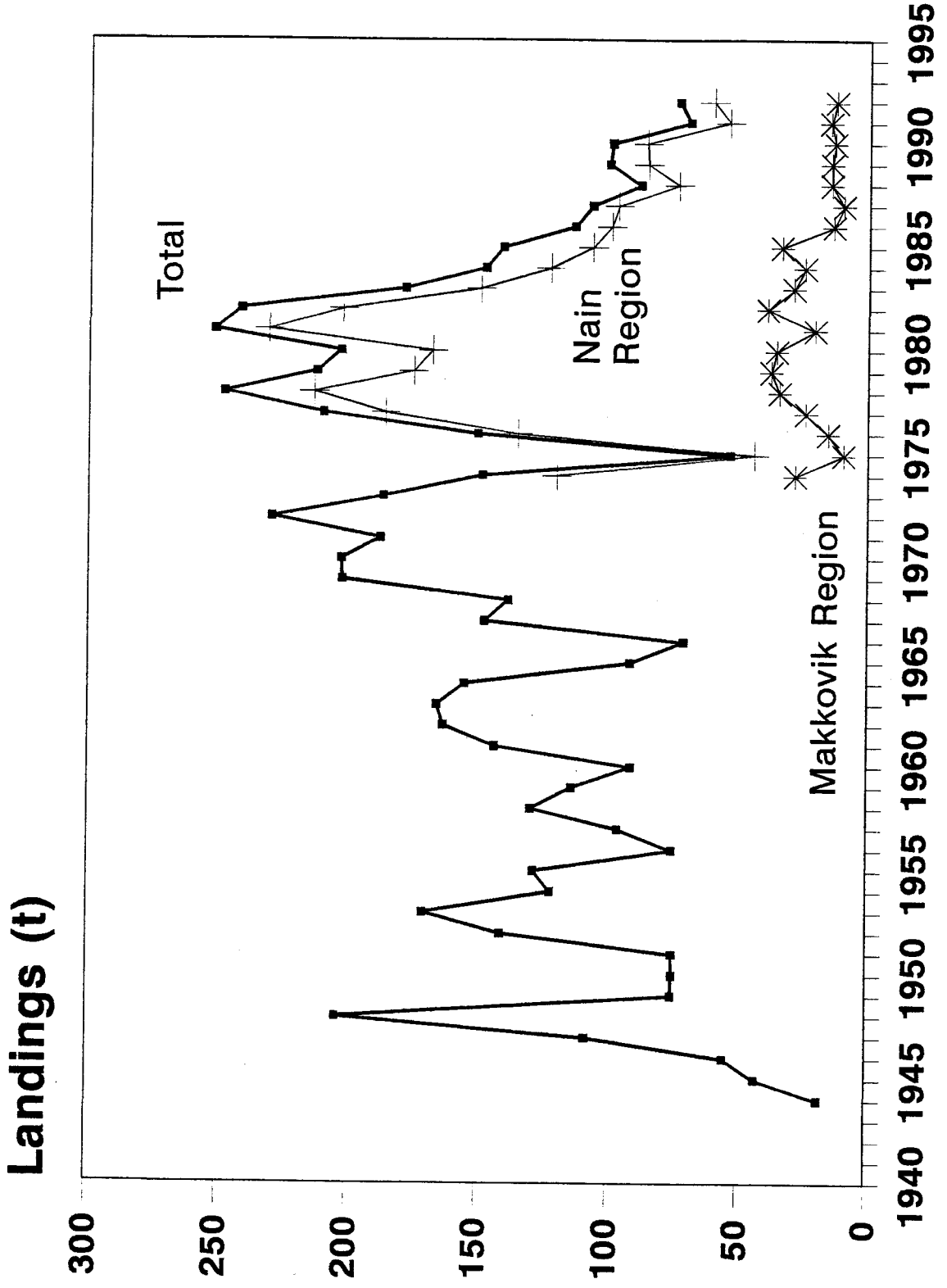


Fig. 2. Summary of northern Labrador Arctic charr landings (tonnes), 1944-92.

