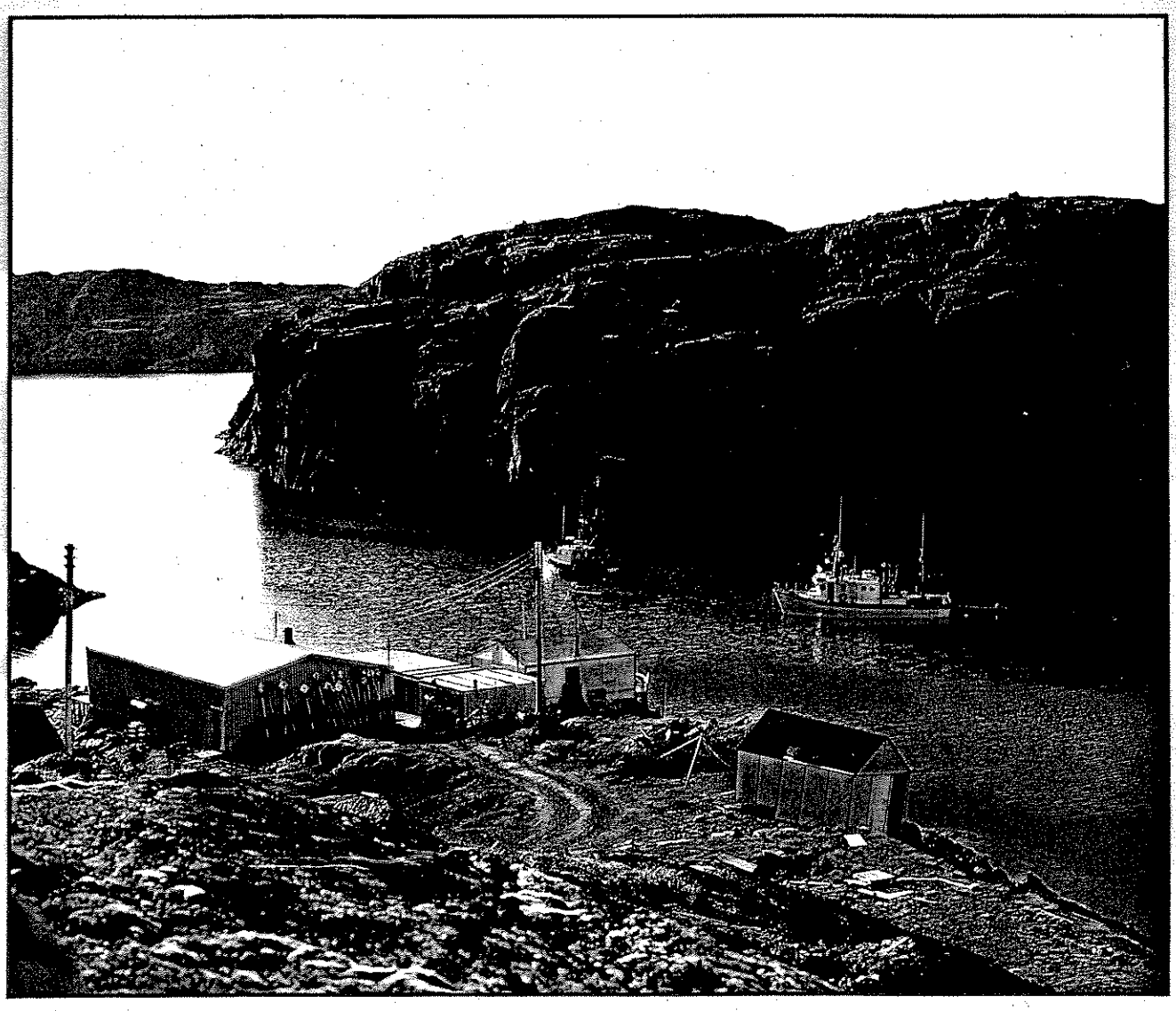
KILLINIQ FISHERIES PROJECT

PHASE I



MAKIVIK CORPORATION
RESEARCH DEPARTMENT

AUGUST 1984

KILLINIQ FISHERIES PROJECT

PHASE I

Report by:

David J. Gillis and Marc R. Allard

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A. SUMMARY

This report summarizes the findings from Phase I of a feasibility study on the development of a commercial inshore marine fishery at Killiniq in northeastern Ungava Bay.

At a time when pressure is increasing to commercialize the renewable resource base as one means for expanding the cash economy of northern Québec, this study represents an attempt to guide development toward those species and geographic areas which are presently underutilized. In contrast to development efforts in the recent past, the orientation of this feasibility study is to consider presently unharvested marine species as the primary targets for commercial development. The existence of Atlantic cod (Gadus morhua) stocks, in particular, has been known in this area for several centuries and these have been periodically exploited by both natives and non-natives. Past commercial fisheries in the area, however, have been generally small, though this appears not to be related to the abundance of the resource.

The accumulation of the necessary field data to answer the feasibility question will take several seasons. Major funding and support for Phase I of the Killiniq Fisheries Project were provided by Le Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec and l'Office de Planification et de Développement du Québec, with additional funding and support from Makivik Corporation.

The primary objectives of the Phase I study were: to identify the distribution and abundance of Atlantic cod, Greenland halibut and other marine fisheries resources with commercial potential, that are seasonally available within a reasonable operational radius of Killiniq; to collect biological information pertinent to a commercial harvest of these species; to test the effectiveness of selected fishing gears that might be used by Inuit for the commercial harvest of these species with emphasis on those gears and technologies which could be readily introduced to native people; and to involve the Inuit in every aspect of the project, and particularly to train them in the specific skills required in a commercial fishery.

The field survey was carried out from July 19 to September 22nd, 1983. Two multipurpose fishing vessels were chartered for the exploratory fishing and outfitted with a variety of static gear types, the primary gears being gillnets and longlines. These gears were systematically deployed within the study area, and comprehensive set and catch data collected from all efforts. Standard biological measurements and samples were taken on commercial species, especially Atlantic cod. Fresh catches were processed and salt-cured at the operation's base and transported to southern markets at the completion of the field survey. A shore-based sampling program was established at Killiniq itself to attempt to monitor the temporal availability of Atlantic cod there.

Severe set and tidal currents precluded efficient sampling efforts in some sections of the study area, particularly in Ungava Bay, and a late cover of sea ice throughout the region shortened the intended field sampling period in 1983. These factors resulted in the need to delete from the sampling program the use of several secondary fishing gears. Because of the difficult conditions, planned environmental studies also had to be deleted. These deletions were made in order to protect the essential objectives of the feasibility study.

The results of the survey were encouraging. Though other commercial fish species were not found in abundance, the location of the Atlantic cod resource near Killiniq was re-established and catches were of commercial levels. The fish were uniformly large and represent a superior raw product for commercial use. Most catches were salted by standard methods and the resultant product was independently judged to be excellent by the Canadian Saltfish Corporation.

Comparison of the biological parameters of the present sample with those of a previous sample indicates either that the individual growth rate of the local cod has increased dramatically, or that the present concentration at Killiniq is related to the West Greenland cod stock. This important question must be addressed in future studies. Initial parasite analysis on this stock indicates that the codworm (Phoconema decipiens) is not prevalent.

This report recommends the continuance of studies toward the development of a fishery at or near Killiniq and based on the experiences of Phase I, provides direction for the design of future studies. Emphasis must be placed on the development of fishing gears and operational methods which are suited to the challenging physical conditions presented by the area. Further exploratory surveys in areas of the region that were not sampled during Phase I should increase knowledge of the spatial and temporal availability of the Atlantic cod resource. Several other species, in particular the Iceland scallop (Chlamys islandicus), warrant investigation with specialized gears. The cod resource near Killiniq should now be tested in an experimental commercial fishery to develop an efficient harvesting and processing system and to document the quantity of harvest which can be realized in such an operation. The involvement of local Inuit, the primary benefactors of any future fishery, should be maximized, particularly in the experimental fishery, to prepare them as fully as possible to assume responsibility in a commercial operation.

B. INTRODUCTION

The exploitation of renewable land, marine and freshwater resources has been, and continues to be, an essential element in sustaining the economy and culture of the northern Québec Inuit. Historically, the resources harvested were consumed directly as food, and many of the by-products were used in the production of clothing, shelter, travel equipment, tools and other implements or materials required for each season of the year. As contact with the outside world intensified, a process of commercialization developed and the inventory of important materials grew to include those produced locally and those imported from outside. Fur, skins, oil, ivory and occasionally food were exchanged with traders in order to acquire imported goods. This trading economy fostered the introduction of new technologies for resource harvesting, and gave rise to many profound changes in the material culture of Inuit. Trade and other commercial activities required to sustain this process became more complex and, over time, trade and barter gave way to an economic system based on cash and on the creation of more diversified opportunities for obtaining this cash. Today, the economy of the north is best described as a "mixed economy" comprised of subsistence activities, cottage industry, employment and transfer payments.

