

*Stas Olpiniski*

**The Arctic charr (*Salvelinus alpinus*)  
experimental-commercial winter fishery  
in eastern Ungava Bay, Northern Quebec,  
1989-1990**

Preliminary report

submitted to:

The Economic Regional Development Agreement Committee

by

Thomas Boivin

Kuujuaq Research Centre  
Makivik Corporation  
Renewable Resources Development Department

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## TABLE OF CONTENTS

List of figures .....	i
List of tables.....	i
Introduction.....	1
Materials and methods.....	2
Subsistence harvest study.....	2
Biological sampling program .....	2
Processing of the commercial catch .....	4
Preliminary results and discussion .....	4
Literature cited.....	6

## LIST OF FIGURES

Figure 1. Arctic charr systems located near the community of Kangiqsualujjuaq, eastern Ungava Bay, northern Quebec.....	3
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## LIST OF TABLES

Table 1. Revised commercial quotas for Arctic charr systems in the George River area, 1989-90, and commercial harvests to date .....	4
Table 2. Subsistence and commercial charr harvest data from the Kangiqsualujjuaq area 1988-1989.....	5

## Introduction

The Kangiqsualujjuaq experimental-commercial arctic charr (*Salvelinus alpinus*) winter fishery has been monitored annually by Makivik Corporation, in conjunction with the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation, and the Ministère du Loisir, de la Chasse et de la Pêche. The data collected in these studies has been presented in annual reports (Boivin et al. 1988, 1989 (in prep.); Olpinski et al. 1988, 1989). The information obtained from this research, as well as that collected from studies using counting fences at Lakes Sapukkait and Sanirarsiq (Boivin and Vandal 1989), will prove invaluable towards the development of commercial arctic charr fisheries in this region. A summary of arctic charr research pertinent to the Nunavik resource has been presented by Gillis (1988).

On January 30, 1990, the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation issued the 1989-90 fishing permit to the Annanack and Sons' experimental-commercial arctic charr fishery in Kangiqsualujjuaq. The permit allows for fishing at 7 locations in the Kangiqsualujjuaq area, with a total winter commercial quota of 4,160 arctic charr. When combined with the summer commercial quotas for the Sapukkait and Sanirarsiq fisheries, the total quota for the fishery is 5,810 charr.

Since the 1989-90 winter fishing season is still in progress and will not be completed until April 30, 1989, this report will discuss the materials and methods used in the study, and the preliminary results obtained thus far. Also presented are the subsistence and commercial charr harvests from the first 2 years of the fishery, and the revised commercial quotas for the Annanack and Sons' experimental-commercial fishery in Kangiqsualujjuaq during the 1989-90 field season.

The spellings of all Inuit place names cited in this report are taken from Müller-Wille and Avataq Cultural Institute (1987).

## MATERIALS AND METHODS

### Subsistence Harvest Study

To obtain an estimate of the subsistence fish catch from all arctic charr locations in the Kangiqsualujjuaq area (Figure 1), harvest booklets were distributed to all households in the community (n=85) between 30 November-December 1, 1989. Fishing effort during the summer of 1989 was recorded by the research team, and booklets from the 1988-89 fishery were collected at this time. Fishermen will be visited at the end of the 1989-90 winter fishery period (April, 1990) to update harvest booklets, and/or to answer questionnaires concerning catch and harvest data. The following data regarding total harvest and catch per unit of effort is recorded in harvest booklets by both commercial and subsistence fishermen:

- fisherman (men) involved
- date of capture
- specific location
- mesh size used
- length of net
- time of net set
- time of subsequent net checks
- number of charr (or other spp.) caught

### Biological sampling program

Biological samples from the commercial catch were collected upon the fishermen's return to Kangiqsualujjuaq. The biological data collected includes:

- i) fork length ( $\pm 0.5$  cm);
- ii) eviscerated weight ( $\pm 25$  g);
- iii) sex and coloration (from examination of external characteristics);  
and,
- iv) age (from otoliths, read according to Nordeng (1961))\*

\*Fish heads were removed from the first 150 charr harvested in the commercial fishery for future extraction of otoliths. Please refer to Olpiniski et al. (1988, 1989) for additional information concerning details of the biological sampling program.

