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Northern Labrador Arctic charr and Atlantic salmon: catch and effort update for 1997

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Abstract

Catch and effort statistics for the northern Labrador Arctic charr fishery in 1997 are summarized and information on catch-at-age and weight-at-age updated. Total charr landings of 38 t were more than double that of 1996, the highest since 1993, but only 58% of the previous ten year (1987-96) mean of 65.5 t. Charr landings from the Nain Fishing Region were 34 t or 89% of the northern Labrador total. Landings from the Makkovik Fishing Region were 4 t. Nearly two thirds of the Nain Fishing Region catch (65%) originated from subareas north of Black Island. For the first time since 1993 effort in northern Labrador increased. Areas where effort increased included the Voisey and Okak stock units of the Nain Fishing Region. The increase in effort in the Okak stock unit is largely related to the issuance of new 'charr-only' fishing licences. However, owing to overall low effort in recent years, relative to the 1980's, current commercial catch rates as an index of stock abundance, are perhaps questionable. The experimental in-river terminal harvest for Arctic charr at Southwest Arm Brook, Saglek Fiord, continued in 1997 with the greatest catch recorded to date in the shortest fishing period. Atlantic salmon landings at Nain while higher than in 1996, were still the second lowest on record since 1977. Results of salmon landings are summarized for the period 1977-1997. Catch- and weight-at-age data, and tag release and recapture information are updated from past reports.

Résumé

Les statistiques sur les prises et l'effort de la pêche de 1997 de l'omble chevalier du nord du Labrador sont résumées et les données sur les prises et le poids selon l'âge sont mises à jour. Les débarquements totaux, de 38 t, correspondent à plus du double de ceux de 1996, les plus élevés depuis 1993, mais qu'à 58 % de la moyenne des dix années antérieures (1987-1996), qui était de 65,5 t. Les débarquements de la région de pêche Nain ont atteint 34 t, soit 89 % du total pour le nord du Labrador. Les débarquements de la région de pêche Makkovik ont atteint 4 t. Près des deux tiers (65 %) des prises de la région de pêche Nain provenaient de sous-zones situées au nord de Black Island. Pour la première fois depuis 1993, l'effort a augmenté dans le nord du Labrador. L'effort a augmenté pour les unités de stocks Voisey et Okak de la région Nain. L'augmentation de l'effort dans l'unité Okak s'explique en grande partie par la délivrance de nouveaux permis n'autorisant que la pêche de l'omble. Mais étant donné le faible effort général des dernières années, par rapport aux années 1980, l'utilisation des taux de capture commerciaux actuels à titre d'indice de l'abondance du stock peut être mise en doute. La pêche expérimentale en rivière de l'omble faite dans le ruisseau Southwest Arm, dans le fiord Saglek, s'est poursuivie en 1997 et a permis d'obtenir les captures les plus importantes jamais notées pour une si petite période de pêche. Les débarquements de saumon de l'Atlantique à Nain ont été supérieurs à ceux de 1996 mais demeurent quand même les deuxièmes plus faibles notés depuis 1977. Les données des débarquements de saumon sont résumées pour la période 1977-1997. Les données sur les prises et le poids selon l'âge et celles sur les poissons marqués et recapturés font l'objet d'une mise à jour.

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 of Arctic charr were caught per year in northern Labrador but in the last 5 years (1992-96) annual landings averaged less than 38 t. The lowest landings in the past 30 years occurred in 1996 (14.7 t) followed by 1995 (29.6 t) and 1994 (31.1 t). Landings in 1997 (34.2 t) were more than double that of 1996 but still well below the long term average (1974 -1996 = 128.6 t)

Much of the decline in landings in the Nain Fishing Region during the previous decade can be directly attributed to a reduction in fishing effort. However, individual assessments of the Voisey and Nain stock units have indicated that stock sizes in the early 1990's were below levels estimated for the late 1970's and early 1980's (Dempson MS 1992, MS 1993, 1995). In recent years, there has been more emphasis by the Labrador Inuit Association (LIA) to develop in-river fisheries for Arctic charr in some of the northern fiord subareas. These fisheries could provide selective harvests on some charr stocks while at the same time providing an opportunity to obtain direct evidence of actual spawning escapements.

This paper provides an updated summary of the catch information for the 1997 fishery in a format similar to that presented for the 1995 and 1996 fisheries (Shears and Dempson MS 1996, 1997). Data from an in-river charr fishery in 1997 are also summarized along with an update on landings of Atlantic salmon (*Salmo salar*) at Nain. In addition, catch, and weight-at-age data for each of the Voisey, Nain, and Okak stock units are updated from information last summarized following the 1994 fishery. Finally, Arctic charr tag release and recapture information, used in the initial derivation of the northern Labrador Arctic charr stock units in 1986 (Dempson and Kristofferson 1987) are updated through to the 1996 fishing season.

Noteworthy events or changes in 1997

- at Nain, there were 12 new 'charr-only' licences issued that introduced additional fishers into the charr fishery, most of whom fished in the areas north of Black Island;
- the most successful experimental in-river charr fishery to date was carried out at Southwest Arm Brook, Saglek Fiord;

- there were no DFO river surveys of charr abundance in 1996, however Jacques Whitford Environment Limited operated a fish counting fence on Reid Brook (Voisey's Bay) for Voisey's Bay Nickel Company.

Methods

Information on commercial landings of Arctic charr from the Nain Fishing Region was obtained through purchase slips prepared by Statistics and Informatics Branch of the Department of Fisheries and Oceans and processed by Salmon and Charr Section of the Pelagic Fish, Shellfish and Salmonid Division. Information on landings from the Makkovik Fishing Region were obtained from the DFO fisheries officer in Makkovik, but from Torngat Fish Producers Co-Operative Society for 1996-97. 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 gutted head-on catches were converted to round weight (in kilograms) using the conversion factor: gutted head-on weight x 1.22 = round weight (Dempson MS 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). These unstandardized values are included for comparative purposes with past reports.

Information on length, weight and age (otolith) of Arctic charr caught in the commercial fishery was obtained as fish were processed at the Nain Fish Plant. As in previous years, a two-stage stratified sampling program was carried out for which specific details are provided in Dempson (1995). Samples were identified from individual subareas which form component parts of stock units (Dempson and Kristofferson 1987).

Results and Discussion

Total northern Labrador Arctic charr landings - overview

Figure 2 illustrates the commercial landings of Arctic charr for all of northern Labrador from 1944 to 1997. Also included are the landings from the Nain and

Makkovik Fishing Regions since 1974. During the past 24 years, the Nain Region has contributed 85% of the total northern Labrador catch of Arctic charr, averaging 106 t per year. Commercial landings from both regions in 1997 totalled 38 t, and was similar to the previous five year mean (37.7 t, 1992-96), but 42% below the previous ten year mean (65.5 t, 1987-96) (Table 1).

Landings in the Nain Fishing Region of 34 t in 1997 increased by 156% from 1996. The 1997 catch was 5% above the previous five year (32.4 t, 1992 -96), but approximately 40% below the previous ten year 56 t, 1987-96) average. The number of people fishing was relatively consistent from 1987-92 but dropped considerably in 1993. A further reduction by 50% occurred in 1994 as a result of the extension of the commercial salmon licence buy-out to north coast residents. As stated above, however, 12 new entrants participated in the 1997 charr fishery. These licences were issued by DFO following consultation with the LIA and other fishing interests to attract people into the charr fishery around Nain and further north. The new licences were restricted to fishing in those areas where the chance of intercepting Atlantic salmon was very small. Consequently, effort (unstandardized) in 1997 was the highest recorded since 1993 (Appendix 1), but was still 80% less than the 1981-85 mean.

The highest landings in the Makkovik Region (39 t) occurred in 1982. Landings have fallen substantially since 1992, although charr landings in 1997, 4 t, rose by about 50% from the previous year. As in previous years, concern was expressed about low charr catches and the amount of small charr being caught at Makkovik, Postville, and Hopedale (Unpublished Annual Report by Fishery Officer Eric Andersen, Makkovik, Labrador). Concerns pertain equally to all local food fisheries for charr.

An in-river terminal fishery occurred again in a Saglek Fiord river during 1997. The total catch retained for harvest was 4.1 t. A summary of harvests from experimental river fisheries for 1997 and prior years is provided in Table 2. This river harvest is discussed in more detail under the section entitled *'Experimental Harvest at Southwest Arm Brook, Saglek'*.

Appendix 1 provides an updated summary of catch and effort statistics for all subareas within the Nain Fishing Region from 1974 to 1997 (experimental in-river harvests are not included in the Appendix - refer to Table 2 for details). 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 currently considered as component parts of larger assessment units or stock complexes. These primary assessment units contributed an average of 80% of the commercial production of Arctic charr from the Nain Fishing Region over the period 1974-91.

With the reduction in commercial salmon and charr fishing licences in north Labrador, there was a corresponding increase in food fishing licences. The number of food licences issued dropped in 1997, however it is still much higher than before the licence buy back in 1994. A comparison with past years follows:

No. of food licences

Community	1980	1982	1987	1993	1994	1995	1996	1997
Postville	12	7	10	22	48	42	46	33
Makkovik	19	14	15	13	40	40	49	43
Hopedale	7	12	22	16	51	63	67	55
Davis Inlet	5	5	1	6	10	8	6	4
Nain	10	7	3	21	40	46	50	50
TOTAL	53	45	51	78	189	199	218	185

Individual stock unit summaries

Voisey Stock Unit

The Voisey stock unit is made up of Voisey's Bay and the Anton's subareas (Fig. 1). Prior to 1994, annual landings ranged from 4 to 41 t (mean = 19t, 1974-93) and over this interval contributed 16% of the commercial catch of charr from the Nain Fishing Region (Table 3). In 1997, this stock unit contributed 14% of the landings from the Nain Fishing Region. The highest catches occurred during the late 1970's (Fig. 3). In 1995 there was no directed commercial fishery on this stock unit. The Total Allowable Catches (TACs) listed in Table 3 for 1979 to 1984 applied only to the Voisey Bay subarea. A TAC of 14 t was maintained for 1997.

In 1997, six fishers landed 4.9 t charr from this stock unit. Three individuals landed 0.8 t of charr from Voisey's Bay subarea. Another 3 fishers landed 4.1 t of charr from the Anton's subarea (Table 3). While the stock unit catch is low in comparison with the previous 10 year mean (13 t, 1987-96), it is higher than the previous 5 year mean (4.4 t, 1992-96). Normally, these fishers would move to the Dog Island subarea and fish salmon, but because salmon were apparently scarce they remained at Anton's and fished for a longer period than in recent years.

The low mean weight of fish landed, which has been noted in past years, is still a concern as it remains well below values recorded in the past. Apart from this, there is

no additional quantitative information to suggest changes to the management regime for 1998 assuming the level of fishing and subsequent exploitation rate remains the same. We note that Jacques Whitford Environment Limited (1997) reported 1294 Arctic charr were counted migrating upstream in Reid Brook from July 15 to October 9, 1997. In the absence of comparable information from past years, and knowing that charr interchange among local rivers, we are not able to interpret this in the context of actual stock abundance of Arctic charr in the Voisey's Bay area.