Cultural change in northern Québec has not replaced a strong reliance on the harvesting and consumption of local resources but it has changed the nature of this reliance. In recent years, the accelerated introduction of many other aspects of southern society has created additional needs for cash; needs which often exceed the ability of a local economy based almost solely on subsistence and domestic activities to provide. Consequently, there is increasing pressure toward the further commercialization of renewable wildlife resources as a means of expanding the local cash economy. As a result of the Inuit's traditional utilization of particular species, much of this pressure may be directed toward resources such as caribou (Rangifer tarandus caribou) and Arctic char (Salvelinus alpinus) which are already cornerstones in the subsistence harvest. These food

supplies are, however, increasingly required by an expanding population. It is prudent, therefore, to deflect the pressure to develop commercial harvests toward those species and geographic areas which are presently under-utilized in northern Québec. One promising example of such a resource is the Atlantic cod (Gadus morhua) stock which migrates seasonally into the marine waters surrounding Killiniq Island (Figure 1).

Inuit peoples have occupied the Killiniq area for centuries. Including both the northernmost Labrador and Ungava coasts, this area is widely recognized among Inuit for the abundant natural resources available there. Harp seals(Pagophilus groenlandicus), ringed seals (Pusa hispida), bearded seals (Erignathus barbatus), Arctic char, Atlantic salmon (Salmo salar) as well as many species of marine birds and waterfowl are all plentiful (James Bay and Northern Québec Native Harvesting Research Committee, 1979 and 1982). Caribou move periodically into the area in significant numbers and beluga whales (Delphinapterus leucas) inhabit adjacent waters. In 1976 and 1977, the population of Killiniq (then approximately 50 individuals) harvested 32,400 kg and 29,214 kg respectively of food (edible weight) from all species (Ibid.).

Killiniq (Inuttitut for "end of the land") is aptly named. It is a small island which lies just north of the tip of the Labrador Peninsula, near the southern side of the eastern entrance to the Hudson Strait. With such a strategic location the site has been known to European mariners since at least the mid 16th century. Mercator's map of 1569 would seem to indicate that Portuguese fishermen already knew of the area. John Davis (in 1587) and Weymouth (in 1602) visited the area before Henry Hudson gave his name to the adjacent waterway in 1610 (Dunbar and Hildebrand, 1952). With the subsequent development of the Davis and Hudson Straits into major marine exploration and supply routes to a vast portion of the southeastern and central Canadian Arctic, Killiniq became a key waypoint for a variety of marine traffic, and remains so to this day.

One of the first sustained visitations to the Killiniq area by outsiders was by the Dominion Government Hudson Strait Expedition which

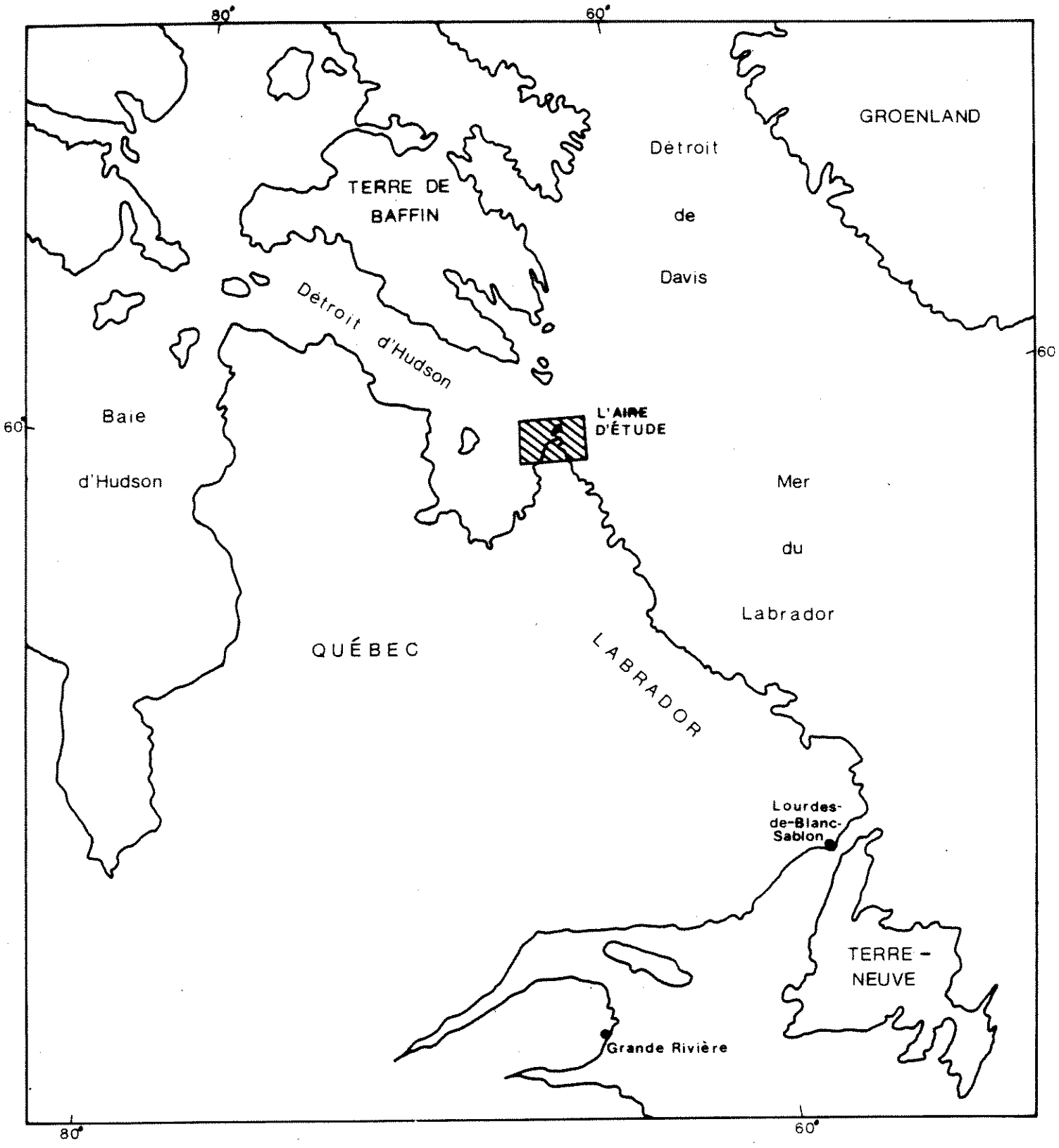

FIGURE 1: EAUX DE L'ATLANTIQUE ET DU SUD-EST DE L'ARCTIQUE
L' AIRE D'ÉTUDE ▨

established a meteorological station from 1884 to 1886 at what became known as Port Burwell. The history of the area from 1884 to 1971 has been summarized by Barnabe (circa 1971). By 1898, a Newfoundland fishing company, Job Brothers Ltd., was operating a cod "fishing station". This operation was taken over by Moravian missionaries in 1904 as they began educating and trading with the Inuit. The Hudson Bay Company established a trading post at Port Burwell in 1916 and the R.C.M.P. set up a post in 1920 to reaffirm Canadian jurisdiction in the Arctic and to collect customs duties from foreign vessels passing through the Hudson Strait to and from points to the west. These two institutions had replaced the trading role of the Moravians by 1924. Hudson Bay Company records of this period indicate that an organized Atlantic cod fishery was operating at Killiniq using both a cod trap and hand jiggers and barrels of cod were frequently sent out to other northern communities on passing ships. The R.C.M.P. and the Hudson Bay Company moved out of the area in 1936 and 1939 respectively.

The first critical study of Atlantic cod from the Killiniq area was performed by Vladykov (1933) on 12 specimens collected in 1927 by a Mr. Fritz Johansen. Between 1947 and 1950 and again in 1954, the Fisheries Research Board of Canada's research vessel, the "Calanus", was involved in biological and physical oceanographic studies in the Ungava Bay area (Dunbar and Grainger, 1952). Data collected included a detailed description of the Atlantic cod at Killiniq (Grainger and Dunbar, unpublished) which they had found to be abundantly available. As a result of this work, an experimental fishing project to provide cod as food to the Inuit was established in 1950 and 1951 (Ibid). Catches were apparently good, but the Inuit were adequately supplied in other food species such as seal and therefore apparently did not put much effort into utilizing this resource after the experiment ended (Evans, 1958).

