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STEENSBY INLET TEST FISHERY
1985
FINAL REPORT

by

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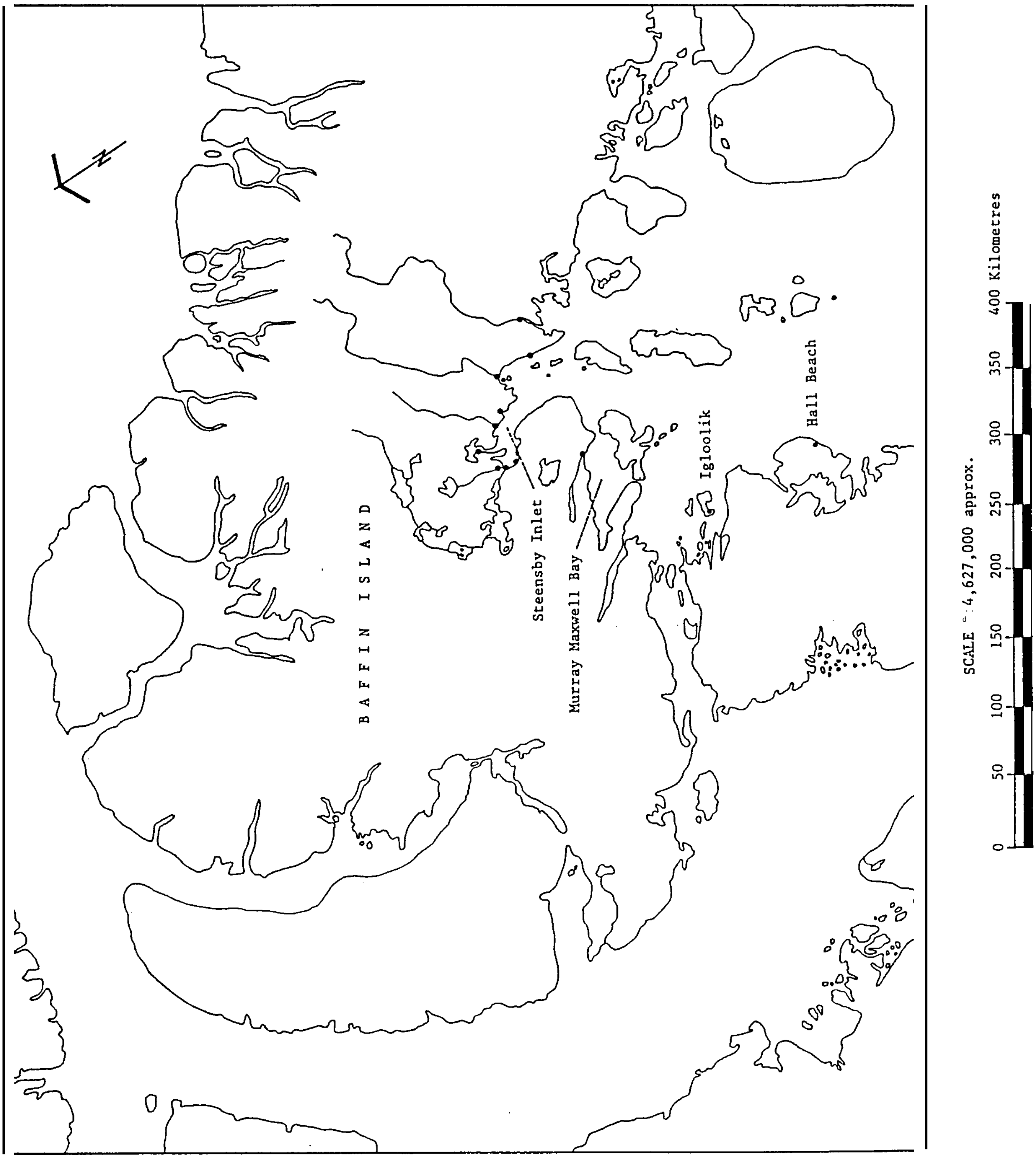
1.0 INTRODUCTION

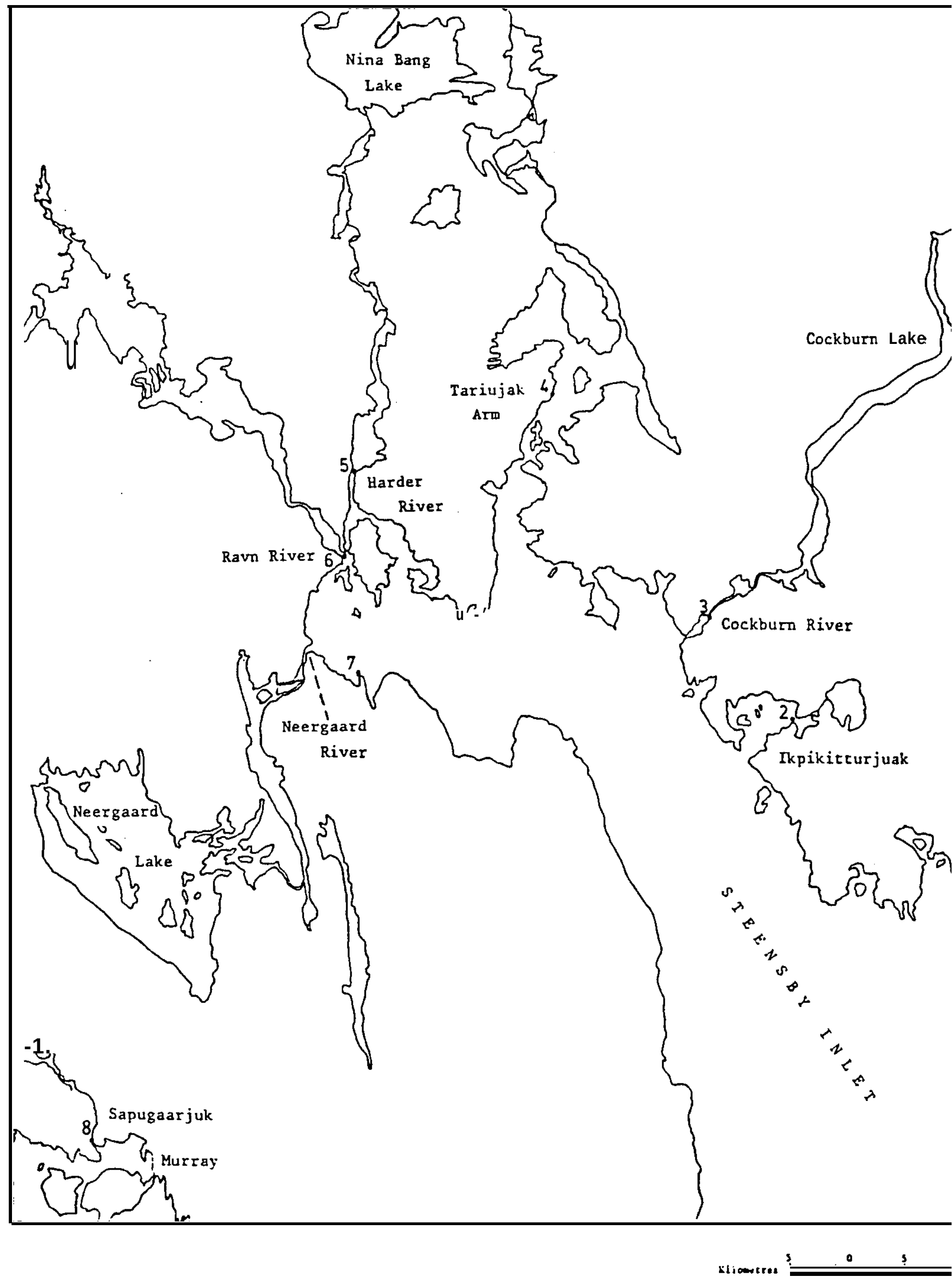
In 1985, North/South Consultants Inc. was contracted by the Igloolik Eskimo Co-operative to conduct a commercial test fishery for Arctic charr in the Steensby Inlet area of Baffin Island. The request for the test fishery was prepared and submitted to the Department of Fisheries and Oceans (DFO) by the Department of Economic Development and Tourism (Frobisher Bay, N.W.T.) and the Igloolik Eskimo Co-operative. The test fishery was carried out in August and September of 1985 and was a co-operative effort involving all of these organizations. Overall funding of project was provided through a Special ARDA grant.

This report is submitted by North/South Consultants Inc. in compliance with its contract. It presents a summary of events and a discussion of results and recommendations which have come out of one year of biological investigation.

Table 1. List of Rivers and Stations for the Steensby Inlet Test Fishery, 1985.

Station	River	Station Coordinates
1	Rowley River	70-16N, 77-45w
2	Ikpikitturjuak River	70-22N, 78-28W
3	Cockburn River	70-26N, 78-41W
4	Tariujak Arm	70-35N, 79-03W
5	Harder River	70-32N, 79-30W
6	Ravn River	70-28N, 79-30W
7	Neergaard River	70-24N, 79-35w
8	Sapugaarjuk River	70-01N, 80-03W
9	Isortoq River	70-00N, 76-59W
10	Qulurnilik River	70-07N, 77-40W


BAFFIN ISLAND
Steensby Inlet
Murray Maxwell Bay
Igloolik
Hall Beach
N
SCALE 1:4,627,000 approx.
0
50
100
150
200
250
300
350
400 Kilometres


Nina Bang Lake
Cockburn Lake
Tariujak Arm
4
5
Harder River
Ravn River
6
3
Cockburn River
7
Neergaard River
2
Ikpikitturjuak
Neergaard Lake
STEENSBY INLET
1
8
Sapugaarjuk
Murray
Kilometres
5
0
5

Scale 1 :

2.0 MATERIALS AND METHODS

2.1 THE FISHERY

Ten rivers were selected as the fishery sites for the summer of 1985 (Table 1). Selections were made by the Igloolik Eskimo Co-operative and based on local knowledge of fish distribution and abundance.

The distance between the fishing grounds around Steensby Inlet and the shipping point at Igloolik was perceived as a potential problem source with regards to transport. The major concern was for the maintenance of adequate production and product quality in the face of unpredictable and unfavorable weather conditions. Consequently, the decision was made to establish a processing and freezing facility in the Steensby Inlet area, at Rowley River.

A Cessna float plane was contracted to collect fish from all the stations and transport them to Rowley River for processing and freezing. The frozen fish were then transferred in bulk to Igloolik using the same aircraft. The fish were generally dressed on site but round fish were regularly shipped to Rowley River from each station for the purpose of biological data collection.

Each station was issued two, standard, nylon multi-filament gillnets of 45 meter length, 2 meter depth and 139 mm mesh size. The one exception was Rowley River where mono-filament nets of the same dimensions were used. Deteriorated nets were replaced as required. The number of nets set and the duration of sets was variable according to fish abundance. An effort was made to maintain a consistent daily catch from the onset of the run until its completion.

Each fishing camp consisted of a fisherman, an English-speaking assistant and, in most cases, their families. The project manager and the biologist/co-ordinator remained at the Rowley River camp. The two fisheries technicians divided their time between all of the fishing stations, collecting biological data and offering assistance to the fishermen.

A note should be included regarding the Sapugaarjuk River (Station 8) fishery. Due to a combination of problems, unrelated to stock abundance or availability, the fishery was not successful. Because of the paucity of data collected, no data analysis was done and no results will appear in this report. However, the site was evaluated and certain recommendations will be presented for future consideration.

2.2 SITE EVALUATIONS

Initially, an effort was made to locate each netting site as close as possible to the mouth of a river, or even a short distance upriver. In order to obtain a clear profile of each run, it was considered essential that only charr actually in the process of migrating should be captured.

Subsequently, each fishing site was evaluated using the following criteria:

1. ice conditions
2. tide conditions
3. float plane accessibility
4. boat accessibility
5. netting suitability

In some cases it was considered that the selected site presented serious problems and new site recommendations will be made for subsequent years.

2.3 BIOLOGICAL EVALUATIONS

Comprehensive biological data were collected from each fishing station throughout the course of the fishery. Lengths and weights (round and/or dressed) were obtained from most fish and an effort was made to collect sagittal otoliths and record sex/maturity information for at least 150 fish from each site. Observations of parasitism and stomach content were also made and recorded.

All sites were visited at least once by a member of the technical staff and at such times extensive biological data was collected. Continuity was maintained by sampling fish which had been shipped dressed or round, as requested, to the base camp at Rowley River.

2.3,1 Age and Growth

Random samples of charr were collected from each station for detailed biological investigation. Sagittal otoliths, for the purpose of age determination, were removed through a transverse, dorsal cut through the head and stored dry in labeled envelopes. They were subsequently ground on a Carborundum stone (when necessary to improve definition), immersed for clearing in benzylbenzoate and viewed through a dissecting microscope. The technique used for aging was the same as that of Grainger (1953) and G. W. Carder (pers. comm.).

Lengths and dressed or round weights were recorded for most of the charr taken in the test fishery. At intervals throughout the fishery and at each station, round weights and dressed weights were taken together. Conversion factors for dressed weight to round weight were then calculated for each station and all dressed weights were converted to round weights.

Length-weight relationships were calculated for each station using the formula:

$$Log_{10}W = a + b\ (Log_{10}L)$$

where w = round wt. in gins.

L = fork length in mm.

A relative condition factor (K), which describes the "robustness" or "plumpness" of a fish, was also calculated for each station. Condition factors were derived using the formula:

$$K = \frac{W \times 10^5}{L^3}$$

where W = round wt. in gins.

L = fork length in mm.

Age-frequency graphs and length–frequency histograms were constructed for each station. Condition factors, mean age, mean length and mean weight were tabulated for comparison between stations. Also, these data were pooled and tabulated with corresponding data from other Arctic charr fisheries for the purpose of comparison.

2.3.2 Mortality

Catch curves were constructed for each station and instantaneous total mortality (Z) was calculated from these by the method described by

Kristofferson, et al. (1982). Annual survival (S) and annual mortality (A) were derived from Z (Ricker, 1975).

2.3.3 Catch-effort and Timing of Runs

Catch-effort (CPE) data wererecorded for each station for every day . that was fished. These data were compiled and analyzed with a view to making inferences regarding the abundance of charr and the strength and timing of the upstream runs.

Graphs were constructed for each station which plot CPE^1 (no. of fish/100m/24 hrs.) and CPE^2 (kg. rd. wt./100m/24 hrs.) as a function of time. In addition, a second set of graphs were produced which plot "enhanced" values, used as y-axis coordinates, represent a running average of triplets of actual values for CPE^1. This was done to produce clearer pictorial profiles of the upstream runs.

2.3.4 Maturity and Female/Male Ratio

Random samples of charr from each station were examined for sex and state of gonadal maturity. The results were compared between stations and pooled for comparison with other Arctic charr commercial and test fisheries.

2.3.5 Feeding and Parasitism

Random samples of charr from each station were examined for stomach content and level of parasitism. The results were then pooled and compared with comparable data from other Arctic charr fisheries.

2.3.6 Data Analysis

The procedures for data analyses were essentially the same as those detailed by Kristofferson and McGowan (1981).

The computer facility (Amdahl 58-50) at the University of Manitoba was used for the bulk of the data analysis. Also, a Kaypro 4 microcomputer was used for much of the data analysis and graphics production.

3.0 RESULTS AND DISCUSSIONS

3.1 SITE EVALUATIONS

3.1.1 Rowley River

The Rowley River camp was located 175 km by air and 220 km by boat from Igloolik. Rowley River was selected for base of operations due to its centrality and its suitability for establishing a large camp. Although the camp was operated successfully in 1985, several serious problems were encountered which should be considered. Primarily, highly variable and often dramatic tides in the lower reaches of the river effectively prohibited access by boat or float plane for prolonged periods of time. Often, flying times were reduced to only a few hours per day, during high tide, and this seriously hindered the efficiency of the operation. Consequently, it was considered that the Rowley River camp should be abandoned in future as a fish collection and processing facility.

Netting suitability was also considered to be a problem. An attempt was made to locate the fishing site as far upriver as possible in order to avoid the most serious tidal influences. However, access is limited to a distance of about 2 km upstream and even at this point, tidal fluctuations of up to 1.5 metres were encountered. In addition, heavy rains in the second half of August substantially increased discharges and most portions of the river became far too turbulent for successful netting. These problems could be resolved by moving the netting operation into deeper waters in the estuary, although some difficulties would then be encountered in locating a new and suitable campsite.

On several occasions, the large bay at the mouth of Rowley River (known locally as Kangachlimaumuit) became blocked by ice, effectively barring access by sea. Although this was not a significant factor in 1985, it could be significant in subsequent years. It is apparently quite common for this area to be jammed with ice for a large portion of, or even all of, the summer months. In such a case, aircraft would be the only means of access.

An airstrip, suitable for Twin Otter landing, was prepared close to the Rowley River camp and this could conceivable serve as an alternative to float plane access.

3.1.2 Ikpikitturjuak River

This station presented very few problems. It is located at the head of a sheltered bay and for the most part float plane and aircraft access was unrestricted. Tides of up to 3 metres were encountered but this was not considered to be a serious factor. Although nets were occasionally set above the low tide level, there was sufficient deep water in the vicinity of the river mouth to allow satisfactory netting operation. A favorable shoreline permitted float plane approach even at the lowest tide levels.

The river itself is very short (less than 100 metres) and shallow. Netting in the river is impossible but it would be possible to set nets at the top end of the river. The small lake which separates the last section of river from the main lake upstream could conceivably be utilized for the netting operation. The lake is large enough and deep enough to allow both float plane and aircraft operation.

3.1.3 Cockburn River

Tidal effect was again a major concern. At high tide, the preponderance of large rocks along the shoreline prohibited beaching of the float plane, although approach was unrestricted at low tide. Ice was not a problem.

The fishing was carried out in a small bay at the base of the first major rapids and no serious problems were encountered with netting.

Again, a widening of the river a short distance (approximately 2 km) upstream of the mouth could conceivably be used as a fishing station. This body of water could easily facilitate the operation of both float plane and boat and could be utilized to avoid any problems which might be presented by tides or ice in the future.

3.1.4 Tariujak Arm

The aerial survey of Tariujak Arm indicated that the arm was subject to sea water invasion at high tide and it was assumed that the water was saline or at least brackish. It was also determined that the only possible river which could provide access to fresh water for over-wintering was located at the extreme north-west end of the arm at the end of a long, deep bay. Although the actual suitability of this river for charr migration was somewhat doubtful, it was decided to set up the fishing station there.

Although some fish were caught, it was soon evident that a run up the river was unlikely to take place. Furthermore, discussion with several fishermen revealed that fish have commonly been caught in the arm itself in the winter. Consequently, a new site was chosen, at the fishermen's recommendation, and on August 30 the camp was relocated at a site halfway down the west side of the arm.

This site proved to be quite suitable for netting and indeed a good harvest was taken. Tides were not significant and ice was not a factor but winds and rough water became a problem due to the flat and exposed nature of the area. The shoreline was also considered to be too rocky for comfortable float plane beaching.

It was found that the water in the arm is quite fresh, at least at the surface, and it is quite likely that the arm itself serves as the overwintering ground. With this in mind another site was selected below the last narrows and rapids. It is recommended that this site be used in the second year in order to gain a clearer perception of the run.

3.1.5 Harder River

The Harder River estuary is very long and shallow and tidal water surges for many kms. inland. The shallow and rocky nature of the estuary severely restricted boat and float plane access. The only suitable site was found to be on the west side of a southward projecting bay at the southern end of the estuary. Although suitable in most respects, this camp was located several kms. from the fishing site, resulting in an unusually large amount of travel time.

No ice was encountered in the estuary but wind and rough water were occasionally a problem.

3.1.6 Ravn River

This is by far the largest river included in the test fishery. The camp and fishing site were located below the last narrows and rapids. The shoreline, although suitable for a camp and boat access, was totally unsuited to float plane beaching. Consequently, the fish were always transferred to the plane by boat.

The netting was conducted at the base of and on either side of the last rapids. Netting presented no difficulties. The area is quite sheltered and wind was seldom a problem. Ice was also not a problem.

3.1.7 Neergaard River

Suitable site location was a difficult problem with the Neergaard River. The entire north end of Steensby Inlet is shallow with extensive tidal mud flats but this aspect is most pronounced in the vicinity of the Neergaard River mouth. The nearest point, accessible by boat, is located about 5 km from the mouth and to the south-east. This site was found to be suitable in most respects but its extreme distance from the mouth of the river was a serious drawback.

It is recommended that in subsequent years the test fishery be relocated upriver at the outflow of the first lake.

3.1.8 Sapugaarjuk River

The Sapugaarjuk River empties into the north side of Murray Maxwell Bay in an area that is generally flat and exposed. However, a protective band of islands which encircles the mouth of the river effectively reduces the effect of wind and tide. The shoreline was generally approachable by boat but, again, approach by float plane was severely restricted due to a profusion of rocks. The area just below the last rapids was found to be suitable for netting.

3.1.9 Isortoq River

Isortoq River flows through the bottom of a long winding valley with steep walls rising to over 400 m. The fishing camp was located at the mouth where it enters Isortoq Fiord. A broad, flat plateau about 5 metres above the river level provided an excellent camp site. The tidal effect was minimal and conditions for boat and float plane access were excellent.

Netting was done in the river, just in front of the camp, and no problems were encountered. The river flows through extensive areas of marine silt and clay deposits and as a result the water is quite turbid.

3.1.10 Qulurnilik River

This river flows out of Windless Lake at about 62 metres elevation and plunges, rather dramatically, for 3 km to the sea. Two major falls, one of them approximately 7.5 metres in height, would logically preclude charr migration up this river. However, all of the fishermen were willing to attest that a run did exist.

A camp was established on a boulder-strewn beach at the mouth of the river and, for the most part, the fishery proceeded without problem. Extreme tides of 3 metres or more made net setting difficult but not impossible. The rocky nature of the shoreline restricted float plane landing to times of high tide. Because of the exposed nature of the site, it is conceivable that wind and ice could present serious problems in the future.

Consideration should be given to moving the fishing site to a small lake above the falls to avoid the physical problems encountered at the mouth. In addition, it was observed that the charr entered the river mouth and held there for a prolonged period of time before proceeding upriver. The resulting concentration of stationary fish made netting very effective but this will also cast some suspicion on the validity of the catch/effort data. Moving the fishing camp above the falls would probably provide a more representative profile of the run.

Although no fish were observed jumping the falls, it was assumed that they did.

3.2 BIOLOGICAL EVALUATIONS

3.2.1 Age and Growth

Mean ages were calculated for all stations (Table 3) and age-frequency graphs were produced. Age-frequency graphs paired with length-frequency histograms appear in Figures 3-20.

The mean ages for the charr of Steensby Inlet are quite high and probably reflect the relatively unexploited nature of the rivers in this region. Mean ages ranged from 16.2 yrs. at Harder R. to 19.9 yrs. at Cockburn R. and the overall mean was 18.4 yrs. Mean ages for Steensby Inlet and other charr fisheries are compared in Table 58.

Length-weight relationships were calculated for charr taken from all the test rivers. The regression values ranged from 2.7760 at Harder R.

to 2.8311 at Qulurnilik R. and the mean for all stations was 2.7980.

Relative condition factors (K) were also calculated for all stations and appear in Table 3. K values ranged from 1.12 at Tariujak Arm and Qulurnilik R. to 1.24 at Ravn R. The overall mean K was 1.16. These values of K are high when compared to those of similar fisheries (Table 58) and indicate that the fish are robust and healthy. It should be kept in mind, however, that condition factors are highly variable from season to season and from year to year (Johnson, 1980). A comparison of K factors representing several years would be more meaningful.

3.2.2 Mortality

A comparison of the mortality data for all of the rivers of this test fishery is presented in Table 3. Instantaneous total mortality (Z) ranged from a low of .09 at Cockburn R. to a high of .59 at Rowley R. The mean Z value for the 9 rivers was .27.

These figures are quite low when compared to those found in other areas. For example, Kristofferson et al. (1982), in a similar test fishery conducted in the Gjoa Haven/Pelly Bay area, found Z values ranging from .34 to 1.06 with a mean of .60 (n=11 rivers). Similarly, McGowan (1985), in a report summarizing data from several test fisheries conducted in the Baffin and Central Arctic regions, gives Z values ranging from .22 to 1.11 and with a mean of .50 (n=25 rivers). Carder (1981), presenting data on the 1979 and 1980 commercial fisheries at Cambridge Bay, reported a range of annual mortality rates (A) from .32 (Z=.39) to .54 (Z=.78) and a mean rate of A (n=7 rivers x 2 yrs.) equal to .47 (Z=.63). All of these reports included many rivers which have a history of commercial fishing or varying degrees of domestic fishing. This known exploitation is consistent with the higher mortality figures.

By contrast, Moore (1975), looking at the virtually unexploited rivers of Cumberland Sound reported an estimated mean annual mortality (A) of .16 or z=.17.

The mortality figures for the Steensby Inlet area are higher than those of Cumberland Sound but considerably lower than those reported from other fisheries. This would be consistent with what is known of the recent fishing patterns in Steensby Inlet. All of the rivers included in the test fishery have been traditional, and in some cases recent, domestic fishing sites (pers.comm. Igloolik fishermen). Tariujak Arm, Rowley R., Ikpikitturjuak R., Qulurnilik R. and Ravn R. have all been fished domestically in recent years. However, these have mostly been small-scale, one-family efforts and it is doubtful that they would have had any significant effect on the overall mortalities. Essentially, this is demonstrated in the low mortality figures.

The only significant commercial fisheries have been on Ravn R., where 7000 kg. and 9100 kg. were taken in 1982 and 1984 respectively. If this fishing mortality has had an effect on the total mortality, it is not evident from the present data (Z=.24, A=.21) for Ravn R.