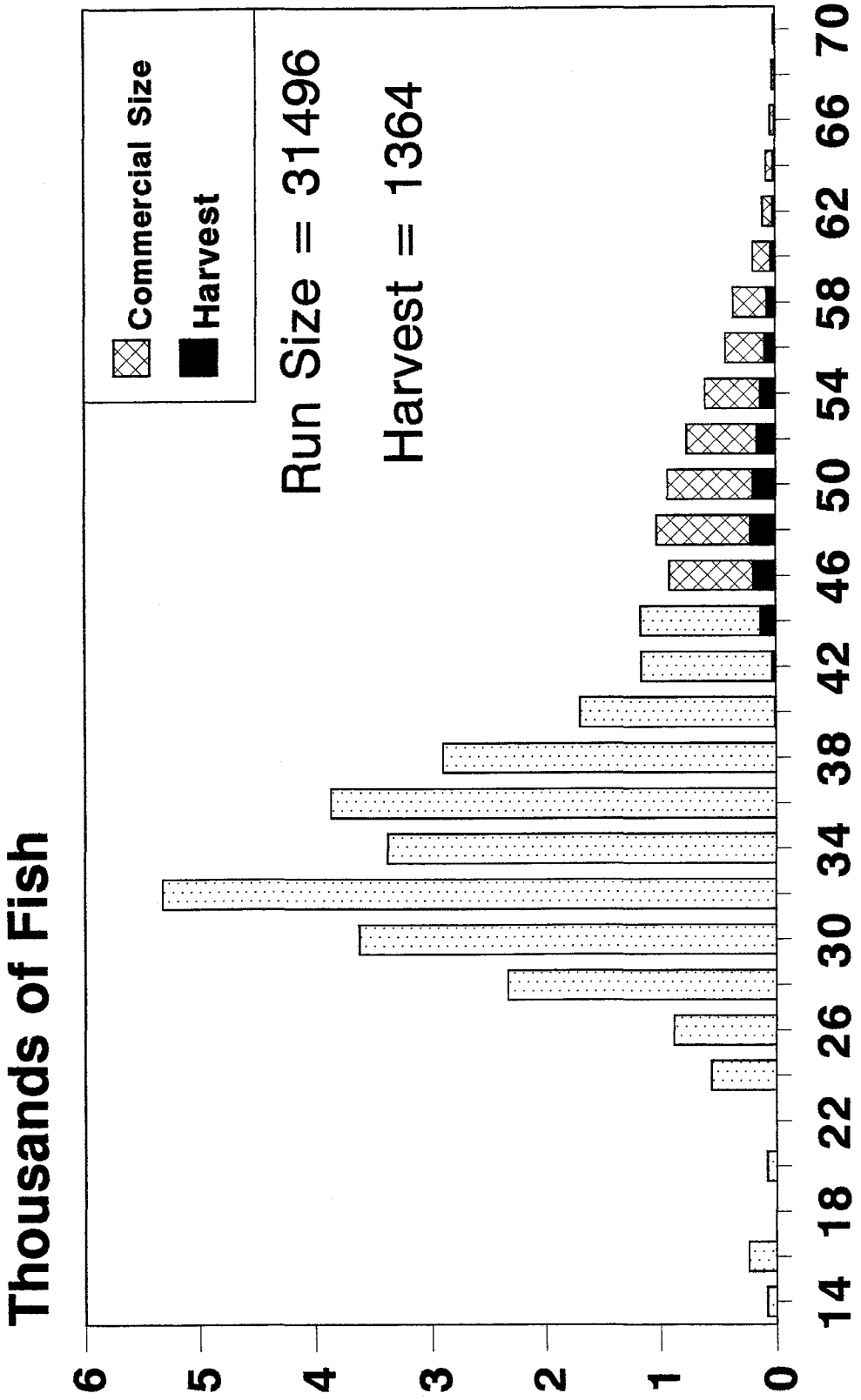


Fig. 3. Length frequency distribution of Arctic charr caught in the experimental in-river fishery at Southwest Arm Brook, Saglek Fiord, 1992. The commercial size component and those fish retained for harvest are indicated.