Following an economic development survey of the Ungava Bay area by the Department of Indian Affairs and Northern Development (Evans, 1958) an economic development project began at Killiniq in 1959. Over the next several years, an Inuit cooperative was formed and fisheries for Arctic char and seals were started. The freezer building at the site today was

placed there in 1959, to store frozen fish. With the assistance of Economic Development Officers from the Department of Indian Affairs and Northern Development, an Atlantic cod fishery was developed to bridge the gap between the Arctic char fishery which usually closed in August and the arrival of migrating harp seals in October (Raymond Buffitt, pers. comm.). Landed catch records for cod have only been found from 1966 (8100 lb.), 1968 (60,000 lb.), 1969 (8,000 lb.) and 1972 (3,000 lb.) (Source: Government of Northwest Territories, Fish and Wildlife Service). The present fish plant (Photo 1, Appendix A) was constructed in 1968 but while it was ideally suited for an Arctic char fishery, the freezer facility was of a limited capacity for Atlantic cod products (Raymond Buffitt, pers. comm.). Cod landings were often restricted to what could be properly processed and stored. This multispecific commercial operation prospered, however, and as the settlement moved into the 1970's it was a flourishing Inuit community of over 100 people with a firm and viable economy based on the diversity and abundance of renewable resources available.

The decline of the community from that point until its abandonment in 1978 was a complex and controversial process; the intricacies of which fall outside the scope of this summary. Due to its remote location, modern services were difficult to maintain. As there was no suitable site for an airstrip, regular contact was possible only by float plane or helicopter except when a landing strip could be cleared on the sea ice between mid-winter and late spring. By August, 1977, the population had declined to less than 50 residents. Among those not already working, there seemed to be little interest in working at the fishery, so the commercial fisheries activities had effectively ceased (McAffee, circa 1977). There is no indication that the exodus of the population or the resultant collapse of the fishery was related to the availability of the resources. On February 8th, 1978, by Federal Government decree, the remaining residents of Port Burwell were moved to various northern Québec communities fringing Ungava Bay. Though the Department of Transport staffs a marine radio station at Killiniq on a seasonal basis, the town has been abandoned since that date.

The hunting areas adjacent to Killiniq continue to be frequented by the Inuit who come to hunt seals and to fish, particularly in the summer

and fall. The Killiniq Inuit have never accepted the closing of the settlement and a movement has developed to establish a new community in the area. A site on the Québec mainland some 40 km south of Killiniq has been tentatively identified and negotiations are presently underway between the Inuit and all levels of government.

It is therefore against this background of long and continuing interest in the Killiniq area and its resources, by native and non-native alike, that the present fisheries development project must be viewed. The purpose of the Killiniq Fisheries Project is to assess the feasibility of re-developing a commercial inshore marine fishery in northeastern Ungava Bay to be run by and for native peoples (Makivik Corporation, 1982). This is certainly not a new idea. As Dunbar (1952, 1970) has clearly pointed out, few areas within the southeastern Canadian Arctic support the diversity and abundance of potentially exploitable natural resources that are available at or near Killiniq. The commercial fishery which developed through the 1960's was successful for a time, before circumstances external to the fishery itself caused it to close. From a resource standpoint, the potential for development still exists at Killiniq, and it must be pursued. Given that harvestable resources are available, many options exist to overcome operational and logistical obstacles.

The present study is designed to further delineate and quantify, on a firm scientific basis, the potential offered by the marine fisheries resources of the area. In addition, it will investigate and test a variety of harvesting methods, product forms and production techniques, from which a feasible combination may emerge. Attention is being focused on those marine species which are not heavily utilized in present Inuit subsistence harvests. The logistical exercise of completing the program itself is a study into the related problems to be faced by a commercial venture at Killiniq and available methods for the movement of materials and products are being identified and tested as the program proceeds.

Phase I of the Killiniq Fisheries Project has focused on issues relating to the resources; relocation of previously known resources such as

Atlantic cod, and examination of as yet unstudied areas and species. In the process, however, much experience and data concerning the operational and logistical aspects of the program have been acquired. A number of Killiniq Inuit interested in reestablishing a fishery have been directly involved and have demonstrated both the attitude and aptitudes which would be required within a commercial fishery.

This document presents a detailed description of the Phase I methodologies, the operational, commercial and scientific data collected, and a discussion of those findings as they relate to the overall feasibility question. The main conclusion of this report is that the results of Phase I warrant the continuance of the program, and a set of recommendations are put forward to guide the development and realization of Phase II.

C. METHODOLOGY

1. GENERAL APPROACH

Phase I of the Killiniq Fisheries Project was primarily an exploratory survey to identify and study the potentially commercial marine fisheries resources available in northeastern Ungava Bay and adjacent waters. The study area straddled the Labrador Peninsula and approximated the reasonable radius of operations of a small (12 m - 17 m) fishing vessel (figure 2). Two such vessels (Photo 1, Appendix A) were chartered for the use of the project by the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec. Various static gears, primarily gillnets and longlines, were deployed systematically within the study area, and comprehensive set and catch data collected from all efforts. Standard biological measurements and samples were taken on commercial species. Fresh catches were processed and salt-cured at the operations base and transported to southern markets at the completion of the field survey. A shore-based sampling program was established at Killiniq to attempt to monitor the temporal availability of the Atlantic cod resource at Killiniq.

Inuit fishermen were involved in most aspects of the program to train and familarize them in operational and processing techniques. At the completion of the survey program, biological samples were analyzed by various specialists. These and other results were then analysed and are presented in this report.

2. DETAILED METHODS

a) Study Area Description

Killiniq Island is located just north of the Labrador Peninsula and is separated from the mainland by McLellan Strait (figure 2). To the

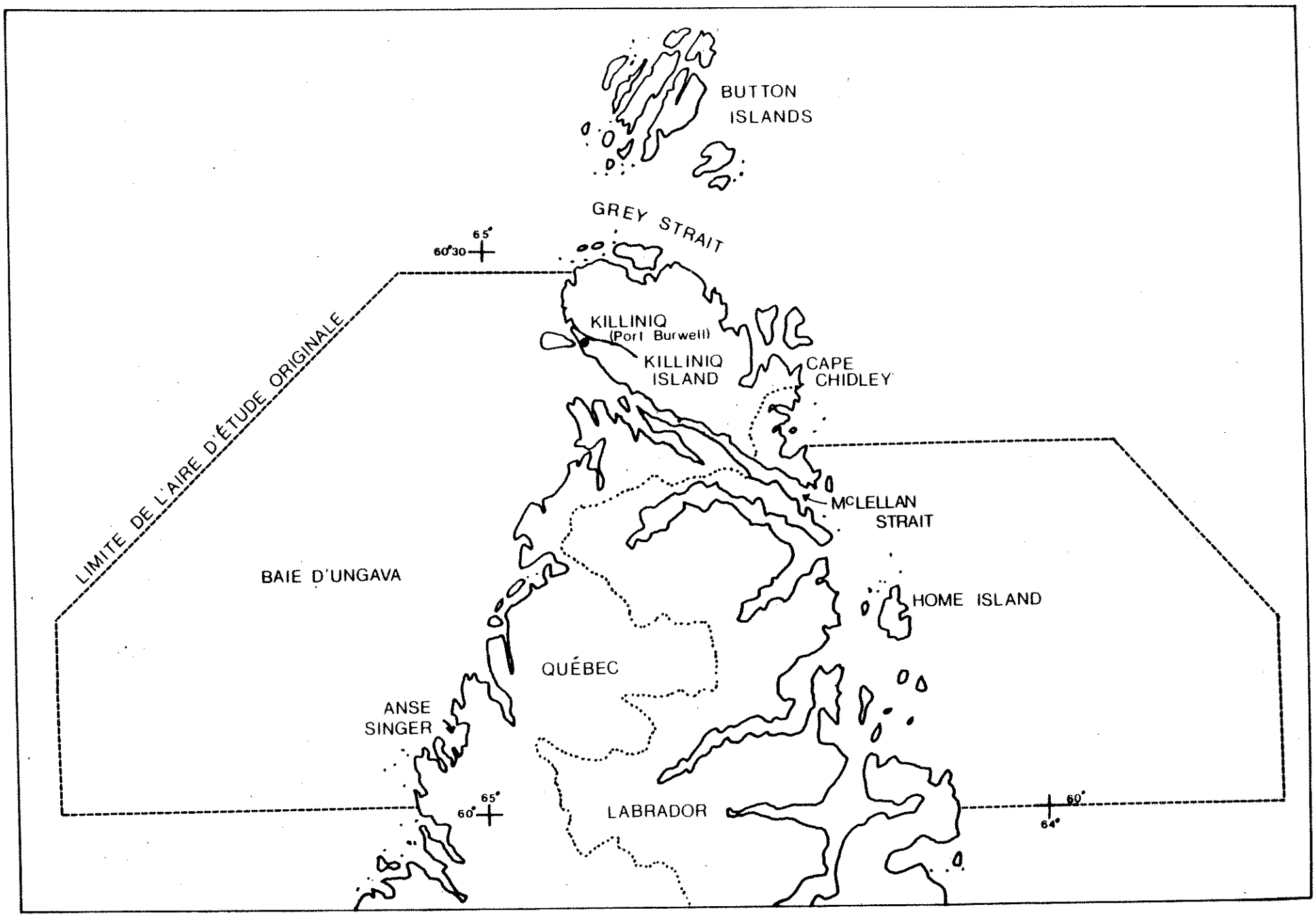

Figure 2: RÉGION DE KILLINIQ ISLAND - L'AIRE D'ÉTUDE

east of the peninsula is the Labrador Sea, to the west Ungava Bay. To the north lie the Button Islands and Resolution Island which, between them, form the eastern entrance to the Hudson Strait. The adjacent countryside is very rugged being the northern limit of the Torngat mountain range. In many areas steep cliffs rise out of deep inshore waters. The highest point of land on the island is 537 meters. The Killiniq settlement site is located on the southwest side of Killiniq Island at 60°25' N 64°50' W. Terrain near the settlement is still very rugged (cover photo) but the hills are lower, attaining heights of 30 m - 150 m. Available bathymetric information is given in Appendix J.