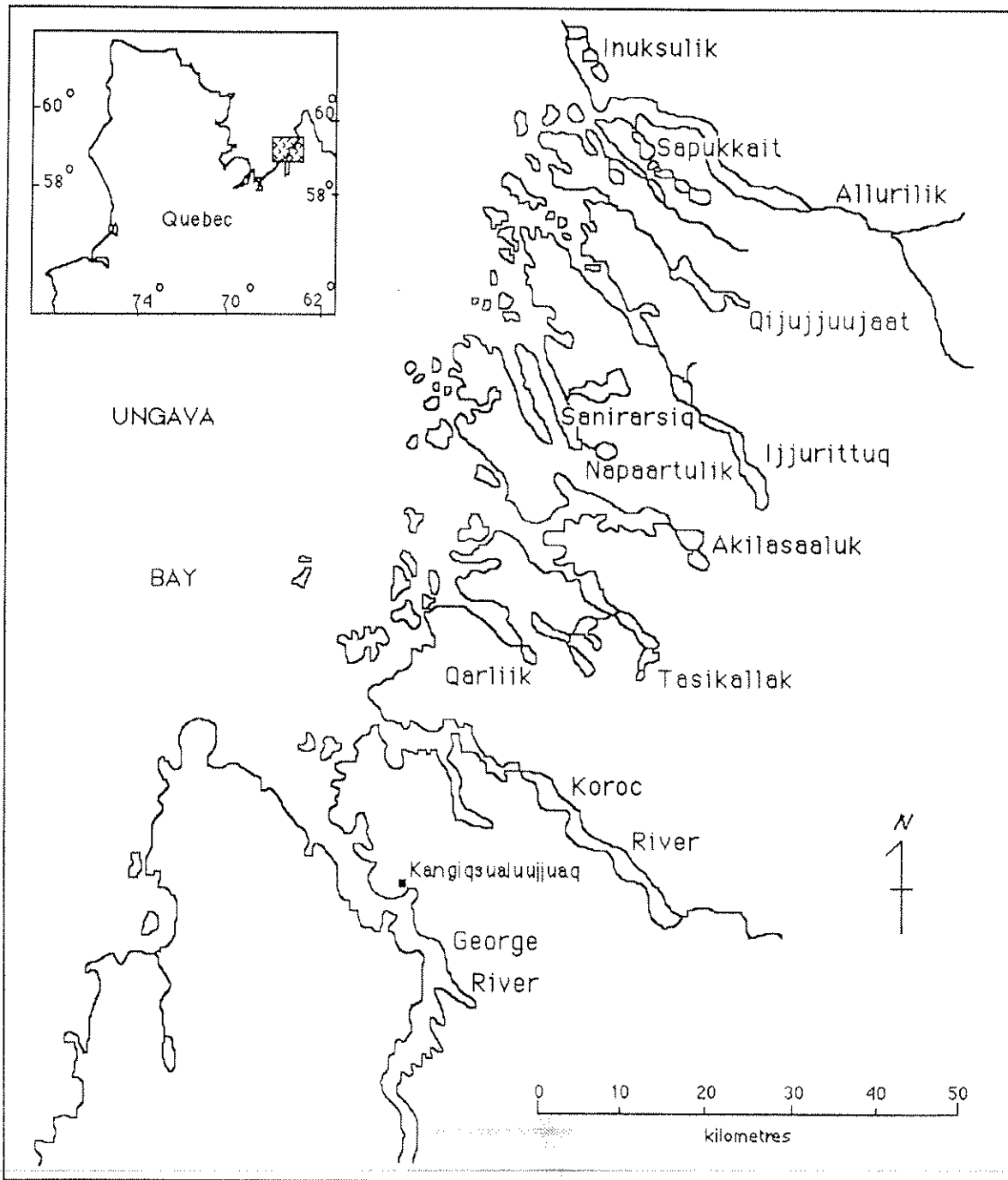


Figure 1. Arctic charr systems located near the community of Kangiqsualuujuaq, eastern Ungava Bay, northern Quebec.

## Processing of the commercial catch

Following morphometric sampling, all fish suitable for commercial sale were eviscerated and commercially-tagged by the fishermen. The procedure for processing the commercial catch is discussed further by Olpinski et al. (1988).

## **PRELIMINARY RESULTS AND DISCUSSION**

The commercial quotas for arctic charr systems in the Kangiqsualujjuaq area were adjusted during the fall of 1989 by MAPA and MLCP. Quotas were removed from the George and Koroc Rivers, and from Lake Qarliik, since subsistence harvest levels and mortality rates of charr in these systems are high (Boivin et al. 1988; 1989 (in prep.)).

As of the present date, the proponent has obtained the commercial quota from only 1 location: Lake Tasikallak. Since the commercial fishery is still in progress, the biological and fishing effort data for locations fished during the 1989-90 winter fishery will be presented in a later report. A summary of the revised quotas for the 1989-90 fishery and commercial harvests to date are presented in Table 1.