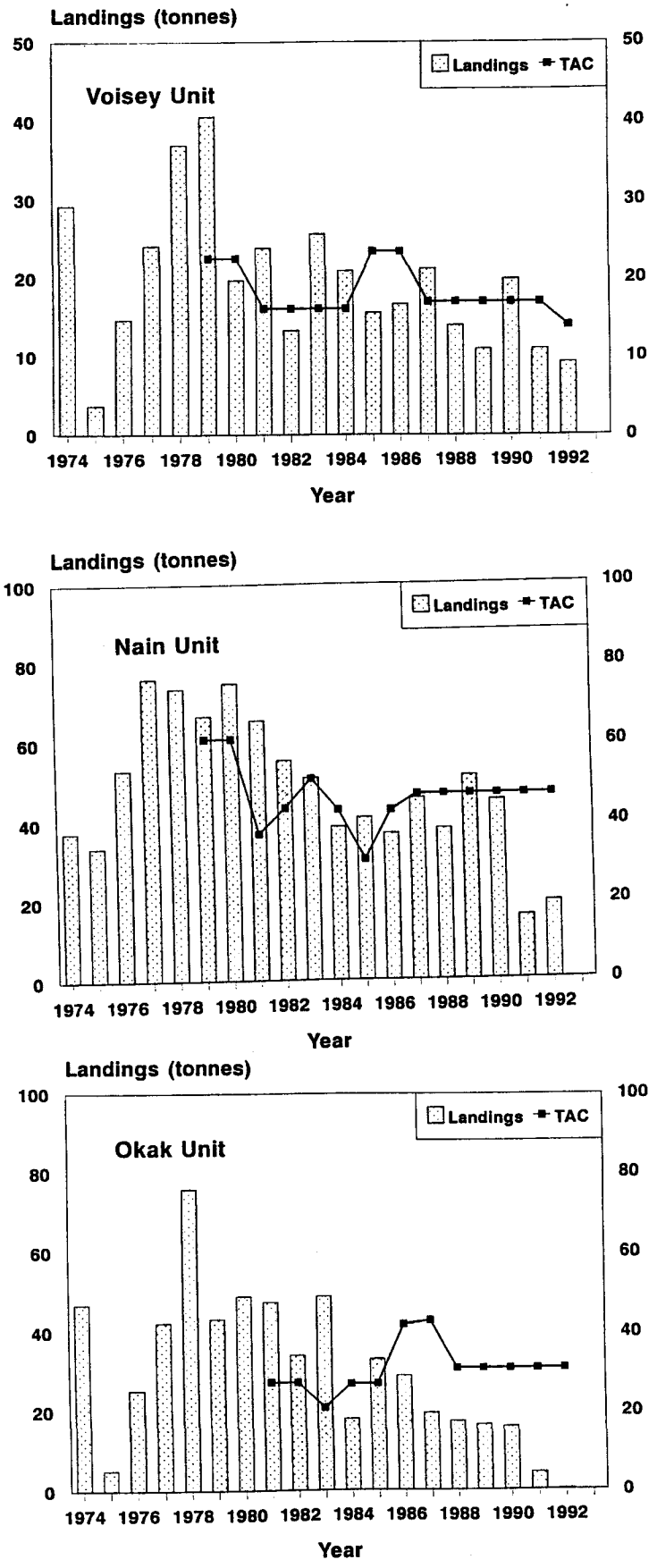
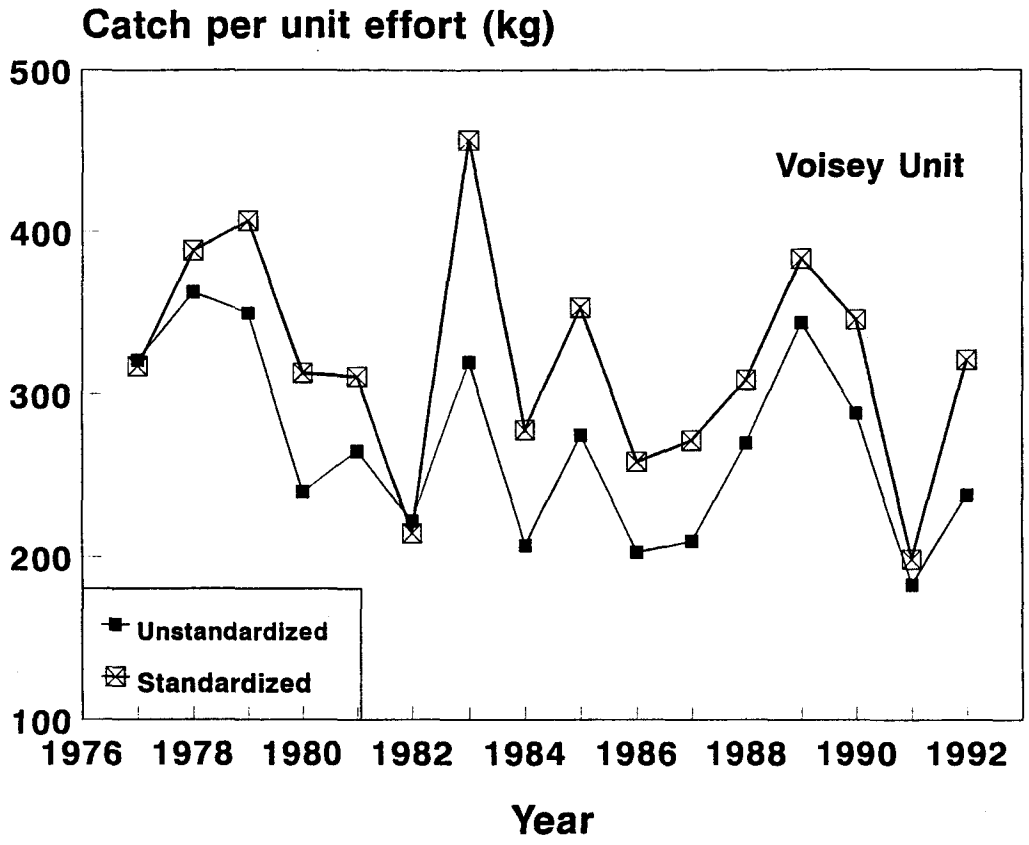


Fig. 4. Summary of total landings with respect to total allowable catch for the Voisey, Nain and Okak stock units.