The dashed line in Figure 2 represents the boundary of the study area. This area was further subdivided into a grid of small blocks of equal size, each block being 5' of latitude by 10' (approximately 5 square nautical miles). There were 18 and 22 such blocks on the Labrador and Ungava sides respectively (see key map, Appendix C).

b) Materials and Equipment

i) Vessels

Two multipurpose commercial fishing vessels were chartered and brought from their home port at Lourdes-de-Blanc-Sablon to Killiniq for the field program. The larger vessel, "F/V Silver Condor" (photos 2, 3 and 5, Appendix A), was a 16.7 m stern trawler which was adapted to handle gillnets by utilizing the overhead trawl net drum. This vessel also featured a refrigerated/frozen storage hold. The smaller vessel, "F/V Cindy Rogers" (photos 2, 3, 6, Appendix A), was a purpose-built gillnetter/longliner, 12.2 m in length. Technical descriptions of these vessels and the equipment onboard each are given in Table 1. A list of equipment placed onboard each vessel for the duration of the project is given in Table 2.

An 8.5 m open trap boat (photo 1, Appendix A) was also rented and brought to the site to tend shore-based and other local gear. Several local Inuit canoes were used periodically for general duties near the operations base.

TABLE 1 - DESCRIPTION OF CHARTERED SURVEY VESSELS
KILLINIQ FISHERIES PROJECT, PHASE I

VESSEL	F.V. CINDY ROGERS CFV-8653	F.V. SILVER CONDOR CFV-8555
Type	Longliner/gillnetter (cabin forward)	stern trawler
Dimensions	12.2 m x 3.4 m x 2.9 m	16.7 m x 5.7 m x 4.6 m
Draft	1.0 m	3.4 m
Home Port	Lourdes-de-Blanc-Sablon	Lourdes-de-Blanc-Sablon
Captain	Alexandre Dumas	Andrew Lavallée
Crew	Jean-Louis Beaudoin Louis Arseneault	Richmond Morris Julien Jones Ives Jones
Call Sign	VA-9906	VA-9905
Motor	453 diesel 4 cyl. 125 hp. General Motors	3408 8 cyl. diesel Caterpillar 365 hp
Fuel Capacity (l.)	685 l	7290 l
Range (hrs.)	24 hrs	120 hrs
Speed (knots)	8 knots	10.5 knots
Hold Capacity	3,640 kg	35,000 kg (frozen)
Electronic equip.	- 1 radar, 24 mi, DECCA - 1 depth sounder, FURUNO FE400 - 1 citizens band radio - 1 VHF radio	- radar, 24 mi, FURUNO - 1 radar, 48 mi, FURUNO - 1 color video fish finder, FURUNO - 1 depth sounder, FURUNO FE600 - automatic pilot - 1 LORAN-C navigation system - 1 track plotter, FURUNO - 1 HF radio, MARCONI - 1 VHF radio - 1 citizens band radio
Fishing equipment	- 15" gillnet gurdy, stand and roller	- 2 trawl winches - 1 net drum, aft

TABLE 2 - EQUIPMENT INSTALLED ONBOARD CHARTERED FISHING VESSELS FOR THE DURATION OF THE FIELD STUDIES

KILLINIQ FISHERIES PROJECT, PHASE I

VESSEL	F.V. CINDY ROGERS CFV-8653	F.V. SILVER CONDOR CFV-8555
Electronic equip.	- 1 HF radio, MARCONI - 1 satellite navigation system, NAVSTAR 601 S - 1 electronic balance, SEAWEIGH	- 1 weather facsimile radio, ALDEN, MARK IV - 1 satellite navigation system, NAVSTAR 601S - 1 electronic balance, SEAWEIGH
Fishing equipment	- 1 vertical longline hauler, LAURENTZEN	- 1 hydraulic crab pot hauler and boom
Other	- 5 survival suits	- 7 survival suits - 500 m x 48 mm hydrographic wire (existing winch) - auxiliary freezer unit for hold

(ii) Fishing Gears and Scientific Equipment

A comprehensive collection of primarily static fishing gears was assembled for the field studies, the details of which are given in Table 3. The longlines, commercial cod gillnets, surface gillnets, trammel nets, experimental nets and crabpots were assembled from their components at the M.A.P.A.Q. Regional Laboratory at Grande Rivière under the supervision of Mr. Arthur Mauger. Other fishing gears were purchased or rented. A large collection of spare pieces and repair materials for these fishing gears was on hand. Scientific sampling equipment (Table 3) was borrowed from McGill University in Montréal and GIROC.

c) Operations

(i) Project Itinerary

The Killiniq site was visited by two Makivik project members and two M.A.P.A.Q. personnel in February 1983, to inspect the condition of the facilities and detail the modifications and installations which would be required for the project. Immediately following, consultations and discussions concerning the project were held with former residents of Killiniq and others in all the Ungava Bay Inuit communities. Concrete preparations for the accomplishment of the Phase I study design began on April 20th, 1983. Key events marking the progression of the activities are outlined in Table 4. Mobilization of the two chartered vessels in late July in Grande Rivière coincided with the preparation of the base at Killiniq. A detailed itinerary of the voyages of the chartered vessels is given in Table 5 (a and b). Fritz Axelson on behalf of M.A.P.A.Q. and Raymond Buffitt on behalf of Makivik Corporation accompanied the vessels to and from the study area. The commencement of field sampling, scheduled for August 4, had to be delayed to August 19 due to lingering sea ice over the study area. Attention was focused initially on the Labrador side of the study area, however, once the Ungava side cleared of ice, all subsequent sampling was directed there. Exploratory fishing and other field sampling was completed

TABLE 3 - LIST OF FISHING GEARS AND SCIENTIFIC EQUIPMENT ASSEMBLED FOR THE FIELD STUDIES

KILLINIQ FISHERIES PROJECT, PHASE I

#	FISHING GEAR
12	Longlines; No. 28 line with hooks of #13, #15, #6283, #6284
40	Bottom cod gillnets; commercial type # 14 monofilament, mesh size 5½", 6" and 7", 50 fathoms length (hung), 25 meshes deep, double selvage
5	Surface gillnets; # 14 monofilament, mesh size 5½" and 6"
1	Cod Trap: circumference 52 fathoms, depth 10 fathoms mesh size 3½" and 5½", 35 fathom leader
1	1 Autofisher; automatic jigging machine
15	Crab Pots; 1.5 m x 1.5 m x 0.6 m, box type, 82 kg each
10	Lobster pots; standard wood lathe construction
17	Trammel nets: outside panels mesh size 16" inside panel mesh size 2½"
12	Experimental nets; geometric progression (approx.) of mesh sizes: 1", 1.5", 2", 2.5", 3", 4"
8	Hand line and jigs; Newfoundland and Norwegian types
	SCIENTIFIC EQUIPMENT
8	Niskin bottles: 5 litre capacity
2	Bathyothermograph: 0-60 m
1	Epibenthic sled: 1m x .75 m x .25 m mesh size 2.00 mm
3	Zooplankton Ring Nets; meshes: .233 mm, .500 mm and 1.00 mm

TABLE 4 - PROJECT ITINERARY, KILLINIQ FISHERIES PROJECT, PHASE I

DATE(S)	ACTIVITY
February 19 to 23	Site inspection
April 20 to July 20	Field studies preparation
June 20	Material consigned to "CCGS Des Groseilliers" for transport to Killiniq
July 10	Chartered vessels depart Lourdes-de-Blanc-Sablon
July 14	Vessels arrive Grande Rivière for mobilization
July 15	Inuit fishermen arrive at Killiniq
July 19	Base preparation team from Kuujjuaq to Killiniq
July 22	Vessels depart Grande Rivière
July 23	Ice field blocks coast at Killiniq
July 27	Vessels start up Labrador coast
August 4	Killiniq base preparation complete
August 4	Vessels arrive Home Island, (Figure 2)
August 12	Ice loose around Killiniq Island. Vessels to Killiniq
Aug. 14 to Aug. 19	Ice traps vessels at Killiniq (Photo 3, Appendix A)
August 17	Program extension requested
August 19	Initial fishing attempt - Ungava Bay
Aug. 20 to Aug. 23	Exploratory fishing - northern Labrador study area
August 23	Return to Killiniq. Ice field gone
August 24	Gear reorganization and resupply
Aug. 25 to Aug. 30	Exploratory fishing - northeastern Ungava study area
August 30	Program extension granted
Aug. 30 to Sept. 15	Exploratory fishing - adjacent to Killiniq Island
September 1	Converted longline vessel to gillnets
September 16	Vessels depart Killiniq
Sept. 16 to Sept. 22	Killiniq base demobilization
September 18	Inuit fishermen depart Killiniq
September 22	Last of project personnel depart Killiniq
September 24	Vessels arrive Lourdes-de-Blanc-Sablon
September 26	Salted product sold
September 28	Vessels depart Lourdes-de-Blanc-Sablon
October 2	Vessels arrive Grande Rivière
Oct. 2 to Oct. 4	Demobilization of vessels at Grande Rivière
October 6	Vessels depart Grande Rivière
October 13	Vessels arrive Lourdes-de-Blanc-Sablon; off charter
Oct. 30 to Jan. 30	Laboratory analyses
Jan. 3 to March 31	Interim and draft report production
April 1 to August 30	Final report production