3.2.3 Catch-Effort and Timing of Runs

Daily catch-effort (CPE) data for each station are presented in Tables 49-57. Mean CPE^1 (no. of fish/100m of net/24 hrs.) ranged from a high of 168 for Ikpikitturjuak R. to a low of 17 for Harder R. The overall mean for the 9 rivers was 61. Corresponding CPE^2 (kgs. round wt./100m of net/24 hrs.) values range from a high of 509 at Ikpitturjuak R. to a low of 53 at Harder R. The mean CPE[2] for all rivers combined was 192.

Kristofferson et al. (1982) presented catch-effort data for test fisheries conducted in Gjoa Haven/Pelly Bay area from 1979-80. The CPE[2] values for those fisheries conducted for upstream runs (fall) ranged from a high of 26 to a low of 1, with an average between 7 rivers of 14.9. The average number of days fished are similar with 17.0 and 18.3 for Gjoa Haven/Pelly Bay and Steensby Inlet respectively.

Daily catch-efforts vs. time for the rivers of this test fishery are presented in figures 21-37. These graphs essentially present a visual profile of each upstream run and indicate the duration and strength of individual runs as well as the relative timing of runs between rivers. The graph for Tariujak Arm is split in order to differentiate between the two fishing sites used. The first part of the fishery (Aug. 16-30) was far removed from the outlet of the Arm and was probably not a representative part of the anadromous run.

In most cases, the bulk of the run from onset to completion is presented. The only notable exception is Qulurnilik R. where the run was apparently well in progress when fishing commenced. In general the runs are well defined with prominent peak dates ranging from Aug. 17 (Rowley R.) to Aug. 29 (Harder R.). Ravn River is the only exception with a series of peaks over the entire course of the run. This could be taken as an indicator of a very long and heavy run. Alternatively, the charr may have been staging or holding at the mouth of the river for a period of time prior to ascending, thereby biassing the catch-effort data. This sort of staging behaviour was definitely occurring at Qulurnilik R. where, although large numbers of fish were observed and caught from the first day of fishing, there were no fish observed upstream, either in the river or leaping the falls . If indeed the fishery was exploiting a highly concentrated stationary population of fish at the mouth of the river, this would explain the extremely high catch-effort figures recorded.

3.2.4 Maturity and Female to Male Ratio

In fisheries management, recruitment potential is possibly the most critical and most difficult parameter to ascertain. Factors which can influence recruitment include: age and size of first maturity, the size of the mature stock, the proportion of the mature stock which actually spawns per year, and the ratio of females to males (F/M).

For the rivers of this test fishery the ages of first maturity ranged from 9 years at Isortoq R. to 13 years at Ikpikitturjuak R., Tariujak Arm, and Qulurnilik R. The mean age of first maturity for all rivers combined was 11.2 years. The mean length of first maturity was 476 mm. These figures are fairly similar to those put forward by Grainger (1953), who estimated first age and size of spawning for charr from the Sylvia Grinnell R. to be 12 years and 460 mm.

Although the proportions of the populations considered to be mature and, hence, capable of spawning were large, it was not possible to ascertain the proportions that actually spawned. In general, anadromous Arctic charr do not migrate to sea in years that they will be spawning (Johnson, 1980). This was found to be true for the charr of Steensby Inlet and, therefore, the spawning segments of the populations were not investigated.

Johnson (1980) suggests that the F/M ratio for the sea run portion of an anadromous population of Arctic charr should be approximately equal to 1.0. By comparison, the F/M ratio for the spawning segment of the populations, although highly variable, is generally quite high. The F/M ratio for spawning charr in Willow Lake, for example, was 10.0 in 1976 (Johnson, 1980).

F/M ratios ranging from 0.2 to 0.9 were recorded for the charr of Steensby Inlet. The overall mean was 0.5. This is considerably less than 1.0, but it is consistent with F/M ratios reported from other test fisheries in the Central Arctic and Baffin Regions (Table 59).

3.2.5 Feeding and Parasitism

A total of 343 charr were examined for stomach content. The results were very consistent between stations with only one, Tariujak Arm, displaying any significant differences. The predominant food item selected was a marine amphipod with a variety of fish and fish remains making up the rest. The results, with Tariujak Arm treated separately, are as follows:

Z Occurrence

	Amphipods	Fish Remains	Empty	N
Tariujak Arm	6	28	66	109
All others combined	46	30	28	234
TOTAL	34	29	40	343

It has been suggested previously that Tariujak Arm serves as an overwintering water body for anadromous charr returning from summer forays into Steensby Inlet. The observed differences in stomach content, and hence feeding pattern, at this station would be consistent with this assertion.

A total 302 charr were examined for parasites. Parasitism was considered to be quite heavy and this is consistent with the observation of Dick and Belosivic (1981) who also examined anadromous charr feeding in Foxe Basin. Four main parasites or groups of parasites were distinguished. The most common was an intestinal cestode, probably Bothrimonus sp. The encysted plerocercoid larvae of another cestode, assumed to be Diphyllobothrium sp., were also very Prevalent" The swimbladder nematode, Cystidicola sp., was fairly common and its observed occurrence here may be a first for Baffin Island. The last common parasite was the external, buccal copepod Salmincola sp.

The frequencies of occurence of these parasites, with all stations pooled, are as follows:

	% Occurrence
Bothrimonus sp.	86%
Diphyllobothrium sp.	30%
Cystidicola sp.	11%
Salmincola sp.	39%

Although the degree of parasitism was high, it did not seem to have affected the general health and robustness of the fish. However, 2 charr were found in a very emaciated or "slinky" state and both, upon examination, were found to be extremely heavily infested with Diphyllobothrium cysts.

The high level of parasitism is not considered to be a detriment with respect to fish quality as all of the parasites mentioned normally restrict themselves to those portions of the fish which are discarded in the cleaning process. Only 2 fish were found to have Diphyllobothrium cysts in the lining of the body cavity and both of these were rejected.

3.3 ASSESSMENTS AND RECOMMENDATIONS

3.3.1 Rowley River

All indications are that Rowley River has a substantial population of mature, robust fish. The values for Instantaneous total mortality (Z) and Annual mortality (A) are high when compared to the other rivers but it is not clear why this should be. There has been some fishing done in recent years but it is doubtful that this would have significantly affected the mortality rates.

The site that was used in 1985 was judged to be quite adequate with respect to netting suitability and access, although it is not recommended that it be used as a base camp in the future.

3.3.2 Ikpikitturjuak River

The charr of this river were also found to be of good size and condition. This river and its watershed are very small, as are the lakes which it drains. It is difficult to make an assessment of the population size, at this time. The catch-effort figures for this river were very high, indeed the highest of all the rivers, but these may be somewhat misleading. The river is a very short one, less than 100 meters, and it was the opinion of the fishermen that the charr moved freely up and down the river, between lake and ocean, throughout the fishing period. If this was so, and if the fish seldom strayed far from the mouth, then the resulting catch effort data may have been high and misleading.

This situation needs clarification and another season of investigation is essential. This river would be ideally suited to the construction of a counting weir and this would be one way of getting a clearer perception of stock size.

The site was also quite suitable in terms of nettability and access, although consideration could be given to relocating the fishery to the first small lake in the system. This would bypass any potential problems with tides, weather and ice.

3.3.3 Cockburn River

Logistical problems prevented a fully successful fishery at Cockburn River in 1985. As a result, the sample sizes used in the biological evaluations were rather small. Nonetheless, indications are that Cockburn River supports a substantial population of large, robust charr. The site that was used in 1985 was very suitable and should be used in the future.

Cockburn River would be an excellent choice for the construction of a counting weir. The river would be physically suited to such a project and offers the advantage of being both intermediate in size and fairly representative in nature.

3.3.4 Tariujak Arm

It has been suggested that Tariujak Arm serves as an overwintering water body for anadromous charr and there is considerable evidence to support this. There are, however, several aspects which need clarification.

It is possible that Tariujak Arm is used primarily, or even exclusively, for overwintering and that the stock may represent a mixture of individuals from other populations. This would have to be taken into consideration when quotas are set.

Alternatively, if Tariujak Arm is used essentially as a lake and has a distinct population of anadromous charr, then it is also possible that fishing in the Arm may be subjecting a non-searun, spawning portion of the population to pressure. In addition, there are indications that the searun charr may be sympatrically or allopatrically sharing Tariujak Arm with a population of smaller, non-searun, "resident" charr. These factors should be considered when making selections for future fishing sites.

3.3.5 Harder River

The mouth of the Harder River was hard to approach and that made it difficult to conduct this type of test fishery. Poor approachability, however, may not be an important factor in a future commercial fishery, since site location would not be as critical.

The charr taken from Harder River were of good size and condition although they were somewhat smaller on average than those from the other rivers. Also the catch-effort figures were lowest for Harder River, although this may have been directly related to the poor fishing site availability.

3.3.6 Ravn River

It is the opinion of the author that, of all the rivers tested in this fishery, the Ravn River offers the most potential for a commercial fishery. The charr were large, robust and apparently very abundant.

The site used in 1985 was adequate but not ideal. A particular problem was the difficulty in beaching the float plane. It is possible that another, more suitable site may be found but none was located in 1985.

3.3.7 Neergaard River

The Neergaard River was the most difficult to approach and to fish. Serious consideration should be given to relocating the fishery upstream at the outflow of the lake.

The charr taken from Neergaard River were of excellent size and quality and the catch-effort data suggest good abundance.

3.3.8 Sapugaarjuk River

Essentially, Sapugaarjuk River was missed in 1985. Another attempt should be made to investigate this river as there is yet no reason to believe that it does not offer the potential of a commercial fishery.

The site used in 1985 was good, but there was a problem of aircraft accessibility.

3.3.9 Isortoq River

Isortoq River holds much promise for a commercial fishery. The site suitability was excellent and the biological evaluations were all positive.

3.3.10 Qulurnilik River

The charr taken from Qulurnilik River were of exceptional quality and catch-effort data suggests considerable abundance.

This river, however, presents a special problem. It has already been discussed that this river is apparently totally unsuited to charr migration due to a series of very significant waterfalls. Moore (1975) observed charr leaping a fall of 1.5 m but passage was prevented by a fall of 3.3 m. The main waterfall on Qulurnilik River is estimated at 7.5 m and there is no stretch of water between the falls and the sea which would be suitable for overwintering charr. The fishermen maintained that the charr do ascend the falls yet no fish were observed either leaping the falls or holding anywhere in the river except at the mouth.

Yet, the charr were there in abundance. Furthermore, when specific biological parameters such as mean weight, mean length, mean age and K were compared to those of other rivers in the vicinity (Isortoq River, Rowley River) and subjected to t-tests, the differences were found to be statistically significant ($P<.001$).

Clearly, there are still many questions to be answered regarding Qulurnilik River.

3.3.11 General Assessments and Recommendations

Nine rivers which empty into Steensby Inlet, Baffin Island, have been investigated to determine the potential for a commercial Arctic charr fishery. All of these rivers were found to have abundant numbers of large, robust charr and, in general, they were easily harvested.

Specific biological data describing size, weight, relative condition and sexual maturity, compare favorably with comparable data from other charr fisheries in the Baffin Island, Central Arctic and Keewatin regions. The rivers around Steensby Inlet are essentially unexploited and, therefore, the data obtained in this test fishery will be useful as baseline data.

Although many logistical and site-suitability problems were encountered, it is felt that none of these are insurmountable. Of greater concern for the future, may be difficulties related to weather and ice conditions.

It is recommended that the test fishery be continued in order to clarify several aspects which will be essential in formulating a management plan. Populations need to be more clearly delineated and stock sizes assessed. A counting weir on one or more of the rivers would be very useful in making these determinations. Tariujak Arm and Qulurnilik River present certain special questions which need to be addressed and clarified.

4.0 ACKNOWLEDGEMENTS

The author wishes to extend his appreciation towards the Department of Economic Development and Tourism, Government of the Northwest Territories, for its extensive roll in this project. Larry Simpson, Policy and Planning Advisor, Frobisher Bay, was instrumental in initiating the project and nurturing it through its developmental stages. John Matthews, the local Economic Development Officer, Igloolik, provided consistent and invaluable field support.

The Igloolik Eskimo Co-operative and Ken Gunther (Manager) assumed all logistical responsibilities. The Igloolik Hunters and Trappers Association offered suggestions and guidance and supplied the project with 2-way radios. Ross Hagan, Fish and Wildlife Officer, Igloolik, also generously offered the loan of a variety of boats and motors, which saw the project through several crises.

Murray Ransom, the Project Manager, did an exceptional job of constructing the base camp and oversaw all aspects of production and processing. Brent Guinn and Donna Rystephanuk were the fishery technicians and their diligent and precise effort was much appreciated.

Michelle Roberge, Department of Fisheries and Oceans, was the Scientific Authority for the project and the author is grateful for her advice and assistance in structuring the field program. Dale McGowan and Garry Carder, also of DFO, advised on various aspects of data analysis.

Paul Paquette and Jackie Wilson provided invaluable assistance in the microcomputer data analysis and Val deJong produced the maps which appear in this report.

Typing was done by Joyce Schick. Stuart Davies offered advice and support throughout and reviewed both the Interim Report and this final report.

Finally, the author wishes to thank the fishermen and their assistance as well as all of the residents of Igloolik who so enthusiastically supported the project.

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Table 2. Catch Records for Steensby Inlet Test Fishery, 1985.

Station	Quota (kg)*	Total Harvest (kg)**	Total Fish Caught	Mean Wt. (kg)
1	1500	1064	348	3.06
2	1000	1093	360	3.04
3	1000	646	208	3.11
4	1000	590	237	2.49
5	1000	449	178	2.52
6	1500	1748	543	3.23
7	1500	1104	354	3.12
8	1500	59	190	3.23
9	1500	1503	505	2.98
10	1000	1257	353	3.56

* Provisional Quotas issued for the test fishery.

** Total in round wt. Dressed wts. were converted to rnd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean wts.

Table 3. Comparison of Length, Round Weight, Condition Factor (K), Female/ Male Ratio, Mean Age, Instantaneous Total Mortality (Z), Annual Mortality (A), and Annual Survival (S) for theSteensby Inlet Test Fishery, 1985.

Stn.	Mean Length(mm)	Mean Rd.Wt. (kg)	K	F/M Ratio	Mean Age	Z	A	S
1	644	3.19	1.16	0.40	18.1	0.59	0.45	0.55
2	640	3.04	1.21	0.41	18.9	0.17	0.16	0.84
3	638	3.09	1.14	0.21	19.9	0.09	0.09	0.91
4	601	2.69	1.12	0.21	17.8	0.44	0.36	0.64
5	602	2.60	1.13	0.23	16.2	0.20	0.18	0.82
6	628	3.23	1.24	0.69	19.1	0.24	0.21	0.79
7	632	3.09	1.18	0.87	18.3	0.26	0.23	0.77
9	628	2.97	1.16	0.87	16.8	0.21	0.19	0.81
10	681	3.57	1.12	0.32	19.8	0.27	0.24	0.76

Table 4 . Length-weight relationship [$\log_{10}W=a+b(\log_{10}L)$] for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	130	-5.1804	2.8160	2.7260 - 2.9060	.954
Female	51	-4.9420	2.8006	2.6976 - 2.9036	.938
Total	346	-4.8625	2.8060	2.6970 - 2.9150	.942

Table 5. Mortality data for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
20-24	47	0.59	0.96	0.45	0.55

Table 6. Summary of Catch-Effort data for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE[1]	CPE[2]
348	1064	3.06	18	55

[1] CPE = no. fish/100m/24hrs.

[2] CPE = kg.rd.wt./100m/24hrs.

Table 7. Length-weight relationship [$\log_{10}W=a+b(\log_{10}L)$] for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	90	-4.7937	2.7989	2.6411 - 2.9567	.947
Female	36	-5.8519	2.7859	2.6863 - 2.8855	.937
Total	341	-3.4887	2.8014	2.6014 - 3.0014	.859

Table 8. Mortality data for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
20-26	49	0.17	0.92	0.16	0.84

Table 9. Summary of Catch-Effort data for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE [1]	CPE [2]
360	1093	3.04	168	509

[1] CPE = no. fish/100m/24hrs.

[2] CPE = kg.rd.wt./100m/24hrs.

Table 10. Length-weight relationship [$\log_{10}W=a+b(\log_{10}L)$] for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	27	-4.2291	2.8285	2.7275 - 2.9295	.955
Female	5	-5.9570	2.7252	2.6534 - 2.7943	.997
Total	180	-4.9128	2.8010	2.6842 - 2.9178	.952

Table 11. Mortality data for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
20-27	17	0.09	0.96	0.09	0.91

Table 12. Summary of Catch-Effort data for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE[1]	CPE[2]
208	646	3.11	24	76

[1]CPE = no. fish/100m/24hrs.

[2]CPE = kg.rd.wt./100m/24hrs.

Table 13. Length-weight relationship [$\log_{10}W=a+b(\log_{10}L)$] for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	146	-5.3716	2.7886	2.6690 - 2.9070	.961
Female	30	-5.5862	2.7489	2.6489 - 2.8489	.967
Total	177	-5.3364	2.7813	2.6663 - 2.8963	.963

Table 14. Mortality data for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
20-25	47	0.44	0.94	0.36	0.64

Table 15. Summary of Catch-Effort data for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE[1]	CPE[2]
237	590	2.49	28	70

[1]CPE = no. fish/100m/24hrs.

[2]CPE = kg.rd.wt./100m/24hrs.

Table 16. Length-weight relationship [$\log_{10}W=a+b(\log_{10}L)$] for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	60	-5.6843	2.7715	2.6945 - 2.8485	.985
Female	13	-6.7825	2.7167	2.6533 - 2.7801	.992
Total	143	-5.9137	2.7760	2.6792 - 2.8728	.970

Table 17. Mortality data for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
18-24	23	0.20	0.95	0.18	0.82

Table 18. Summary of Catch-Effort data for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE [1]	CPE [2]
178	449	2.52	17	53

[1] CPE = no. fish/100m/24hrs.

[2] CPE = kg.rd.wt./100m/24hrs.

Table 19 . Length-weight relationship [$\log_{10}W=a+b(\log_{10}L)$] for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	110	-5.5492	2.7925	2.6648 - 2.9202	.971
Female	76	-5.7753	2.7799	2.6757 - 2.8841	.975
Total	498	-5.3018	2.7940	2.6780 - 2.9100	.959

Table 20. Mortality data for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
20-26	79	0.24	0.94	0.21	0.79

Table 21. Summary of Catch-Effort data for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE[1]	CPE[2]
543	1748	3.23	58	188

[1] CPE = no. fish/100m/24hrs.

[2] CPE = kg.rd.wt./100m/24hrs.

Table 22. Length-weight relationship [$\log_{10}W=a+b(\log_{10}L)$] for Arctic charr taken from Neergaard R., Aug. 13 - Sept. 9, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	55	-4.5717	2.8129	2.6681 - 2.9577	.915
Female	52	-3.8016	2.7932	2.6960 - 2.8904	.862
Total	196	-4.8701	2.7983	2.6815 - 2.9151	.938

Table 23 . Mortality data for Arctic charr taken from Neergaard R.,Aug.13- Sept. 9, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
20-27	46	0.26	0.88	0.23	0.77

Table 24. Summary of Catch-Effort data for Arctic charr taken from Neergaard R., Aug. 13 - Sept. 9, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE[1]	CPE[2]
354	1104	3.12	40	126

[1]CPE = no. fish/100m/24hrs.

[2]CPE = kg.rd.wt./100m/24hrs.

Table 25. Length-weight relationship $[\log_{10}W=a+b(\log_{10}L)]$ for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	67	-4.9842	2.8220	2.6846 - 2.9594	.936
Female	58	-5.2386	2.7702	2.6772 - 2.8632	.976
Total	399	-4.4636	2.7936	2.6470 - 2.9402	.930

'l'able 26. Mortality data for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
17-22	45	0.21	0.91	0.19	0.81

Table 27. Summary of Catch-Effort data for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE[1]	CPE[2]
505	1503	2.98	54	160

[1]CPE = no. fish/100m/24hrs.

[2]CPE = kg.rd.wt./100m/24hrs.

Table 28. Length-weight relationship [$\log_{10}W=a+b(\log_{10}L)$] for Arctic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

Sex	N	Y-Intercept(a)	Slope(b)	95% C.I. of b	r
Male	104	-3.5516	2.8414	2.7060 - 2.9768	.791
Female	36	-2.3879	2.8081	2.7037 - 2.9125	.741
Total	251	-3.3629	2.8311	2.7061 - 2.9561	.825

Table 29. Mortality data for Arctic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

Age-Classes Used	N	Instantaneous Total Mortality (Z)	r	Annual Mortality (A)	Annual Survival (S)
21-26	61	0.27	0.94	0.24	0.76

Table 30. Summary of Catch-Effort data for Arctic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

N	Harvest (kg.rd.wt.)	Mean rd.wt. (kg.)	CPE[1]	CPE[2]
353	1257	3.56	139	493

[1] CPE = no. fish/100m/24hrs.

[2] CPE = kg.rd.wt./100m/24hrs.

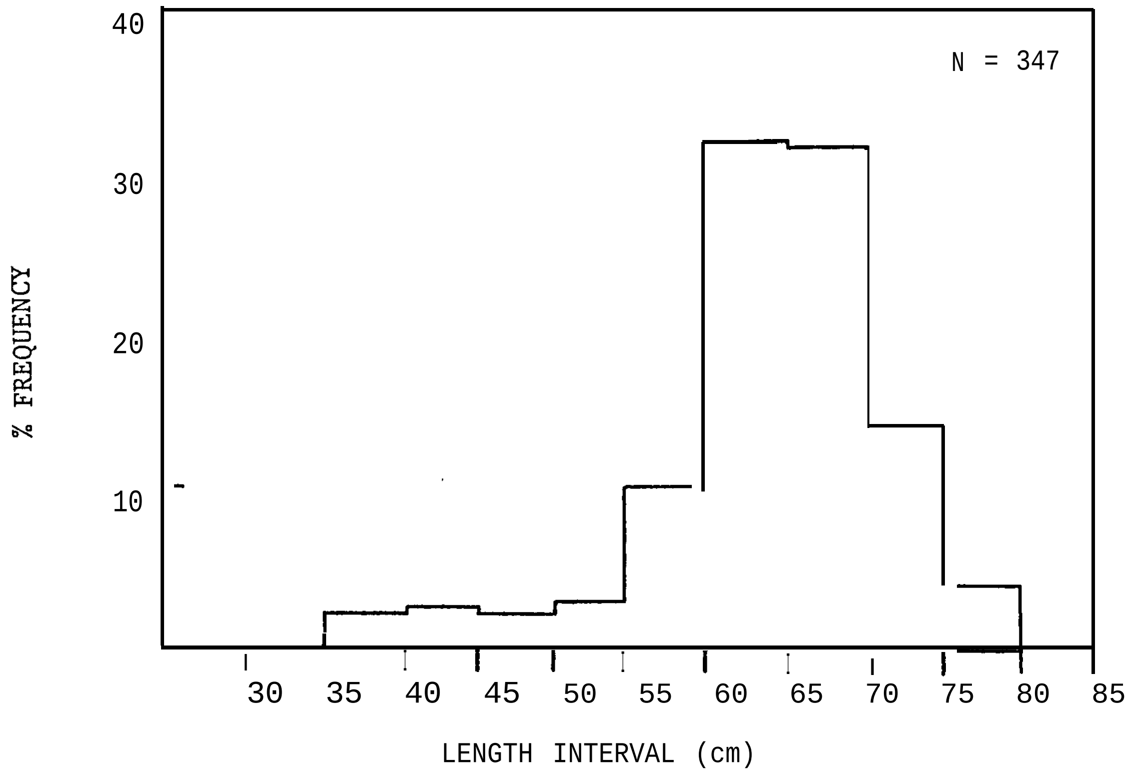

Fig. 3. Length-frequency distribution for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

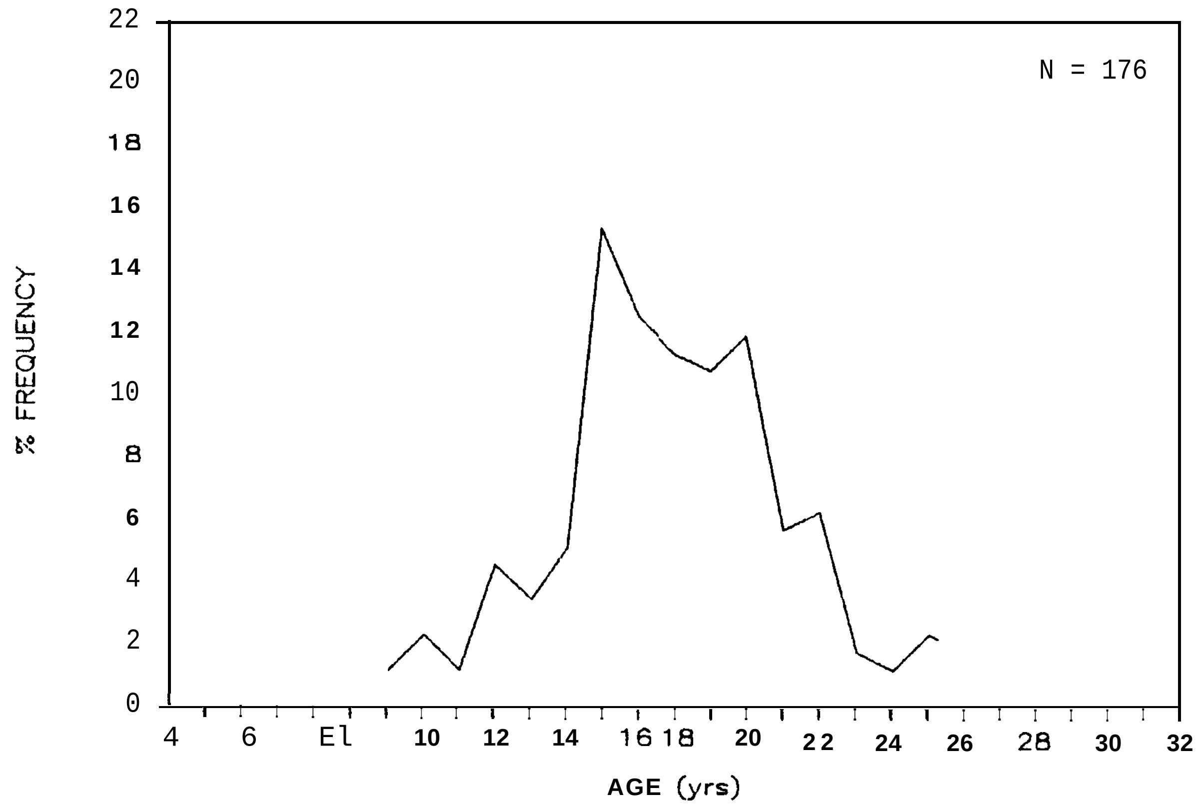

Fig. 4. Age-frequency distribution for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