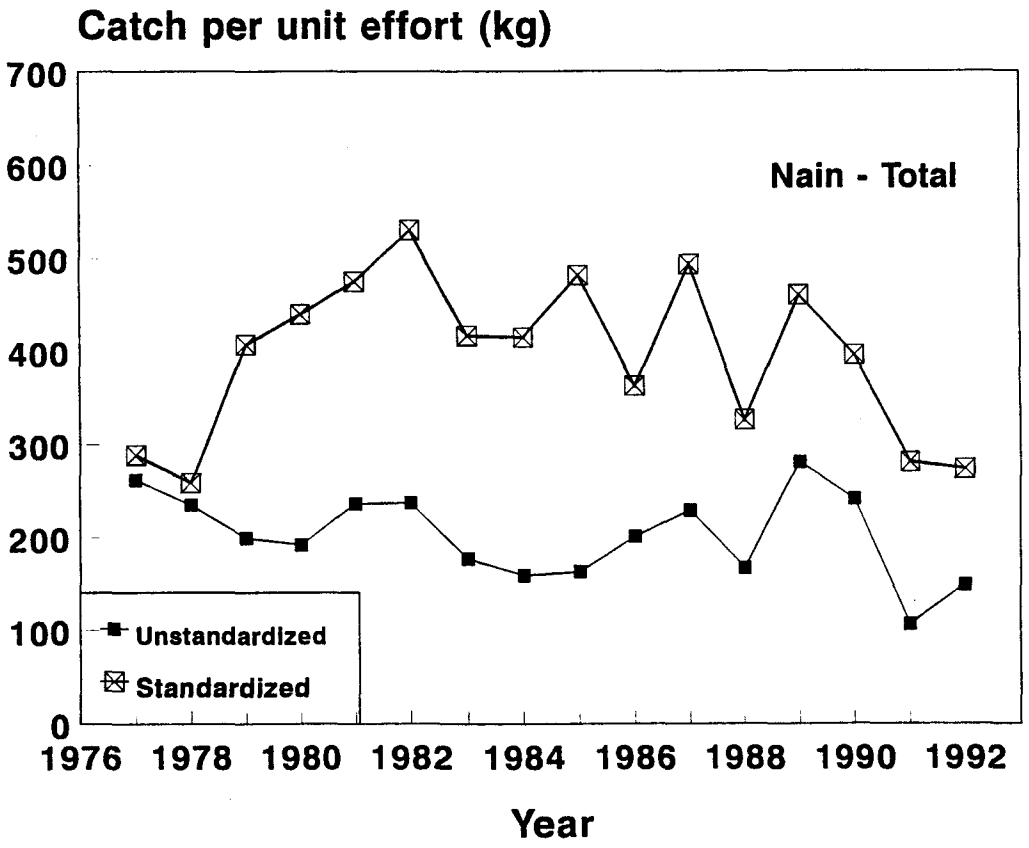


Fig. 5. Comparison of unstandardized and standardized commercial catch rates for the Voisey, Nain, and Okak stock units.