TABLE 5a - CHARTER VESSELS' VOYAGE ITINERARY, NORTHBOUND
KILLINIQ FISHERIES PROJECT, PHASE I

DEPART		ARRIVE	
LOCATION	DATE/TIME(EDT)	LOCATION	DATE/TIME(EDT)
Grande Rivière	July 22/15:55	Chevry	July 23/22:25
Chevry	July 24/17:40	Harrington	July 24/18:58
Harrington	July 24/19:10	Latabatière	July 24/22:45
Latabatière	July 25/10:00	Blanc Sablon	July 25/18:42
Blanc Sablon	July 27/22:45	Domino Harbour	July 28/19:10
Domino Harbour	July 29/02:30	Smokey	July 29/15:45
Smokey	July 30/08:47	Strawberry Is.	July 30/19:20
Strawberry Is.	July 31/11:00	Hopedale	July 31/17:51
Hopedale	Aug. 01/02:27	Nain	Aug. 01/14:27
Nain	Aug. 02/11:39	Okak Bay	Aug. 02/21:06
Okak Bay	Aug. 03/04:30	Bigelow Bay	Aug. 03/20:25
Bigelow Bay	Aug. 04/06:20	Home Is.	Aug. 04/17:37
Home Is.	Aug. 05/13:45	Ikkudliayuk Fjord	Aug. 05/14:45
Ikkudliayuk Fjord	Aug. 10/11:50	Ikkudliayuk Fjord	Aug. 10/15:15
Ikkudliayuk Fjord	Aug. 11/11:50	Tunnissugjuak Fjord	Aug. 11/15:20
Tunnissugjuak Fjord	Aug. 12/08:40	Fox Hbr. (Killiniq)	Aug. 12/18:10

DURATION OF TRIP: 21 days

TOTAL TIME STEAMING: 155 hr, 18 min

TABLE 5b - CHARTER VESSELS' VOYAGE ITINERARY, SOUTHBOUND
KILLINIQ FISHERIES PROJECT, PHASE I

DEPART		ARRIVE	
LOCATION	DATE/TIME(EDT)	LOCATION	DATE/TIME(EDT)
Killiniq	Sept.16/07:16	Ikkukliayuk Fjord	Sept.16/11:00
Ikkudliayuk Fjord	Sept.17/07:30	Bear Gut	Sept.17/20:30
Bear Gut	Sept.18/08:07	Okak Run	Sept.18/18:10
Okak Run	Sept.19/04:30	Nain	Sept.19/15:00
Nain	Sept.20/05:08	Hopedale	Sept.20/18:15
Hopedale	Sept.21/05:19	Makkovik	Sept.21/12:45
Makkovik	Sept.22/05:25	Horse Chops Is.	Sept.22/20:45
Horse Chops Is.	Sept.23/05:15	Square Island Hbr.	Sept.23/18:00
Square Is. Hbr.	Sept.24/04:46	Blanc-Sablon	Sept.25/05:45
Blanc-Sablon	Sept.28/07:10	Latabatière	Sept.28/15:57
Latabatière	Sept.29/08:05	Harrington	Sept.29/11:55
Harrington	Sept.29/no record	La Romaine	Sept.29/22:30
La Romaine	Sept.30/10:25	Natashquan	Sept.30/16:21
Natashquan	Oct. 01/06:17	Port Menier	Oct. 01/21:15
Port Menier	Oct. 02/06:05	Grande Rivière	Oct. 02/17:11

DURATION OF TRIP: 17 days

TOTAL TIME STEAMING: 150 hr, 27 min

by September 15, the two survey vessels left the site on the 16th, and the base was shut down and vacated by September 22. Having made the trip south, stopping at Lourdes-de-Blanc-Sablon to sell the fish product and at Grande Rivière to demobilize, the vessels went off charter on October 13.

Laboratory analyses of the retained biological samples began almost immediately. Final analysis of the data cumulating in this report was underway in January 1984. A draft final report was presented in April 1984.

(ii) Base Preparation

The required alterations and repairs to onsite facilities were identified during the site survey in February, 1983. Immediately prior to the field season the following modifications and installations were made. Four houses were refurbished to minimally acceptable standards to accommodate study personnel. One building was extensively refitted as a cookhouse. In all five houses the roof was repaired, new windows and oil heaters were installed, and the interiors were cleaned and painted. The cookhouse was fitted with a water pump and heater. Power was supplied by a 6.0 kw generator installed in an adjacent building.

Extensive repairs were also required at the fish plant site. The more modern of the plant buildings are constructed of steel and concrete and were structurally sound although most of the mechanical equipment left at the site was beyond repair. The processing plant was thoroughly cleaned and the floor and ceiling painted. The freezer roof was repaired and a small area partitioned off and fitted with a freezing unit for bait and food storage. An oil heater was installed and a small office/lab built in the old fish plant, the remainder of which was used as a gear workshop. On the wharf, all rotting planks were replaced and a whole section washed away by ice was rebuilt. All buildings on the site were rewired by an electrician to meet the project's requirements. Other installations included: a hoist and boom on the wharf for loading and unloading the vessels, a seawater supply system for washing fish and equipment and two small

(6.0 kw) generators to supply power to the plant site. One important installation was that of a fuel line from the reservoirs to the wharf area for refueling the vessels.

(iii) Material Logistics

The materials, equipment and supplies needed for Phase I were delivered to the site by various means. The majority, (including food, 20 metric tons of fishery salt, all materials for base preparation, most fishing gear and scientific equipment) was shipped to the site in early July on the MOT icebreaker "C.C.G.S. Des Groseilliers". The two chartered fishing vessels brought the remaining fishing and scientific equipment from Grande Rivière, Québec. Seven thousand pounds of frozen herring for bait was carried to the site aboard "Silver Condor".

Access to the site in the early period of the field program was arranged with MOT who were operating a BELL 212 helicopter in the area. Once ice conditions permitted, further deliveries of personnel, fresh food, parts and mail were made by a single-engine plane on floats chartered out of Kuujjuaq, Québec as required.

At the completion of the study, some of the equipment and all of the fish products were carried south by the two chartered vessels. Remaining gears to be shipped south were picked up by the "C.C.G.S. Des Groseilliers" in late September and delivered to Québec.

(iv) Sampling and Documentation

The exploratory procedure initially used during field studies was to deploy different types of fishing gears from each of the two vessels within one or several adjacent sampling blocks. The two vessels always worked in the same general area to assist and advise the other if necessary. Generally, gillnets were set at each location overnight. Longlines were, in some instances, retrieved within several hours but at other times left overnight as well. Although major modifications to these procedures

were subsequently required (sections D.1.d, D.1.c and E.2), the catch sampling and documentation procedures outlined below were followed throughout the study.

For every effort involving each gear, detailed records were kept of the block number, precise location, gear type and size, duration, water depth and damage. Each potentially commercial species was counted and/or weighed. For commercial species, length frequencies for each sex were recorded to the nearest cm. Random sub-sampling was performed only where large catches dictated to do so.

Further biological data was collected by detailed autopsies of selected fish. Autopsies included total length to the nearest mm, round weight to the nearest 100 grams, sex and state of maturity. Otoliths were removed from all autopsied fish for age determination. The parameters documented from autopsied fish were corrected against the random length frequency distribution to calculate that parameter on the total catch. The stomach contents of eighty fish and internal parasites of approximately forty others were retained for analysis.

(v) Laboratory Procedures

The ages of the individual fish were determined from otoliths. The otolith was sectioned with an ISOMET low speed saw as close to the center as possible so as to expose the nucleus. Half of the sectioned otolith was placed on a hot plate for approximately 15-20 seconds, at a temperature of 260°C to 480°C, depending on the size of the otolith. The burnt sections were then placed upright in a tray and read under a microscope using reflected light.

Stomach samples were examined and identified to species where possible and the frequency of their occurrence calculated. The parasite samples were examined for species composition.