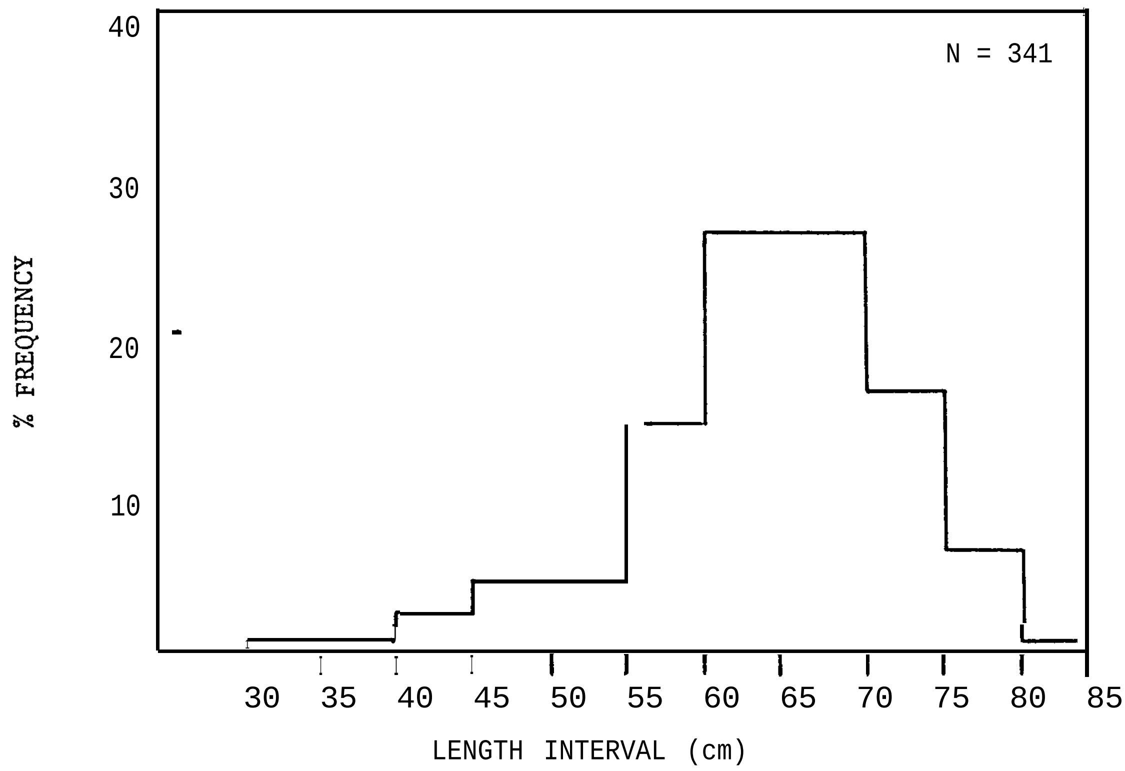

Fig. 5. Length-frequency distribution for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

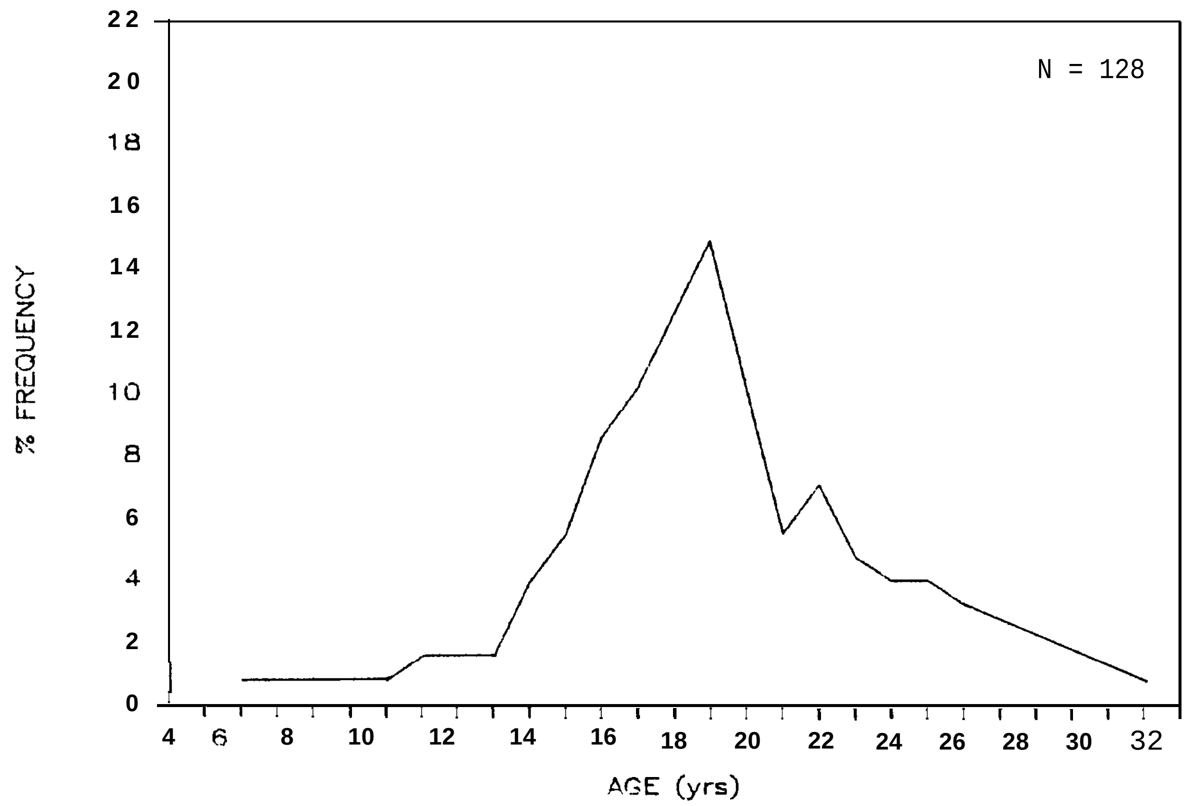

Fig. 6. Age-frequency distribution for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

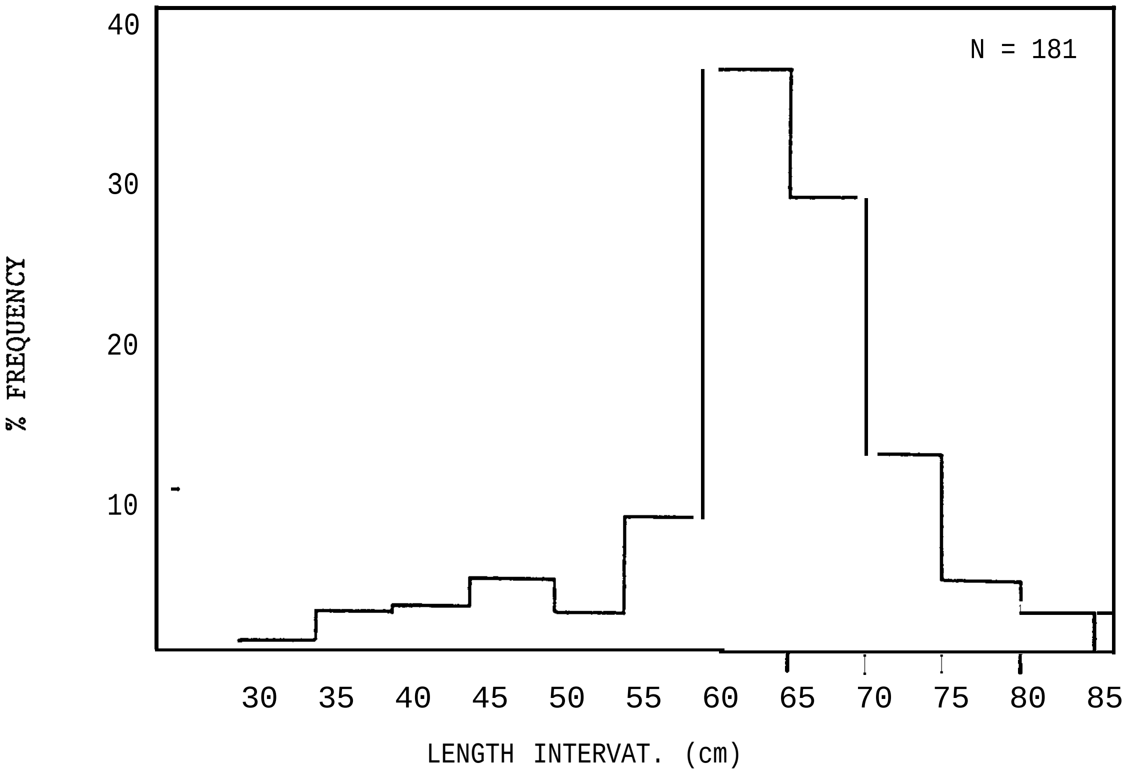

Fig. 7. Length-frequency distribution for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

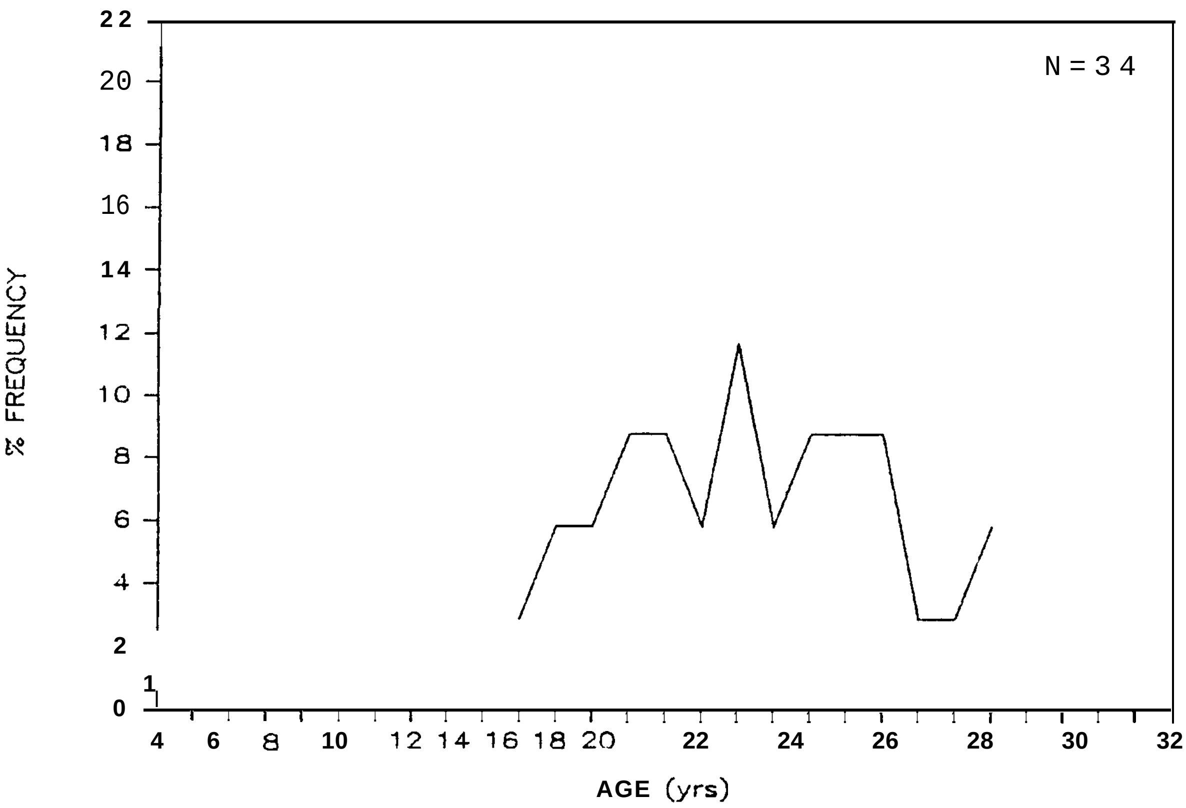

Fig. 8. Age-frequency distribution for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

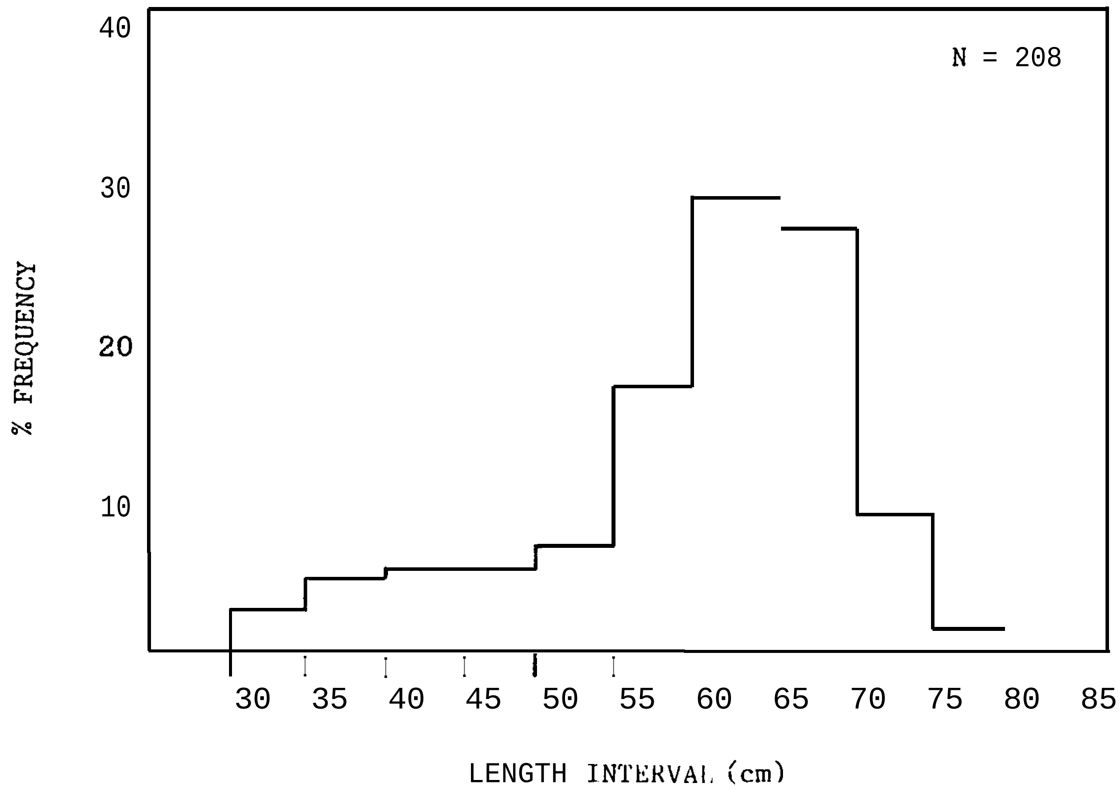

Fig. 9. Length-frequency distribution for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

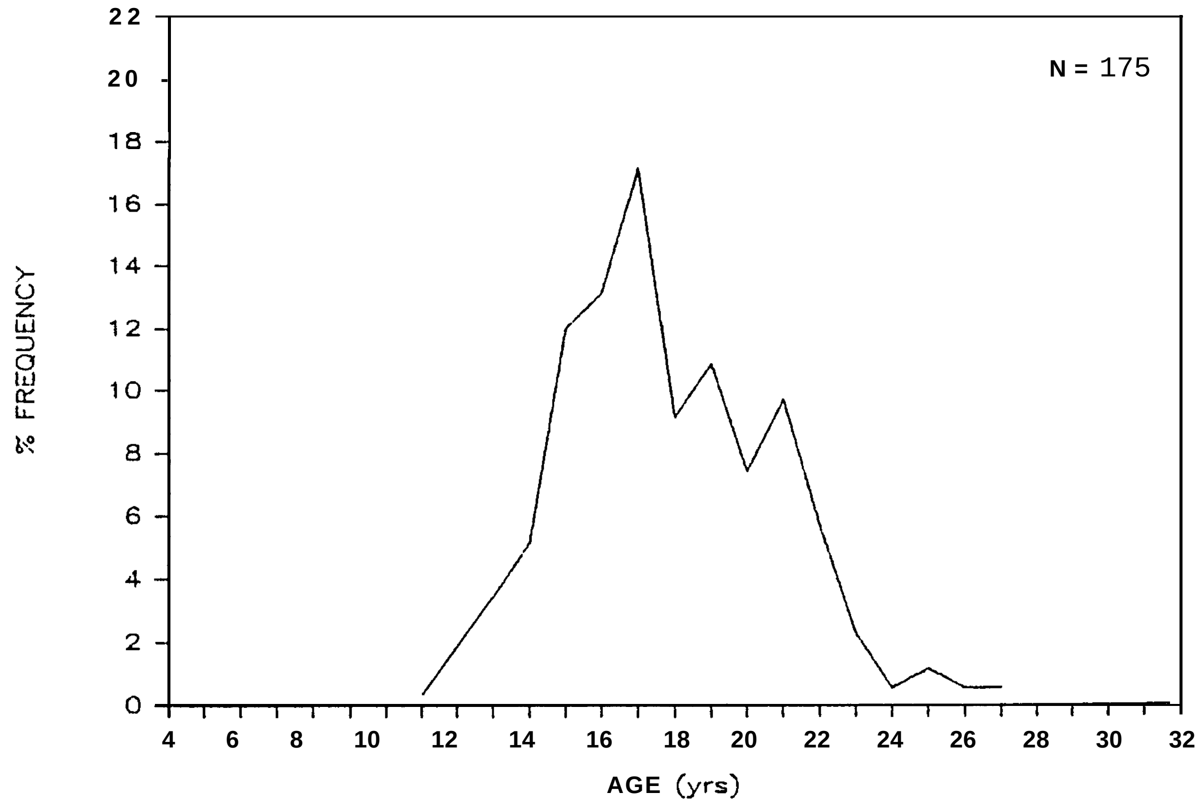

Fig. 10. Age-frequency distribution for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

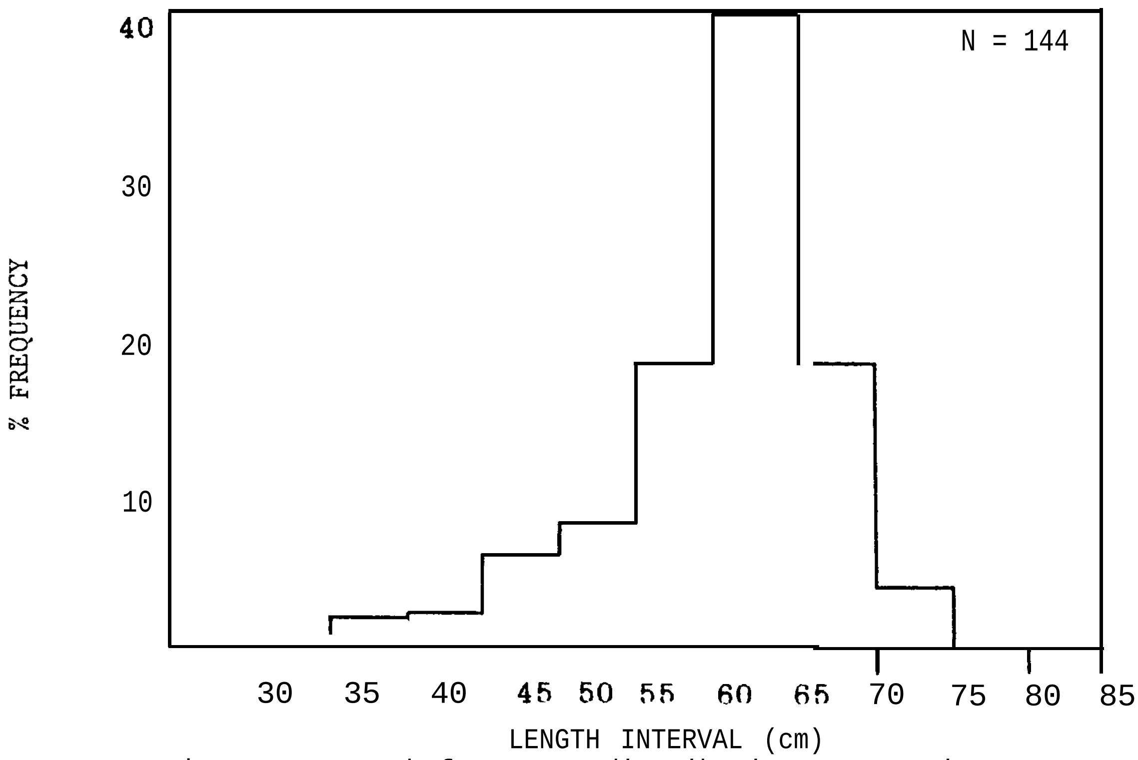

Fig. 11. Length-frequency distribution for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985.

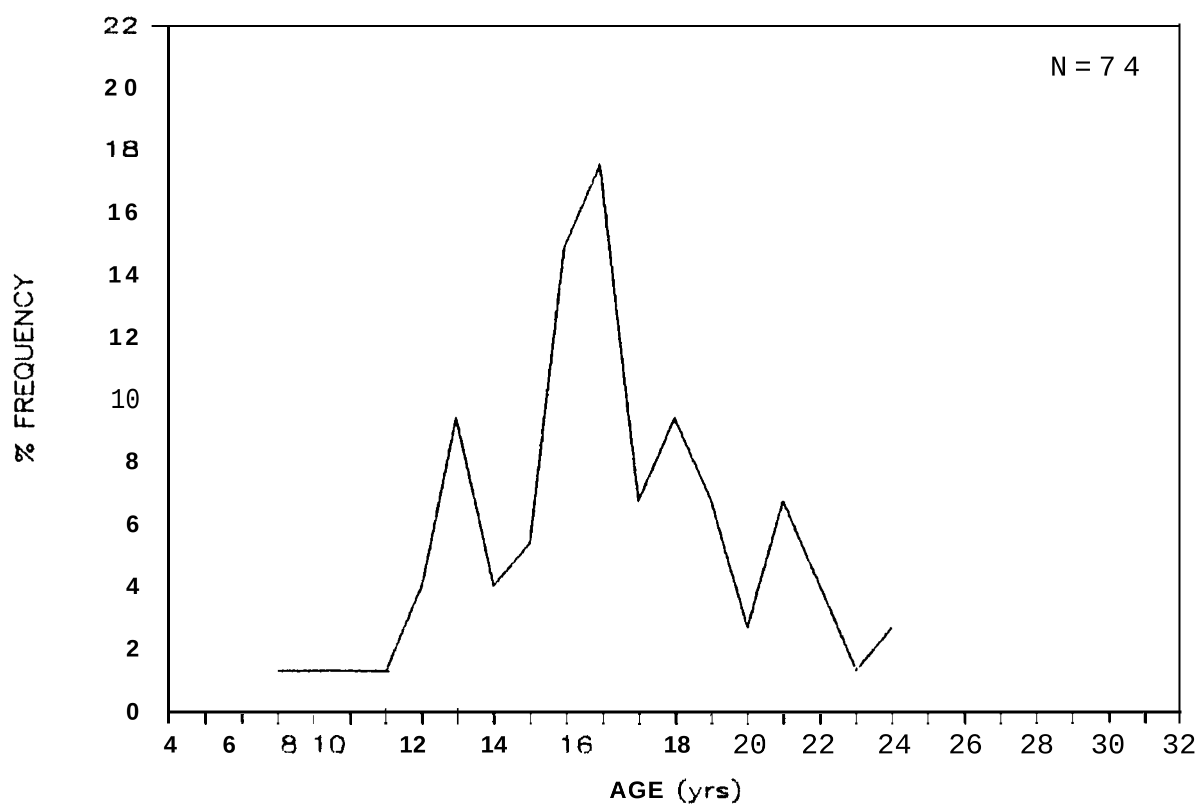

Fig. 12. Age-frequency distribution for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985.