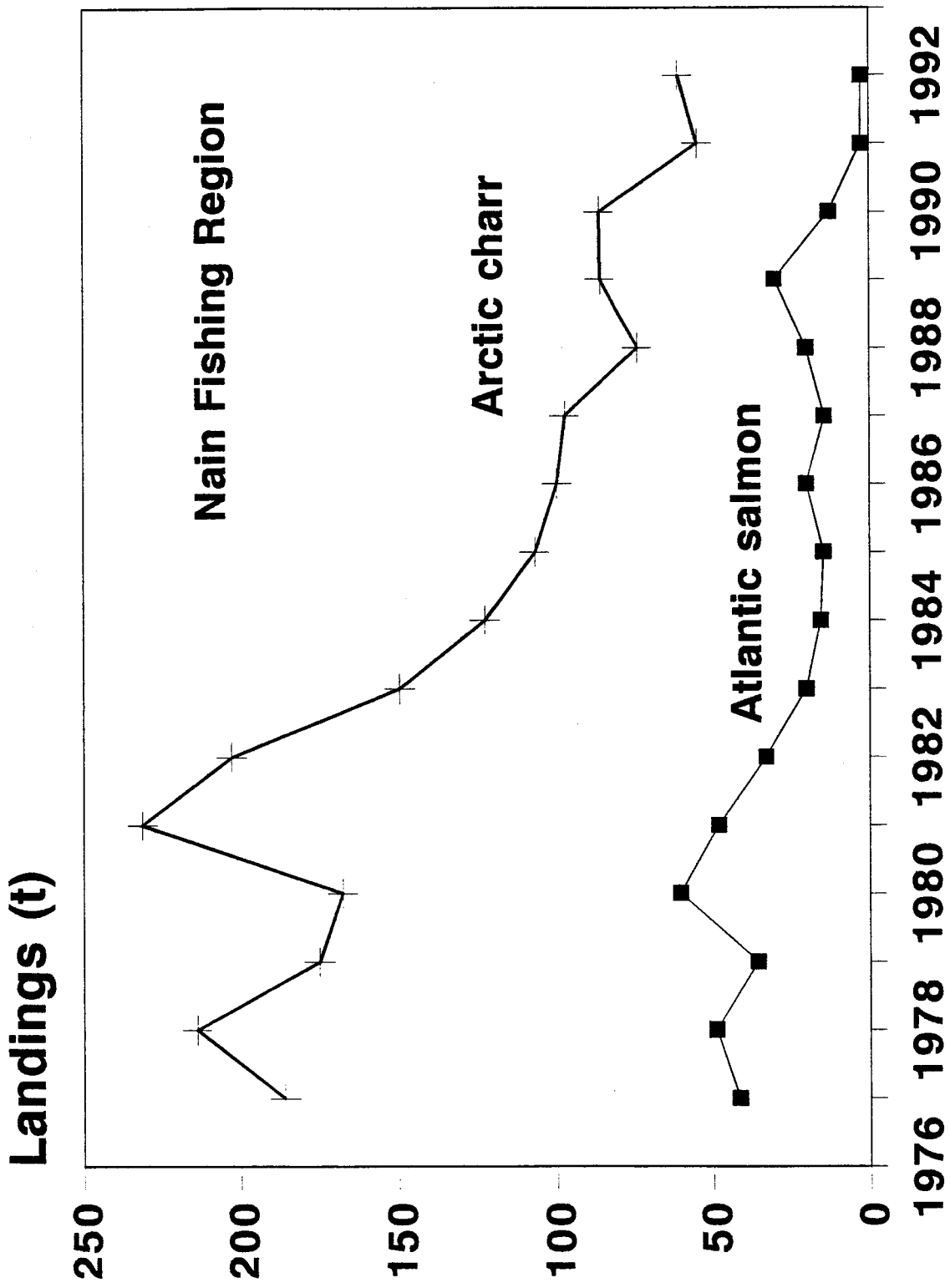


Fig. 6. Summary of Nain region Arctic charr and Atlantic salmon landings (tonnes), 1977-92.

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1992.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

AREA=ANTONS

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)	9135	3489	3172	2111	4011	19371	8460	7870	6191	23062
EFFORT (PERSON-WKS)	34	20	6	20	17	63	32	38	24	63
C/E (KG)	269	174	529	106	236	307	264	207	258	366
% > 2.3 KG			21	24	28	22	14	13	12	9

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)	13099	14212	13589	8611	8460	11019	12659	2813	413
EFFORT (PERSON-WKS)	82	51	67	55	29	32	45	20	6
C/E (KG)	160	279	203	157	292	344	281	141	69
% > 2.3 KG	7								

AREA=VOISEY BAY

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS						22500	22500	16100	16100	16000
CATCH (KG)	20045	238	12232	22488	33597	21880	11557	16325	7688	2953
EFFORT (PERSON-WKS)	64	2	45	56	85	59	52	53	38	17
C/E (KG)	313	119	272	402	395	371	222	308	202	174
% > 2.3 KG			42	35	34	32	17	16	17	17

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS	16000	23400							
CATCH (KG)	8113	1435	3065	12630	5577		7236	8158	8851
EFFORT (PERSON-WKS)	24	6	22	54	26		24	43	36
C/E (KG)	338	239	139	234	215		301	190	246
% > 2.3 KG	16								

AREA=ANAKTAKLIK BAY

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS						21500	21500	8660	8660	11000
CATCH (KG)	7821	2548	14670	21604	13075	14913	8045	9157	10836	2359
EFFORT (PERSON-WKS)	28	10	45	63	55	76	53	32	27	24
C/E (KG)	279	255	326	343	238	196	152	286	401	98
% > 2.3 KG			36	38	27	20	12	10	11	11

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS	6100	8400		5000	5000	5000	5000	5000	5000
CATCH (KG)	3980	7477	180	2002	1075	1175	454	1484	70
EFFORT (PERSON-WKS)	34	39	7	18	12	13	5	17	3
C/E (KG)	117	192	26	111	90	90	91	87	23
% > 2.3 KG	12								

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1992.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

AREA=DOG ISLAND

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)	2659	653	212	2039	386	1440	3048	1516	1105	6858
EFFORT (PERSON-WKS)	38	40	11	49	25	61	86	37	38	62
C/E (KG)	70	16	19	42	15	24	35	41	29	111
% > 2.3 KG			11	9	8	15	11	14	7	8

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)	6666	6882	3289	16881	11735	2794	7219	1240	2134
EFFORT (PERSON-WKS)	66	62	32	86	88	27	44	14	16
C/E (KG)	101	111	103	196	133	103	164	89	133
% > 2.3 KG	10								

AREA=NAIN BAY

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										5000
CATCH (KG)	12461		3119	8464				5450	85	532
EFFORT (PERSON-WKS)	37		10	28				29	1	8
C/E (KG)	337		312	302				188	85	67
% > 2.3 KG			16	15				4		2

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)	1886	2667	6437	3806	5179	20734	10265	4039	4762
EFFORT (PERSON-WKS)	15	32	39	15	33	61	61	59	45
C/E (KG)	126	83	165	254	157	340	168	68	106
% > 2.3 KG	6								