(vi) Production

Most fresh catch of commercial species collected during Phase I was processed following standard commercial techniques. After biological sampling and documentation was completed, the fresh fish were gutted, headed and split (removing the backbone). Split fish were then cleaned and lowered into the hold of the "Silver Condor" where they were layered alternately with salt. This salted product was brought south at the end of the field season, where it was graded and sold to the Canadian Saltfish Corporation at Lourdes-de-Blanc-Sablon.

D. RESULTS

1. OPERATIONS

a) Sea Ice

Sea ice was abnormally late clearing out of much of the eastern Canadian Arctic in 1983 (figures 3, 4, and 5) and access to our Phase I study area (figure 2), both in Ungava and Labrador, and to Killiniq itself, was directly affected. Up until the 19th of August (figures 3 and 4) with only two short interruptions, the ice pack remaining in Ungava Bay was pushed against the coast in the Killiniq area. A narrow band of water along the eastern shore remained clear from approximately July 15th to July 23rd and the Killiniq area itself was sufficiently clear on August 12th to allow the study's chartered vessels, which had been delayed by ice at Home Island (figure 2) since August 4th to proceed to the site (Table 4). By August 19th, the vessels were able to move out of Killiniq but loose strings of ice persisted in Ungava Bay, jeopardizing any static gears which might be set there. On the coast of Labrador from August 20th to 23rd, ice was also present though the vessels were usually able to manoeuvre around it. Gears could be set and retrieved but not without risk as some gears were lost to ice during this time. By August 23rd at Killiniq, all but the shore-stranded sea ice had gone and Ungava Bay was clear. Sea ice was not a factor in the execution of the exploration program after this date.

The direct effects of these conditions on the planned exploratory program were quite significant. Commencement of effective exploratory fishing was delayed by approximately 21 days by ice and this precipitated the request (subsequently granted) for an extension of the field sampling period. Several sets of static fishing gears were lost to ice during initial sampling attempts and several others sustained damage.

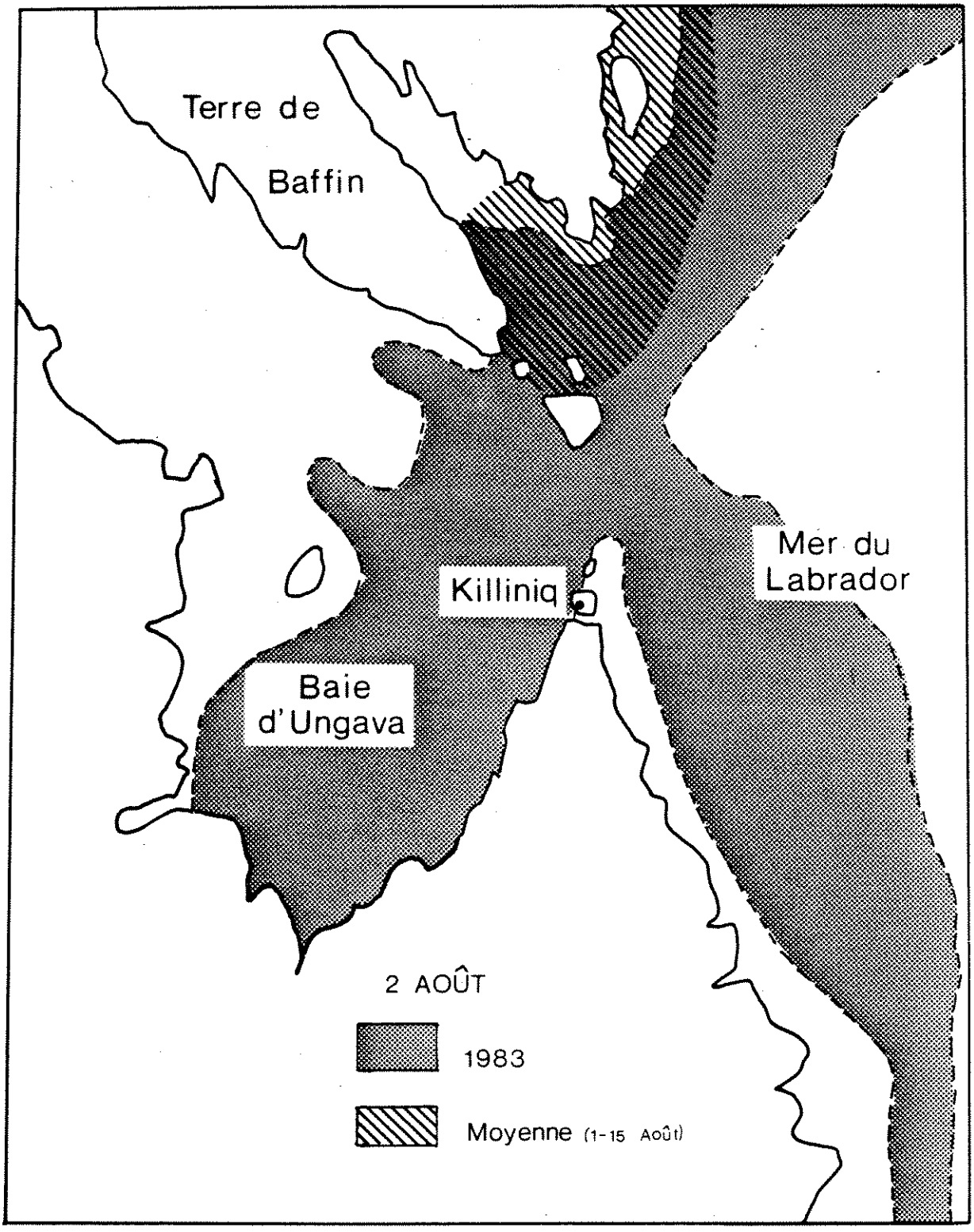

FIGURE 3: ÉTENDUE DU COUVERT DE GLACE EMPÊCHANT LE DÉPLOIEMENT DES ENGINS DE PÊCHE STATIQUES (≥10% PAR RÉGION) POUR 1983: Environnement Canada, 1983; pour la moyenne: United States Naval Oceanographic Office, 1968.

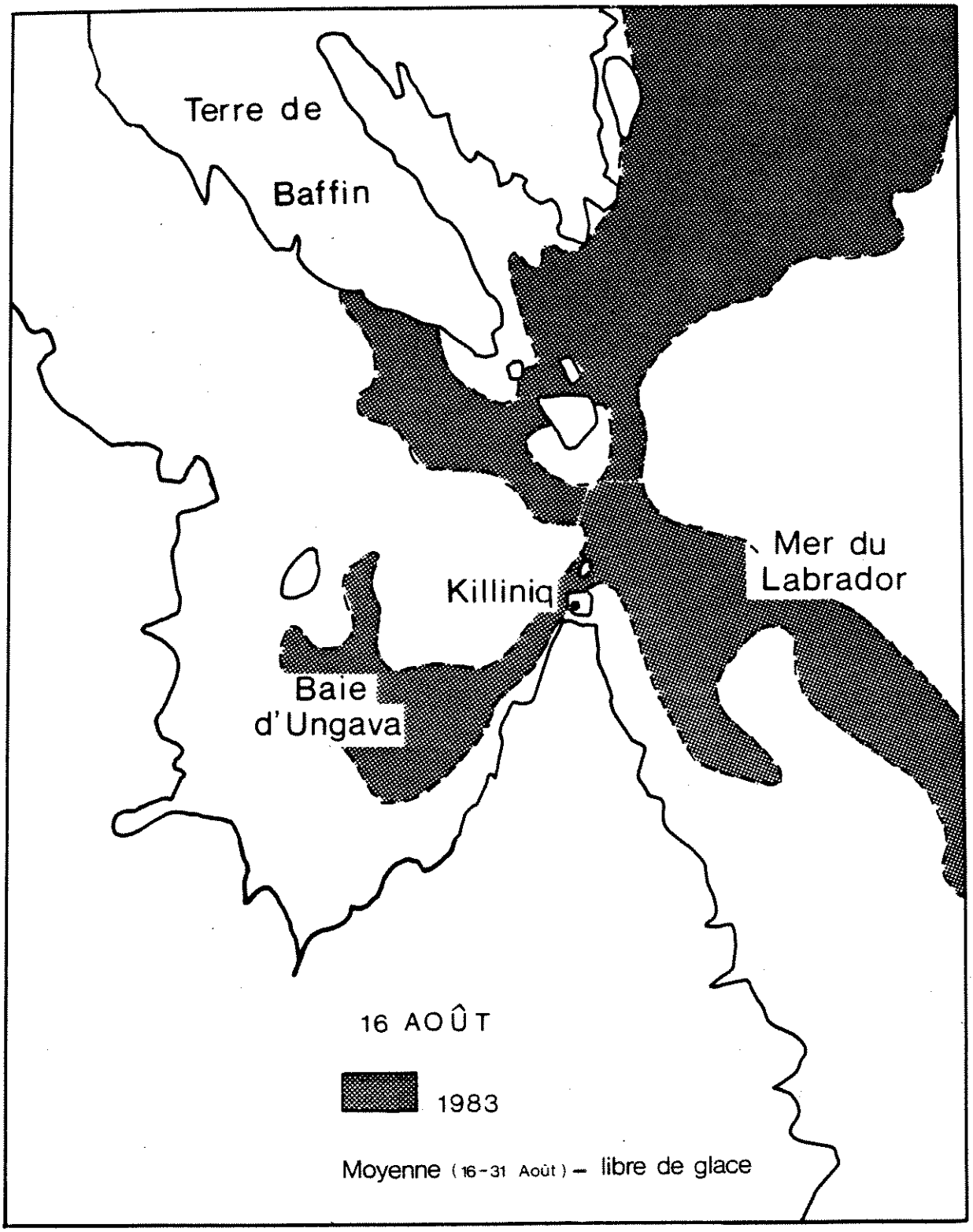

FIGURE 4 : ÉTENDUE DU COUVERT DE GLACE EMPÊCHANT LE DÉPLOIEMENT DES ENGINS DE PÊCHE STATIQUES (≥10% PAR RÉGION) POUR 1983: Environnement Canada, 1983; pour la moyenne: United States Naval Oceanographic Office, 1968.