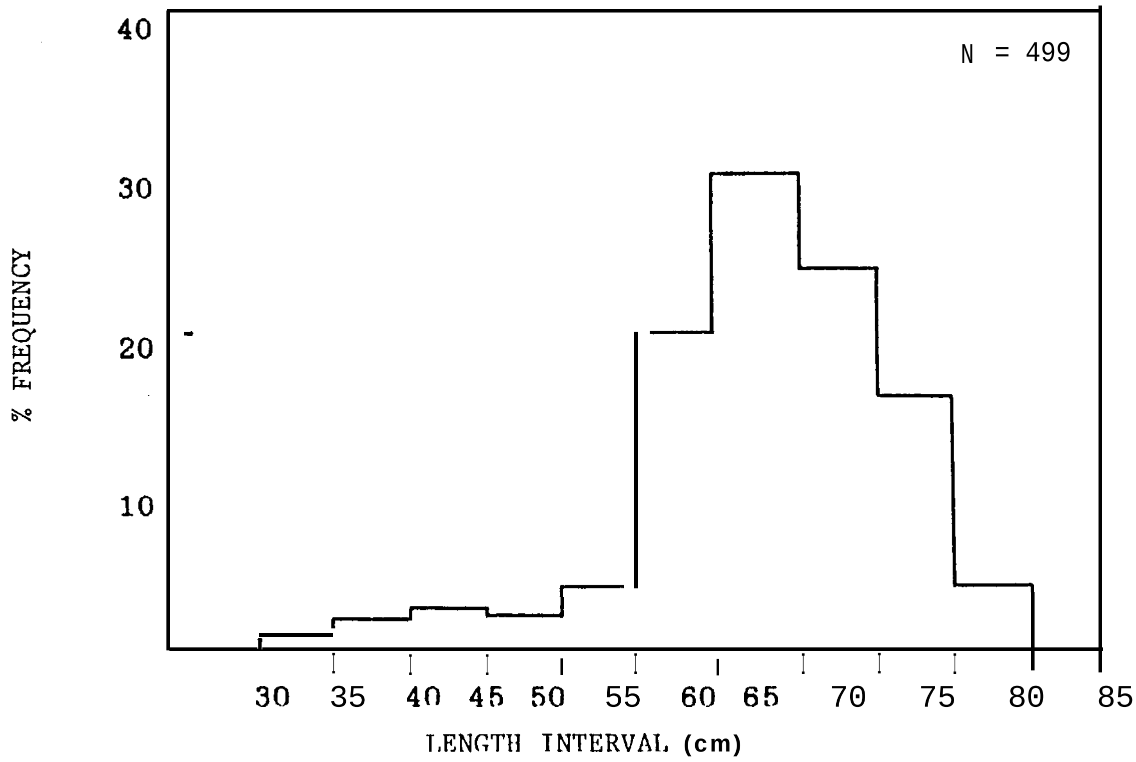

Fig. 13. Length-frequency distribution for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

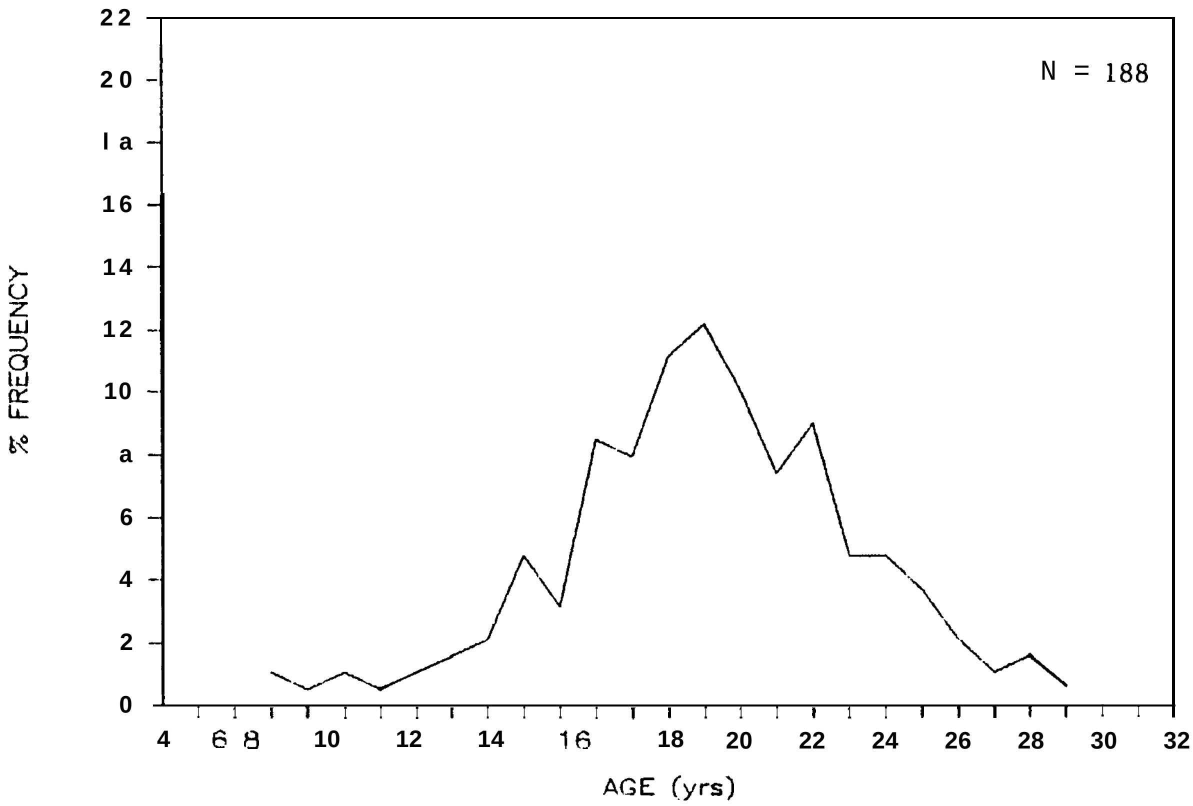

Fig. 14. Age-frequency distribution for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

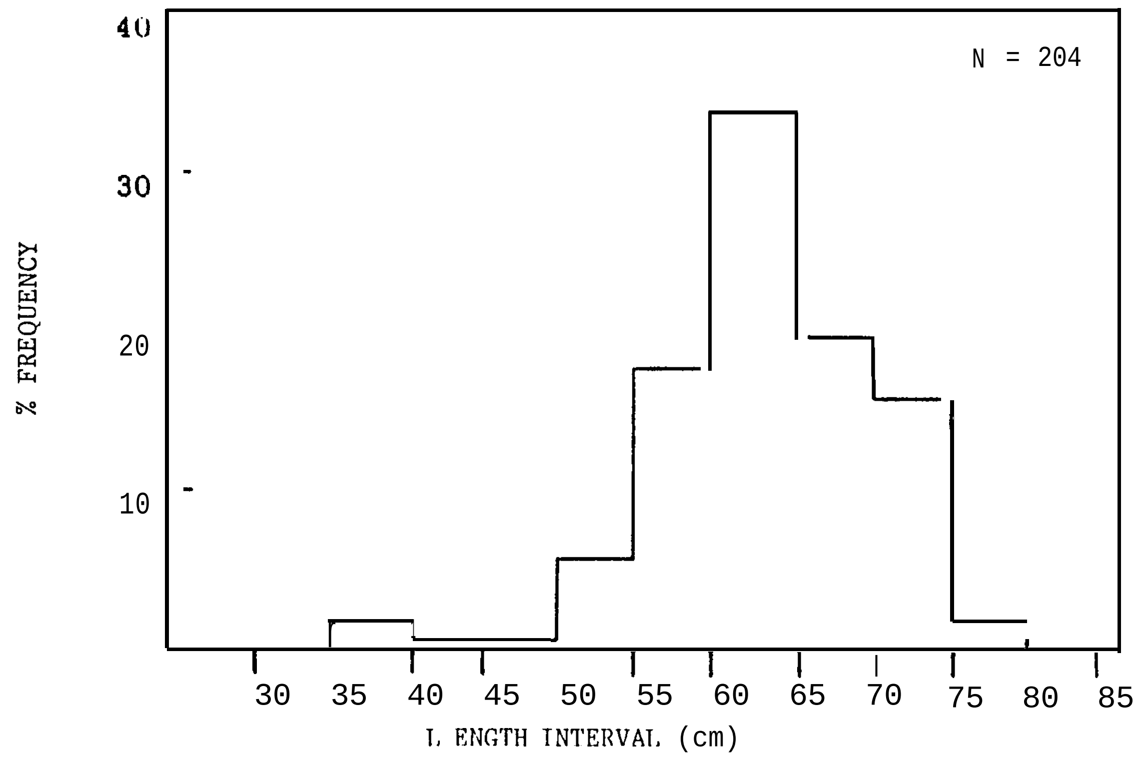

Fig. 15. Length-frequency distribution for Arctic charr taken from Neergaard R., Aug. 13 - Sept. 9, 1985.

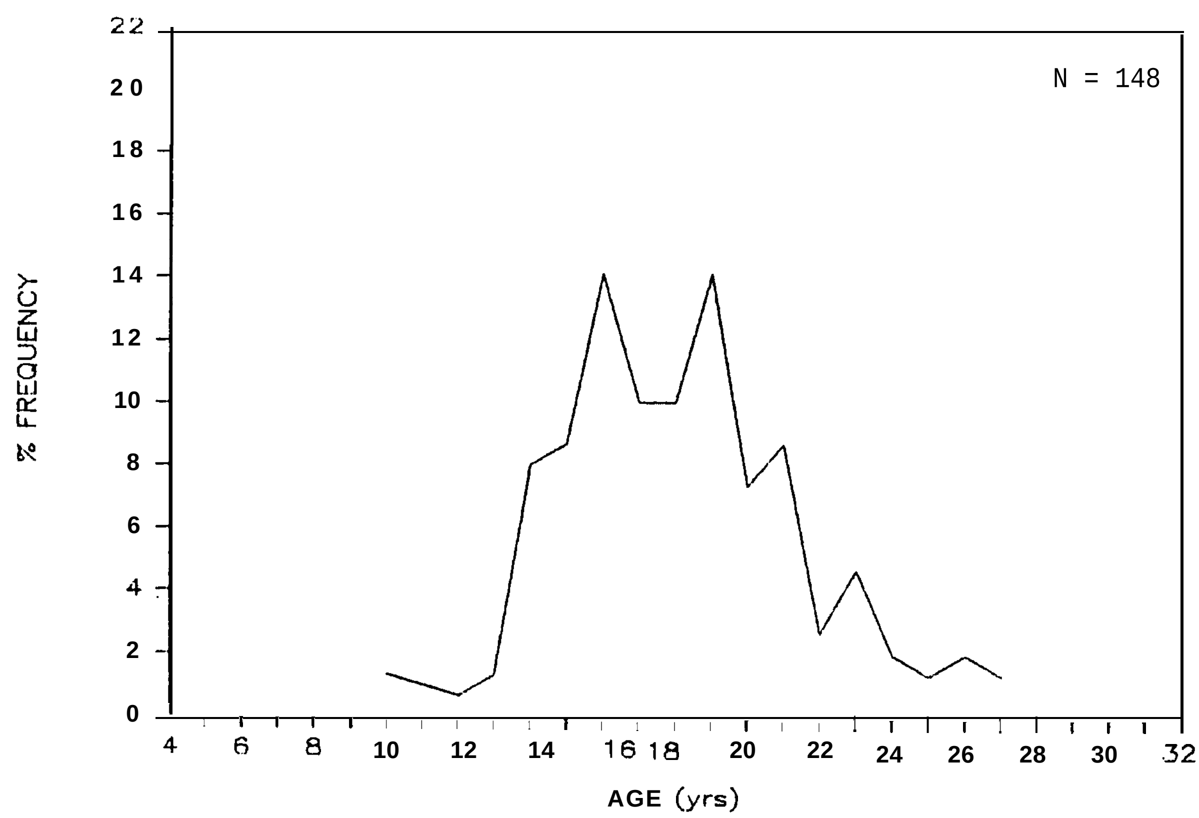

Fig. 16. Age-frequency distribution for Arctic charr taken from Neergaard R., Aug.]3 - Sept. 9, 1985.

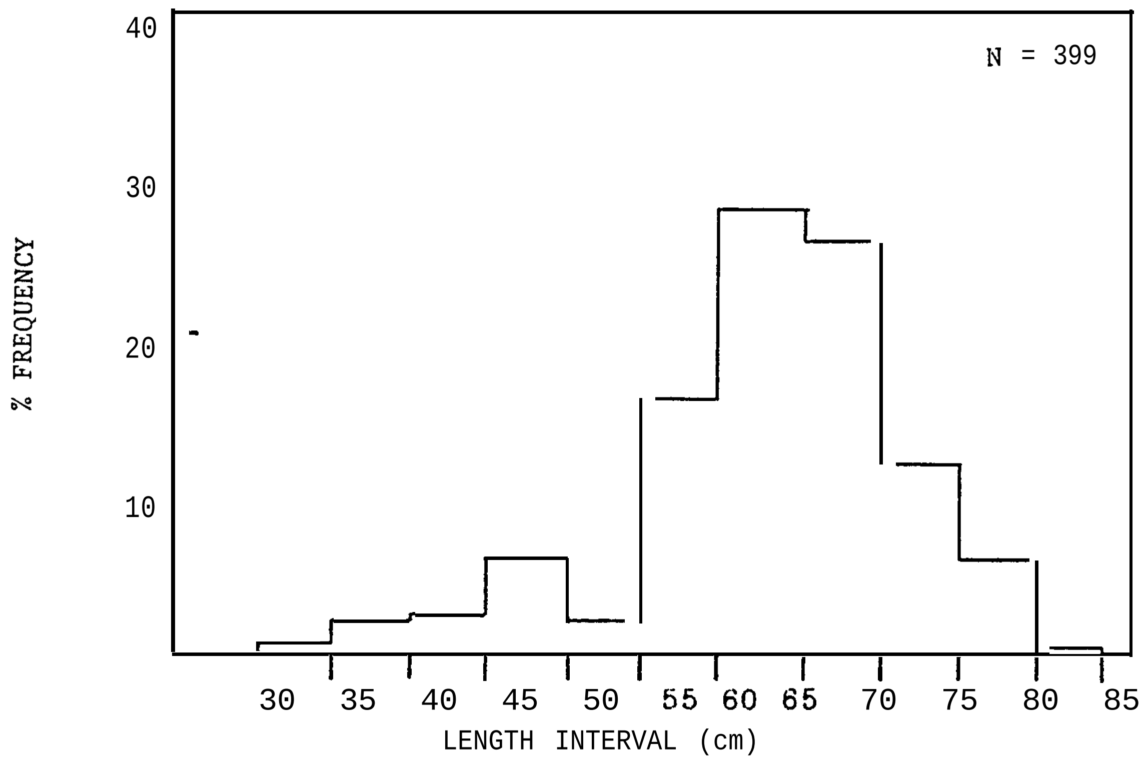

Fig. 17. Length-frequency distribution for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

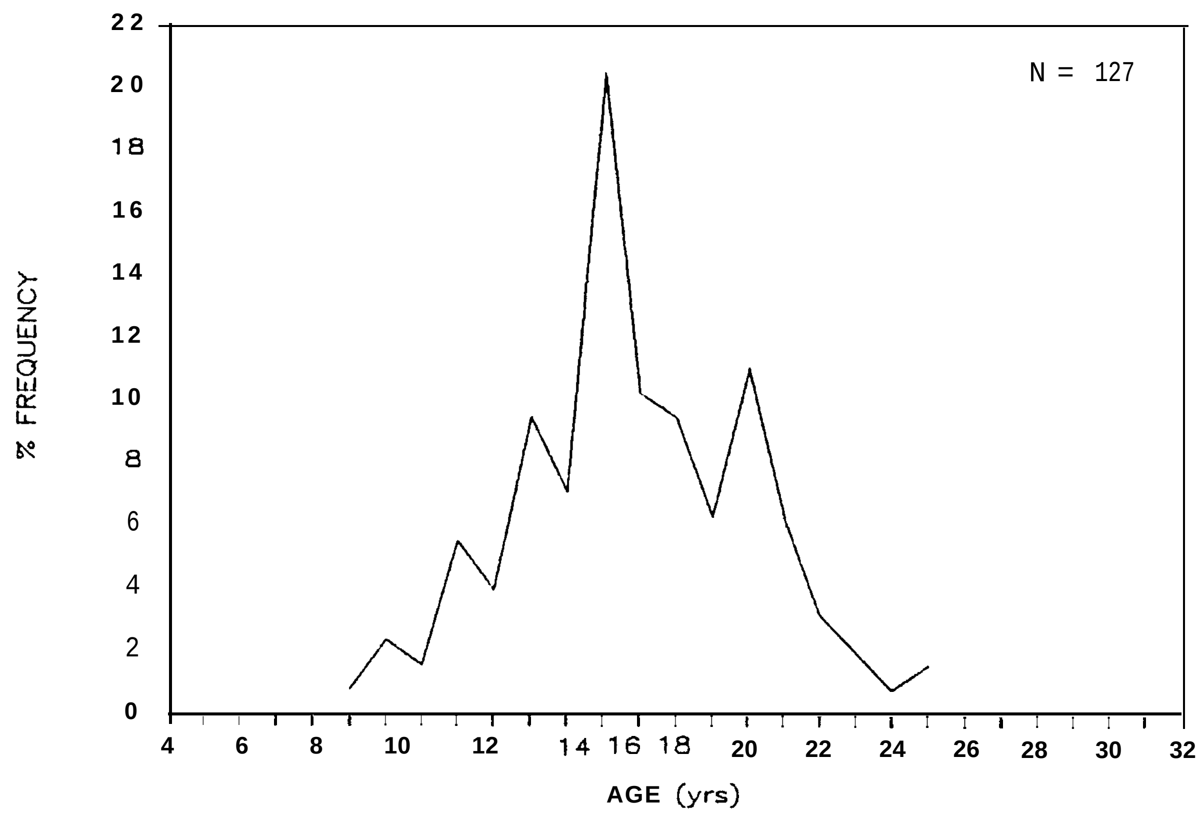

Fig. 18. Age-frequency distribution for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

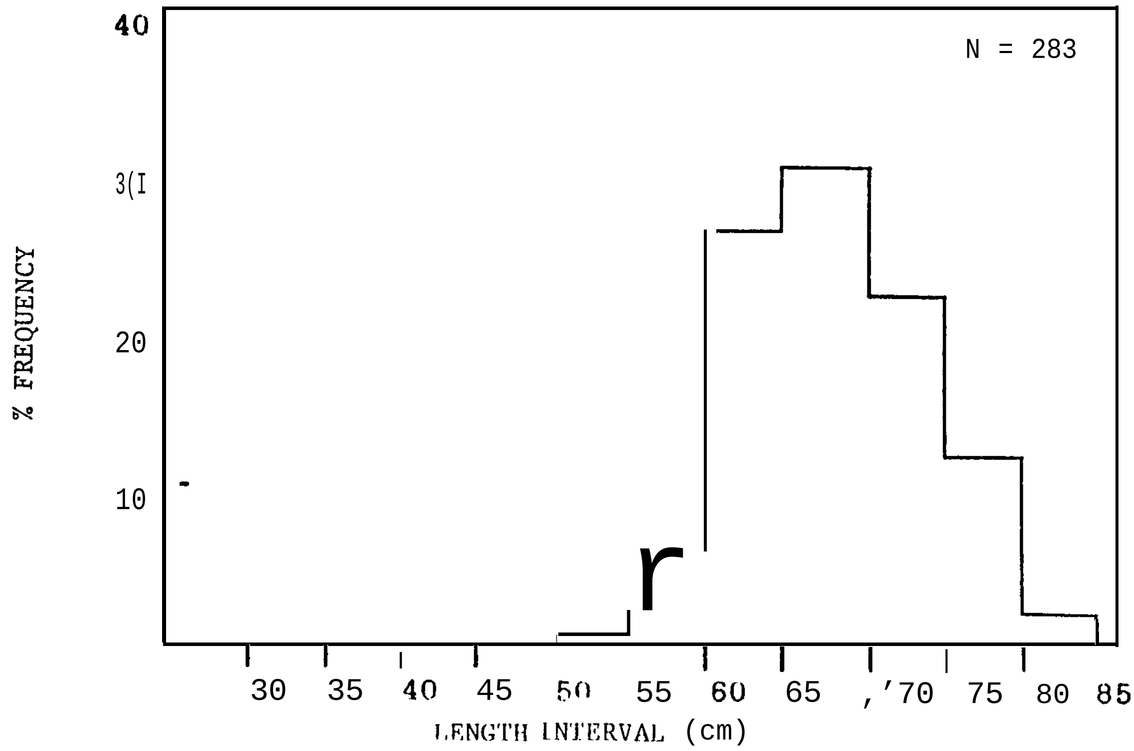

Fig. 19. Length-frequency distribution for Arctic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

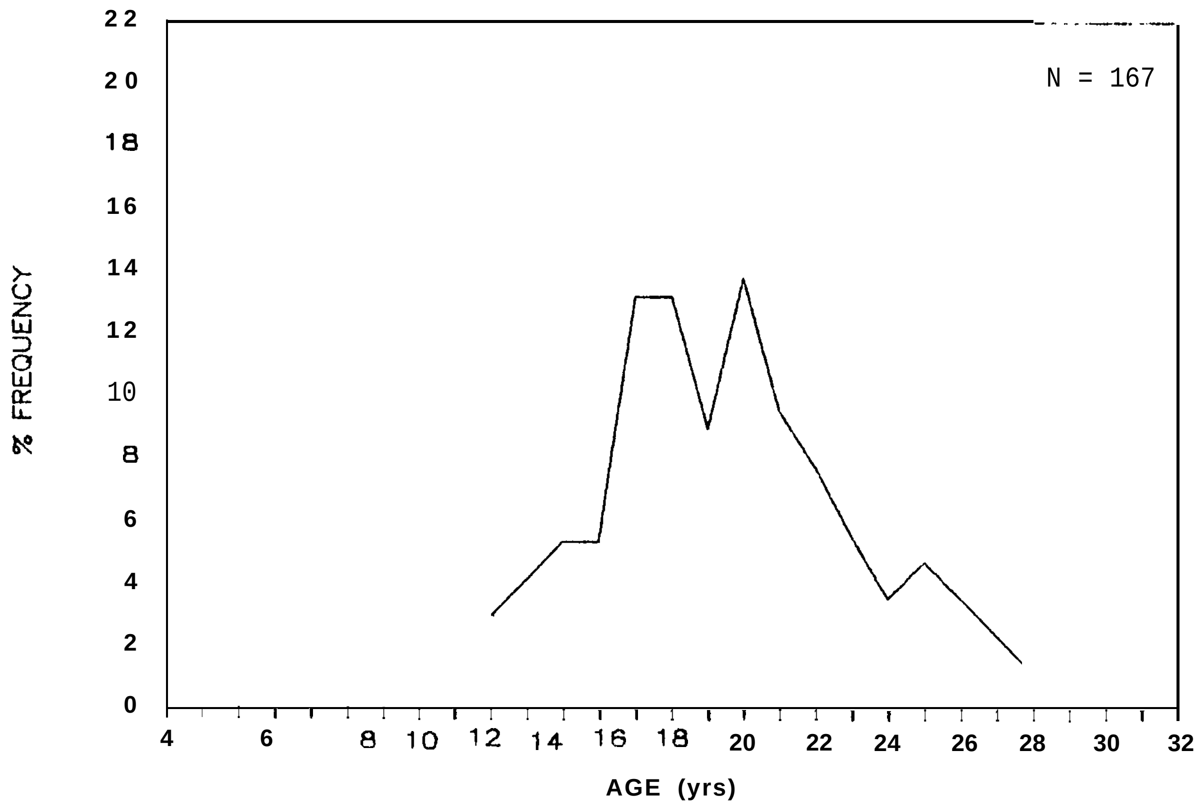

Fig. 20. Age-frequency distribution for Arctic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

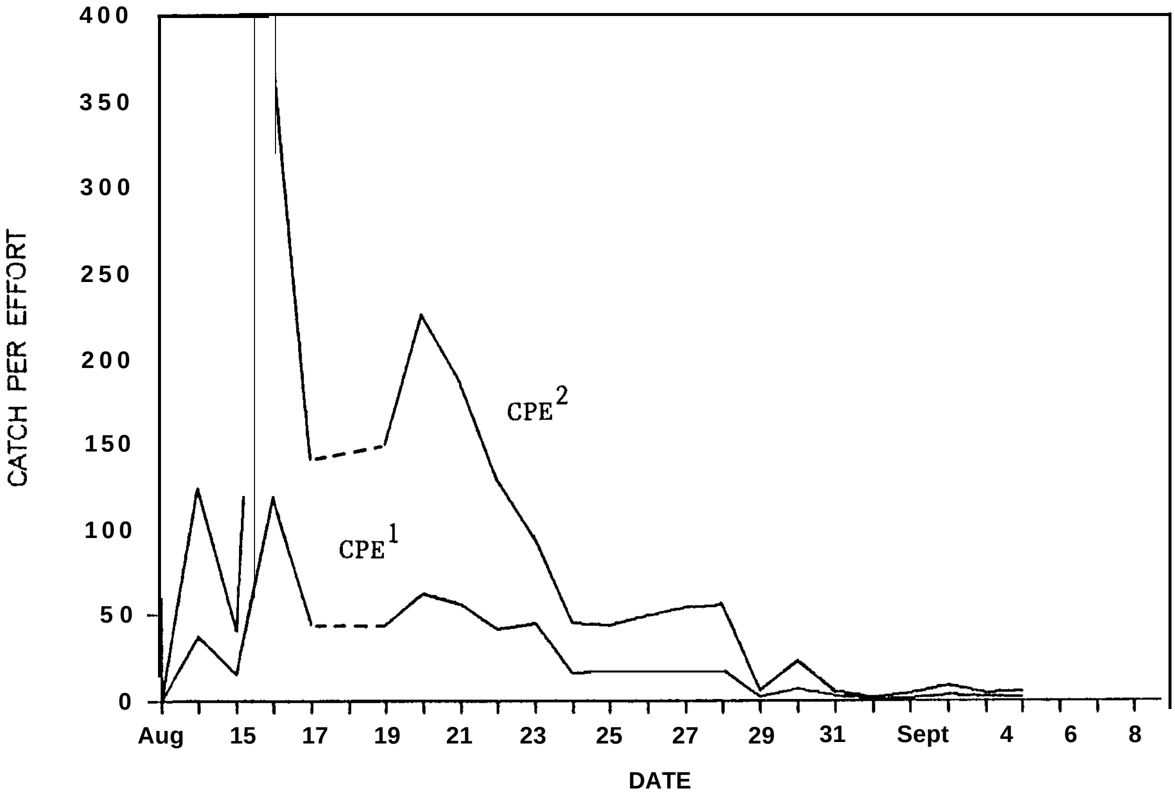

Fig. 21. Daily catch-effort over time for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

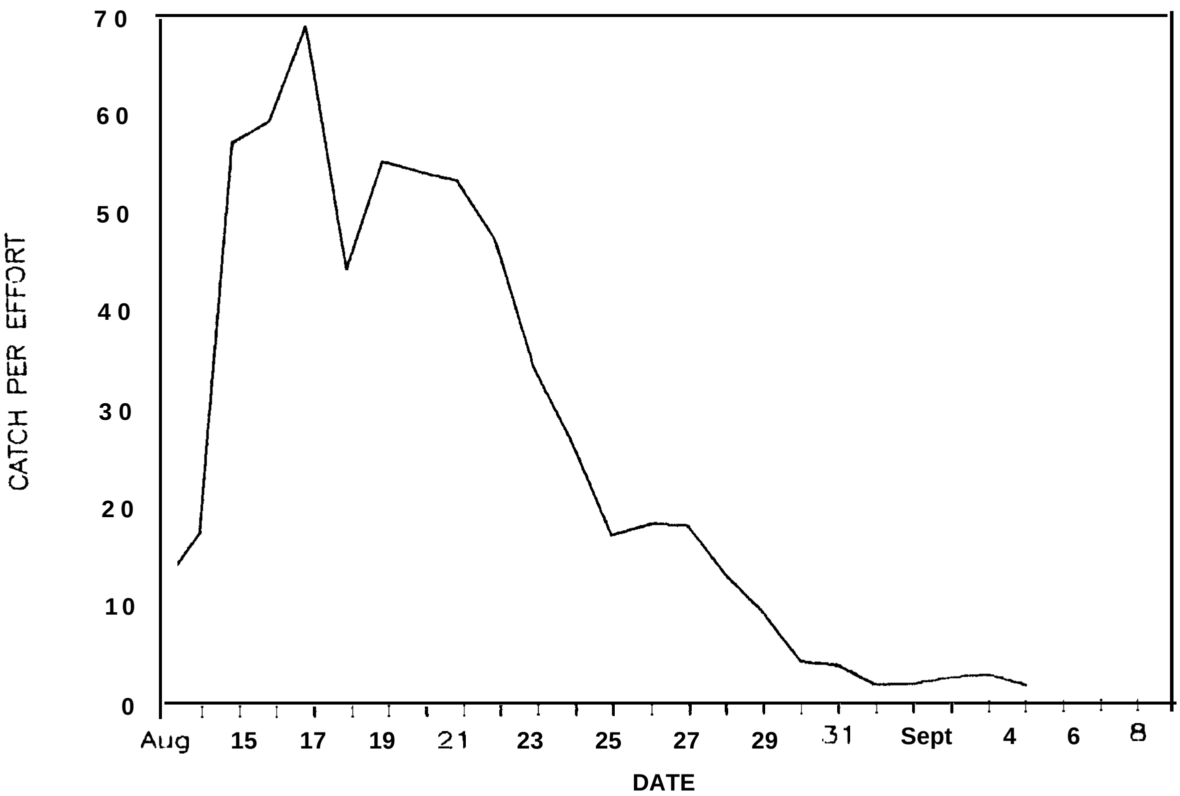

Fig. 22. Temporal representation of the upstream run of Arctic charr at Rowley R., Aug. 13 - Sept. 5, 1985 (using enhanced values of CPE_1 = no. of fish/100m/24 hrs.).