Nain Stock Unit

The Nain stock unit consists of an inshore zone made up of Anaktalik Bay, Nain Bay, Tikkoatokak Bay, and Webb Bay subareas, and an offshore island zone made up of the Dog Island and Black Island subareas (Fig. 1). Annual landings ranged from 5 to 76 t (mean = 40.2 t, 1974-97), and over this interval contributed 37.8% of the commercial catch of charr from the Nain Fishing Region (Table 4). The highest catches occurred during the late 1970's and early 1980's (Fig. 3), with the catches declining in recent years. The lowest catch of approximately 5 t occurred in 1996.

The TACs listed in Table 4 for 1979 to 1983 applied to the specific subareas of Anaktalik Bay and Nain-Tikkoatokak Bay only. In 1984 and 1985, an offshore component was included in the TAC. The quota area catch (QAC) in Table 4 summarized landings for those subareas specifically under quota restrictions only, prior to the derivation of the stock units in 1986. Since 1986, the TAC has applied to the entire stock unit. Based partly on Science advice, the management plan for 1994 lowered the TAC from 47 t to 32 t. This TAC remained in effect for 1997.

Landings of Arctic charr from the Nain stock unit in 1997 totalled 7 t and represented 20% of the overall catch from the Nain Fishing Region (Table 4). This was an increase of 45% from the previous year but similar to catches in 1994 and 1995. In 1995, effort reached its lowest level (41 person-weeks) since 1974 when the collection of these data began. This increased to 53 person-weeks in 1996 before dropping back to 42 person-weeks in 1997 (Table 4).

A summary of landings partitioned by inshore and offshore fishing zones is presented in Table 5. Historically, the combination of effort reduction and a drop in reference level catches (TACs) have contributed to an overall decrease in the amount of charr harvested from this stock unit. However during 1997, catch, effort and catch rate increased in both the inshore and offshore zones. This year as usual for this stock unit, there was some effort directed at the inshore zone early in the fishing season before moving to the offshore and northern areas when ice conditions allowed in late July. Effort again moved inshore when fisherpersons returned to Nain from offshore (Dog Island and Black Island) and northern areas. Fishers then landed charr from Nain Bay and Tikkoatokak Bay subareas until later in August. By this time, however, most of

the charr would have already returned to freshwater overwintering areas and catches tended to be low. We note that there is a significant relationship between catch rate and timing of the fishery for the Nain stock unit ($r^2 = 0.37$; $P = 0.003$); the later the timing of the commercial catch, the lower the catch rate. However, if the inshore zone itself is considered, then 74% of the variation in catch-rate can be explained by the timing of the fishery ($P = 0.0001$). In contrast with the timing of the fishery in the Voisey and Okak stock units, timing of the Nain unit catch had been much later during the past decade (Fig. 4), especially when the inshore and offshore zones are considered separately (Fig. 5).

As is the case in the Voisey stock unit, mean weight of fish landed also remains low and thus is still a concern. In part, this could be due to a later timing of the fishery, but also a long term effect of exploitation on this stock. There is no additional quantitative information to suggest changes to the management regime for 1998 assuming the level of fishing remains generally the same.

Spring food fishery at Nain Bay

The Nain stock unit is where the domestic or spring food fishery largely occurs. This fishery is targeted on charr as they migrate to sea at the mouth of Fraser River (Nain Bay). Efforts in the past, both by DFO and more recently by the Labrador Inuit Association (LIA), have failed to quantify adequately the amount of charr taken annually in this food fishery. This unrecorded for harvest has not been factored into the commercial landings or catch-at-age estimates.

Under normal spring conditions, removals from the spring food fishery would likely be more significant in recent years (e.g. since 1992) when overall commercial landings have averaged only 10.7 $t \cdot y^{-1}$ in contrast to the 1977-90 period when commercial landings averaged over 54 $t \cdot y^{-1}$. However, in 1997 as in 1995 and 1996, sea ice deterioration apparently coincided with the downstream migration of Arctic charr. As a result during the prime spring fishing time, people were unable to access the mouth of Fraser River. We note that in the past, the LIA and members of the Nain fisheries committee have expressed concern about the amount of charr taken in this fishery.

Okak Stock Unit

The Okak stock unit consists of an inshore zone made up of Okak Bay and an offshore island zone made up of the Cutthroat subarea (Fig. 1). Annual landings ranged from only 180 kg in 1992 to a high of 76 t in 1978 (mean = 25.5 t, 1974-97), and over this interval contributed 24% of the commercial catch of charr from the Nain

Fishing Region (Table 6). The highest catches occurred during the late 1970's and early 1980's (Fig. 3), with the lowest catches in 1992 and 1993. The Total Allowable Catches (TACs) listed in Table 6 for 1981 to 1985 applied only to the Okak Bay subarea. A TAC of 31 t was maintained for 1997.

Landings of Arctic charr from the Okak assessment unit have been inconsistent in recent years in part due to fishing in other nearby subareas (e.g. Tasiuyak) that are not formally part of the three primary stock units (Voisey, Nain, Okak). There was no fishing directly within Okak Bay itself in 1992 and 1993 while only 4 t was harvested in 1991. Landings rebounded during 1994 and 1995, with catches totalling 10.9 t and 10.6 t respectively. In 1996, landings dropped sharply to 3.4 t with very little effort (only 8 person-weeks) recorded. In 1997 the landings increased substantially to 13.5 t. This was the highest recorded since 1990 (Table 6).

There has been little effort directed to the offshore Cutthroat subarea since 1990. This has been due to adverse ice conditions in some years and the licence buy-back program in the fall/winter of 1993/94. Most fishers who concentrated on salmon fishing (the main fishery in this subarea) sold their licences at that time. Owing to local ice conditions, no fishery occurred in this offshore zone in 1994 with limited effort in 1996. In 1997, 885 kg of charr were taken, mostly as a by-catch in the Atlantic salmon fishery at Cutthroat. This too was the highest catch of charr since 1990 (Appendix 1).

Catch rates in 1994, 1995 and 1996 were the highest recorded in the Okak stock unit. In 1997 both the catch and effort increased significantly, but the catch rate decreased significantly. Given the greater effort in 1997, the catch-rate data may be more indicative of charr abundance than that of the previous 3 years when effort in general was sparse. In 1997, of the 34 t of charr taken in the Nain Fishing Region, 22.1 t (65%) came from areas north of Black Island with 13.5 t (40%) coming from the Okak stock unit.

Summary

As stated in past reports, there are no independent estimates of Arctic charr abundance in any of the stock unit areas. With the minimal commercial effort in recent years, both in terms of spatial and temporal coverage, catch-rates as an index of true abundance are questionable at best. River specific information on Arctic charr abundance and monitoring of stock characteristics are imperative in order to provide sound scientific advice. In the absence of these types of data, continued updates of baseline commercial fishery monitoring are all that can be accomplished.

Experimental Harvest at Southwest Arm Brook, Saglek

In 1996 and 1997, in-river fisheries were modelled along the lines of future commercial river harvesting ventures. That is, the fishing crew went to the river and installed the trap with the intention of taking up to 7930 pounds (~ 3.6 t) round weight of commercial sized (> 45 cm) charr as it was captured. Only recaptured tagged (Carlin) fish, injured or noncommercial size charr were to be released. The fishery occurred between August 4 and August 10. Again as in 1996, the 1997 in-river harvest cannot be used to infer overall abundance of charr returning to Southwest Arm Brook because of the very short interval over which time the fish were harvested.

The total number of charr caught and released was unknown. However, 2615 commercial-sized charr (most > 45 cm) were delivered to the fish plant at Nain on August 12. According to plant records, the gutted weight of harvested charr was 3379 kg. Of this only 59 kg (1.8%) were graded number two quality.

DFO science representatives were present on site only during the slaughter of the fish. At that time 127 charr were sampled for length, weight, sex and stage of maturity. Otoliths were collected for subsequent ageing. Biological characteristics data obtained from commercial-sized charr harvested in the 1997 in-river fishery are summarized in Table 2. An additional 81 charr selected by length stratification were sampled at the fish plant.

Nain Region - Atlantic salmon landings

Atlantic salmon landings specifically from the Nain Fishing Region in SFA 1 are presented for the period 1977 to 1997 (Table 7). As noted in past summaries, salmon caught in this area are, for the most part, not from 'local' rivers, that is rivers located within the Nain Fishing Region. Most of the salmon are believed to originate from other rivers in central and southern Labrador with some fish from Newfoundland, the Maritime Provinces, and Quebec (Reddin and Dempson 1986).

Traditionally, most of the salmon landed at Nain (92%) are caught in the four subareas: Dog Island, Black Island, Kiglapaits, and Cutthroat (O'Connell et al. MS 1995). Catches have ranged from a high of 60 t in 1980 to a low of just 254 kg in 1996 (Table 7). Over the 15 year period 1977-91, the Nain Fishing Region represented about 31% of the total SFA 1 catch of Atlantic salmon, and landings at Nain were associated with landings from the rest of Labrador ($r^2 = 0.63$, $P = 0.004$, $N = 15$). Catches from all subareas averaged only 2.3 $t \cdot y^{-1}$ until 1990. During the past five years (1993-97), landings have averaged only 1.6 $t \cdot y^{-1}$, with the lowest catch (254 kg) and catch rate in 1996. The low catch in 1996 was due in part to poor ice conditions and

subsequent low effort in offshore subareas where most salmon have been traditionally caught. In 1997 salmon landings at Nain were 1.2 t. Effort remained low in 1997 (Table 7).

Update: Arctic charr catch- and weight-at age data

Catch- and weight-at-age data were last updated following the 1994 fishery (Dempson and Shears MS 1995). Tables 8 - 13 provide updated information through to 1997 for each of the Voisey, Nain and Okak stock complex. As noted in past summaries, the majority of the catch is still made up of four age classes (ages 7 - 10). Older charr are clearly less prominent than they were a decade ago. Part of this could be related to the later timing of the fishery, and hence the sampling in some stock units (e.g. Nain) as typically the older/larger charr often enter the rivers first. It could also be related to the less intense sampling that has occurred coincident with lower catches in recent years.

The decline in mean weight over time has also been noted in past reports. Mean weights are lower in recent years in comparison with the 1980's. Again, at least for the Nain stock unit, 58% of the variation in mean weight ($P = 0.0001$) can be explained by the timing of the fishery - the later the timing, the lower the mean weight. This, however, is less likely to be the case for the Voisey and Okak stock units where timing of the fishery, while variable, has not shown a similar pattern for consistently later median catch dates as that experienced in the Nain stock complex. The possible connection between size and available prey, notably capelin, has also been discussed previously (Dempson 1995). Capelin, for the most part, are still virtually absent from the diets of charr in the Nain region in contrast to earlier years. As stated earlier, the smaller mean weights of charr caught in the commercial fishery remain a concern.

Update: Arctic charr tag release and recapture information

Tag release and recapture information were last updated following the 1985 fishery (Dempson and Kristofferson 1987). At that time 7566 charr had been tagged and released in northern Labrador of which 1886 (24.9%) had been recaptured. These data formed the basis for the derivation of the stock unit concept for the management of northern Labrador Arctic charr fisheries. Information on movements and migration patterns current to the 1996 fishing season ($N = 13147$ tagged and released; $N = 3073$ (23.4%)) is consistent with that from a decade ago (Table 14; Figure 6). That is, by far the majority of charr tagged and released within a particular stock unit, if they are subsequently recaptured, are caught within the same unit they were released in, and generally there is little intermixing of charr from widely distributed areas along the coast.

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Table 1: Summary of northern Labrador Arctic charr landings (kg round) by fishing Region, 1974-1997.