AREA=TIKKOATOKAK BAY

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS						39500	39500	28500	35000	35000
CATCH (KG)	9960	27695	31568	39483	55061	37919	42131	28066	28283	16211
EFFORT (PERSON-WKS)	28	76	81	94	147	108	130	80	75	65
C/E (KG)	356	364	390	420	374	351	324	351	377	249
% > 2.3 KG			19	20	18	14	10	5	7	8

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS	26000	12500		16000	16000	16000	16000	16000	16000
CATCH (KG)	8618	6243	3841	3608	2240	2636	1491	2296	2560
EFFORT (PERSON-WKS)	43	24	16	12	12	13	12	16	9
C/E (KG)	200	260	240	301	187	203	124	143	284
% > 2.3 KG	5								

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1992.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

AREA=WEBB BAY

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)	580	833	4550	2516	3472	3035	3008	8100	4607	15055
EFFORT (PERSON-WKS)	1	5	15	21	16	9	8	29	27	56
C/E (KG)	580	167	303	120	217	337	376	279	171	269
% > 2.3 KG			21	19	20	39	39	27	11	5

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS				9000	9000	9000	9000	9000	9000
CATCH (KG)	10476	5143	5890	8424	6041	5904	4859	2343	3111
EFFORT (PERSON-WKS)	43	35	34	27	33	17	10	10	16
C/E (KG)	244	147	173	312	183	347	486	234	194
% > 2.3 KG	7								

AREA=BLACK ISLAND

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)	4264	2101	2725	3389	2966	10632	20051	14413	11602	11028
EFFORT (PERSON-WKS)	60	62	48	65	81	92	130	94	79	87
C/E (KG)	71	34	57	52	37	116	154	153	147	127
% > 2.3 KG			8	10	14	7	6	7	8	4

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)	7913	12750	17458	11151	12024	18222	20987	4490	6917
EFFORT (PERSON-WKS)	62	68	72	50	61	60	65	37	44
C/E (KG)	128	188	242	223	197	304	323	121	157
% > 2.3 KG	5								

AREA=KIGLAPAITS

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)	5131	1504	6089	5435	12097	17606	16543	21911	8326	20625
EFFORT (PERSON-WKS)	26	32	59	57	103	120	95	99	34	103
C/E (KG)	197	47	103	95	117	147	174	221	245	200
% > 2.3 KG			25	25	34	14	18	12	16	12

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)	11431	6184	6983	1620	862	2605	1051	1110	653
EFFORT (PERSON-WKS)	55	41	55	14	9	22	10	15	4
C/E (KG)	208	151	127	116	96	118	105	74	163
% > 2.3 KG	9								

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1992.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

AREA=TASIUYAK

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)	1467		281		2280	1837	1137		1060	1259
EFFORT (PERSON-WKS)	15		2		9	11	8		6	7
C/E (KG)	98		141		253	167	142		177	180
% > 2.3 KG			21		71	34	14		11	13

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)	3423	4724	6749	8997	2823	3186	3302	1077	3063
EFFORT (PERSON-WKS)	23	36	26	61	22	23	17	5	13
C/E (KG)	149	131	260	147	128	139	194	215	236
% > 2.3 KG	5								

AREA=MUGFORD

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)			1970	1374	1148	170	513			15
EFFORT (PERSON-WKS)			15	9	7	2	5			1
C/E (KG)			131	153	164	85	103			15
% > 2.3 KG			30	36	32	16	15			

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)									
EFFORT (PERSON-WKS)									
C/E (KG)									
% > 2.3 KG									

AREA=OKAK BAY

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS								27300	27300	21000
CATCH (KG)	34250	2354	17812	27592	36125	26171	17434	11049	9031	30732
EFFORT (PERSON-WKS)	105	15	52	107	104	123	65	46	26	147
C/E (KG)	326	157	343	258	347	213	268	240	347	209
% > 2.3 KG			29	26	18	11	8	10	7	7

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS	27000	27000	27000	26000	22000	26000	26000	26000	26000
CATCH (KG)	13864	24746	20141	15695	12608	14973	12497	4112	
EFFORT (PERSON-WKS)	30	119	91	71	51	84	45	13	
C/E (KG)	462	208	221	221	247	178	278	316	
% > 2.3 KG	2								

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1992.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

AREA=CUTTHROAT

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)	12641	2703	7526	15488	41146	17803	32397	37263	25699	19043
EFFORT (PERSON-WKS)	95	47	103	130	267	161	205	172	164	164
C/E (KG)	133	58	73	119	154	111	158	217	157	116
% > 2.3 KG			17	25	25	12	12	13	15	10

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)	4570	8515	8756	3954	4842	1591	3628	320	180
EFFORT (PERSON-WKS)	65	106	89	70	89	84	55	18	13
C/E (KG)	70	80	98	56	54	19	66	18	14
% > 2.3 KG	7								