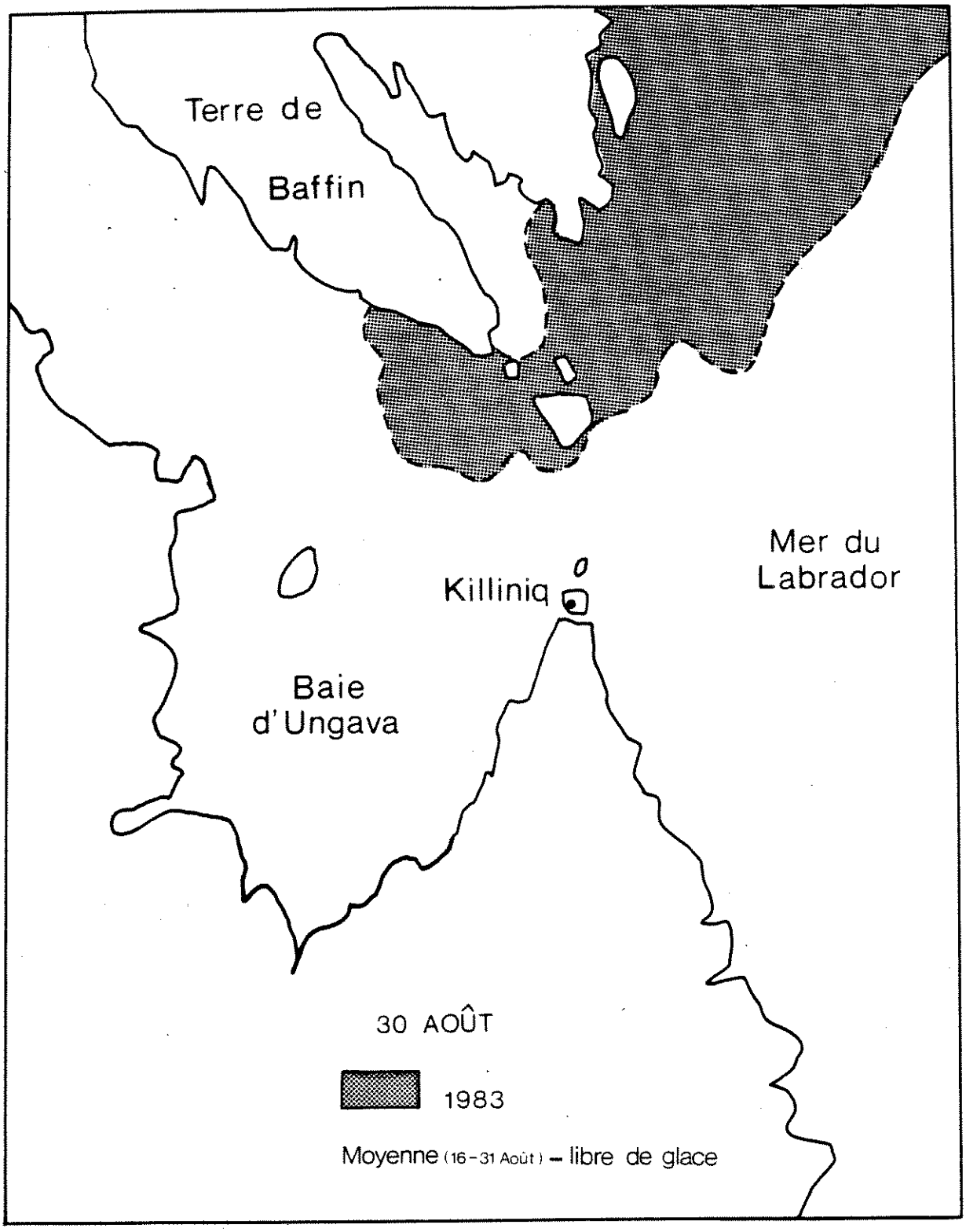

FIGURE 5 : ÉTENDUE DU COUVERT DE GLACE EMPÊCHANT LE DÉPLOIEMENT DES ENGINS DE PÊCHE STATIQUES (≥ 10% PAR RÉGION) POUR 1983 Environnement Canada, 1983; pour la moyenne: United States Naval Oceanographic Office, 1968.

b) Weather

Weather in the study area during Phase I was quite suitable for the operation of the two survey vessels. Only three days of sampling time were lost exclusively because of meteorological conditions, excluding ice coverage. Details of recorded meteorological measurements made by MOT personnel at Killiniq are found in Appendix B.

A monthly summary of some key meteorological parameters at Killiniq during the field studies period is given in Table 6. Temperatures were slowly cooling through the period. Precipitations were quite low, totalling 180.5 mm for the three months. In July, wind directions were evenly split between all quadrants except for a low occurrence of NW winds, which were infrequent throughout the whole period. Winds from the two southerly quadrants, SW and SE, prevailed through August and September (Table 6). Wind velocities were almost invariably light to moderate through the whole summer, with few observations of winds in excess of 20 knots (39 km/hr).

c) Tidal and Set Currents

Similar to all of Ungava Bay, the northeastern coast features a semi-diurnal tide of considerable, if somewhat variable, magnitude (figure 6). This is manifested in strong tidal currents over much of the Bay, but particularly so where waters are deflected around coastal headlands and nearshore islands. These fluctuating tidal currents are superimposed upon a steady set current which brings water from southern Ungava Bay in a northeasterly flow between Akpatok Bank and the northeast coast of the Bay (figure 7). As a result, forceful water movements and turbulent water were encountered over all but the most sheltered coastal areas in the Ungava study area. The dominant hydrological feature of the Labrador study area is the Labrador current, which sets in a generally southern direction parallel to the coast. Tidal ranges on this coast are of less magnitude than in Ungava Bay, although narrow coastal passages are swept by strong tidal currents.

TABLE 6 - MONTHLY SUMMARY OF KEY METEOROLOGICAL PARAMETERS AT KILLINIQ JULY TO SEPTEMBER 1983 (SOURCE: ENVIRONMENT CANADA, CANADIAN CLIMATOLOGICAL CENTRE)

PARAMETER	JULY	AUGUST	SEPT.
Number of weather observations	243	252	246
Temperature:			
Mean daily high [°C]	7.9	6.7	4.8
Mean daily low [°C]	0.7	1.3	-0.4
Overall mean °C	4.3	4.0	2.2
Precipitation:			
Total (mm)	86.4	52.3	41.8
Snow* (cm)	trace	0	3.7
Days with more than 1.0 mm total precipitation	12	13	9
Sealevel air pressure, mean (millibars)	1005.8	1007.3	1011.2
Winds:			
Direction (% of observations) -			
NE quadrant (N to ENE)	25%	6%	12%
SE quadrant (E to SSE)	23%	22%	33%
SW quadrant (S to WSW)	31%	41%	33%
NW quadrant (W to NNW)	6%	14%	8%
Calm	15%	17%	14%
Speed (% of observations) -			
Calm	15%	17%	14%
01 km/hr to 19 km/hr (0.5 knots to 10 knots)	55%	60%	56%
20 km/hr to 38 km/hr (10 knots to 20 knots)	25%	22%	24%
39 km/hr + (20 knots +)	5%	1%	6%