Year	Nain Fishing Region				Makkovik Fishing Region			Total Catch
	Catch	No. of Fishermen	Fathoms of Gear Licenced	Catch as % of Total	Catch	No. of Fishermen	Fathoms of Gear Licenced	
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
1993	33562	37	7200	88	4622	90	18000	38184
1994	29345	18	3600	94	1778	18	3600	31123
1995	25080	18	3600	85	4522	18	3600	29602
1996	13281	18	3600	83	2691	19	3800	15972
1997	33985	30	6000	89	4029	10	2000	38014
Avg. 1992-96	32404				5331			37736
Avg. 1987-96	56029				9490			65518
Avg. 1974-96	106297			85	19204			128645

For 1985, Makkovik Region, catch includes 6788 kg from spring fishery in Postville area. Catch for Nain Fishing Region includes in-river harvests in 1989,1991,1992, 1994, 1995, 1996 and 1997, and the trap fishery at Nachvak Fiord in 1986.

Table 2. Summary of Arctic charr landings (kg-round) from various experimental fisheries in northern Labrador.

Year	Area	Type of Fishery		
		Trap-net	River Gillnet	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
1994	Saglek Fiord			2114
1995	Saglek Fiord			2584
1996	Saglek Fiord			2983
1997	Saglek Fiord			4123

* Note thses catches are included in the overall summary in Table 1 but are not included in Appendix 1.

Biological characteristic data collected from commercial sized Acrtic charr obtained from various in-river fisheries in northern Labrador

Year	Rivers	Number	Mean FL (cm)	Mean GW (kg)	Mean Age (y)
1989	Ikadlivik Brook, Voisey Bay	98	51.1	1.45	9.2
1989	Webb Brook, Webb Bay	102	47.6	1.19	9.5
1989	Kingurutik River, Tikkoatokak Bay	300	47.6	1.16	9.0
1989	Kamanatsuk Brook, Tikkoatokak Bay	40	47.6	1.02	9.4
1989	Fraser River, Nain Bay	287	45.4	1.02	10.0
1991	Pangertok Inlet River, Saglek	77	53.1	1.55	9.8
1994	Pangertok Inlet River, Saglek	89	53.6	1.53	9.7
1992	Southwest Arm Brook, Saglek	210	52.5	1.35	9.6
1994	Southwest Arm Brook, Saglek	151	52.4	1.41	9.3
1995	Southwest Arm Brook, Saglek	187	52.2	1.49	9.4
1996	Southwest Arm Brook, Saglek*	193	51.9	1.38	10.4
1997	Southwest Arm Brook, Saglek	113	51.3	1.29	10.1
1994	North Arm Brook, Saglek	99	50.0	1.16	10.4

* only 77 fish with ages

Table 3: Catch (kg-round) and effort (person-weeks) statistics for the Voisey assessment unit from 1974 to 1997. 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. CUE is unstandardized.

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
1993	14000		8461	48	176	23	25
1994	14000		3335	15	222	5	11
1995	14000		0	0	0	0	0
1996	14000		977	6	163	0	7
1997	14000		4860	30	162	85	14
Avg. 1992-96			4411				
Avg. 1987-96			13055				
Avg. 1974-97			16205				

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

Table 4: Catch (kg) and effort (person-weeks) statistics for the Nain assessment unit from 1974 to 1997. 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. CUE is unstandardized.

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
1993	47000		13410	116	116	58	40
1994	32000		8825	69	128	48	30
1995	32000		6835	41	167	88	27
1996	32000		4851	53	92	52	37
1997	32000		7024	42	167	53	21
Avg. 1992-9			10695				
Avg. 1987-9			25028				
Avg. 1974-9			40155				

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 5: Summary of catch and effort statistics for the Nain stock unit, 1974-97. Quotas and landings are in kg round weight, effort is expressed as person-weeks fished. Refer to text for information on quotas and quota area catch. CUE = unstandardized catch per unit effort.

	Inshore			Offshore				Total				
Year	Catch	Effort	CUE	Catch	Effort	CUE	% Catch Offshore	Catch	Effort*	CUE	TAC	Quota Area Catch
1974	30822			6923			18.1	37745				
1975	31076			2754			8.1	33830				
1976	50813	146	348	2500	52	48	4.7	53313	196	272		
1977	70908	183	387	5347	114	47	7	76255	291	262		
1978	70465	212	332	3298	106	31	4.5	73763	314	235		
1979	54967	189	291	11877	152	78	17.8	66844	336	199	61000	52832
1980	52328	183	286	22727	215	106	30.3	75055	390	192	61000	50176
1981	49956	157	318	15676	131	120	23.9	65632	278	236	37160	37223
1982	43108	119	362	12509	117	107	22.2	55617	235	237	43660	39119
1983	33603	147	229	17599	149	118	34.4	51202	289	177	51000	19102
1984	24558	131	187	14342	128	112	36.9	38900	244	159	43200	29063
1985	21527	125	172	19631	130	151	47.7	41158	252	163	30500	36019
1986	16347	91	180	20748	101	205	55.9	37095	185	201	43000	
1987	17840	71	251	28032	135	208	61.1	45872	200	229	47000	
1988	14535	90	162	23759	149	159	62.1	38295	229	167	47000	
1989	30449	103	296	21016	87	242	40.8	51465	183	281	47000	
1990	17069	88	194	28205	108	261	62.3	45275	188	241	47000	
1991	10162	102	100	5730	50	115	36.1	15892	149	107	47000	
1992	10504	71	148	9051	60	151	46.3	19555	131	149	47000	
1993	5591	60	93	7819	59	133	58.3	13410	116	116	47000	
1994	4592	31	148	4232	38	111	48	8825	69	128	32000	
1995	844	11	77	5991	33	182	88	6835	41	167	32000	
1996	2306	11	72	2545	21	121	52	4851	53	92	32000	
1997	3317	20	166	3707	23	161	53	7024	42	167	32000	

* Total effort should be equal to or less than the sum of the inshore and offshore effort.

Table 6: Catch (kg) and effort (person-weeks) statistics for the Okak assessment unit from 1974 to 1997. 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. CUE is unstandardized.

Year	TAC	QAC	Catch	Effort	CUE	% Offshore	Unit as % of Nain Region Tota
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
1993	31000		578	9	64	100	2
1994	31000		10866	23	472	0	37
1995	31000		10635	26	409	2	42
1996	31000		3425	8	428	2	26
1997	31000		13515	69	196	7	40
Avg. 1992-96			5137				
Avg. 1987-96			9990				
Avg. 1974-97			25517				

Table 7. Summary of Atlantic salmon landings at Nain, Labrador 1977 - 1997. Catch, effort and CUE as in Arctic charr landings tables.

Year		Catch	Effort	CUE
1977		41581	560	74
1978		48945	562	87
1979		35722	650	55
1980		60332	619	97
1981		48124	598	80
1982		32974	491	67
1983		20105	542	37
1984		15596	339	46
1985		14653	308	48
1986		20090	350	57
1987		14414	275	52
1988		20090	282	71
1989		29960	359	83
1990		12892	246	52
1991		2688	89	30
1992		2671	85	31
1993		1848	76	24
1994		1899	64	30
1995		2989	65	46
1996		254	24	11
1997		1159	32	36

Table 8. Estimated catch at age from the commercial Arctic charr fishery in the Voisey stock unit, 1977-1997.

	CATCH AT AGE																				
AGE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
6	318	619	475	154	68	316	1045	291	1	44	8	140	68	17	9	364	494	188		31	458
7	2085	4374	4914	803	915	755	2947	2891	1917	351	1312	1638	911	1110	909	1198	2088	602		208	1233
8	4030	5372	7928	3386	2571	1566	3410	3254	3066	3230	2813	2319	1445	2865	1047	1034	1344	647		190	962
9	2086	2330	3382	4140	4803	2346	3449	2238	3242	3888	4420	1465	1520	2945	1625	1511	1025	487		53	618
10	1237	1236	1163	1424	2359	1226	1611	1392	433	1400	2029	1440	1135	1827	1257	1099	574	374		111	316
11	600	1141	634	500	941	657	1084	753	324	686	966	771	702	1083	691	480	237	99		11	113
12	389	380	212	238	406	65	827	414	233	244	280	289	245	588	362	241	98	22		52	33
13	212	380	159	159	41	13	147	355	64	149	38	28	107	440	155	30	10	5		0	3
14	108	334	55	28	19	27	45	83	55	123	57	43	183	136	89	5	6	5		0	12
6+	11065	16166	18922	10832	12123	6971	14565	11671	9335	10615	11923	8133	6316	11011	6144	5973	5896	2429	No Fishery	656	3748

Table 9. Average weight at age (kg-round) from the Voisey stock unit commercial catch of Arctic charr, 1977-1997.

AVERAGE WEIGHT AT AGE

AGE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
6	1.53	1.53	1.53	1.03	0.93	1.20	1.33	1.25	1.05	1.07	1.03	1.23	1.27	1.12	1.11	1.17	0.98	0.88	-	0.82	0.81
7	1.77	1.77	1.77	1.24	1.26	1.46	1.54	1.53	1.39	1.21	1.41	1.50	1.43	1.48	1.47	1.32	1.30	1.19	-	1.37	1.14
8	2.07	2.07	2.07	1.60	1.77	1.70	1.64	1.71	1.63	1.44	1.73	1.69	1.68	1.70	1.64	1.44	1.50	1.39	-	1.42	1.44
9	2.60	2.60	2.60	1.89	2.04	2.02	1.89	1.93	1.77	1.64	1.80	1.78	1.79	1.83	1.79	1.62	1.58	1.50	-	1.80	1.59
10	2.78	2.78	2.78	2.19	2.17	2.20	2.04	2.06	1.98	1.72	1.95	1.89	1.95	1.94	1.84	1.70	1.73	1.58	-	1.58	1.66
11	2.94	2.94	2.94	2.42	2.30	2.49	2.18	2.14	1.99	1.90	2.02	1.98	2.06	2.01	2.01	1.90	1.85	1.72	-	1.95	1.63
12	3.24	3.24	3.24	2.49	2.37	2.33	2.10	2.32	2.18	1.90	1.92	1.88	1.90	1.98	2.01	1.97	1.92	2.41	-	1.84	1.71
13	2.60	2.60	2.60	2.70	3.36	2.83	2.20	1.91	2.26	1.97	2.31	2.23	2.04	1.90	2.01	2.51	2.74	2.55	-	-	2.64
14	2.76	2.76	2.76	3.73	2.76	3.42	2.55	1.82	2.26	1.45	1.58	1.45	1.90	2.29	2.15	0.00	2.59	2.20	-	-	2.19

MEAN AGE OF INDIVIDUALS IN CATCH

Age	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	8.62	8.50	8.20	8.86	9.09	8.84	8.63	8.66	8.51	8.97	8.98	8.77	9.18	9.28	9.31	8.70	8.01	8.29	-	8.38	7.91

MEAN WEIGHT OF INDIVIDUALS IN CATCH

Weight	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	2.28	2.21	2.17	1.83	1.98	1.94	1.78	1.79	1.68	1.58	1.79	1.73	1.78	1.81	1.77	1.57	1.32	1.39	-	1.49	1.30

Table 10. Estimated catch at age from the commercial Arctic charr fishery in the Nain stock unit, 1977-97.