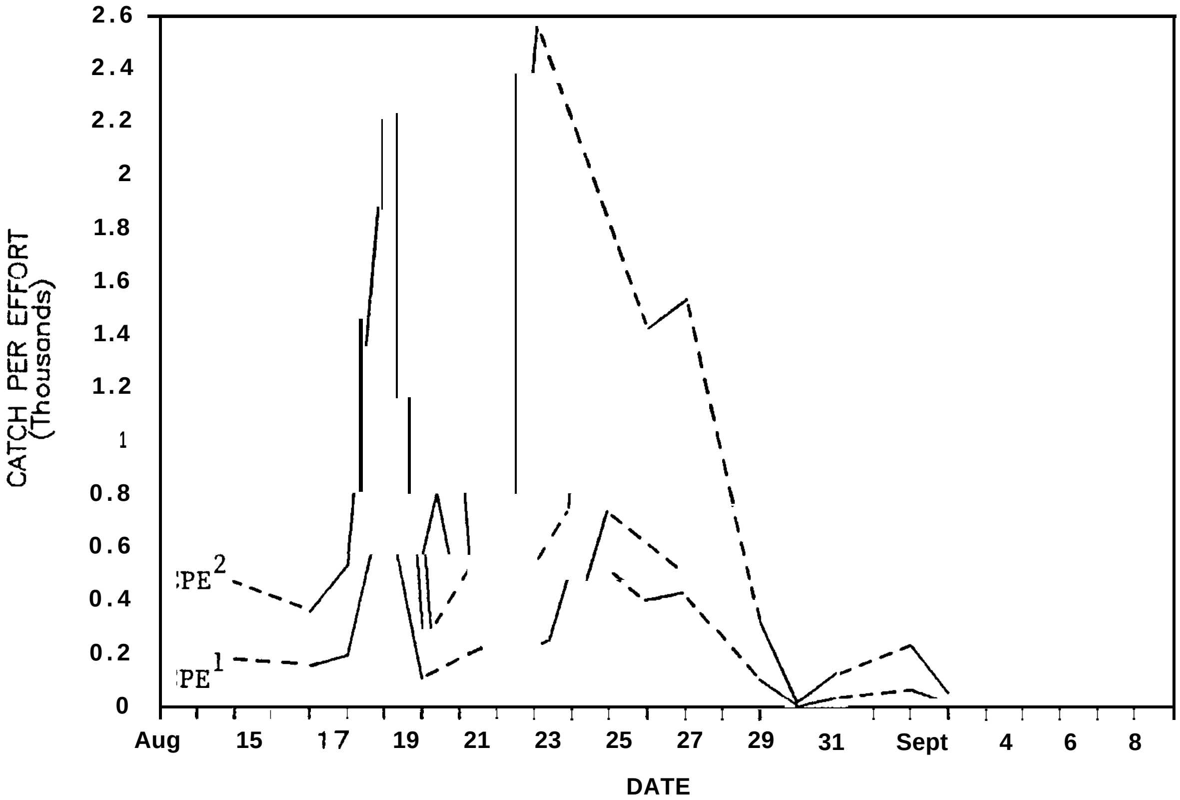

Fig. 23. Daily catch-effort over time for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

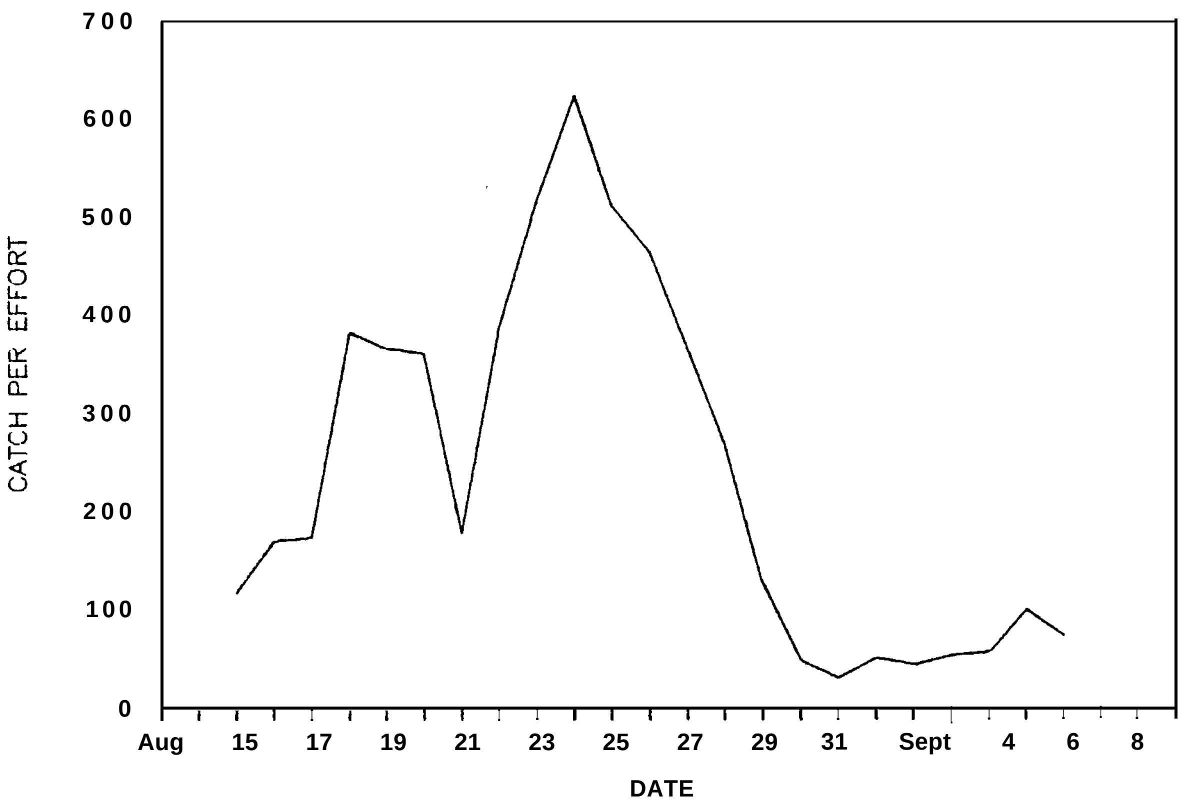

Fig. 24. Temporal representation of the upstream run of Arctic charr at Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985 (using enhanced values of CPE^1 = no. of fish/100m/24 hrs.).

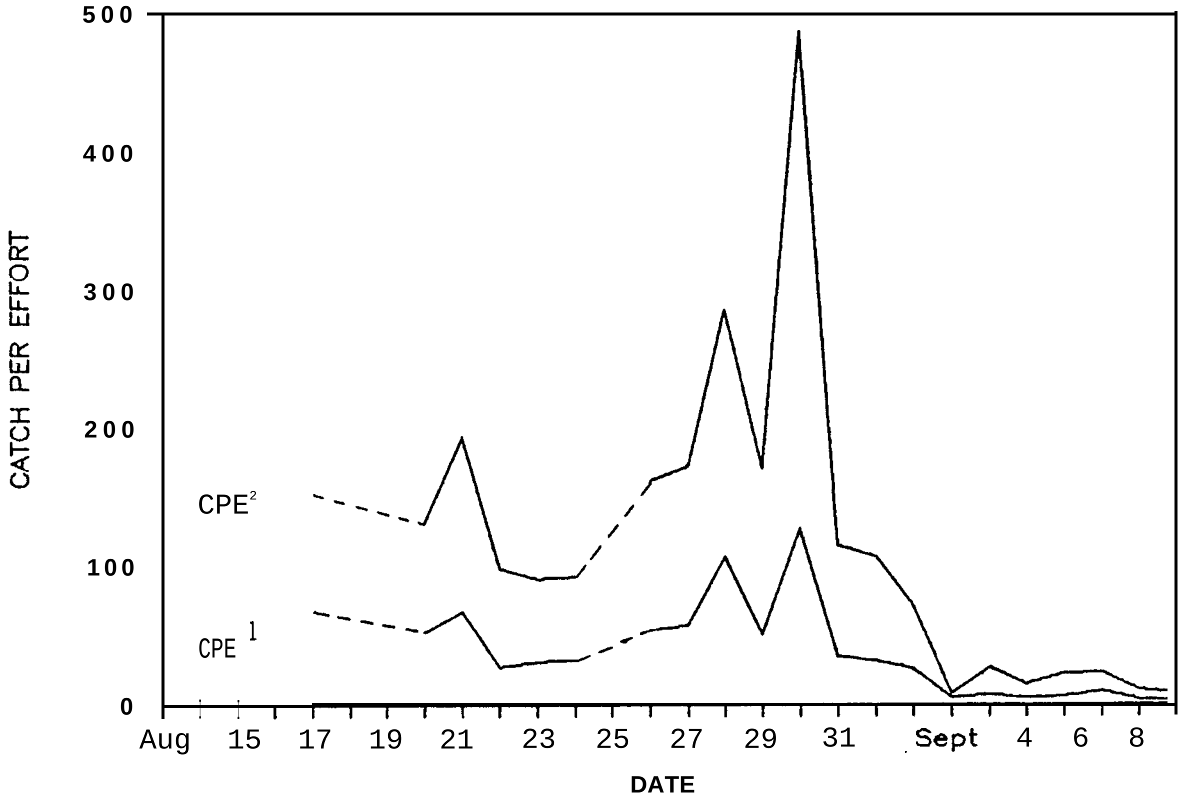

Fig. 25. Daily catch-effort over time for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

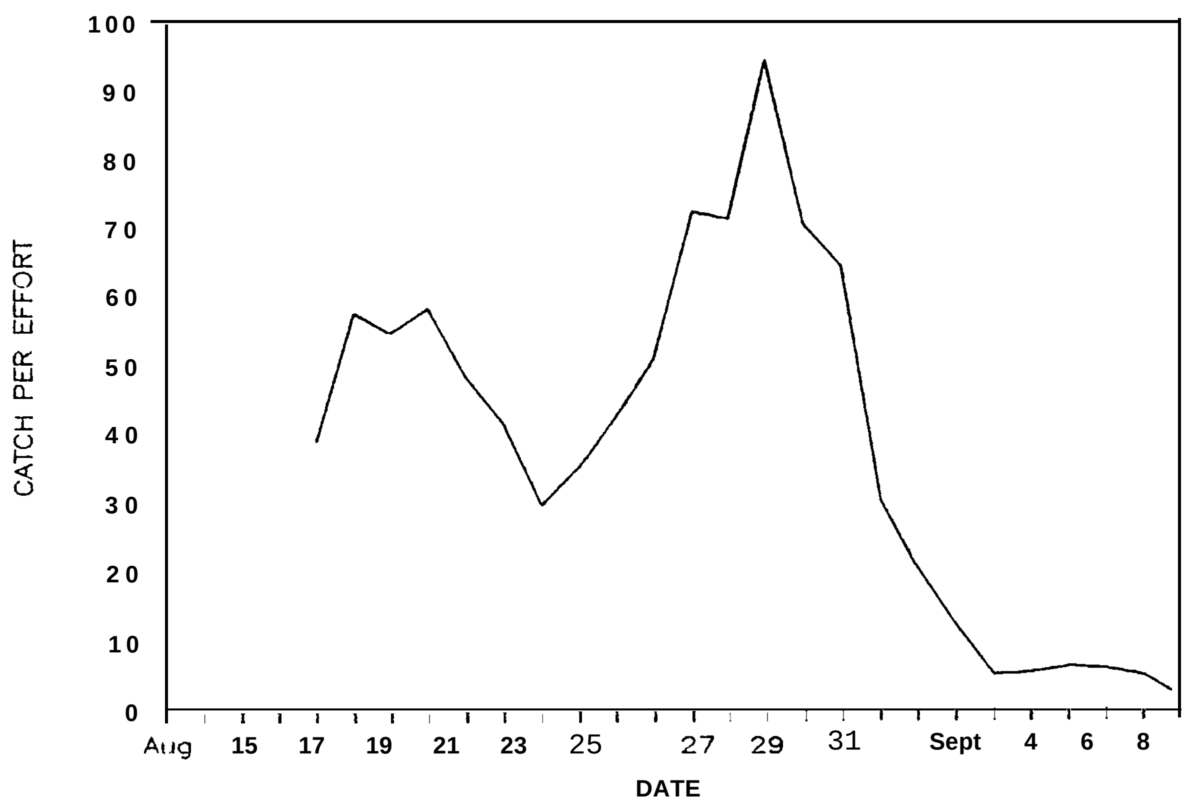

Fig. 26. Temporal representation of the upstream run of Arctic charr at Cockburn R., Aug. 17 - Sept. 9, 1985 (using enhanced values of CPE_1 = no. of fish/100m/24 hrs.).

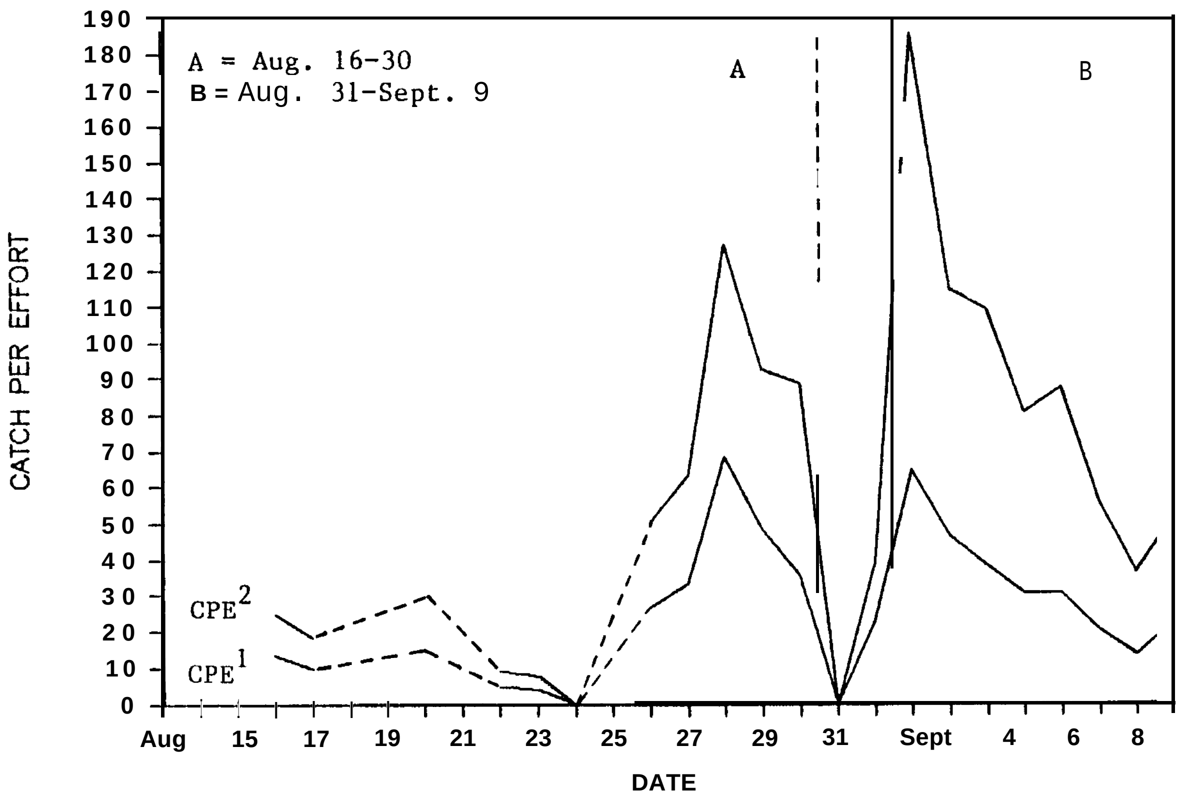

Fig. 27. Daily catch-effort over time for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

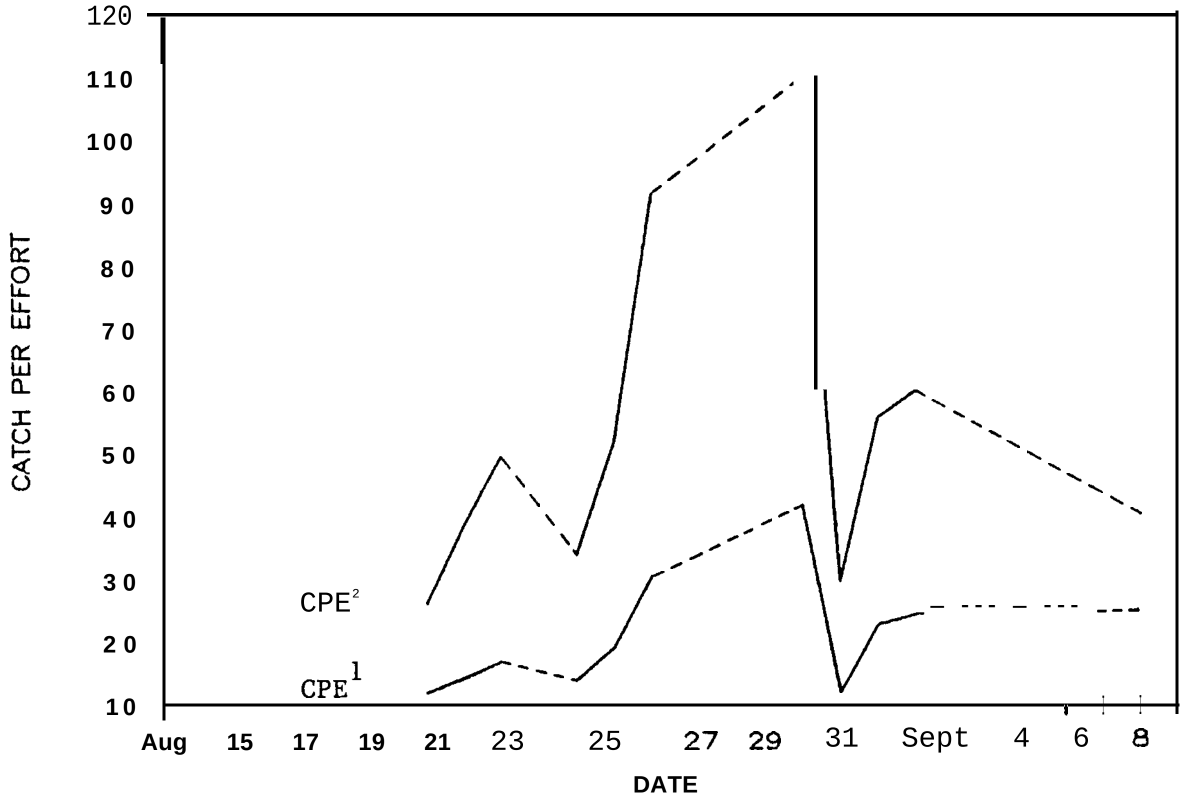

Fig. 28. Daily catch-effort over time for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985.

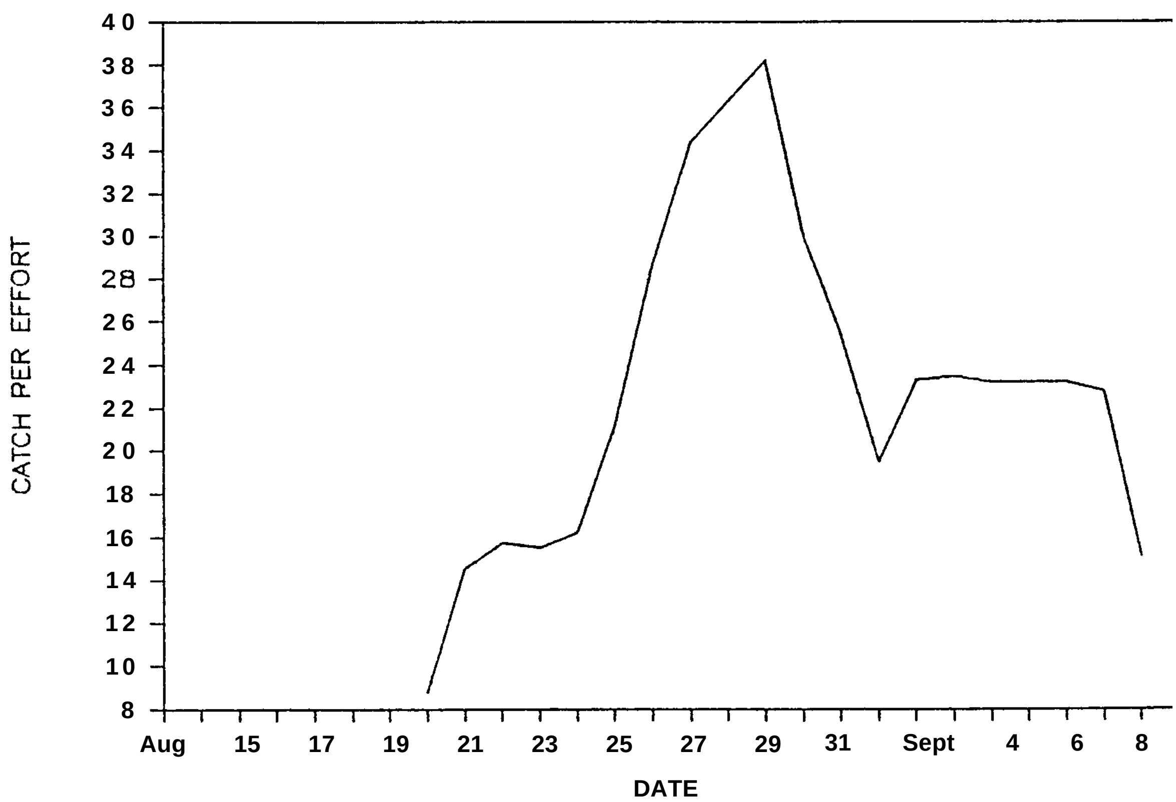

Fig. 29. Temporal representation of the upstream run of Arctic charr at Harder R., Aug. 20 - Sept. 8, 1985 (using enhanced values of CPE[1] = no. of fish/100m/24 hrs.).