AREA=NAPARTOK

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
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	

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)								242	4414
EFFORT (PERSON-WKS)								4	16
C/E (KG)								60	276
% > 2.3 KG									

AREA=HEBRON FIORD

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS									29072	
CATCH (KG)				5957			2915	39901	37822	
EFFORT (PERSON-WKS)				37				106	98	
C/E (KG)				161				376	386	
% > 2.3 KG				16			19	34	23	

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS	20000								
CATCH (KG)	19531				543		643	20731	21252
EFFORT (PERSON-WKS)	112				6		1	49	92
C/E (KG)	174				91		643	423	231
% > 2.3 KG									

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1992.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

AREA=DOMES

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)								5187	2643	
EFFORT (PERSON-WKS)								19	14	
C/E (KG)								273	189	
% > 2.3 KG								36	17	

	1984	1985	1986	1987	1988	1989	1990	1991	1992
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	1983
QUOTAS										
CATCH (KG)								24722	23791	
EFFORT (PERSON-WKS)								77	118	
C/E (KG)								321	202	
% > 2.3 KG								18	7	

	1984	1985	1986	1987	1988	1989	1990	1991	1992
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	1983
QUOTAS										
CATCH (KG)									7758	
EFFORT (PERSON-WKS)									26	
C/E (KG)									298	
% > 2.3 KG									20	

	1984	1985	1986	1987	1988	1989	1990	1991	1992
QUOTAS									
CATCH (KG)	3110								172
EFFORT (PERSON-WKS)	25								2
C/E (KG)	124								86
% > 2.3 KG									

APPENDIX 1, ARCTIC CHARR CATCH STATISTICS, 1974-1992.
SUMMARY OF CATCH AND EFFORT DATA FOR THE NAIN FISHING REGION

AREA=NACHVAK

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)										
EFFORT (PERSON-WKS)										
C/E (KG)										
% > 2.3 KG										

	1984	1985	1986	1987	1988	1989	1990	1991	1992	
QUOTAS										
CATCH (KG)		6142	1808							
EFFORT (PERSON-WKS)		18	4							
C/E (KG)		341	452							
% > 2.3 KG										

AREA=NAIN FISHERY

	1974	1975	1976	1977*	1978	1979	1980	1981	1982	1983
QUOTAS										
CATCH (KG)	120414	44118	134898	186165	213915	175263	167991	231221	203012	149732
EFFORT (PERSON-WKS)	531	309	616	863	966	918	880	914	856	804
C/E (KG)	227	143	219	216	221	191	191	253	237	186
% > 2.3 KG			24	25	25	17	12	16	13	8

	1984	1985	1986	1987	1988	1989	1990	1991	1992	
QUOTAS										
CATCH (KG)	123045	107120	98186	97379	74010	84837	86292	54455	58553	
EFFORT (PERSON-WKS)	729	637	554	533	471	436	394	320	315	
C/E (KG)	169	168	180	183	157	195	219	170	186	
% > 2.3 KG	6									

* INCLUDES 186 KG UNACCOUNTED FOR BY AREA

APPENDIX 2, NAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1992.

AREA=NAIN BAY

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)					90		2	2
EFFORT (PERSON-WKS)					9		1	1
C/E (KG)					10		2	2

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	9	43		7	118	35	19	11
EFFORT (PERSON-WKS)	2	6		1	11	10	4	3
C/E (KG)	5	7		7	11	4	5	4

AREA=DOG ISLAND

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	5999	5337	6877	9220	8022	4476	3931	618
EFFORT (PERSON-WKS)	76	66	101	110	78	62	70	32
C/E (KG)	79	81	68	84	103	72	56	19

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	772	473	965	703	1106	1564	4	88
EFFORT (PERSON-WKS)	21	20	36	36	23	30	2	6
C/E (KG)	37	24	27	20	48	52	2	15

AREA=BLACK ISLAND

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	8659	9710	5557	11844	8374	6944	2940	2394
EFFORT (PERSON-WKS)	98	103	116	139	99	96	78	55
C/E (KG)	88	94	48	85	85	72	38	44

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	2842	4790	1928	3980	4686	2217	757	467
EFFORT (PERSON-WKS)	67	86	54	57	64	66	32	32
C/E (KG)	42	56	36	70	73	34	24	15

AREA=OKAK BAY

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	842	1011	1055	335	1364	92	653	153
EFFORT (PERSON-WKS)	51	51	66	36	34	11	75	19
C/E (KG)	17	20	16	9	40	8	9	8

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	465	428	171	283	775	280	38	
EFFORT (PERSON-WKS)	52	44	29	30	64	29	5	
C/E (KG)	9	10	6	9	12	10	8	

APPENDIX 2, NAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1992.