	CATCH AT AGE																				
AGE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
6	2003	371	430	75	145	83	470	182	103	210	483	204	903	459	203	269	83	92	197	30	348
7	9250	6703	4306	960	2118	977	2791	2612	2463	4129	5462	6288	4750	4726	1365	3195	1982	999	1040	474	1267
8	12453	13122	11568	10519	6877	4782	5842	4619	6506	7713	6293	7166	9707	6115	2085	3809	2874	2087	1294	944	795
9	7630	7984	9593	16342	15435	7255	6996	5671	4722	5862	7548	4688	8464	8844	2631	3166	2525	1628	1539	1072	1700
10	5052	4406	4208	8345	9787	7987	4177	4374	4111	2857	4498	3607	3785	4681	2175	2574	1596	859	426	454	747
11	2454	2367	2168	4077	3746	4936	4357	2173	2494	1284	2013	1631	2853	1908	874	905	469	282	201	241	343
12	988	1688	1573	1340	991	2976	2762	1495	1605	625	1375	650	1234	927	444	422	296	94	25	52	138
13	358	312	418	813	304	561	600	738	901	240	898	324	665	378	183	241	171	39	0	49	64
14	180	272	312	522	151	451	557	281	534	199	306	136	277	137	92	48	49	20	5	0	26
15	1	118	34	43	42	59	70	96	322	205	357	52	28	186	48	32	38	24	0	0	0
16	1	97	14	1	13	46	27	57	93	50	180	20	6	1	36	1	0	3	0	0	0
17	1	1	1	66	10	23	95	89	21	42	37	40	1	1	2	1	2	0	0	0	0
6+	40371	37441	34625	43103	39619	30136	28744	22387	23875	23416	29450	24806	32673	28363	10138	14663	10085	6127	4727	3316	5428

Table 11. Average weight at age (kg-round) from the Nain stock unit commercial catch of Arctic charr, 1977-97.

AVERAGE WEIGHT AT AGE

Age	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
6	0.89	1.31	1.37	0.89	0.79	1.13	1.27	1.18	1.10	1.15	1.14	1.13	1.16	1.17	1.29	0.94	0.80	0.96	1.14	0.88	0.78
7	1.28	1.71	1.52	1.20	1.18	1.37	1.56	1.40	1.43	1.37	1.33	1.38	1.38	1.42	1.38	1.20	1.16	1.25	1.29	1.27	1.16
8	1.77	1.86	1.85	1.52	1.51	1.68	1.66	1.63	1.65	1.56	1.53	1.55	1.56	1.50	1.54	1.33	1.31	1.44	1.46	1.44	1.30
9	2.07	2.24	2.02	1.78	1.70	1.84	1.84	1.78	1.78	1.69	1.62	1.63	1.63	1.66	1.59	1.37	1.39	1.51	1.50	1.53	1.40
10	2.59	2.41	2.08	1.93	1.76	1.89	1.88	1.88	1.83	1.69	1.65	1.64	1.71	1.76	1.63	1.41	1.42	1.58	1.62	1.53	1.49
11	2.86	2.35	2.18	1.83	1.78	1.93	1.88	1.87	1.81	1.68	1.68	1.67	1.68	1.68	1.71	1.54	1.50	1.47	1.68	1.57	1.48
12	2.74	2.67	2.41	1.91	1.80	1.96	1.92	1.89	1.83	1.70	1.71	1.71	1.64	1.77	1.70	1.44	1.52	1.55	1.97	1.75	1.63
13	3.16	3.34	2.25	1.93	1.74	2.11	1.96	1.93	1.82	1.95	1.68	1.70	1.69	1.65	1.76	1.49	1.38	1.86	-	1.46	1.47
14	3.28	2.88	1.94	1.97	1.72	1.93	1.77	2.07	1.90	1.79	1.74	1.44	1.74	1.75	1.65	1.52	1.24	1.75	2.69	-	1.49
15	2.65	2.65	2.65	2.71	2.87	2.26	1.84	1.84	1.89	1.61	1.80	1.68	1.97	1.46	1.66	1.93	1.46	1.52	-	-	-
16	2.15	2.15	2.15	2.15	3.88	2.69	2.05	1.46	1.53	1.71	1.61	1.75	2.56	1.97	1.47	1.87	0.00	2.20	-	-	-
17	2.45	2.45	2.45	4.43	2.45	2.69	2.28	1.91	1.64	1.64	2.03	1.75	1.64	1.81	4.65	2.38	3.63	0.00	-	-	-

MEAN AGE OF INDIVIDUALS IN CATCH

Age	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	8.46	8.75	8.87	9.34	9.28	9.83	9.52	9.40	9.47	8.77	9.10	8.65	8.86	8.92	9.16	8.73	8.75	8.64	8.36	8.79	8.61

Inshore and Offshore

MEAN WEIGHT OF INDIVIDUALS IN CATCH

Weight	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	1.88	2.06	1.93	1.75	1.66	1.85	1.79	1.74	1.73	1.59	1.56	1.55	1.58	1.60	1.57	1.34	1.33	1.44	1.45	1.46	1.29

Inshore

MEAN WEIGHT OF INDIVIDUALS IN CATCH

Weight	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
				1.74	1.66	1.82	1.84	1.84	1.82	1.59	1.58	1.57	1.55	1.58	1.58	1.26	1.29	1.38	1.3	1.29	1.61

Offshore

MEAN WEIGHT OF INDIVIDUALS IN CATCH

Weight	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
						1.85	1.60	1.67	1.59	1.53	1.48	1.54	1.54	1.63	1.56	1.34	1.34	1.53	1.43	1.52	1.24

Table 12. Estimated catch at age from the commercial Arctic charr fishery in the Okak stock unit, 1977-1997.

	CATCH AT AGE																				
AGE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
6	84	205	1	130	39	93	475	220	17	41	42	150	190	80	22	0	9	112	294	38	538
7	139	2465	1989	638	526	713	1762	1202	2675	2056	1008	1007	1760	1474	577	3	99	1045	994	327	1336
8	417	8163	7462	5631	2135	2760	4471	2047	4948	6333	1636	1822	1829	2667	778	18	120	1917	1855	561	1308
9	1084	5494	4997	9175	7166	4167	5787	1885	5385	5197	3686	2977	2058	2108	693	31	122	1815	2665	661	1296
10	2667	5594	3299	6487	7615	3848	5601	1621	2740	3291	3247	2241	1718	1267	332	26	62	986	1149	435	1024
11	3388	3747	1954	2863	4673	3622	5169	1937	2936	1261	1371	1492	1714	1234	164	11	6	623	608	184	477
12	5417	3953	878	1382	1330	1542	4075	1290	987	875	395	772	865	556	122	18	10	275	198	65	56
13	2278	2773	761	407	1044	444	1643	1034	740	562	299	187	296	261	68	7	0	43	54	12	92
14	1694	514	527	350	459	342	658	514	768	148	166	125	139	94	23	0	0	0	2	0	0
15	1472	1027	410	262	359	183	307	192	103	170	85	13	52	92	0	0	0	7	0	0	0
16	832	308	351	90	44	57	107	111	75	8	34	32	56	0	23	0	0	0	0	0	0
17	277	567	399	178	223	114	68	123	123	3	2	1	16	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0
6+	19749	34810	23028	27593	25613	17885	30123	12176	21497	19945	11971	10819	10700	9856	2802	114	428	6823	7819	2283	6127

Table 13. Average weight at age (kg-round) from the Okak stock unit commercial catch of Arctic charr, 1977-1997.

AVERAGE WEIGHT AT AGE

AGE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
6	1.21	1.21	1.21	1.02	1.29	1.13	1.15	1.16	1.12	1.06	1.14	1.16	1.26	1.13	1.32	-	0.88	1.03	1.05	0.88	0.72
7	1.48	1.48	1.48	1.20	1.24	1.38	1.25	1.26	1.27	1.32	1.30	1.33	1.32	1.40	1.48	1.15	1.03	1.27	1.12	1.24	0.97
8	1.66	1.66	1.66	1.59	1.51	1.58	1.43	1.41	1.45	1.50	1.43	1.37	1.47	1.55	1.51	1.57	1.29	1.47	1.32	1.37	1.16
9	1.85	1.85	1.85	1.77	1.73	1.66	1.56	1.46	1.52	1.64	1.58	1.53	1.51	1.69	1.57	1.41	1.51	1.74	1.36	1.59	1.44
10	1.98	1.98	1.98	1.81	1.93	1.75	1.66	1.58	1.67	1.73	1.64	1.60	1.65	1.79	1.80	1.64	1.62	1.90	1.58	1.72	1.50
11	2.02	2.02	2.02	1.89	1.89	1.76	1.69	1.52	1.61	1.85	1.64	1.63	1.66	1.76	1.83	1.84	2.32	1.78	1.53	1.70	1.52
12	2.36	2.36	2.36	2.05	1.93	1.94	1.76	1.62	1.90	1.85	1.75	1.76	1.77	1.88	1.66	1.63	2.30	1.74	1.63	1.61	2.16
13	2.30	2.30	2.30	2.47	2.10	2.01	1.73	1.64	1.77	1.77	1.87	1.85	1.86	1.74	1.72	1.84	-	1.20	1.61	2.06	1.52
14	2.38	2.38	2.38	2.10	1.87	2.02	1.52	1.68	1.66	1.72	1.97	1.74	1.99	1.84	1.63	-	-	-	3.92	-	-
15	2.48	2.48	2.48	1.83	1.93	2.18	1.81	1.76	2.04	1.60	2.04	2.31	1.89	1.63	-	-	-	3.20	-	-	-
16	2.30	2.30	2.30	2.82	1.54	1.65	1.70	1.66	1.89	2.72	2.48	1.91	1.76	-	1.63	-	-	-	-	-	-
17	2.30	2.30	2.30	2.37	2.39	2.56	2.73	2.10	2.07	-	-	-	2.17	-	-	-	-	-	-	-	-
18	2.30	2.30	2.30	2.58	3.17	1.84	2.07	-	3.16	1.68	-	-	2.30	-	-	-	-	-	-	-	-
19	2.30	2.30	2.30	2.69	-	-	2.07	1.43	1.37	-	-	-	-	1.84	-	-	-	-	-	-	-

MEAN AGE OF INDIVIDUALS IN CATCH

AGE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	12.00	10.08	9.53	9.58	10.11	9.96	10.05	10.14	9.47	9.10	9.82	9.46	9.43	9.19	8.85	9.93	8.44	8.84	8.80	8.88	8.50

MEAN WEIGHT OF INDIVIDUALS IN CATCH

Weight	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	2.20	1.95	1.86	1.77	1.83	1.72	1.60	1.51	1.54	1.60	1.58	1.53	1.56	1.64	1.58	1.58	1.37	1.59	1.36	1.50	1.21

Table 14. Percentage distribution of recoveries, by stock complex and subarea, of anadromous Arctic charr tagged and released from various subareas and rivers of northern Labrador, 1974-1996.