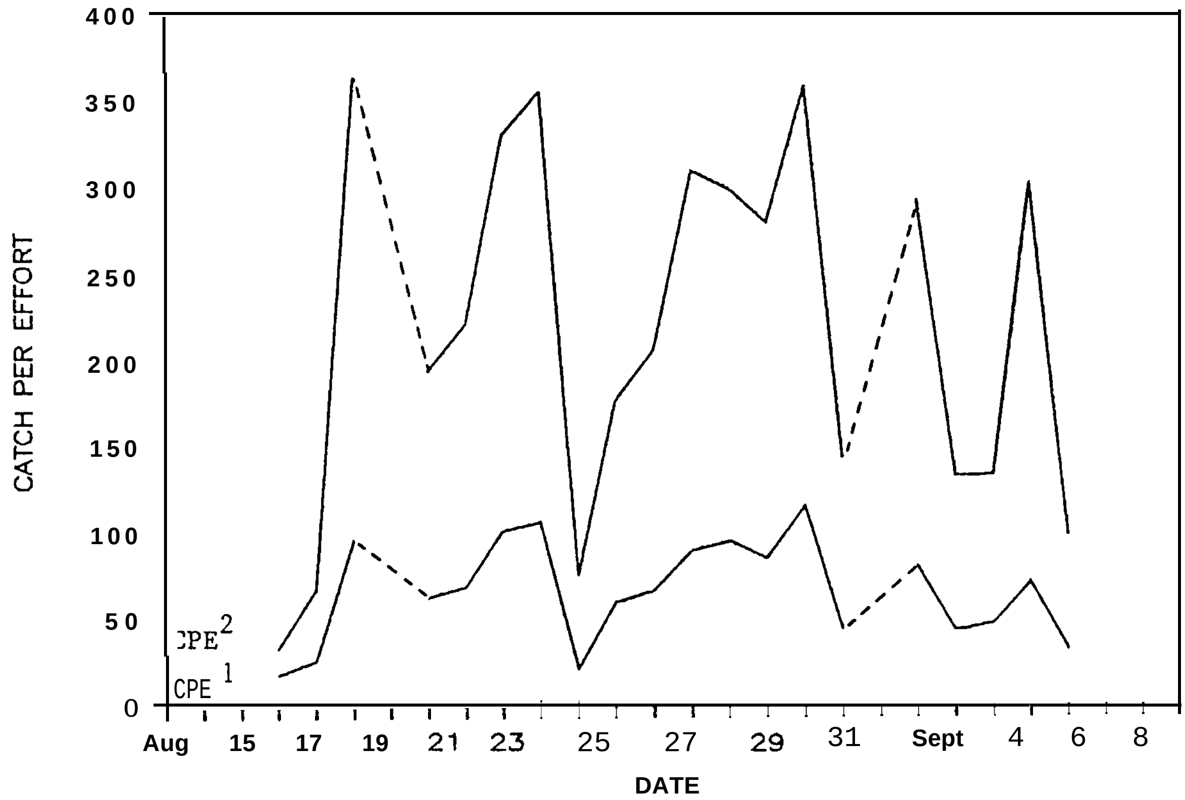

Fig. 30. Daily catch-effort over time for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

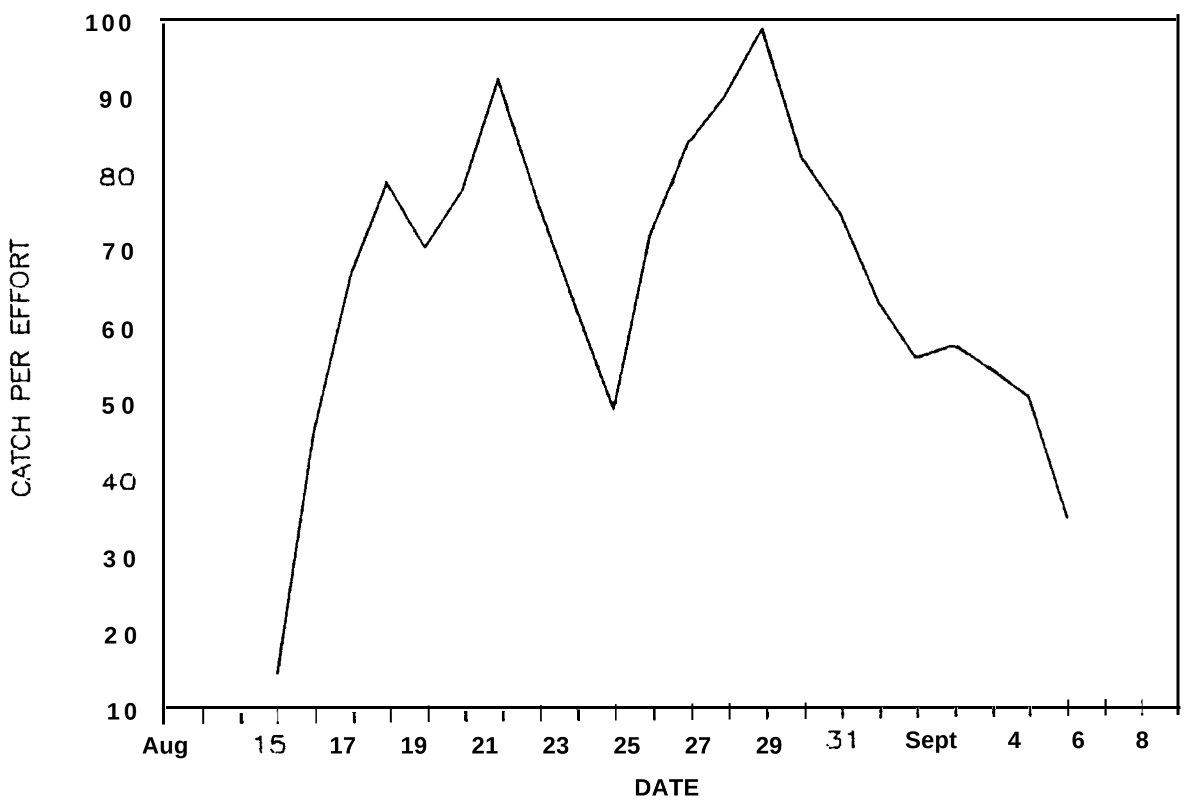

Fig. 31. Temporal representation of the upstream run of Arctic charr at Ravn R., Aug. 16 - Sept. 6, 1985 (using enhanced valued of $\overline{CPE}_1$ = no. of fish/100m/24 hrs.).

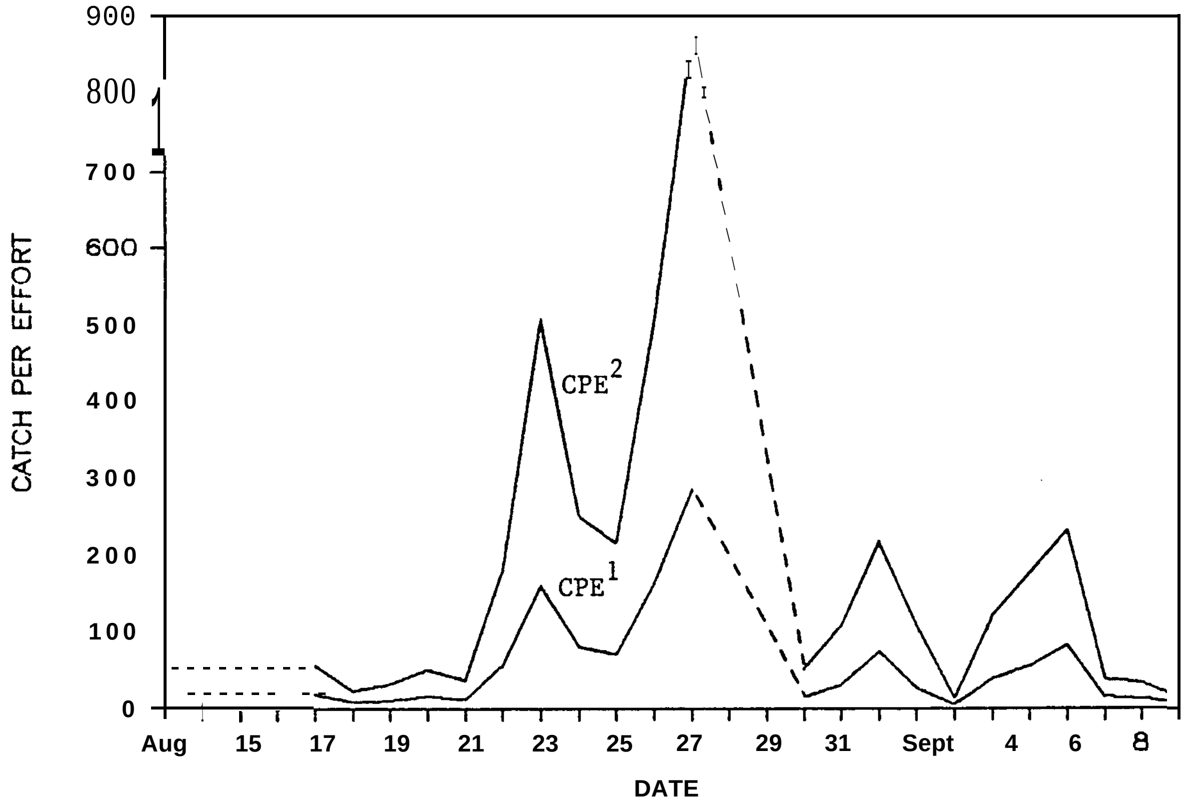

Fig. 32. Daily catch-effort over time for Arctic charr taken from Neergaard R., Aug. 13 - Sept. 9, 1985.

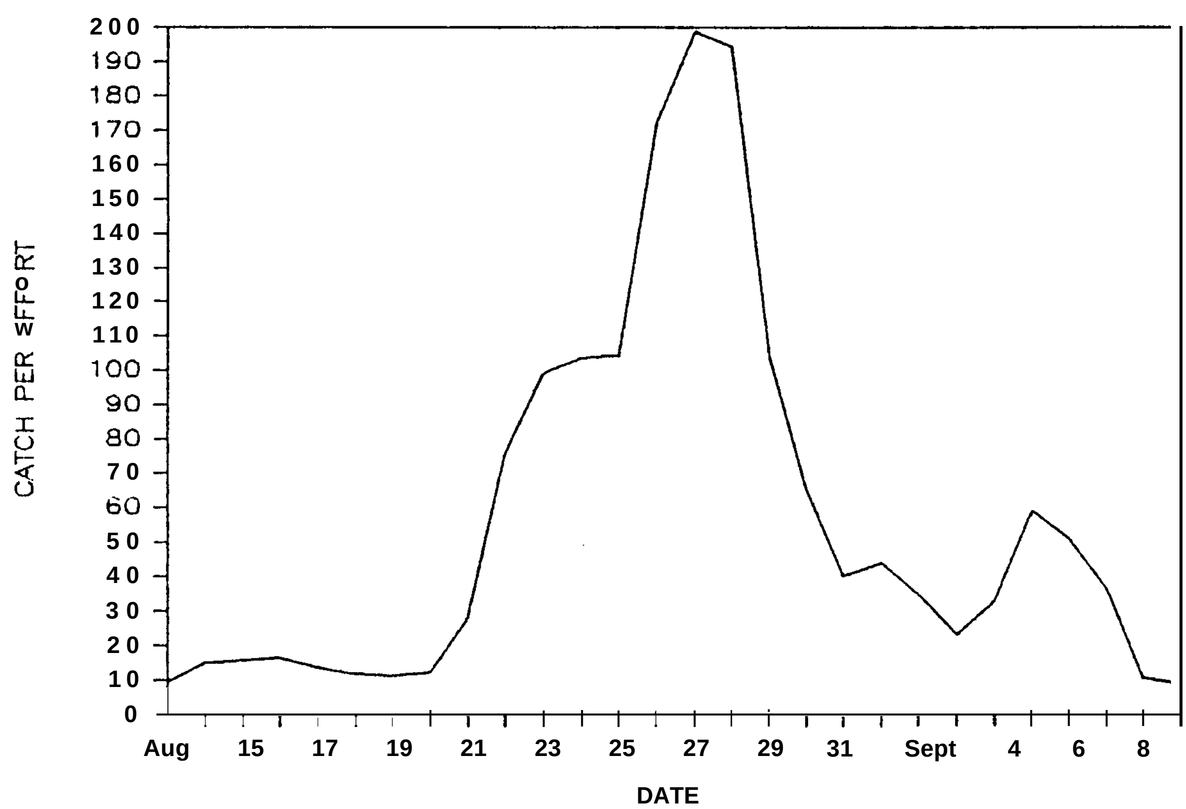

Fig. 33. Temporal representation of the upstream run of Arctic charr at Neergaard R., Aug. 13 - Sept. 9, 1985 (using enhanced valued of CPE^1 = no. of fish/100m/24 hrs.).

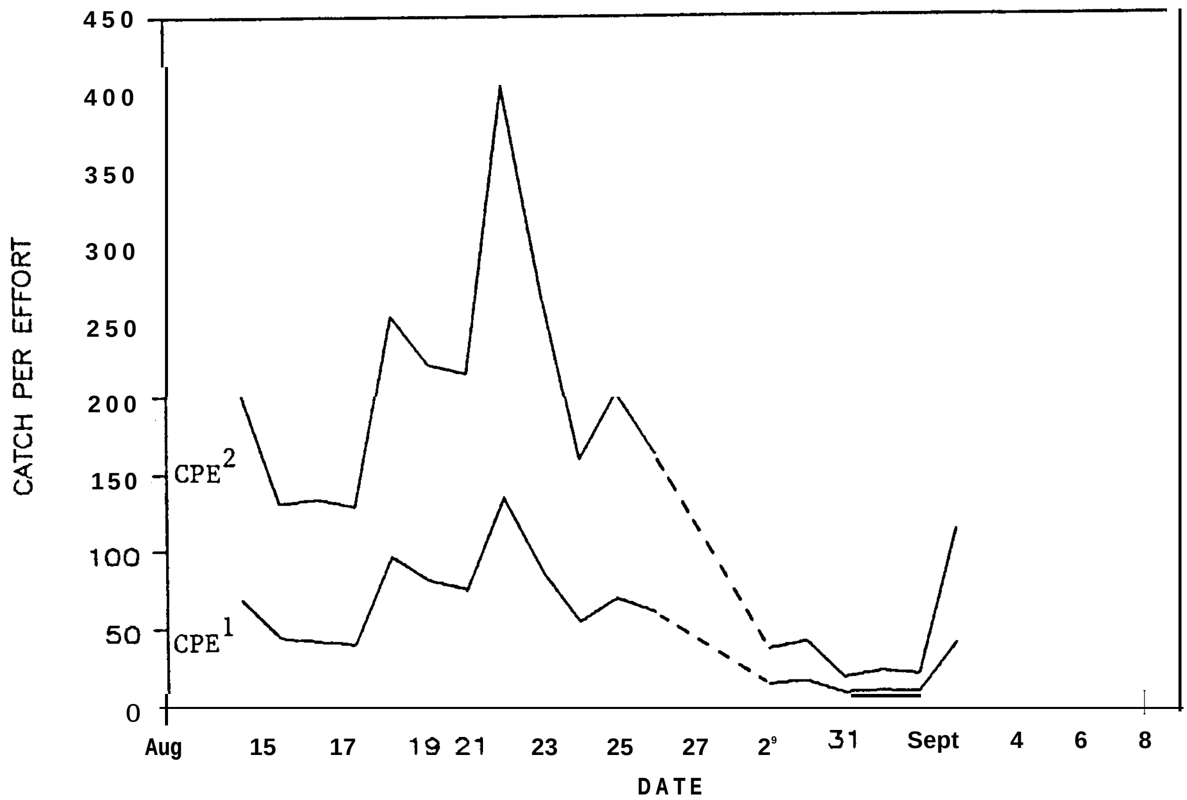

Fig. 34. Daily catch-effort over time for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

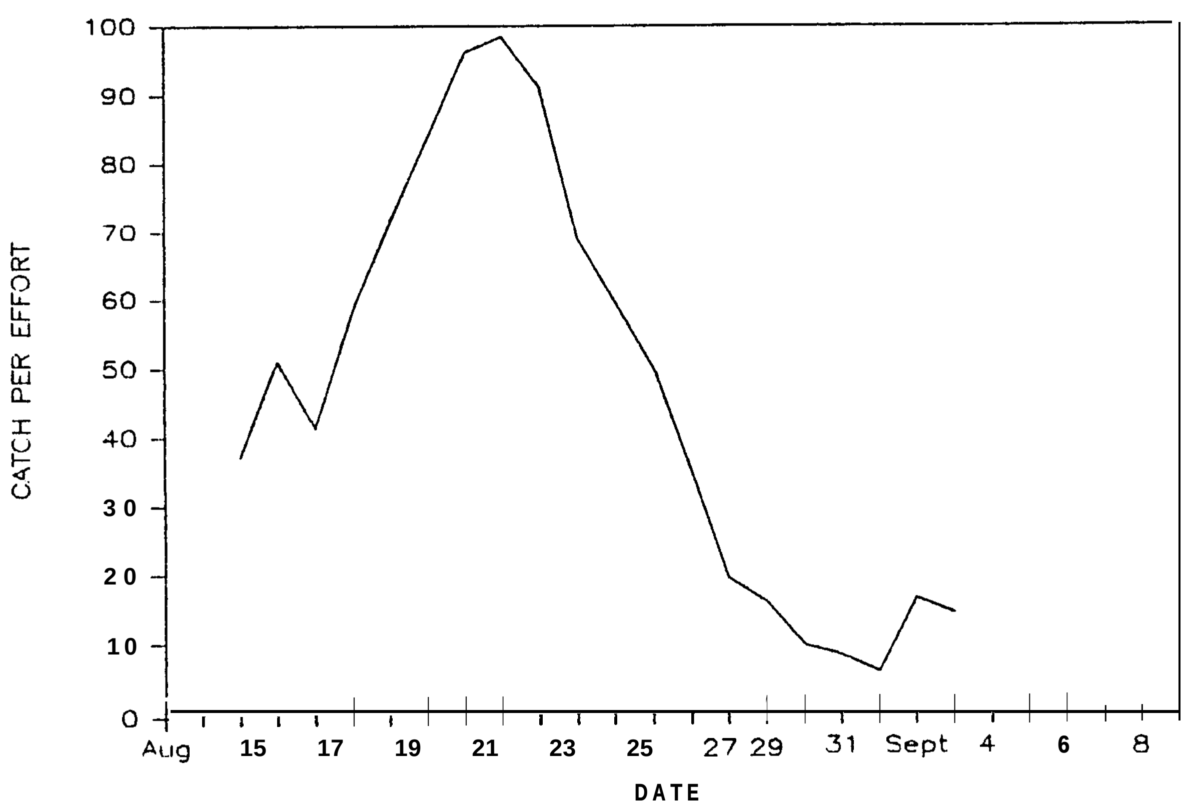

Fig. 35. Temporal representation of the upstream run of Arctic charr at Isortoq R., Aug. 15 - Sept. 3, 1985 (using enhanced valued of CPE = no. of fish/100m/24 hrs.).

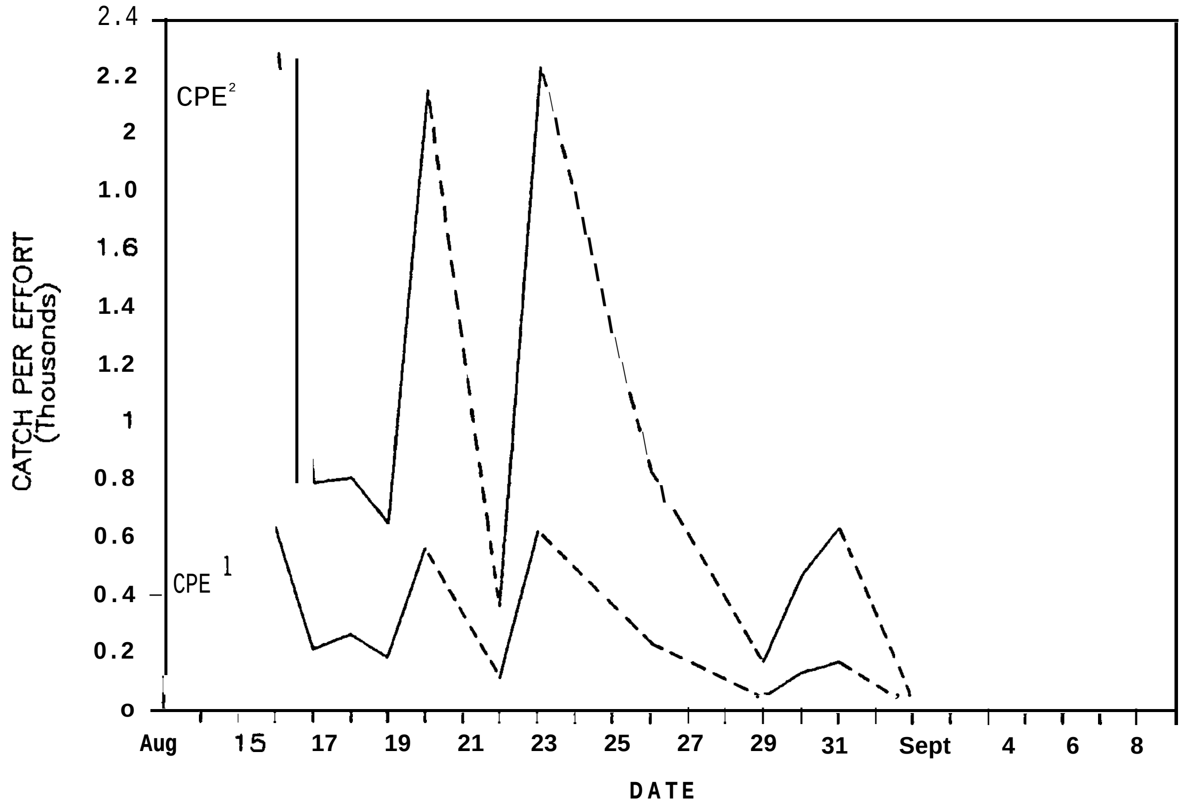

Fig. 36. Daily catch-effort over time for Arctic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

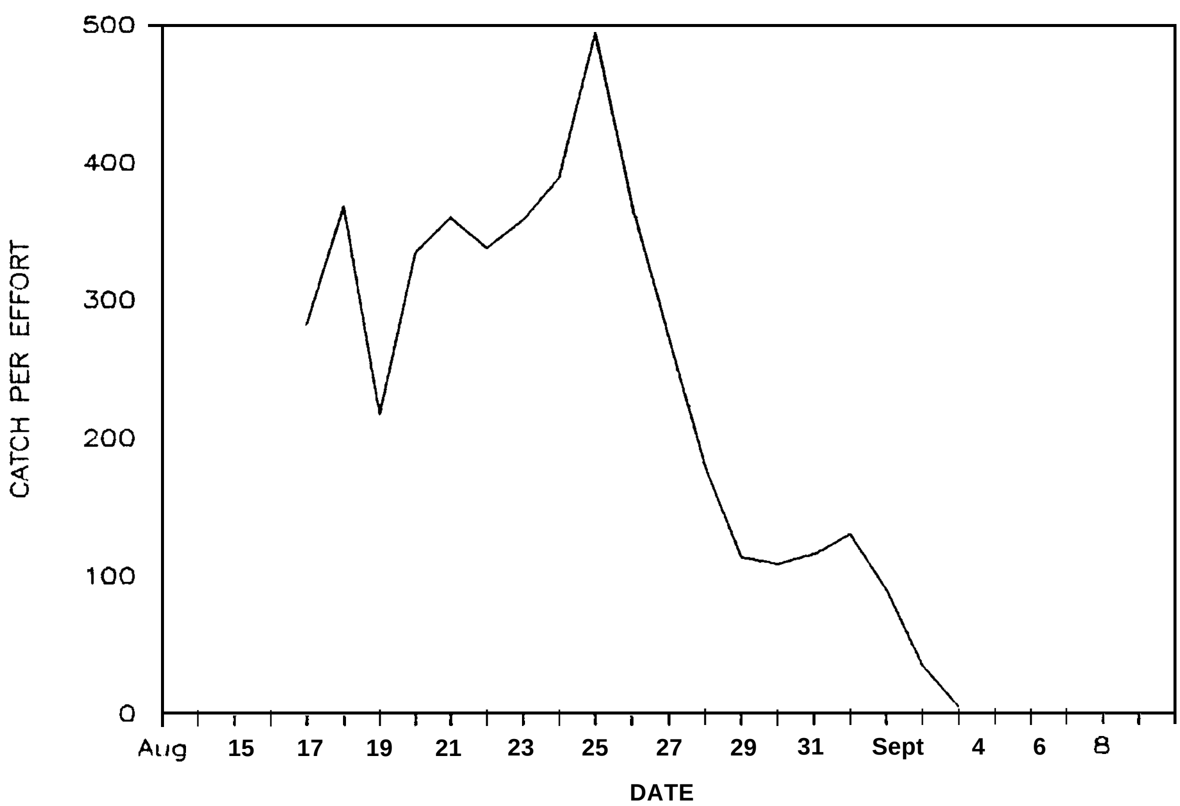

Fig. 37. Temporal representation of the upstream run of Arctic charr at Qulurnilik R., Aug. 16 - Sept. 3, 1985 (using enhanced valued of CPE = no. of fish/100m/24 hrs.).