AREA=NAPARTOK BAY

	1977	1978	1979	1980	1981	1982	1983	1984
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		

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)								2
EFFORT (PERSON-WKS)								1
C/E (KG)								2

AREA=HEBRON FIORD

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	430				334	350		2242
EFFORT (PERSON-WKS)	31				33	24		70
C/E (KG)	14				10	15		32

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)							6	14
EFFORT (PERSON-WKS)							1	3
C/E (KG)							6	5

AREA=SAGLEK FIORD

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)					498	78		67
EFFORT (PERSON-WKS)					26	11		9
C/E (KG)					19	7		7

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)								
EFFORT (PERSON-WKS)								
C/E (KG)								

AREA=ANTONS

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	126	51	293	85	59	88	638	139
EFFORT (PERSON-WKS)	10	7	34	10	12	10	40	18
C/E (KG)	13	7	9	9	5	9	16	8

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	333	104	182	148	146	101	3	16
EFFORT (PERSON-WKS)	19	16	23	19	20	20	1	3
C/E (KG)	18	7	8	8	7	5	3	5

APPENDIX 2, NAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1992.

AREA=NACHVAK FIORD

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)								
EFFORT (PERSON-WKS)								
C/E (KG)								

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)								
EFFORT (PERSON-WKS)								
C/E (KG)								

AREA=VOISEY BAY

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	83	410	33	35	45	51	62	55
EFFORT (PERSON-WKS)	14	20	5	7	9	9	9	5
C/E (KG)	6	21	7	5	5	6	7	11

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)		5	10	10		10	19	7
EFFORT (PERSON-WKS)		1	2	2		2	4	2
C/E (KG)		5	5	5		5	5	4

AREA=ANAKTALIK BAY

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	27	12	92	11			14	9
EFFORT (PERSON-WKS)	4	3	12	3			2	2
C/E (KG)	7	4	8	4			7	5

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	5							
EFFORT (PERSON-WKS)	2							
C/E (KG)	3							

AREA=TIKKOATOKAK BAY

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	22	25	13	57	6	53	105	12
EFFORT (PERSON-WKS)	5	3	3	4	1	8	11	3
C/E (KG)	4	8	4	14	6	7	10	4

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	18	5	7	20	10	17		
EFFORT (PERSON-WKS)	4	1	2	4	3	4		
C/E (KG)	5	5	4	5	3	4		

APPENDIX 2, NAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1992.

AREA=WEBB BAY

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	236	131	118	2	173	264	487	142
EFFORT (PERSON-WKS)	17	9	6	1	19	20	42	17
C/E (KG)	14	15	20	2	9	13	12	8

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	173	59	79	103	114	202	98	121
EFFORT (PERSON-WKS)	15	12	9	10	12	9	5	6
C/E (KG)	12	5	9	10	10	22	20	20

AREA=KIGLAPAITS

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	5357	7544	5183	7690	5177	3743	4231	2502
EFFORT (PERSON-WKS)	47	86	117	94	94	35	90	39
C/E (KG)	114	88	44	82	55	107	47	64

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	1255	1459	336	346	2430	179	204	126
EFFORT (PERSON-WKS)	38	48	14	6	24	9	12	4
C/E (KG)	33	30	24	58	101	20	17	32

AREA=TASIUYAK

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)		3	18	248			105	58
EFFORT (PERSON-WKS)		1	2	5			2	7
C/E (KG)		3	9	50			53	8

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	35	324	138	167	495	75	18	49
EFFORT (PERSON-WKS)	6	15	19	9	12	10	2	4
C/E (KG)	6	22	7	19	41	8	9	12

AREA=CUTTHROAT

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	17626	21166	12072	29716	21757	15291	6936	7013
EFFORT (PERSON-WKS)	135	174	153	199	165	157	122	50
C/E (KG)	131	122	79	149	132	97	57	140

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	8745	12400	10599	14323	20080	8212	1522	1770
EFFORT (PERSON-WKS)	82	101	87	108	126	57	21	21
C/E (KG)	107	123	122	133	159	144	72	84

APPENDIX 2, NAIN REGION ATLANTIC SALMON CATCH STATISTICS, 1974-1992.

AREA=MUGFORD

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

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)								
EFFORT (PERSON-WKS)								
C/E (KG)								

AREA=DOMES

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

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)								
EFFORT (PERSON-WKS)								
C/E (KG)								

AREA=RAMAH BAY

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)						5		27
EFFORT (PERSON-WKS)						1		3
C/E (KG)						5		9

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)								
EFFORT (PERSON-WKS)								
C/E (KG)								

AREA=NAIN FISHERY

	1977	1978	1979	1980	1981	1982	1983	1984
CATCH (KG)	41581	48945	35722	60332	48124	32974	20105	15596
EFFORT (PERSON-WKS)	560	562	650	619	598	491	542	339
C/E (KG)	74	87	55	97	80	67	37	46

	1985	1986	1987	1988	1989	1990	1991	1992
CATCH (KG)	14653	20090	14414	20090	29960	12892	2688	2671
EFFORT (PERSON-WKS)	308	350	275	282	359	246	89	85
C/E (KG)	48	57	52	71	83	52	30	31