Tagging location, stock complex, & subarea	Number Tagged	Number Recaptured	Percent recapture by stock complex												
			Voisey			Nain			Okak			Napartok	Hebron	Saglek	Unknown
			Inshore	Offshore	Total	Inshore	Offshore	Total	Inshore	Offshore	Total				
Voisey															
Antons	39	8	25	25	50	25	25	50	0	0	0	0	0	0	0
Voisey's Bay	1097	237	73	15	88	5	5	10	0	<1	<1	0	0	0	<1
Total	1136	245*	71	16	87	6	6	12	0	<1	<1	0	0	0	<1
* includes one at Davis Inlet															
Nain															
Anaktalik Bay	225	60	0	2	2	72	18	90	0	2	2	0	0	0	6
Nain Bay	2922	720	1	3	4	64	29	93	<1	1	1	0	0	0	1
Fraser River	807	243	0	1	1	84	10	94	0	1	1	0	0	0	4
Tikkoatokak Bay	2228	897	1	3	4	64	28	92	<1	2	2	0	0	0	1
Webb Bay	312	142	0	0	0	95	4	99	0	<1	<1	0	0	0	0
Offshore	349	65	0	1	1	12	75	88	0	5	5	0	0	0	6
Total	6843	2127*	<1	2	3	67	26	93	<1	1	2	0	0	0	2
* Includes one at Makkovik and one at Davis Inlet															
Okak															
Okak Bay	481	131	0	0	0	1	5	6	44	43	87	0	0	0	7
Napartok															
Napartok Bay	228	15	0	0	0	7	0	6	0	20	20	47	27		0
Hebron															
Hebron Fiord	411	66	0	0	0	0	0	0	3	6	9	2	85	1	3
Ikarut River - adults	1245	289	0	0	0	0	<1	<1	2	3	5	1	92	<1	<1
Ikarut River - juveniles	1253	57	0	0	0	0	0	0	0	0	0	0	100	0	0
River H-3	420	38	0	0	0	5	3	8	0	10	10	0	82	0	0
River H-6	106	15	0	0	0	0	7	7	0	7	7	0	86	0	0
Total	3435	465	0	0	0	<1	1	1	2	4	6	1	91	<1	1
Saglek															
Saglek Fiord	342	37	0	0	0	0	0	0	0	0	0	0	8	92	0
Pangertok Inlet	163	6	0	0	0	0	0	0	0	0	0	0	0	100	0
Southwest Arm Bk.	618	40	0	0	0	0	0	0	0	0	0	0	0	100	0
North Arm Bk.	129	7	0	0	0	0	0	0	0	0	0	0	0	100	0
Total	1252	90	0	0	0	0	0	0	0	0	0	0	3	97	0

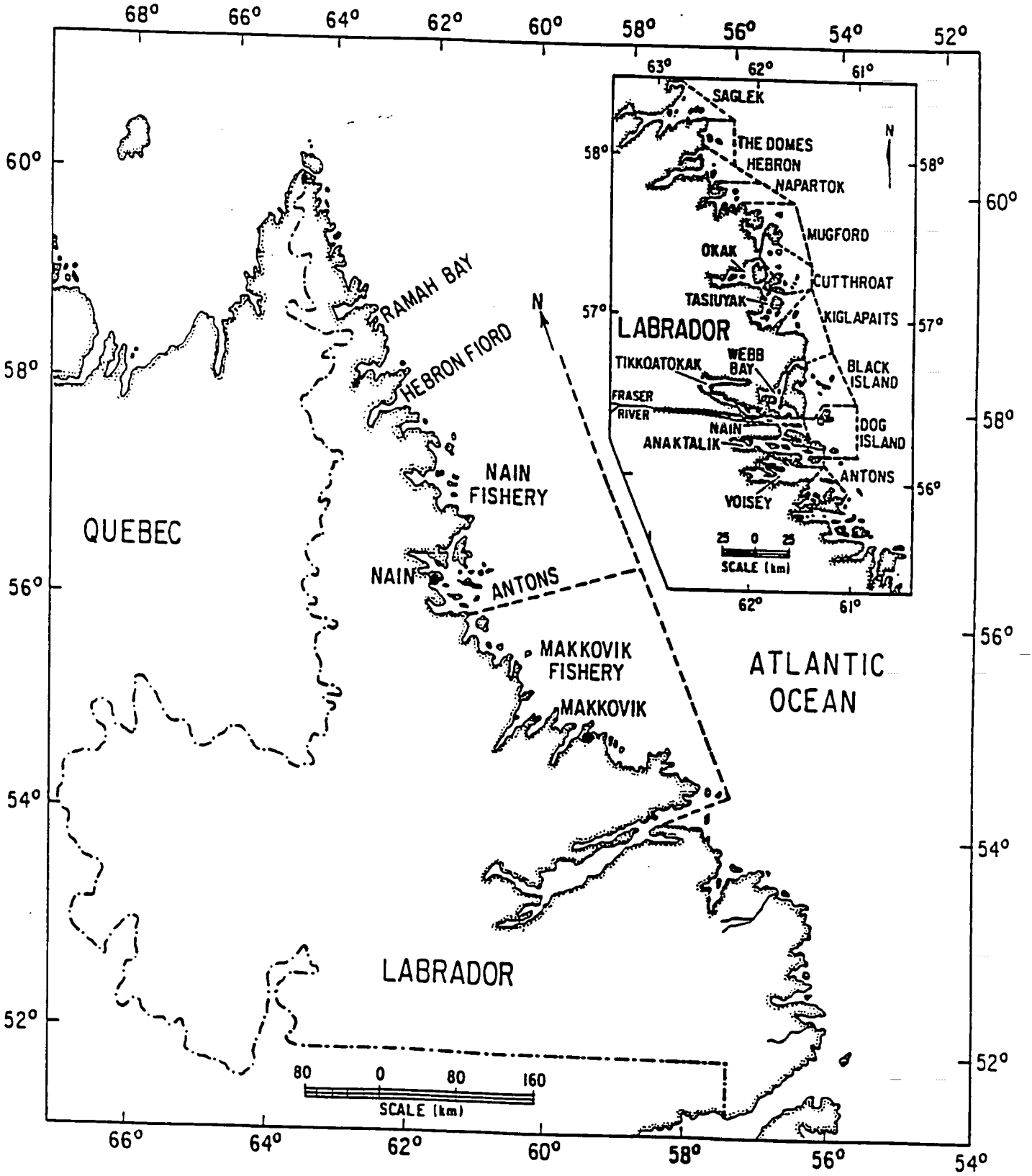


Fig 1: Location of the Nain and Makkovik Fishing Regions in northern Labrador. Insert illustrates the location of subareas within the Nain Fishing Region.

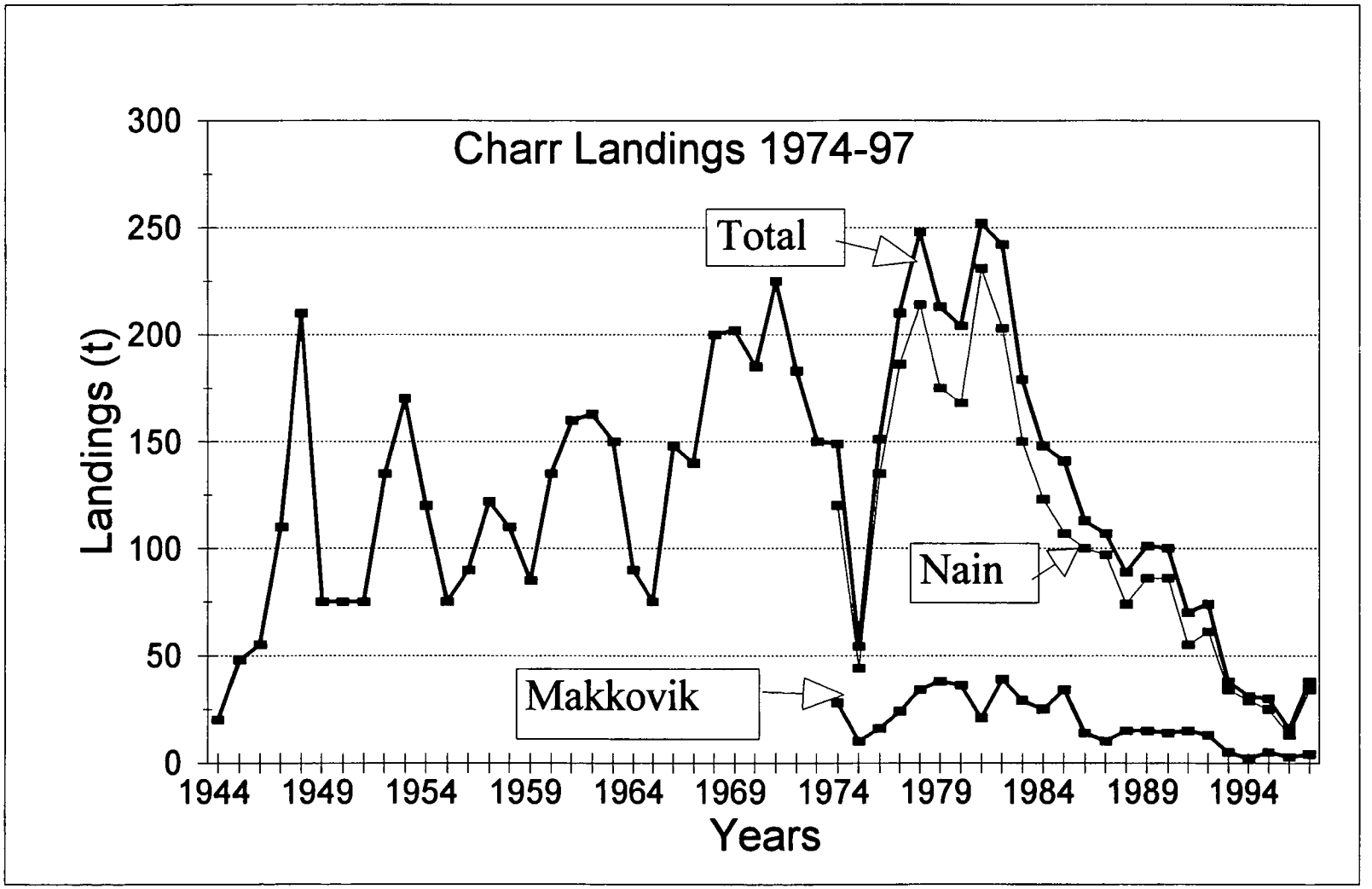


Fig 2: Summary of northern Labrador Arctic charr Landings (tonnes), 1944-97 with separate landings for Nain and Makkovik from 1974 to 1997.