APPENDIX I

Table 31. Biological data by age class for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

	MALES							FEMALES							COMBINED						
AGE		LENGTH(MM)		WEIGHT(G)			%		LENGTH (MM)		WEIGHT (G)			%		LENGTH(MM)		WEIGHT(G)			%
(YR)	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
10	1	397	-	650	-	1.04	o	1	482	-	1200	-	1,07	100	2	440	60.1	925	389	1, 06	50
11	3	542	89.7	2067	929	1.23	33	1	584	-	2250	-	1.13	100	4	552	76.2	2113	7b4	1.20	50
12	2	523	156,4	1950	1768	1.13	0	-	-	-	-	-	-		2	523	158.4	1950	768	1.13	0
13	3	656	17.8	3402	131	1,21	67	5	634	60.8	3120	639	1.22	80	8	b42	48.3	322b	509	1.22	75
14	3	643	72,5	3292	1132	1.21	67	3	b39	32.4	3050	b50	1.16	67	b	641	50.3	3171	836	1.18	67
15	7	635	75.8	3157	1286	1,17	57	2	588	39.6	2400	990	1015	100	9	624	70.2	2989	214	1.16	67
lb	18	b50	45,3	3236	753	1.16	72	8	626	51,0	2938	708	1.17	100	27	b43	46. 6	3152	725	1,17	78
17	18	664	52. 8	34B5	886	1.17	72	3	604	5.3	2867	126	1.30	100	22	652	54.4	3367	838	1.20	73
18	17	650	58.9	3379	1184	1.18	88	3	662	61. 6	3550	1011	1.20	100	20	b52	57.8	3405	1136	1.19	96
19	14	669	40,0	3623	8S7	1,19	93	5	570	96.4	2280	112?	1.12	100	19	b43	72.3	3270	1087	1.17	95
20	lb	667	53,3	3542	928	1,17	100	5	667	34.7	3240	345	1.10	100	21	667	48,7	3470	829	1.15	100
21	b	711	58.5	410B	942	1414	100	4	683	30.8	3600	414	1.13	100	10	700	4?.3	3905	787	1.14	1(IO
22	9	711	32,7	3844	600	1,07	100	2	670	30.4	3575	4b0	1.19	100	11	703	35.1	3795	5b7	1.09	100
23	3	710	60. 0	4067	1300	1.11	1O(I	-	-	-	-	-	-		3	710	60. 0	40b7	130(1	1.11	100
24	2	665	17.7	3225	177	1,10	100	-	-	-	-	-	-		2	665	17.7	3225	177	1.10	100
25	4	702	38.8	3869	1034	1.10	100	-	-	-	-	-	-		4	702	38.8	3869	1034	1.10	100
26	2	657	65.8	3300	849	1.16	50	1	562	-	1550	-	0.87	100	3	625	71.7	2717	1175	1.06	67
27	2	616	62.2	3075	1167	1,28	100	1	741	-	3300	-	0,81	100	3	658	84,5	3150	835	1.12	10CI
TOTAL	130							44							176						
MEAN		b59	65	3422	995	1.16			629	64.5	2949	B07	1.15			651	66. 0	3300	966	1.16	
MEAN AGE 18.1																					

Table 32. Biological data by length interval for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH (MM) MEAN	MALES WEIGHT (G) MEAN	MALES WEIGHT (G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) titan	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED HEIGHT(G) MEAN	COMBINED HEIGHT(G) SD	COMBINED K
350	1	397	650	-	1,04	0	-	-	-	-	-	-	4	386	638	131	1,10
400	2	426	850	212	1.09	0	1	427	750	-	0.94	100	4	429	883	169	1.11
450	1	495	1200	-	0,99	0	1	482	1200	-	1.07	100	4	481	1200	0	1.08
500	2	537	1525	106	0,99	100	2	523	1600	71	1,12	100	10	527	1623	271	1,11
550	9	5B4	23b9	159	1.19	56	6	574	2117	388	1,12	100	37	579	2319	281	1,20
600	39	625	2902	282	1. 19	67	20	626	2883	200	1.18	90	112	b24	2066	299	1, 18
650	46	675	352b	442	1,15	93	15	668	3410	396	1,15	100	110	672	3474	510	1,14
700	22	723	4436	b40	1.17	100	6	723	400B	539	1,06	100	49	723	4335	723	1. 15
750	9	7b4	5178	632	1.16	100	1	760	5100	-	1.16	100	15	767	5090	b54	1.13
TOTAL	131						52						347				
MEAN		658	3416	993	1.16			b35	2996	833	1.14			644	3189	989	1,16

Table 33. Biological data by age class for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

AGE	HALES							FEMALES							COMBINED						
	LENGTH (MM)			WEIGHT(G)			%	LENGTH (MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%
(YR)	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SO	MEAN	SD	K	MAT	N	HEAN	SD	MEAN	SD	K	HAT
6	1	271	-	250	-	1,24	0	-	-	-	-	-	-		1	271	-	250	-	1,26	0
7	1	303	-	300	-	1.08	0	-	-	-	-	-	-		1	303	-	300	-	1.0B	0
10	1	420	-	700	-	0,94	0	-	-	-	-	-	-	-	1	420	-	700	-	0.94	0
11	2	486	97,6	1300	707	1.08	O	-	-	-	-	-	-		2	486	97,6	1300	707	1.08	O
13	2	594	111,0	2565	1294	1.18	50	-	-	-	-	-	-		2	594	111.0	2565	1294	1.18	50
14	5	562	96.2	2140	1104	1,11	60	-	-	-	-	-	-		5	562	96,2	2140	1104	1,11	60
15	4	613	60.8	2648	920	1.12	50	3	53B	92s7	lb77	928	1,00	100	7	581	79,4	2231	990	1,07	71
16	B	619	84.5	2858	1321	1.14	50	3	602	39, B	2417	584	1,09	67	11	614	73.3	2737	1154	1,13	55
17	10	631	38.9	2768	746	1.08	70	3	619	24,6	2717	225	1,15	100	13	628	35, b	2756	653	.10	77
18	9	674	75, B	3814	1462	1,19	67	7	592	54,2	2560	805	1,19	86	16	630	77. 6	3266	1346	.19	7s
19	16	653	58.0	3158	651	1,13	81	3	614	22, B	2B40	618	1,22	100	19	647	5505	310B	640	.15	84
20	7	666	94.6	33b7	1494	1.06	57	b	615	41,7	2382	460	1,01	100	13	643	76.8	2912	1211	.04	77
21	4	693	39,7	37BB	342	1,15	100	3	624	33,0	25B3	723	1,05	100	7	663	50,3	3271	B05	.10	100
22	5	66B	38.3	3322	691	1,10	100	4	665	57.2	3318	741	1.12	100	9	666	44,3	3320	667	.11	100
23	6	656	101. 8	3267	1196	1.18	83	-	-	-	-	-	-		6	656	101.8	3267	1196	1.18	83
24	2	735	137,2	4150	2546	0,97	100	3	651	3B.7	3267	1012	1,16	100	5	6B5	87.0	3620	1538	1.08	100
25	4	698	50,2	3475	1057	1,03	100	1	614	-	2B00	-	1,21	100	5	681	57,6	3340	964	1s07	100
26	3	741	20,6	5283	189	1.30	100	I	641	-	2350	-	0.89	100	4	716	52, b	4550	1475	1,20	100
31	1	713	-	3420	-	0,94	0	-	-	-	-	-	-	.	1	713	-	3420	-	0,94	0
TOTAL	91							37							128						
HEAN		63B	98	3100	1262	1,12			613	52,9	2625	738	1.11			631	87.9	2963	1153	1.12	
MEAN AGE 18,9																					

Table 34. Biological data by length interval for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH (MM) MEAN	MALES WEIGHT (G) MEAN	MALES WEIGHT (G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(HH) MEAN	FEMALES WEIGHT(G) HEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(HH) MEAN	COMBINED HEIGHT(G) MEAN	COMBINED HEIGHT(G) SD	COMBINED K
250	1	271	250	-	1.26	0	-	-	-	--		-	1	271	250	-	1,26
300	1	303	300	-	1.08	0	-	-	-	--		-	1	303	300	-	1.08
350	-	-	-	--		-	-	-	-	--		-	1	395	650	-	1,05
400	2	419	750	71	1,02	0	1	442	850	-	0.98	100	4	423	775	65	1,02
450	5	473	1290	373	1,22	0	1	493	1250	-	1,04	100	14	479	1179	270	1,07
500	2	526	1595	78	1,10	0	1	545	1500	-	0,93	100	16	533	1484	180	0.98
550	12	572	2185	267	1.17	50	7	578	2029	277	1,05	71	48	517	2130	276	1.11
600	17	623	2459	512	1,02	71	19	619	2704	367	1,14	100	90	624	2679	390	1,10
650	33	677	3611	b23	1.16	85	7	668	3386	430	1.14	100	90	b75	3S13	572	1,14
700	9	724	4258	S00	1.12	89	1	729	4250	-	1,10	100	52	721	4069	636	1.08
750	8	7b7	4865	824	1.08	100	-	-	-	-	-	-	21	769	4994	649	1.10
800	1	832	5950	-	1,03	100	-	-	-	-	-	-	3	816	5683	379	1,04
TOTAL	91						37						341				
HEAN		638	3100	1262	1.12			613	2625	738	1.11			640	3043	1130	1,10

Table 35. Biological data by age class for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

AGE	MALES							FEMALES							COMBINED						
	LENGTH (MM)			WEIGHT (G)			%	LENGTH (MM)			WEIGHT (G)			%	LENGTH (MM)			WEIGHT (G)			%
(YR)	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SO	MEAN	SD	K	MAT
11	1	493	-	1350	-	1.13	100	1	341	-	400	-	1.01	0	2	417	107.5	875	672	1.07	50
14	-	-	-	-	-	--	-	1	430	-	825	-	1,04	100	1	430	-	825	-	1,04	100
15	2	526	91,2	2038	1184	1.31	0	-	-	-	-	-	-	-	2	526	91.2	2038	1184	1.31	0
16	2	648	54.4	3125	742	1,14	100	-	-	-	-	-	-	-	2	648	54.4	3125	742	1.14	100
17	3	608	32,3	2900	912	1,27	100	-	-	-	-	-	-	-	3	608	32,3	2900	912	1,27	100
18	1	637	-	2900	-	1.12	100	2	616	19.8	2788	336	1.19	100	3	623	18.5	2825	246	1.17	100
19	1	671	-	3750	-	1.24	100	1	629	-	3550	-	1.43	100	2	650	29.7	3b50	141	1,33	100
20	4	732	64,1	4388	1254	1,10	100	-	-	-	-	-	-	-	4	732	64.1	4388	1254	1s10	100
21	2	717	50,9	4375	1025	1.18	100	-	-	-	-	-	-	-	2	717	50,9	4375	1025	1.18	100
22	3	748	25,0	4600	522	1,11	100	-	-	-	-	-	-	-	3	748	25,0	4600	522	1,11	100
23	2	699	50.2	4125	247	1,22	100	1	641	-	3100	-	1.18	100	3	679	48,6	3783	617	1,21	100
24	3	702	19,3	3967	379	1,15	100	-	-	-	-	-	-	-	3	702	19.3	3967	379	1.15	100
25	1	723	-	4300	-	1,14	100	-	-	-	-	-	-	-	1	723	-	4300	-	1,14	100
26	1	779	-	4400	-	0.93	100	-	-	-	-	-	-	-	1	779	-	4400	-	0,93	100
27	2	721	111,7	4400	2616	1,09	100	-	-	-	-	-	-	-	2	721	111.7	4400	2616	1.09	100
TOTAL	28							6							34						
MEAN		679	84	3742	1202	1.16			546	127,1	2242	1308	1,17			656	104.8	3477	1333	1,16	

MEAN ABE 19,9

Table 36. Biological data by length interval for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH(MM) MEAN	MALES WEIGHT (G) HEAN	MALES WEIGHT (G) SD	MALES K	MALES % HAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES HEIGHT(6) MEAN	FEMALES HEIGHT(6) SD	FEMALES K	FEMALES % HAT	COMBINED N	COMBINED LENGTH(MM) HEAN	COMBINED HEIGHT(6) HEAN	COMBINED HEIGHT(6) SD	COMBINED K
300		-	-	-	--	-	1	341	400	-	1,01	0	1	341	400	-	1,01
350	-	-	.	--	-	-	-	-	--		-		3	393	650	87	1,07
400		-	-	-	--	-	1	430	825	-	1,04	100	4	431	819	131	1,02
450	2	477	1275	106	1. 18	50	-	-	-	-	-	-	6	476	1150	145	1,07
500		-	-	-	--	-	-	.	-	.	.	-	4	526	1938	592	1,33
550	2	582	2588	407	1,31	50	-	-	-	-	-	-	16	576	2330	413	1,22
600	5	420	2890	616	1,17	100	4	626	3056	409	1,25	100	64	627	2904	422	1.17
650	7	683	3707	154	1,17	100	-	-	-	-	-	-	51	675	3430	475	1,12
700	b	717	4308	468	1,17	100	-	-	-	-	-	-	21	717	4114	548	1,11
750	4	764	4613	507	1,04	100	-	-	-	-	-	-	9	764	4622	630	1,04
BOO	2	814	6175	106	1,15	100	-	-	-	-	-	-	2	814	6175	106	1,15
TOTAL	28						b						181				
HEAN		679	3742	1202	1.16			546	2242	1308	1,17			638	3087	1024	1,14

Table 37. Biological data by age class for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

AGE	MALES							FEMALES							COMBINED						
	LENGTH (MM)			HEIGHT(G)			%	LENGTH(MM)			HEIGHT(B)			%	LENGTH(MM)			WEIGHT(G)			%
(YR)	N	MEAN	SD	MEAN	SD	K	MAT	N	HEAN	SD	MEAN	SD	K	MAT	N	HEAN	SD	MEAN	SD	K	HAT
7	1	334	-	400	-	1.07	0		-			-	-		1	334	-	400	-	.07	0
11	1	440	-	900	-	1.06	0			-		-	-		1	440	-	900	-	.06	0
13	2	548	38.9	1875	460	1,13	50	4	404	70.1	1300	597	1,08	75	6	505	65,8	1492	587	,09	67
14	6	548	111.4	2025	1219	1,10	50	3	523	89,0	1450	910	1.09	100	9	539	99.4	1900	10B2	.09	67
15	19	582	64.7	2276	795	1,10	53	2	574	27,6	2150	0	1,15	100	21	581	61.7	2264	755	.11	57
16	18	574	102.2	230B	969	1,12	44	5	586	19.5	2380	256	1.18	100	23	571	90.4	2324	B59	,13	57
17	27	613	67. 0	2767	B33	1.15	52	3	570	14,7	2150	867	1.11	100	30	609	67,7	2705	842	1.15	57
18	13	649	52,0	3162	841	1,14	85	3	591	20,0	2333	104	1,13	100	16	638	52.6	3006	B24	1,13	88
19	15	651	47,4	3183	886	1,13	80	4	552	80.1	2138	9B1	1.19	100	19	630	67,4	2963	981	1.15	84
20	9	664	54,4	3406	828	1,15	78	4	586	34,5	2330	246	1,17	100	13	640	60.5	3077	858	1,16	85
21	16	677	38. B	3191	547	1,03	88	1	640		2800	-	1,07	100	17	674	38.6	3168	538	1,03	88
22	9	653	43,5	30B9	766	1,09	7B	1	613		2450	-	1006	100	10	649	43,0	3025	750	1009	80
23	3	724	36.7	4650	1460	1,20	100	I	639		3000	-	1.15	100	4	703	52.1	4238	1450	1,19	100
24	1	718	-	3500	-	0,95	100					·	·	·	1	718	-	3500	-	0,95	100
25	2	693	10,6	3575	318	1,08	100	-				-	-	-	2	693	10,6	3575	318	1.08	100
26	1	640	-	2700	-	1,03	100		-	-		-	-	-	1	640	-	2700	-	1*03	100
27	1	704	-	3400	-	0,97	100					-	-	-	1	704	-	3400	-	0,97	100
TOTAL	144							31							175						
MEAN		622	81	2818	9B4	1.11			565	63.2	2127	657	1,14			612	81.3	2695	970	1,12	
MEAN AGE	17,8																				

Table 38. Biological data by length interval for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

LENGTH INTERVAL	MALES						FEMALES						COMBINEI)				
		LENGTH(MM)	WEIGHT (G)			%		LENGTH(MM)	WEIGHT (G)			%		LENGTH(HH)	WEIGHT (G)		
(MM)	N	HEAN	MEAN	SD	K	HAT	N	MEAN	MEAN	SD	K	HAT	N	HEAN	HEAN	SD	K
300	1	334	400	-	1.07	o	-	-	-	--	-		3	332	400	-	1,07
350	3	381	517	76	0.93	0	1	380	550	-	l.OO	0	8	37b	525	65	0.95
400	b	427	833	299	1.06	1	7	-	-	-	-	- -	1 0	419	833	299	1.06
450	5	475	1070	192	0.99	0	4	471	1075	119	1.03	100	10	474	1072	154	1.01
500	b	529	1558	199	1.05	33	5	527	1820	469	1.23	100	12	529	1677	355	1.13
550	20	577	2240	249	1.17	55	9	575	220b	101	1.16	100	33	578	2234	213	1.17
600	44	625	2807	258	1.15	68	12	620	2679	278	1,12	100	59	624	2779	265	1.14
650	45	673	337b	478	1*11	78	-	-	-	-	-		55	672	337b	478	1.11
700	15	714	3970	578	1009	100	-	-	-	-	-	-	16	715	3970	578	1,09
750	2	764	5250	1344	1.18	100	-	-	-	-	-		2	7b4	5250	1344	1.18
TOTAL	147						31						208				
HEAN		420	2803	992	1.12			5b5	2127	657	1.14			601	2685	97S	1.12

Table 39. Biological data by age class for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985.

AGE	MALES							FEMALES							COMBINED						
	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			HEIGHT(6J			%	LENGTH(MM)			WEIGHT(G)			%
(YR)	N	MEAN	SD	MEAN	SD	K	MAT	N	HEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
7	1	387	-	600	-	1,04	0	-	-	-	-	-	-		1	387	-	600	-	1.04	0
B	1	372	-	500	-	0.97	0	-	-	-	-	-	-		1	372	-	500	-	0.97	0
10	1	501	-	1350	-	1,07	100	-	-	-	-	-	-		1	501	-	1350	-	1.07	100
11	3	490	100,5	1517	1112	1,14	33	-	-	-	-	-	-	-	3	490	100.5	1517	1112	1*14	33
12	4	567	103,6	2136	1120	1.09	50	3	42b	41.9	700	180	0.90	100	7	506	10B,0	1521	11OB	1.01	71
13	1	664	-	3500	-	1,20	100	2	555	89.8	2025	1237	1.10	100	3	591	89.6	2517	1221	1,13	100
14	2	622	1.4	2750	71	1.14	100	2	488	38.9	1150	424	0.97	100	4	555	80.8	1950	957	1.06	100
15	10	620	38.1	2895	689	1.19	100	1	621	-	2550	-	1.06	100	11	620	36.2	2864	661	1.18	100
lb	11	598	81.6	2473	925	1,08	82	2	520	18.4	1400	212	0.99	100	13	586	80.2	2308	938	1.07	85
17	5	612	69.3	2580	827	1.10	80	-	-	-	-	-	-		5	612	69,3	2580	827	1,10	80
18	b	660	26,3	3050	602	1,05	100	1	600	-	2600	-	1,20	100	7	651	32,9	2986	575	1.08	100
19	4	572	89,3	2063	1067	1.03	100	1	513	-	1300	-	0.96	100	5	560	81.7	1910	985	1.01	100
20	1	620	-	2800	-	1,17	100	1	598	-	2500	-	1,17	100	2	609	15.6	2b50	212	1.17	100
21	5	603	93.6	2610	1132	1.11	100	-	-	-	-	-	-		5	603	93.6	2610	1132	1.11	100
22	2	598	24,0	2675	389	1,25	100	1	638	-	3000	-	1,16	100	3	611	2B.7	27B3	333	1,22	100
23	1	675	-	3100	-	1.01	100	-	-	-	-	-	-	-	1	675	-	3100	-	1.01	100
24	2	649	3616	3200	283	1,17	100	-	-	-	-	-	-		2	649	36.8	3200	283	1.17	100
TOTAL	60							14							74						
MEAN		597	83	2514	935	1,11			527	78.8	1657	869	1.03			583	06.4	2352	977	1.09	
MEAN AGE	16,2																				

Table 40. Biological data by length interval for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH(MM) MEAN	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K
350	2	380	550	71	1.00	0	1	399	550	-	0.87	100	3	386	550	50	0.96
400	3	435	833	76	1.02	0	1	404	650	-	0.99	100	4	427	788	111	1.01
450	5	464	1010	175	1.00	40	3	475	967	61	0.90	100	8	468	994	159	0.96
500	3	523	1450	132	1.01	100	4	517	1388	38	1.00	100	12	526	1454	132	1.00
550	8	580	2275	136	1.16	88	1	598	2500	-	1.17	100	27	579	2319	316	1.19
600	24	626	2835	290	1.15	100	4	619	2763	221	1.16	100	57	625	2877	282	1.18
650	15	674	3400	407	1.11	100	-	-	-	-	-	-	27	673	3413	496	1.12
700	1	705	4000	-	1.14	100	-	-	-	-	-	-	6	721	4300	451	1.15
TOTAL	61						14						144				
MEAN		597	2529	934	1.11			527	1657	869	1.03			602	2602	911	1.13

Table 41. Biological data by age class for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

AGE	MALES							FEMALES							COMBINED						
	LENGTH (MM)			HEIGHT(6)		%		LENGTH(MM)			WEIGHT (6)		%		LENGTH(MM)			WEIGHT(6)		%	
(YR)	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	HEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
7	2	300	23,3	275	35	1.03	0	-	-	-		-	-		2	300	23.3	275	35	1.03	0
8	-	-	-	-	-	-		1	418	-	700	-	0.96	O	1	418	-	700	-	0.96	O
9	1	325	-	350	-	1.02	0	1	2B3	-	200	-	0.88	O	2	304	29. -I	275	106	0.95	0
10	1	350	-	450	-	1.05	0	-	-	-		-	-		1	350	-	450	-	1,05	0
12	1	450	-	1050	-	1,15	0	1	354	-	500	-	1.13	100	3	381	60.6	b75	325	1.17	33
13	2	509	0,7	1650	141	1.26	50	2	502	45.3	1775	884	1.34	100	4	505	26.4	1713	522	1.30	75
14	b	540	57.7	20B3	815	1.24	83	3	501	158.2	1708	189B	1,01	0	9	527	93.4	1958	1162	1.16	56
15	b	570	85.6	2500	1065	1,26	B3	-	-	-		-	-		b	570	85.6	2500	1065	1.26	83
16	11	b02	49.7	2B70	862	1,28	64	4	595	39,0	27b9	b20	1.30	100	lb	b04	47.1	288B	770	1.2B	69
17	9	622	36,5	3189	726	1.31	78	5	585	64s2	24b5	953	1.16	60	15	615	53.6	3002	B70	1.25	67
18	15	b73	55,4	4183	712	1,39	100	b	635	30. B	3033	460	1.19	83	21	662	53.3	3B55	831	1.33	?5
19	15	663	44,3	3520	730	1.20	B7	B	590	27,1	270b	349	1.32	100	23	637	52.5	3237	731	1.24	91
20	9	b49	52.1	3550	1034	1,27	7B	9	635	25.0	3189	368	1,24	100	19	b42	39,1	3361	754	1.26	84
21	4	b40	103.1	3b50	1751	1,33	10CI	7	b33	39.9	3200	614	1.25	100	14	652	71.4	3b3b	1492	1.26	79
22	B	651	110,7	4044	1444	1,40	75	9	621	51.0	3072	795	1,27	100	17	635	83.1	3529	1215	1,33	88
23	b	720	68.1	4863	1232	1,28	100	3	665	16.4	3383	115	1.16	100	9	702	61.1	43b9	1224	1,24	100
24	2	773	36.1	6250	212	1,37	100	7	663	59.2	3711	B27	1,26	100	9	bB7	71.7	4275	331	1,29	100
25	2	674	71,4	4400	1061	1,43	100	3	641	20,8	3217	666	1.21	100	7	667	41.3	3721	791	1.25	71
26	2	72B	12.0	5575	813	1,44	100	2	658	35,4	3025	1237	1.04	100	4	693	45. 6	4300	702	1,24	100
27	1	648	-	2650	-	0.97	100	1	686	-	3700	-	1.15	100	2	667	26.9	3175	742	1,06	100
28	1	b25	-	2500	-	1.02	100 .	2	423	66.5	2975	813	1.22	100	3	624	47,0	2817	637	1.15	10(J
29	1	584	-	1825	-	0,92	100	-	-	-		-	-		1	5B4	-	1825	-	0,92	100
TOTAL	105							74							188						
MEAN		b27	99	3395	1395	1, 28			607	81.1	2886	939	1.22			620	94,2	3206	1280	1,25	
MEAN AGE 19,1																					

Table 42. Biological data by length interval for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH(HH) MEAN	MALES WEIGHT (6) HEAN	MALES WEIGHT (6) SD	MALES K	MALES % MAT	EENALES N	EENALES LENGTH(MM) MEAN	EENALES WEIGHT (6) HEAN	EENALES WEIGHT (6) SD	EENALES K	EENALES % MAT	COMBINED N	COMBINED LENGTH (MM) MEAN	COMBINED WEIGHT (6) HEAN	COMBINED WEIGHT (6) SD	COMBINED K
250	1	283	250	-	1,10	0	1	283	200	-	0.88	0	2	283	225	35	0,99
300	2	321	325	350,		99	o	-	-	-	--	-	3	32b	375	90	1.07
350	1	350	450	-	1,05	0	2	372	550	71	1,07	50	5	375	580	115	1,09
400	3	427	717	76	0.93	33	2	425	663	53	0.87	0	12	432	802	133	0.99
450	1	450	1050	-	1,15	0	2	479	1063	124	0.97	100	8	472	1103	83	1,05
500	7	525	1850	248	1,27	43	2	540	2275	177	1,45	100	19	529	1950	4B2	1.31
550	19	573	2618	648	1,40	84	19	580	2532	193	1.30	100	102	578	2519	344	1.31
600	25	622	3012	337	1,26	84	21	624	3005	379	1.24	90	147	625	3033	335	1.24
650	29	479	4031	397	1.29	93	25	668	3612	371	1,21	92	121	674	3782	481	1,23
700	14	722	5077	709	1,35	100	3	719	4533	275	1.22	100	60	720	4669	720	1.25
750	9	774	5728	609	1,23	100	-	-	-	-	-	-	20	771	5458	713	1.19
TOTAL	111						77						499				
MEAN		629	3442	1417	1.28			609	2914	935	1,22			620	3226	1128	1,24

Table 43. Biological data by age class for Arctic charr taken from Neergaard R., Aug. 13 – Sept. 9, 1985.