Table 1. Revised commercial quotas for Arctic charr systems in the George River area, 1989-90, and commercial harvests to date

<u>System</u>	<u>Quota</u>	<u>Commercial harvests</u>
Tasikallak	200	200
Akilasaaluk	545	0
Napaartulik	425	0
Ijjurittuq	1000	0
Qijujjuujaat	770	0
Allurilik	520	0
Inuksulik	770	0
Sapukkait**	650	-
Sanirarsiq**	1,000	-
<b>TOTAL</b>	<b>5,810</b>	<b>200</b>

\*\* Commercial quotas for summer fisheries using counting fences

Since 1987-88, arctic charr has been fished commercially in eastern Ungava Bay using both gillnets set beneath freshwater ice (Olpinski et al. 1988, 1989), and counting fences (Boivin and Vandal 1989). Subsistence harvest data has also been collected since this time. The total subsistence and commercial harvests by the Inuit of Kangiqsualujjuaq during 1988 and 1989 are presented in the following table:

Table 2. Subsistence and commercial charr harvest data from the Kangiqsualujjuaq area 1988-1989. Subsistence harvest results were obtained from harvest booklets and interviews with fishermen

Location	1988			1989		
	Subsistence	Commercial	Total	Subsistence	Commercial	Total
George River*	3323	0	<b>3323</b>	2926	378	<b>3304</b>
Koroc	2694	164	<b>2858</b>	4693	163	<b>4856</b>
Qarliik*	202	118	<b>320</b>	79	110	<b>189</b>
Tasikallak	673	241	<b>914</b>	952	340	<b>1292</b>
Akilasaaluk	30	553	<b>583</b>	35	535	<b>570</b>
Ijgurittuq*	54	1029	<b>1083</b>	62	0	<b>62</b>
Napaartulik	0	0	<b>0</b>	89	35	<b>124</b>
Sanirarsiq**	4	278	<b>282</b>	83	1127	<b>1210</b>
Sapukkait**	204	0	<b>204</b>	312	601	<b>913</b>
<b>TOTAL</b>	<b>7,184</b>	<b>2,383</b>	<b>9,567</b>	<b>9,231</b>	<b>3,289</b>	<b>12,520</b>

\* Includes sport catches

\*\* Includes weir harvests

At present, few fish have been harvested during the 1989-90 experimental-commercial winter fishery in Kangiqsualujjuaq. It is expected that the proponent will attempt to fish Lake Akilasaaluk and Ijgurittuq River in the near future. The final report for the 1989-90 winter fishery will include biological analysis of the catch and final harvest statistics, and will be presented to the Economic Regional Development Agreement Committee in September, 1990.



## LITERATURE CITED

- Boivin, T.G., S. Olpinski, and P. May, 1988. The arctic charr (*Salvelinus alpinus*) experimental-commercial winter fishery in Kangiqsualujjuaq, Québec, 1987-1988. Report submitted to ministère de l'Agriculture, des Pêcheries et de l'Alimentation and ministère du Loisir, de la Chasse et de la Pêche. Kuujjuaq Research Centre, Makivik Corporation. 40 pp.
- Boivin, T.G., S. Olpinski, and P. May, 1989. The arctic charr (*Salvelinus alpinus*) experimental-commercial winter fishery in Kangiqsualujjuaq, Québec, 1988-1989. Report submitted to ministère de l'Agriculture, des Pêcheries et de l'Alimentation and Ministère du Loisir, de la Chasse et de la Pêche. Kuujjuaq Research Centre, Makivik Corporation (in prep.).
- Boivin, T. and D. Vandal. 1989. Arctic charr research using counting fences in eastern Ungava Bay, northern Quebec, 1988. Scientific report submitted to Ministère de l'Agriculture, des Pêcheries et de l'Alimentation, Quebec. Kuujjuaq Research Centre, Makivik Corporation 29 pp.
- Gillis, D.J. 1988. Arctic charr (*Salvelinus alpinus*) fisheries management: an evaluation of current methods and of the information pertinent to the northern Québec resource. Ministère du Loisir, de la Chasse et de la Pêche. Direction régionale du Nouveau-Québec. Service de l'aménagement et de l'exploitation de la faune. Technical report. 68 p.
- Müller-Wille and Avataq Cultural Institute. 1987. Gazetteer of Inuit place names in Nunavik (Quebec, Canada). Avataq Cultural Institute, Inukjuak, Quebec. 368 pp.
- Nordeng, H. 1961. On the biology of char (*Salmo alpinus* L.) in Salangen, north Norway. 1. Age and spawning frequency determined from scales and otoliths. NYTT Magasin for Zoologi. 10: 67-123. Oslo University Press.
- Olpinski, S., T. Boivin and P. May. 1988. A field report of the 1987-1988 experimental-commercial and scientific arctic charr (*Salvelinus alpinus*) fisheries in eastern Ungava Bay, Quebec. Field report submitted to Ministère de l'Agriculture, des Pêcheries et de l'Alimentation and Ministère du Loisir, de la Chasse et de la Pêche. Kuujjuaq Research Centre, Makivik Corporation. 24 pp.



Olpinski, S., T. Boivin and P. May. 1989. A field report of the 1988-1989 experimental-commercial arctic charr (*Salvelinus alpinus*) fishery in eastern Ungava Bay, Quebec. Field report submitted to Ministère de l'Agriculture, des Pêcheries et de l'Alimentation and Ministère du Loisir, de la Chasse et de la Pêche. Kuujjuaq Research Centre, Makivik Corporation. 17 pp.