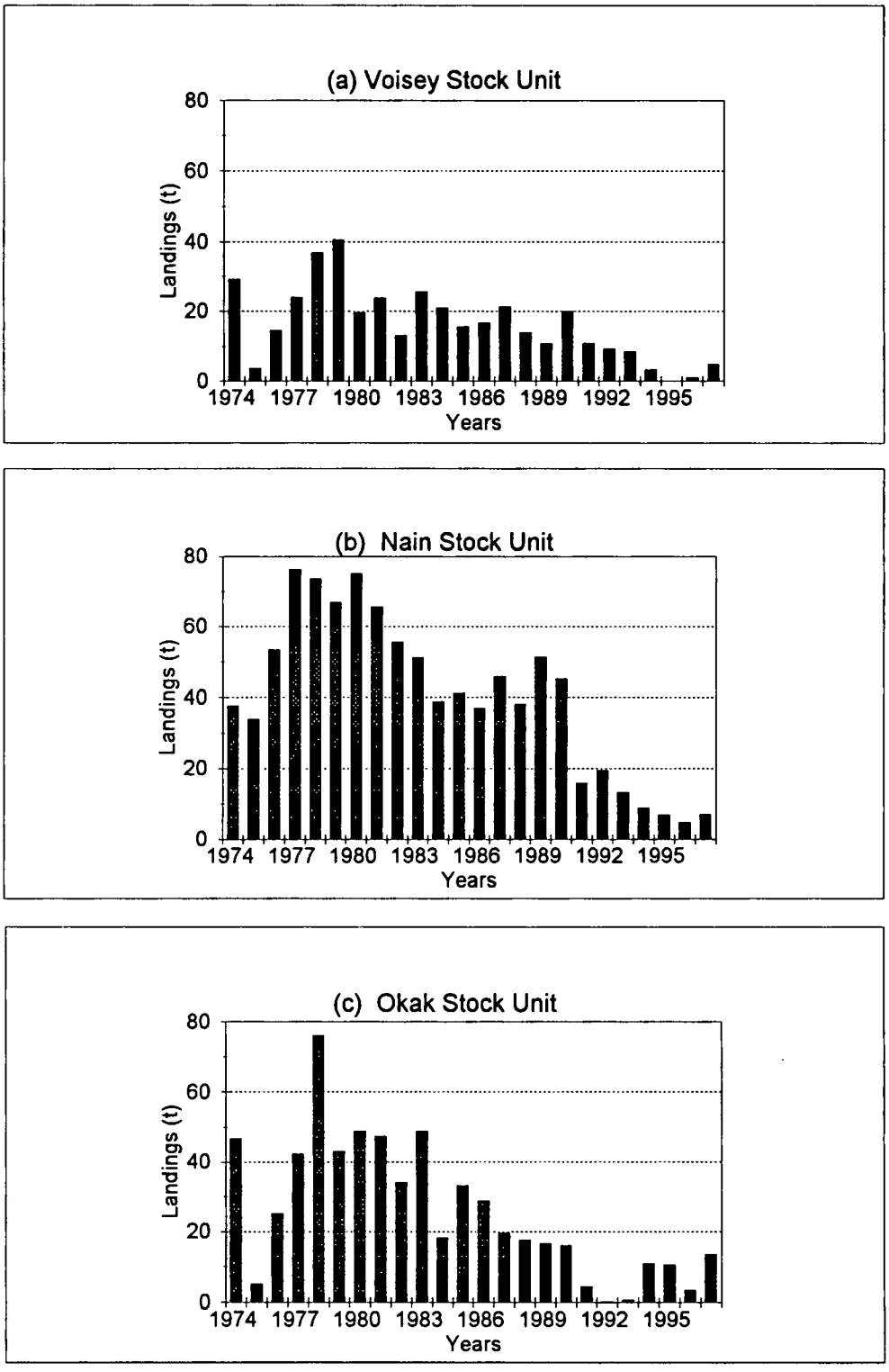
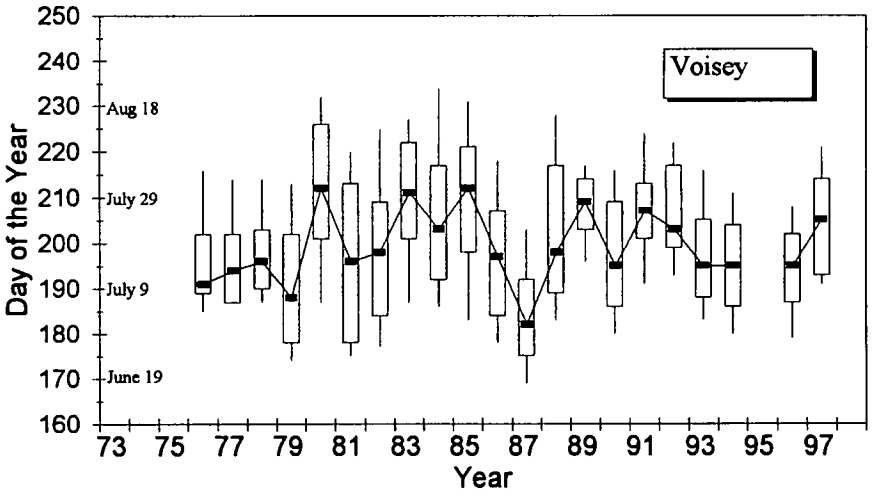
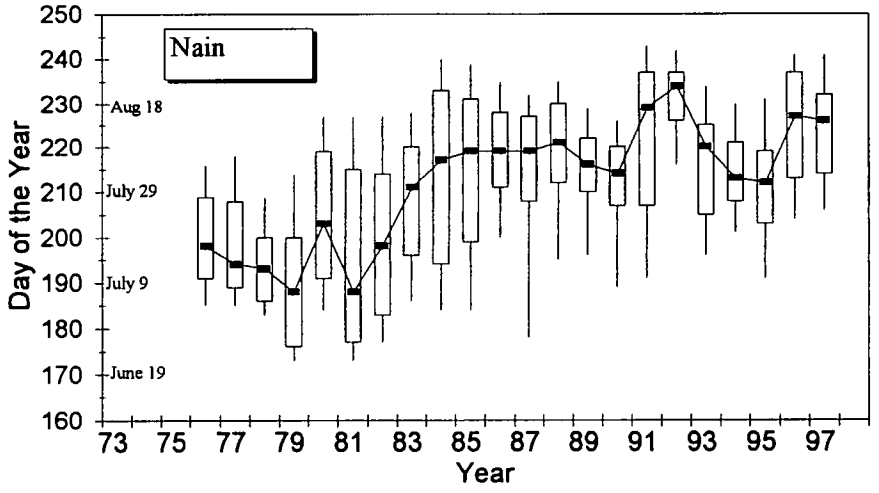


Fig 3: Commercial Landings of anadromous Arctic charr from the (a) Voisey, (b) Nain, and (c) Okak stock units, 1974-97.





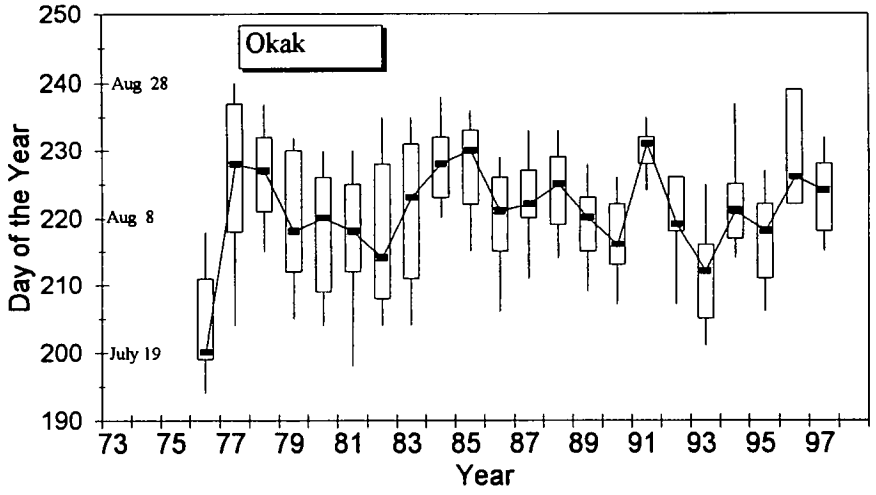


Figure 4. Commercial catch timing of the Voisey, Nain, and Okak stock complex Arctic charr fisheries, 1977 - 1997. Vertical lines represent the 10th and 90th percentiles of the day of the year of catch timing, the rectangle is the 25th and 75th percentiles, while the marker within the rectangle is the median catch timing.

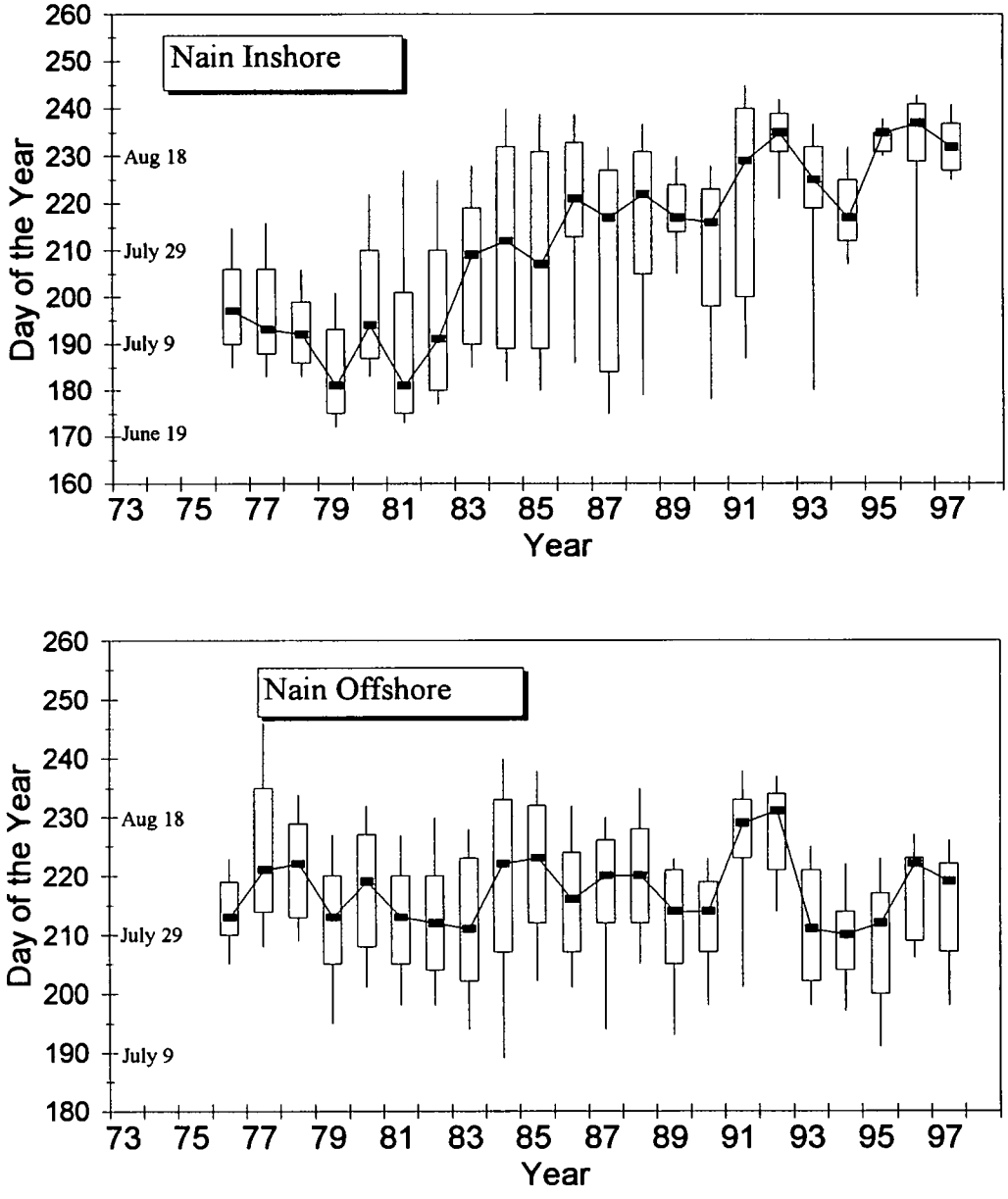


Figure 5. Commercial catch timing for the Nain stock complex Arctic charr fishery inshore and offshore fishing zones, 1977-1997. Vertical lines represent the 10th and 90th percentiles of the day of the year of catch timing, the rectangle is the 25th and 75th percentiles, while the marker within the rectangle is the median catch timing.