AGE	HALES							FEMALES							COMBINED						
	LENGTH(MM)			HEIGHT(G)			X	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT (G)			%
(YR)	N	MEAN	SD	HEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
10	1	303	-	600	-	1,07	100	-	-	-		-	-		2	397	19.1	725	177	1.15	50
12	1	602	-	2600	-	1,19	100	-	-	-		-	-		!	602	-	2600	-	1,19	100
13	-	-	-		-	-	.	-	-	-	-	-	-		2	600	41.7	3000	707	1.38	0
14	6	611	52,5	2692	632	1.16	83	1	5b2	-	2500	-	1s41	100	12	606	47.0	2746	631	1.22	50
15	b	648	58.2	3770	1268	1.29	50	5	5B3	3B.3	2513	534	1.22	100	13	616	54.5	3132	1061	1.25	62
16	9	644	53,3	3467	851	1.28	67	7	603	52.2	2b00	704	1,17	100	21	b03	7300	2B02	1002	1022	62
17	6	637	32,3	3713	703	1.39	67	b	594	36.8	2b25	343	1,26	100	15	610	37.5	2915	720	1.28	67
18	5	629	61.4	3363	810	1,31	100	8	624	43.9	2625	626	1.16	100	15	621	47.0	2825	795	1.16	87
19	12	640	82.5	3167	1214	1.14	75	5	625	33.2	2B70	726	1.16	100	21	634	68.1	2986	1008	1.13	67
20	1	755	-	4650	-	1.08	100	8	653	45.4	3150	B07	1.11	100	11	661	50. 8	3245	871	1.10	82
21	5	706	62.1	4225	975	1,23	100	7	634	29. b	2936	354	1.15	100	13	667	55.7	344b	856	1.17	92
22	1	790	-	6350	-	1,29	100	1	595	-	2150	-	1.02	100	4	664	86.9	3675	1841	1.18	50
23	2	678	96.2	3150	-	0.76	50	4	652	49,0	3100	999	1,09	100	7	672	61.9	3375	1010	1.05	71
24	2	734	20,5	3625	672	0,93	100	-	-	-		-	-		3	723	23.7	3550	492	0095	67
25	1	718	-	5000	-	1.35	100	-	-	-		-	-		2	732	19.8	4525	672	1.16	50
26	2	760	17,0	4750	71	1,08	100	-	-	-		-	-		3	749	22.5	47b7	58	1.14	67
27	1	735	-	3700	-	0,93	100	1	662	-	3300	-	1.14	100	2	699	51. 6	3500	2B3	1.03	100
30	-	-	-		-	-		1	667	-	3b00	-	1.21	100	1	667	-	3600	-	1.21	100
TOTAL	61							54							14a						
MEAN		b53	77	3495	1134	1,20			b22	45,4	2B42	638	1017			b32	69.7	3071	988	1.18	
MEAN AGE 18.3																					

4. Biological data by length interval for Arctic charr taken from Neergaard R., Aug. 13 - Sept. 9, 1985.

MALES						FEMALES						COMBINED				
	LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)		
N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K
[illegible]	383	600	-	1.07	°	-	-	-	-	-	-	3	379	550	87	1.00
[illegible]	-	-	-	-	-	-	-	-	-	-	-	2	415	800	71	1.13
[illegible]	485	1000	-	0.88	0	-	-	-	-	-	-	2	485	1125	177	0.99
[illegible]	532	1783	425	1.17	67	3	530	2017	293	1.36	00	11	533	1891	328	1.24
[illegible]	577	2490	319	1.30	33	12	578	2323	140	1.20	00	36	579	2328	243	1.20
[illegible]	620	3053	397	1.27	79	22	617	2689	423	1.14	00	70	621	2863	413	1.19
[illegible]	672	3838	609	1.27	85	15	669	3427	407	1.14	00	42	670	3613	513	1.20
[illegible]	728	4279	765	1.12	93	2	717	4250	354	1.15	00	33	723	4255	632	1.13
[illegible]	775	5150	803	1.10	100	-	-	-	-	-	-	5	771	5110	701	1.11
						54						204				
	[illegible] 3	3493	123	°			622	2842	6 8	1.17			632	3086	987	1.18

Table 45. Biological data by age class for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

AGE	MALES							FENALES							COMBINED						
	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%
(YR)	N	MEAN	SD	MEAN	SD	K	HAT	N	HEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
9	-	-	-	-	-	-		1	379	-	525	-	0.96	100	1	379	-	525	-	0.9b	100
10	1	465	-	1025	-	1,02	0	1	425	-	800	-	1,04	0	3	437	24.3	867	138	1.03	0
11	-	-	-	-	-	-	-	2	383	116.0	725	b72	1.06	50	2	3B3	116.0	725	b72	1.06	50
12	5	574	152,2	2440	1528	1.13	60	2	461	66.5	1175	530	1.15	100	7	542	130,7	2079	1409	1.14	71
13	4	571	29.3	2063	880	1.08	75	1	b04	-	2350	-	1,07	100	5	577	29,5	2120	772	1,07	80
14	3	611	42.6	2883	382	1,27	100	9	594	49.4	2511	619	1.17	100	12	598	46.6	2b04	577	1.19	100
15	4	668	40.8	3268	626	1.09	100	5	615	17,5	2790	383	1,20	100	9	638	39,4	3002	533	1*15	100
16	15	651	63,7	3393	1010	1,20	100	11	59s	54.4	2445	561	1,20	100	26	b23	67.6	2992	962	1,20	100
17	8	701	44,!	39s3	59s	1,15	1(IO	5	629	25.6	2795	547	1.11	100	13	674	51.7	3508	BOb	1,13	100
18	7	666	66.1	3843	1S77	1,23	100	5	648	49.0	3145	920	1,13	100	12	658	57, %	3552	1339	1.19	100
19	3	700	68.4	30B3	843	0.89	100	S	b3B	36.4	297s	559	1.14	100	8	661	55.8	3016	b20	1,0S	100
20	8	742	48.0	4766	1316	1.14	100	b	b2B	40,9	2638	402	1.07	100	14	693	73, !	3054	1479	1.11	100
21	5	7b3	36.9	4520	655	1,02	100	3	618	82,1	2933	1217	1.20	100	8	70B	91,1	392S	1159	1,09	100
22	3	725	28.2	4417	704	1.15	100	1	b39	-	3150	-	1.21	100	4	704	48.8	4100	855	1.17	100
24	-	-	-	-	-	-		1	662	-	2700	-	0,93	100	1	bb2	-	2700	-	0.93	100
25	1	672	-	33(IO	-	1,09	100	1	680	-	3150	-	1,00	100	2	676	5.7	3225	106	1.04	100
TOTAL	67							59							127						
MEAN		670	85	3569	1266	1,14			59S	79,1	2528	824	1,14			633	91.8	30b3	1210	1,14	
MEAN AGE 16.8																					

Table 46. Biological data by length interval for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH(MM) MEAN	MALES WEIGHT (G) MEAN	MALES WEIGHT (G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED WEIGHT (G) MEAN	COMBINED WEIGHT (G) SD	COMBINED K
500	1	527	1650	-	1.13	0	-	-	-	-	-	-	2	52B	1800	212	1.23
550	1	5B5	2250	-	1,12	100	6	575	2290	432	1.18	100	15	575	2304	271	1.20
400	26	630	2944	422	1.16	69	20	627	2910	372	1.18	100	74	628	2911	361	1.17
650	37	676	342B	576	1.11	97	lb	666	3274	382	1.11	100	86	672	3438	46B	1.13
700	34	716	4054	431	1,10	100	5	724	3267	388	0.85	100	63	719	4077	620	1.09
750	20	7b4	4309	900	0,97	100	-	-	-	-	-	-	36	7b5	4456	958	1.00
800	5	813	5695	721	1,05	100	-	-	-	-	-	-	6	816	5956	855	1.08
850	1	852	7?50	-	1.29	100	-	-	-	-	-	-	1	852	7950	-	1.29
TOTAL	125						47						283				
MEAN		696	3741	966	1,10			644	3006	496	1.12			681	3566	942	1.12

Table 47. Biological data by age class for Arctic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

AGE	MALES							FEMALES							COMBINED						
	LENGTH(MM)			HEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%
(YR)	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
13	3	610	26.7	2250	-	1,12	100	1	661	-	3b00	-	1,25	100	4	623	33,7	2925	955	1.19	100
15	b	696	60. b	4180	1143	1,21	83	3	608	52.7	3175	530	1.27	100	9	666	70.1	3693	1076	1.22	89
16	b	656	71.1	3140	790	1,10	83	3	b24	26.1	29b7	2B4	1.23	100	9	645	59.9	30B2	646	1.14	89
17	15	667	53,0	3579	867	1.21	BO	7	b32	35.3	2908	660	1.18	100	22	656	50.2	335b	849	1,2(I	86
18	14	674	50, b	3220	968	1.11	86	7	b3b	43.0	2825	430	1.08	100	22	666	53,7	3088	835	1,10	86
19	12	703	60.3	4140	935	1,12	92	3	b25	51.8	2550	424	1.04	100	15	687	65.3	3875	1056	1,11	93
20	17	702	38,3	3984	57b	1,15	100	b	654	46.2	3330	30b	1.25	100	23	690	45.1	3875	589	1.17	100
21	12	714	58.8	4002	1411	1.10	92	4	636	53.8	293B	882	1,11	100	16	694	65.9	3718	1351	1.10	94
22	9	703	37,4	3533	767	1,00	89	4	652	33,3	2825	35	1,12	100	13	687	42,5	3405	744	1.03	92
23	7	710	38.0	33?0	489	0,97	100	3	679	54.1	3350	495	0*97	100	10	700	42.8	3379	44B	6.97	100
24	4	761	14,7	4050	951	0,92	100	2	671	22. b	3200	354	1.06	100	b	731	48.9	37b7	872	0.96	100
25	5	732	42,2	3780	662	0.96	100	2	670	23.3	3175	601	1,05	100	8	713	43. b	3588	616	0.99	88
26	4	b93	43,8	3600	1179	1,04	100	2	682	53.7	3025	177	0.96	100	b	689	41.9	3370	896	1,01	100
28	2	797	21.9	5250	-	6,98	100	-	-	-	-	-	-		2	797	21.9	5250	-	0,98	100
29	2	767	99.7	b450	-	1,10	100	-	-	-		-	-		2	767	99,7	6450	-	1.10	100
TOTAL	118							47							167						
MEAN		697	57	3751	982	1,10			644	42.1	300b	496	1.12			682	57.9	3549	933	1,10	
MEAN AGE	19.8																				

. Biological data by length interval for Arc=ic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

MALES						FEMALES						COMBINED			
LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)		
MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K
-	-	-	-	-	1	301	250	-	0.92	'00	1	301	250	-	.92
366	600	-	1.22	0	1	379	525	-	0.96	.00	7	381	589	40	1.07
					2	420	800	0	1.08	50	9	426	853	133	1.10
468	1088	88	1.06	0	3	466	1158	95	1.14	67	22	473	1182	116	1.11
538	1350	849	0.86	50	4	529	1813	180	1.22	'00	11	528	1686	398	1.14
578	2375	181	1.23	100	12	587	2435	214	1.21	'00	64	582	2361	242	1.20
628	2892	310	1.17	100	23	624	2743	309	1.13	·00	115	624	2775	324	1.14
673	3407	493	1.12	100	13	669	3362	548	'. 12	.00	100	673	3427	470	1.12
725	4447	633	1.17	100	-	-	-	-	-	-	48	721	4240	575	1.13
777	5175	757	1.10	100	-	-	-	-	-	-	21	771	5065	873	1.10
-	-	-	-		-	-	-	-	-	-		800	5000	-	₀.98
					9						399				
670	3571	1257	1.14			5 5	25 8	824	1.14			6 8	2973	1081	5

APPENDIX II

Table 49. Daily Catch-Effort Records for Arctic charr taken from Rowley R., Aug. 13 - Sept. 5, 1985.

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE[1]	CPE[2]
Aug. 13	0	0	3.83	0	0
14	6	19.85	3.83	37.6	124.4
15	4	10.70	6.31	15.2	40.7
16	5	16.80	1.01	118.8	399.2
17	23	73.25	12.39	44.6	141.9
18					
19	26	88.56	14.19	44.0	149.8
20	61	220.25	23.42	62.5	225.7
21	53	176.55	22.64	56.2	187.1
22	30	94.10	17.46	41.2	129.4
23	40	84.66	21.40	44.9	95.0
24	10	28.60	15.20	15.8	45.2
25	17	40.67	22.07	18.5	44.2
26	18	52.45	25.45	17.0	49.5
27	10	28.45	12.61	19.0	54.2
28	16	49.80	21.40	17.9	55.9
29	4	10.20	42.34	2.3	5.8
30	10	32.90	33.33	7.2	23.7
31	3	6.05	25.56	2.8	5.7
Sept. 1	1	1.95	26.23	0.9	1.8
2	1	3.17	18.24	1.3	4.2
3	4	11.15	29.17	3.3	9.2
4	3	5.70	28.94	2.5	4.7
5	3	7.95	34.57	2.1	5.5
Total	348	1063.76			
Mean		3.06		18	55

[1] CPE = no. fish/100m/24 hrs.

[2] CPE = kg.rd.wt./100m/24 hrs.

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

Table 50. Daily Catch-Effort Records for Arctic charr taken from Ikpikitturjuak R., Aug. 15 - Sept. 6, 1985.

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE[1]	CPE[2]
Aug. 15	24	58.47	3.15	182.9	445.5
16					
17	25	56.45	3.83	156.7	353.7
18	56	153.89	6.98	192.6	529.1
19	60	166.80	1.80	800.0	2224.0
20	6	16.45	1.35	106.7	292.4
21					
22	35	105.51	3.38	248.5	749.2
23	69	239.60	2.25	736.0	2555.7
24					
25					
26	15	53.55	0.90	400.0	1428.0
27	24	86.53	1.35	426.7	1538.3
28					
29	12	36.20	2.70	106.7	321.8
30	1	3.56	4.05	5.9	21.1
31	4	14.24	2.70	35.6	126.6
Sept. 1					
2	5	17.50	1.80	66.7	233.3
3	8	28.48	12.61	15.2	54.2
4					
5					
6	16	56.10	2.70	142.2	498.7
Total	360	1093.33			
Mean		3.04		168	509

[1]CPE = no. fish/100m/24 hrs.

[2]CPE = kg.rd.wt./100m/24 hrs.

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

Table 51. Daily Catch-Effort Records for Arctic charr taken from Cockburn R., Aug. 17 - Sept. 9, 1985.

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE[1]	CPE[2]
Aug. 17	2	4.99	0.79	60.8	151.6
18					
19					
20	8	20.22	3.71	51.8	130.8
21	10	28.86	3.60	66.7	192.4
22	4	14.65	3.60	26.7	97.7
23	27	78.71	20.94	31.0	90.2
24	14	40.60	10.59	31.7	92.0
25					
26	22	66.65	9.91	53.3	161.4
27	15	45.30	6.31	57.1	172.3
28	28	75.12	6.31	106.5	285.7
29	15	51.25	7.21	49.9	170.6
30	19	73.07	3.60	126.7	487.1
31	12	39.87	8.33	34.6	114.9
Sept. 1	5	17.13	3.83	31.3	107.3
2	5	14.05	4.73	25.4	71.3
3	2	3.38	10.59	4.5	7.7
4	6	23.28	21.40	6.7	26.1
5	3	10.25	17.12	4.2	14.4
6	4	17.35	18.47	5.2	22.5
7	3	7.20	7.48	9.6	23.1
8	2	6.96	17.12	2.8	9.8
9	2	6.96	19.82	2.4	8.4
Total	208	645.85			
Mean		3.11		24	76

[1]CPE = no. fish/100m/24 hrs.

[2]CPE = kg.rd.wt./100m/24 hrs.

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

Table 52. Daily Catch-Effort Records for Arctic charr taken from Tariujak Arm, Aug. 16 - Sept. 9, 1985.

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE[1]	CPE[2]
Aug. 16[3]	2	3.78	3.64	13.2	24.9
17	2	3.78	4.96	9.7	18.3
18					
19					
20	6	11.35	9.01	16.0	30.2
21					
22	1	1.89	4.96	4.8	9.2
23	1	1.89	5.86	4.1	7.7
24	0	0	3.38	0	0
25					
26	4	7.57	3.60	26.7	50.5
27	5	9.46	3.60	33.3	63.1
28	9	16.67	3.15	68.6	127.0
29	10	19.12	4.95	48.5	92.7
30	12	30.00	8.11	35.5	88.8
31[4]	0	0	0.90	0	0
Sept. 1	7	11.78	7.21	23.3	39.2
2	17	48.75	6.31	64.7	185.4
3	41	101.35	21.17	46.5	114.9
4	18	51.20	11.26	38.4	109.1
5	23	60.55	18.02	30.6	80.6
6	42	119.90	32.88	30.7	87.5
7	15	41.15	17.79	20.2	55.5
8	11	29.95	18.82	13.3	36.3
9	11	25.15	11.71	22.6	51.6
Total	237	590.29			
	52	100.51 (Aug. 16-30)			
	185	489.78 (Aug. 31-Sept.9)			
Mean				28	70
			(Aug. 16-30)	23	44
			(Aug. 31-Sept.9)	30	80

[1] CPE = no. fish/100m/24 hrs.

[2] CPE = kg.rd.wt./100m/24 hrs.

[3] Fishing site #1 (Aug.16-30)

[4] Fishing site #2 (Aug.31-Sept.9)

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

Table 53. Daily Catch-Effort Records for Arctic charr taken from Harder R., Aug. 20 - Sept. 8, 1985

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE[1]	CPE[2]
Aug. 20	5	10.88	9.91	12.1	26.4
21	10	27.06	16.67	14.4	39.0
22	16	46.80	22.52	17.1	49.9
23					
24	12	29.45	20.72	13.9	34.1
25	19	51.40	23.87	19.1	51.7
26	19	56.73	14.87	30.7	91.6
27					
28					
29					
30	33	86.76	18.92	41.9	110.1
31	13	32.99	26.58	11.7	29.8
Sept. 1	14	34.58	14.87	22.6	55.8
2	15	37.05	14.87	24.2	59.8
3					
4					
5					
6					
7					
8	22	35.71	22.07	23.9	38.8
Total	178	449.41			
Mean		2.52		17	53

[1]CPE = no. fish/100m/24 hrs.

[2]CPE = kg.rd.wt./100m/24 hrs.

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

Table 54. Daily Catch-Effort Records for Arctic charr taken from Ravn R., Aug. 16 - Sept. 6, 1985.

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE [1]	CPE [2]
Aug. 16	6	11.13	7.88	18.3	33.9
17	13	33.18	11.71	26.6	68.0
18	9	34.15	2.25	95.0	364.3
19					
20	26	80.25	9.91	63.0	194.4
21	13	41.65	4.51	69.2	221.6
22	21	68.35	4.96	101.6	330.7
23	41	136.85	9.23	106.6	355.8
24	17	60.56	19.14	21.3	75.9
25	37	109.53	14.87	59.7	176.8
26	40	124.05	14.41	66.6	206.6
27	32	110.35	8.56	89.7	309.4
28	34	106.75	8.56	95.3	299.3
29	51	168.10	14.41	84.9	279.9
30	49	151.57	10.14	116.0	358.8
31	29	93.30	15.54	44.8	144.1
Sept. 1					
2	25	90.60	7.43	80.8	292.7
3	33	102.35	18.47	42.9	133.0
4	28	78.80	14.15	47.6	133.7
5	22	93.60	7.43	71.1	302.0
6	17	52.76	12.81	31.8	98.6
Total	543	1747.88			
Mean		3.23		58	188

[1] CPE = no. fish/100m/24 hrs.

[2] CPE = kg.rd.wt./100m/24 hrs.

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

Table 55. Daily Catch-Effort Records for Arctic charr taken from Neergaard R., Aug. 13 – Sept. 9, 1985.

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE [1]	CPE [2]
Aug. 13	3	9.51	5.41	13.31	44.40
14					
15					
16					
17	1	3.17	1.35	17.78	56.36
18	2	6.34	6.53	7.35	23.30
19	3	9.51	7.21	9.99	31.66
20	4	12.68	6.08	15.79	50.05
21	3	9.51	6.31	11.41	36.17
22	9	28.53	3.82	56.55	179.25
23	24	76.08	3.60	160.00	507.20
24	35	108.15	10.36	81.08	250.54
25	38	117.42	13.06	69.83	215.78
26	32	98.88	4.73	162.37	501.72
27	32	98.88	2.70	284.44	878.93
28					
29					
30	7	25.40	11.71	14.35	52.06
31	4	13.60	3.04	31.58	107.37
Sept. 1	37	108.39	12.05	73.69	215.88
2	22	90.47	20.27	26.05	107.12
3	3	9.95	18.36	3.92	13.01
4	33	100.99	20.05	39.50	120.89
5	17	53.35	7.32	55.74	174.92
6	26	74.04	7.66	81.46	231.98
7	12	30.27	19.37	14.87	37.51
8	5	13.65	9.91	12.11	33.06
9	2	5.46	9.91	4.84	13.22
Total	354	1104.23			
Mean		3.12		40	126

[1] CPE = no. fish/100m/24 hrs.

[2] CPE = kg.rd.wt./100m/24 hrs.

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

Table 56. Daily Catch-Effort Records for Arctic charr taken from Isortoq R., Aug. 15 - Sept. 3, 1985.

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE[1]	CPE[2]
Aug. 15	7	20.72	2.48	67.7	200.5
16	26	76.91	14.19	44.0	130.1
17	30	97.10	17.46	41.2	133.5
18	67	220.16	41.22	39.0	128.2
19	54	144.07	13.51	95.9	256.0
20	54	151.33	16.22	79.9	223.9
21	49	143.38	15.77	74.6	218.2
22	49	148.25	8.78	133.9	405.2
23	46	144.16	12.75	86.6	271.4
24	23	69.00	10.47	52.7	158.2
25	40	119.29	14.19	67.7	201.8
26	41	112.20	16.67	59.0	161.5
27					
28					
29	2	5.96	4.17	11.5	34.3
30	3	8.94	5.52	13.0	38.8
31	1	2.98	4.73	5.1	15.1
Sept. 1	3	8.94	10.59	6.8	19.2
2	3	8.94	12.61	5.7	17.0
3	7	20.86	4.50	37.3	111.3
Total	505	1503.19			
Mean		2.98		54	160

[1]CPE = no. fish/100m/24 hrs.

[2]CPE = kg.rd.wt./100m/24 hrs.

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

Table 57. Daily Catch-Effort Records for Arctic charr taken from Qulurnilik R., Aug. 16 - Sept. 3, 1985.

Date	N	Rd.wt. (kg.)*	Hours set/100m	CPE [1]	CPE [2]
Aug. 16	18	64.51	0.68	635.3	2277.9
17	34	126.04	3.83	213.1	789.8
18	33	102.38	3.04	260.0	808.3
19	65	231.67	8.56	182.2	649.5
20	37	141.80	1.58	562.0	2153.9
21					
22	7	22.00	1.46	115.1	361.6
23	73	262.57	2.82	621.3	2234.6
24					
25					
26	32	111.66	3.15	243.8	850.7
27					
28					
29	9	31.77	4.50	48.0	169.4
30	30	106.74	5.40	133.3	474.4
31	11	41.86	1.58	167.1	635.9
Sept. 1					
2	3	10.59	5.86	12.3	43.4
3	1	3.53	18.69	1.3	4.5
Total	353	1257.15			
Mean		3.56		139	493

[1]CPE = no. fish/100m/24 hrs.

[2]CPE = kg.rd.wt./100m/24 hrs.

*Dressed wts. were converted to rd. wts. using calculated conversion factors. Unweighed fish were included and assumed to conform to mean rd. wt.

APPENDIX III

Table 58. Mean length, weight, condition factor (K) and age for Arctic charr taken during several test fisheries conducted in the Central Arctic and Baffin Regions of the Northwest Territories.

Fishery	Fork Length	Round Weight	Dressed Weight	K	Age	Season
Steensby Inlet, 1985	635	3097	-	1.16	18.4	fall
Gjoa Haven/ Pelly Bay[1] 1979-80	615	2793		1.23	-	fall
	585	2375		1.07	-	spring
					11.8	combined
Pond Inlet/Arctic Bay* 1980-84	659	3045		1.02	15.1	mostly spring
Pangirtung[2] 1980-85	630	2632		1.02	14.8	winter & spring
Keewatin District[3] 1979-81	621	2705		1.13	10.3	fall
Cambridge Bay[4] 1979-80 (commercial fishery)	628	-	2642	1.07	-	fall*
	601	-	2585	1.19	-	spring
	612	-	2607	1.14	13.9	combined

* Fall and spring fisheries were conducted on different rivers.

1 Kristofferson, A.H. et al., 1982

2 McGowan, D.K., 1985

3 Carder, G.W. and R.F. Peet, 1983

4 Carder, G.W., 1981

Table 59. A comparison of Female/Male ratios for Arctic charr from several test and commercial fisheries conducted in the Central Arctic, Keewatin and Baffin Regions of the Northwest Territories.

Fishery Fishery	Mean F/M ratio	Range
Steensby Inlet, 1985	0.5	0.2 - 0.9
Gjoa Haven/Pelly Bay , 1979-80	0.8	0.5 - 1.1
Pond Inlet/Arctic Bay[2], 1980-84	0.7	0.6 - 0.9
Pangirtung[2] 1980-85	0.5	0.2 - 0.7
Keewatin District[3], 1973-77	0.9	0.3 - 1.8
Naujuk Lake[4] (research project)	1.4	

1 Kristofferson, A.H. et al., 1982

2 McGowan, D.K., 1985

3 Carder, G.W. and R.F. Peet, 1983

4 Johnson, L., 1980