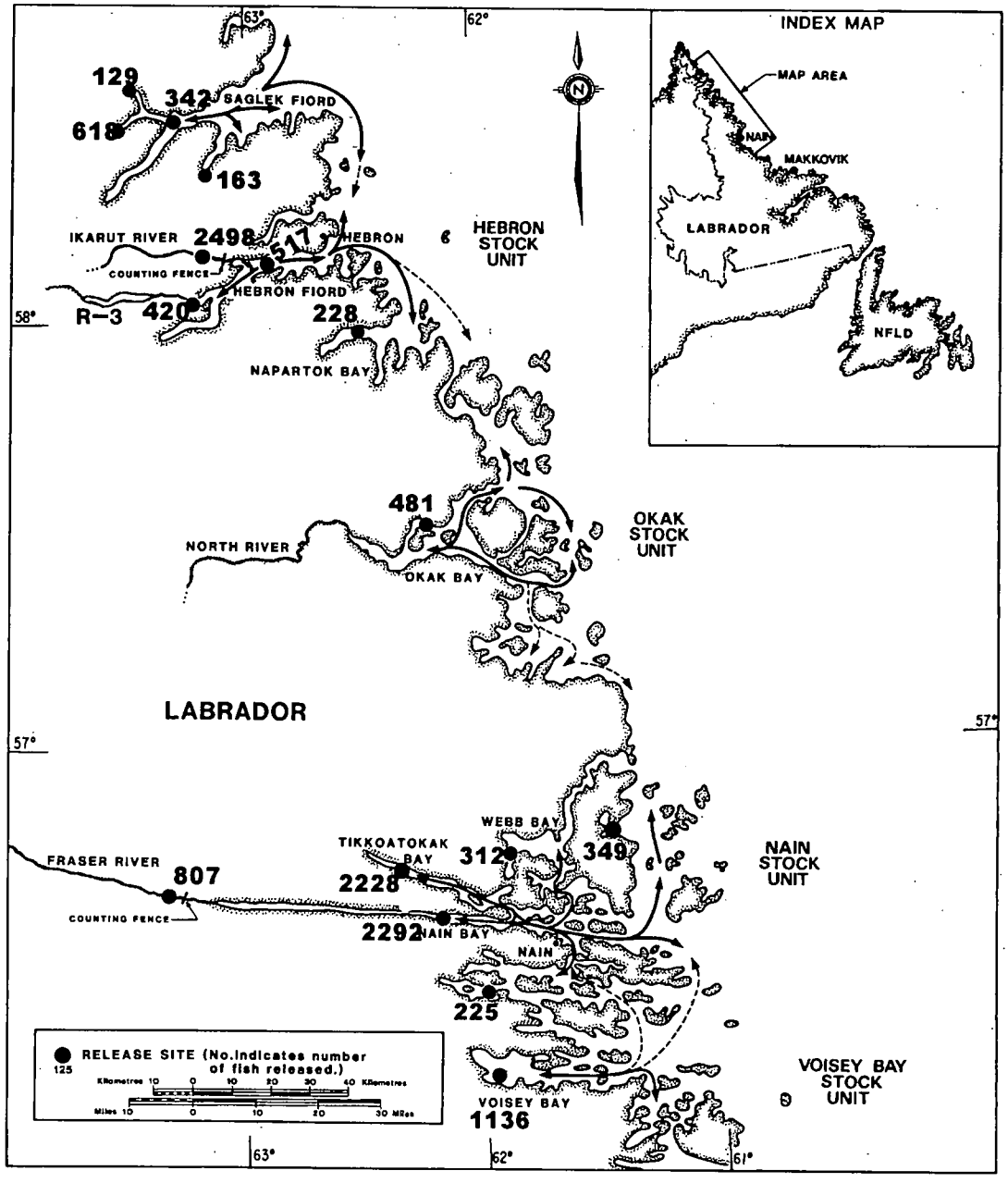


Figure 6. General patterns of ocean movements of anadromous Arctic charr in northern Labrador, showing numbers of fish tagged, and release location, 1974 - 1996. In some places, release locations have been generalized. Dominant migrations are illustrated with solid continuous lines; fine broken lines represent minor movements.

Appendix 1. Arctic Charr Catch Statistics, 1974-1997
Summary of Catch and Effort Data For the Nain Fishing Region

Area=Antons

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)	9135	3489	3172	2111	4011	19371	8460	7870	6191	23062	13099	14212
Effort (Person-wks)	34	20	6	20	17	63	32	38	24	63	82	51
C/E (Kg)	269	174	529	106	236	307	264	207	258	366	160	279
% > 2.3 Kg			21	24	28	22	14	13	12	9	7	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	13589	8611	8460	11019	12659	2813	413	1904	180			4121
Effort (Person-wks)	67	55	29	32	45	20	6	11	2			20
C/E (Kg)	203	157	292	344	281	141	69	173	90			206
% > 2.3 Kg												

Area=Voisey's Bay

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas						22500	22500	16100	16100	16000	16000	23400
Catch (Kg)	20045	238	12232	22488	33597	21880	11557	16325	7688	2953	8113	1435
Effort (Person-wks)	64	2	45	56	85	59	52	53	38	17	24	6
C/E (Kg)	313	119	272	402	395	371	222	308	202	174	338	239
% > 2.3 Kg			42	35	34	32	17	16	17	17	16	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	3065	12630	5577		7236	8158	8851	6558	3155		977	739
Effort (Person-wks)	22	54	26		24	43	36	38	13		6	10
C/E (Kg)	139	234	215		301	190	246	173	243		163	74
% > 2.3 Kg												

Area=Anaktalik

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas						21500	21500	8660	8660	11000	6100	8400
Catch (Kg)	7821	2548	14670	21604	13075	14913	8045	9157	10836	2359	3980	7477
Effort (Person-wks)	28	10	45	63	55	76	53	32	27	24	34	39
C/E (Kg)	279	255	326	343	238	196	152	286	401	98	117	192
% > 2.3 Kg			36	38	27	20	12	10	11	11	12	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Catch (Kg)	180	2002	1075	1175	454	1484	70	230	19			
Effort (Person-wks)	7	18	12	13	5	17	3	6	1			
C/E (Kg)	26	111	90	90	91	87	23	38	19			
% > 2.3 Kg												

Appendix 1. Arctic Charr Catch Statistics, 1974-1997
Summary of Catch and Effort Data For the Nain Fishing Region

Area=Dog Island

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)	2659	653	212	2039	386	1440	3048	1516	1105	6858	6666	6882
Effort (Person-wks)	38	40	11	49	25	61	86	37	38	62	66	62
C/E (Kg)	70	16	19	42	15	24	35	41	29	111	101	111
% > 2.3 Kg			11	9	8	15	11	14	7	8	10	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	3289	16881	11735	2794	7219	1240	2134	2218	1485	1199	1687	1411
Effort (Person-wks)	32	86	88	27	44	14	16	18	14	11	13	12
C/E (Kg)	103	196	133	103	164	89	133	123	106	109	130	118
% > 2.3 Kg												

Area=Nain Bay

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas										5000		
Catch (Kg)	12461		3119	8464				5450	85	532	1886	2667
Effort (Person-wks)	37		10	28				29	1	8	15	32
C/E (Kg)	337		312	302				188	85	67	126	83
% > 2.3 Kg			16	15				4		2	6	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	6437	3806	5179	20734	10265	4039	4762	2346	3349	388	1613	1740
Effort (Person-wks)	39	15	33	61	61	59	45	33	23	7	25	11
C/E (Kg)	165	254	157	340	168	68	106	71	146	55	65	158
% > 2.3 Kg												

Area=Tikkoatokak Bay

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas						39500	39500	28500	35000	35000	26000	12500
Catch (Kg)	9960	27695	31568	39483	55061	37919	42131	28066	28283	16211	8618	6243
Effort (Person-wks)	28	76	81	94	147	108	130	80	75	65	43	24
C/E (Kg)	356	364	390	420	374	351	324	351	377	249	200	260
% > 2.3 Kg			19	20	18	14	10	5	7	8	5	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas		16000	16000	16000	16000	16000	16000	16000	16000	16000	16000	16000
Catch (Kg)	3841	3608	2240	2636	1491	2296	2560	2088	1224	457	693	1577
Effort (Person-wks)	16	12	12	13	12	16	9	15	7	4	7	9
C/E (Kg)	240	301	187	203	124	143	284	139	175	114	99	175
% > 2.3 Kg												

Appendix 1. Arctic Charr Catch Statistics, 1974-1997
Summary of Catch and Effort Data For the Nain Fishing Region

Area=Webb Bay

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)	580	833	4550	2516	3472	3035	3008	8100	4607	15055	10476	5143
Effort (Person-wks)	1	5	15	21	16	9	8	29	27	56	43	35
C/E (Kg)	580	167	303	120	217	337	376	279	171	269	244	147
% > 2.3 Kg			21	19	20	39	39	27	11	5	7	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas		9000	9000	9000	9000	9000	9000	9000	9000	9000	9000	9000
Catch (Kg)	5890	8424	6041	5904	4859	2343	3111	928				
Effort (Person-wks)	34	27	33	17	10	10	16	8				
C/E (Kg)	173	312	183	347	486	234	194	116				
% > 2.3 Kg												

Area=Black Island

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)	4264	2101	2725	3389	2966	10632	20051	14413	11602	11028	7913	12750
Effort (Person-wks)	60	62	48	65	81	92	130	94	79	87	62	68
C/E (Kg)	71	34	57	52	37	116	154	153	147	127	128	188
% > 2.3 Kg			8	10	14	7	6	7	8	4	5	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	17458	11151	12024	18222	20987	4490	6917	5601	2747	4792	858	2296
Effort (Person-wks)	72	50	61	60	65	37	44	41	24	22	8	11
C/E (Kg)	242	223	197	304	323	121	157	137	114	218	107	209
% > 2.3 Kg												

Area=Kiglapaits

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)	5131	1504	6089	5435	12097	17606	16543	21911	8326	20625	11431	6184
Effort (Person-wks)	26	32	59	57	103	120	95	99	34	103	55	41
C/E (Kg)	197	47	103	95	117	147	174	221	245	200	208	151
% > 2.3 Kg			25	25	34	14	18	12	16	12	9	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	6983	1620	862	2605	1051	1110	653	524	529	354		
Effort (Person-wks)	55	14	9	22	10	15	4	4	4	4		
C/E (Kg)	127	116	96	118	105	74	163	131	132	89		
% > 2.3 Kg												

Appendix 1. Arctic Charr Catch Statistics, 1974-1997
Summary of Catch and Effort Data For the Nain Fishing Region

Area=Tasiuyak

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)	1467		281		2280	1837	1137		1060	1259	3423	4724
Effort (Person-wks)	15		2		9	11	8		6	7	23	36
C/E (Kg)	98		141		253	167	142		177	180	149	131
% > 2.3 Kg			21		71	34	14		11	13	5	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	6749	8997	2823	3186	3302	1077	3063	1153	3675	4671	1044	4455
Effort (Person-wks)	26	61	22	23	17	5	13	3	11	9	2	16
C/E (Kg)	260	147	128	139	194	215	236	384	334	519	522	278
% > 2.3 Kg												

Area=Mugford

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
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					

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
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	1984	1985
Quotas								27300	27300	21000	27000	27000
Catch (Kg)	34250	2354	17812	27592	36125	26171	17434	11049	9031	30732	13864	24746
Effort (Person-wks)	105	15	52	107	104	123	65	46	26	147	30	119
C/E (Kg)	326	157	343	258	347	213	268	240	347	209	462	208
% > 2.3 Kg			29	26	18	11	8	10	7	7	2	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas	27000	26000	22000	26000	26000	26000	26000	26000	26000	26000	26000	26000
Catch (Kg)	20141	15695	12608	14973	12497	4112			10866	10377	3348	12630
Effort (Person-wks)	91	71	51	84	45	13			23	18	5	56
C/E (Kg)	221	221	247	178	278	316			472	576	670	226
% > 2.3 Kg												

Appendix 1. Arctic Charr Catch Statistics, 1974-1997
Summary of Catch and Effort Data For the Nain Fishing Region

Area=Cutthroat

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)	12641	2703	7526	15488	41146	17803	32397	37263	25699	19043	4570	8515
Effort (Person-wks)	95	47	103	130	267	161	205	172	164	164	65	106
C/E (Kg)	133	58	73	119	154	111	158	217	157	116	70	80
% > 2.3 Kg			17	25	25	12	12	13	15	10	7	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	8756	3954	4842	1591	3628	320	180	578		259	77	885
Effort (Person-wks)	89	70	89	84	55	18	13	9		8	3	15
C/E (Kg)	98	56	54	19	66	18	14	64		32	26	59
% > 2.3 Kg												

Area=Napartok

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
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			

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
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	1984	1985
Quotas									29072		20000	
Catch (Kg)				5957			2915	39901	37822		19531	
Effort (Person-wks)				37				106	98		112	
C/E (Kg)				161				376	386		174	
% > 2.3 Kg				16			19	34	23			

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)			543		643	20731	21252	5608				
Effort (Person-wks)			6		1	49	92	34				
C/E (Kg)			91		643	423	231	165				
% > 2.3 Kg												

Appendix 1. Arctic Charr Catch Statistics, 1974-1997
Summary of Catch and Effort Data For the Nain Fishing Region

Area=Domes

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)								5187	2643		976	
Effort (Person-wks)								19	14		10	
C/E (Kg)								273	189		98	
% > 2.3 Kg								36	17			

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)												
Effort (Person-wks)												
C/E (Kg)												
% > 2.3 Kg												

Area=Saglek Fiord

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)								24722	23791		5389	
Effort (Person-wks)								77	118		40	
C/E (Kg)								321	202		135	
% > 2.3 Kg								18	7			

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)								3247				
Effort (Person-wks)								4				
C/E (Kg)								812				
% > 2.3 Kg												

Area=Ramah

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)									7758		3110	
Effort (Person-wks)									26		25	
C/E (Kg)									298		124	
% > 2.3 Kg												

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)							172	580				
Effort (Person-wks)							2	2				
C/E (Kg)							86	290				
% > 2.3 Kg												

Appendix 1. Arctic Charr Catch Statistics, 1974-1997
Summary of Catch and Effort Data For the Nain Fishing Region

Area=Nachvak

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)												6142
Effort (Person-wks)												18
C/E (Kg)												341
% > 2.3 Kg												

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	1808											
Effort (Person-wks)	4											
C/E (Kg)	452											
% > 2.3 Kg												

Area=Nain Fishery

	1974	1975	1976	1977*	1978	1979	1980	1981	1982	1983	1984	1985
Quotas												
Catch (Kg)	120414	44118	134898	186165	213915	175263	167991	231221	203012	149732	123045	107120
Effort (Person-wks)	531	309	616	863	966	918	880	914	856	804	729	637
C/E (Kg)	227	143	219	216	221	191	191	253	237	186	169	168
% > 2.3 Kg			24	25	25	17	12	16	13	8	6	

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Quotas												
Catch (Kg)	98186	97379	74010	84837	86292	54455	58553	33562	27230	25080	13281	29854
Effort (Person-wks)	554	533	471	436	394	320	315	226	122	84	70	160
C/E (Kg)	180	183	157	195	219	170	186	149	223	299	190	187
% > 2.3 Kg												

* Includes 186 kg unaccounted for by area.

Appendix 2. Nain Region Atlantic Salmon Catch Statistics, 1977-1997.

Area = Antons

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	126	51	293	85	59	88	638	139	333	104	182
Effort (Person-wks)	10	7	34	10	12	10	40	18	19	16	23
C/E (Kg)	13	7	9	9	5	9	16	8	18	7	8

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	148	146	101	3	16	110	35			9
Effort (Person-wks)	19	20	20	1	3	5	2			2
C/E (Kg)	8	7	5	3	5	22	18			5

Area = Voisey's Bay

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	83	410	33	35	45	51	62	55		5	10
Effort (Person-wks)	14	20	5	7	9	9	9	5		1	2
C/E (Kg)	6	21	7	5	5	6	7	11		5	5

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	10		10	19	7	10	26			5
Effort (Person-wks)	2		2	4	2	2	4			2
C/E (Kg)	5		5	5	4	5	7			3

Area = Dog Island

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	5999	5337	6877	9220	8022	4476	3931	618	772	473	965
Effort (Person-wks)	76	66	101	110	78	62	70	32	21	20	36
C/E (Kg)	79	81	68	84	103	72	56	19	37	24	27

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	703	1106	1564	4	88	126	1009	421	79	4
Effort (Person-wks)	36	23	30	2	6	14	11	11	6	1
C/E (Kg)	20	48	52	2	15	9	92	38	13	4

Appendix 2. Nain Region Atlantic Salmon Catch Statistics, 1977-1997.

Area = Anaktalik Bay

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
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		

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)						3				
Effort (Person-wks)						1				
C/E (Kg)						3				

Area = Nain Bay

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)					90		2	2	9	43	
Effort (Person-wks)					9		1	1	2	6	
C/E (Kg)					10		2	2	5	7	

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	7	118	35	19	11	4	154	11	24	
Effort (Person-wks)	1	11	10	4	3	1	8	2	4	
C/E (Kg)	7	11	4	5	4	4	19	6	6	

Area = Tikkoatokak Bay

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	22	25	13	57	6	53	105	12	18	5	7
Effort (Person-wks)	5	3	3	4	1	8	11	3	4	1	2
C/E (Kg)	4	8	4	14	6	7	10	4	5	5	4

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	20	10	17							
Effort (Person-wks)	4	3	4							
C/E (Kg)	5	3	4							

Appendix 2. Nain Region Atlantic Salmon Catch Statistics, 1977-1997.

Area = Webb's Bay

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	236	131	118	2	173	264	487	142	173	59	79
Effort (Person-wks)	17	9	6	1	19	20	42	17	15	12	9
C/E (Kg)	14	15	20	2	9	13	12	8	12	5	9

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	103	114	202	98	121	19				
Effort (Person-wks)	10	12	9	5	6	4				
C/E (Kg)	10	10	22	20	20	5				

Area = Black Island

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	8659	9710	5557	11844	8374	6944	2940	2394	2842	4790	1928
Effort (Person-wks)	98	103	116	139	99	96	78	55	67	86	54
C/E (Kg)	88	94	48	85	85	72	38	44	42	56	36

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	3980	4686	2217	757	467	229	418	229	82	116
Effort (Person-wks)	57	64	66	32	32	25	19	18	8	9
C/E (Kg)	70	73	34	24	15	9	22	13	10	13

Area = Kiglapaits

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	5357	7544	5183	7690	5177	3743	4231	2502	1255	1459	336
Effort (Person-wks)	47	86	117	94	94	35	90	39	38	48	14
C/E (Kg)	114	88	44	82	55	107	47	64	33	30	24

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	346	2430	179	204	126	120	78	13		
Effort (Person-wks)	6	24	9	12	4	4	4	2		
C/E (Kg)	58	101	20	17	32	30	20	7		

Appendix 2. Nain Region Atlantic Salmon Catch Statistics, 1977-1997.

Area = Tasiuyak

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)		3	18	248			105	58	35	324	138
Effort (Person-wks)		1	2	5			2	7	6	15	19
C/E (Kg)		3	9	50			53	8	6	22	7

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	167	495	75	18	49	20	110	124		7
Effort (Person-wks)	9	12	10	2	4	3	6	8		1
C/E (Kg)	19	41	8	9	12	7	18	16		7

Area = Cutthroat

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	17626	21166	12072	29716	21757	15291	6936	7013	8745	12400	10599
Effort (Person-wks)	135	174	153	199	165	157	122	50	82	101	87
C/E (Kg)	131	122	79	149	132	97	57	140	107	123	122

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	14323	20080	8212	1522	1770	1184		2140	52	1007
Effort (Person-wks)	108	126	57	21	21	13		12	3	13
C/E (Kg)	133	159	144	72	84	91		178	17	77

Area = Okak Bay

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	842	1011	1055	335	1364	92	653	153	465	428	171
Effort (Person-wks)	51	51	66	36	34	11	75	19	52	44	29
C/E (Kg)	17	20	16	9	40	8	9	8	9	10	6

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	283	775	280	38			69	51	17	11
Effort (Person-wks)	30	64	29	5			10	12	3	4
C/E (Kg)	9	12	10	8			7	4	6	3

Appendix 2. Nain Region Atlantic Salmon Catch Statistics, 1977-1997.

Area = Mugford

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)		121	8	159							
Effort (Person-wks)		7	2	3							
C/E (Kg)		17	4	53							

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)										
Effort (Person-wks)										
C/E (Kg)										

Area = Napartok Bay

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
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					

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)					2					
Effort (Person-wks)					1					
C/E (Kg)					2					

Area = Hebron Fiord

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	430				334	350		2242			
Effort (Person-wks)	31				33	24		70			
C/E (Kg)	14				10	15		32			

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)				6	14	7				
Effort (Person-wks)				1	3	3				
C/E (Kg)				6	5	2				

Appendix 2. Nain Region Atlantic Salmon Catch Statistics, 1977-1997.

Area = Domes

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)					2033	1107		164			
Effort (Person-wks)					16	14		9			
C/E (Kg)					127	79		18			

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)										
Effort (Person-wks)										
C/E (Kg)										

Area = Saglek Fiord

0

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)					498	78		67			
Effort (Person-wks)					26	11		9			
C/E (Kg)					19	7		7			

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)										
Effort (Person-wks)										
C/E (Kg)										

Area = Ramah

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)						5		27			
Effort (Person-wks)						1		3			
C/E (Kg)						5		9			

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)						16				
Effort (Person-wks)						1				
C/E (Kg)						16				

Appendix 2. Nain Region Atlantic Salmon Catch Statistics, 1977-1997.

Area = Nachvak Fiord

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)											
Effort (Person-wks)											
C/E (Kg)											

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)										
Effort (Person-wks)										
C/E (Kg)										

Area = Nain Fishery

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Catch (Kg)	41581	48945	35722	60332	48124	32974	20105	15596	14653	20090	14414
Effort (Person-wks)	560	562	650	619	598	491	542	339	308	350	275
C/E (Kg)	74	87	55	97	80	67	37	46	48	57	52

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch (Kg)	20090	29960	12892	2688	2671	1848	1899	2989	254	1159
Effort (Person-wks)	282	359	246	89	85	76	64	65	24	32
C/E (Kg)	71	83	52	30	31	24	30	46	11	36