* Included in total precipitation

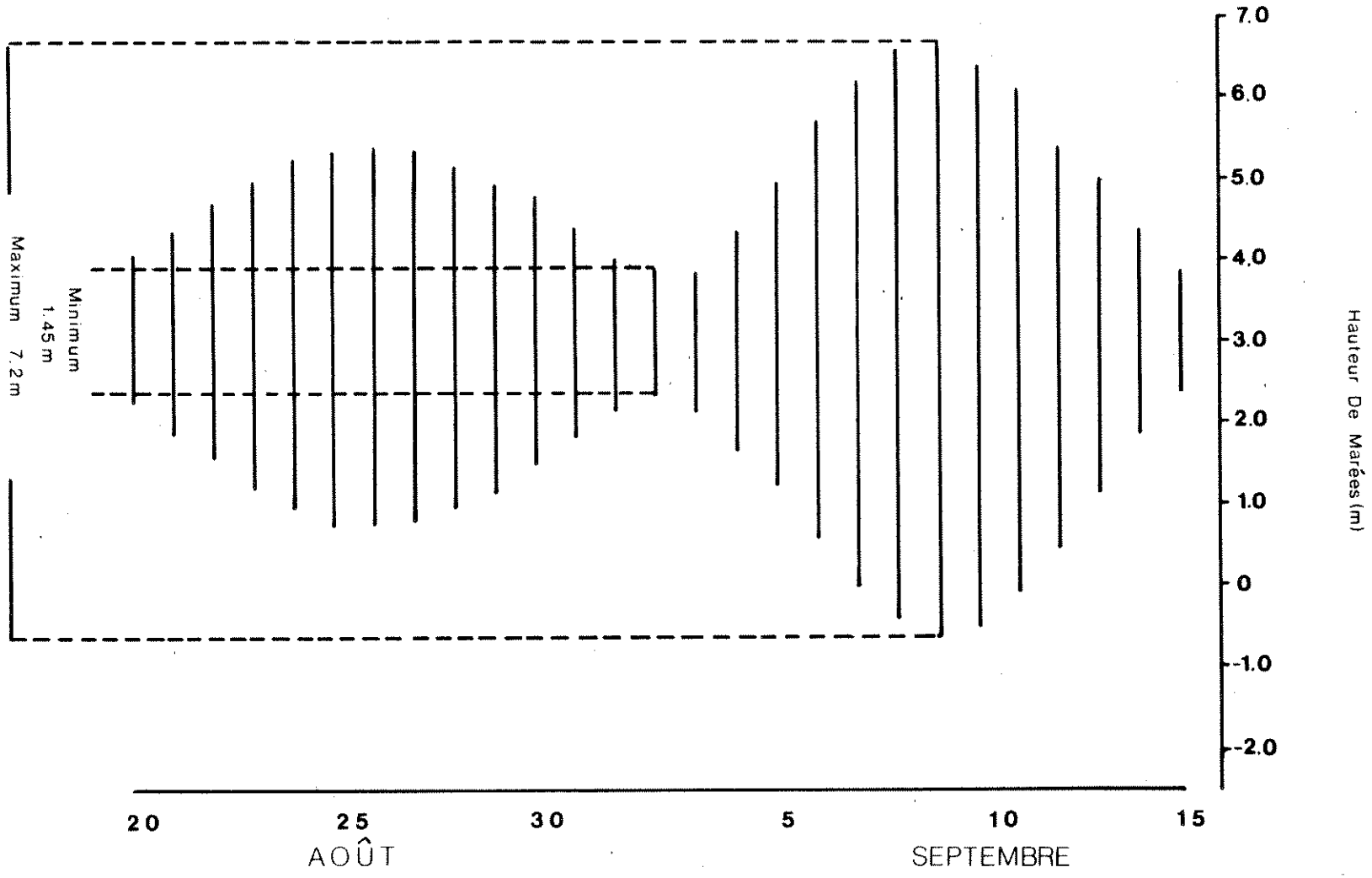

FIGURE 6: L'AMPLITUDE DES MARÉES QUOTIDIENNES 20 AOÛT – 15 SEPTEMBRE 1983 (Service Hydrographique du Canada, 1982)

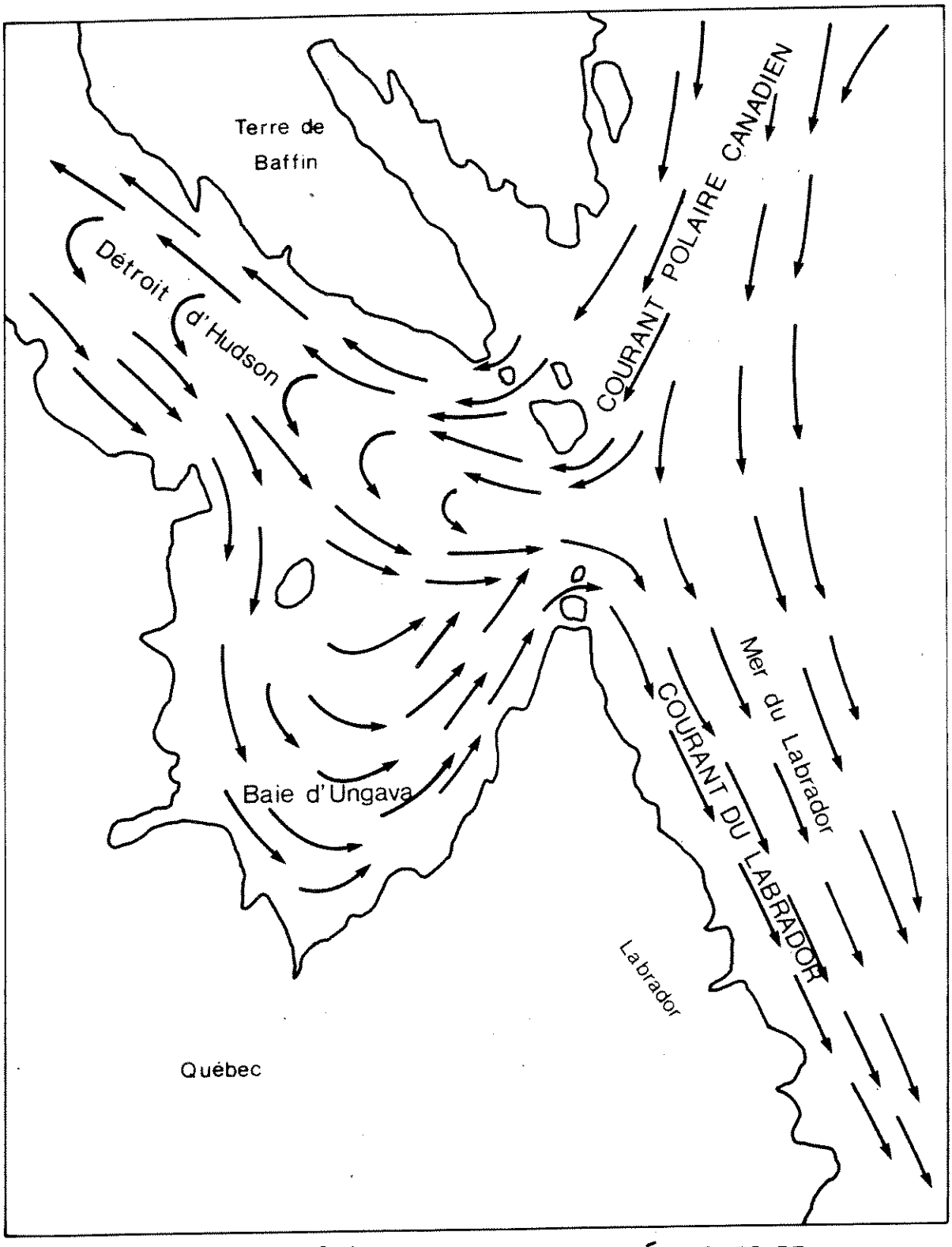

FIGURE 7: MODÈLE GÉNÉRAL DES COURANTS OCÉANIQUES DE SURFACE; EAUX DU SUD-EST DE L'ARCTIQUE CANADIEN
(Adapté de Dunbar (1951) et Gustajtis & Buckley (1977))

These currents and tides had a direct impact on the success and effectiveness of the survey activities in the study area, as detailed in section d).

d) Operation of Fishing Gears and Vessels

Both the vessels employed during the field studies of Phase I were adequately suited to their roles in the program and their crews were competent in the operation of the vessels and their gears. The smaller (12.2 m) vessel was particularly well suited to working very close inshore, being highly manoeuverable and having a shallower draft (1.0 m).

The severe physical conditions encountered in the study area, particularily the set and tidal currents, had a significant impact on the operation of the static fishing gears used during the project. Much of the Ungava Bay study area could not be effectively surveyed, as the strong currents damaged or swept away both longline and gillnet sets (Photo 4, Appendix A). Respite from these currents was only available in well-protected inlets and coves along the coast but at many of these locations, heavy beds of seaplants (probably Laminaria sp.) fouled the gears. As a result of this, damages to and losses of gears were initially quite high. This situation improved considerably once efforts became concentrated along the south and west coasts of Killiniq and Jackson Islands (figure 8). Here, through very strong currents swept just offshore, a number of protected coves were found where nets could be set close inshore in relatively still water.

Operationally, the situation on the Labrador coast was somewhat better. Here, effective deployment of gears was generally uninhibited by the currents, although extremely heavy beds of seaplants were encountered in some locations. Prevailing currents along this coast (figure 7) tend to bring loose ice pans and strings of ice through these waters from areas far to the north in Davis Strait and west in Hudson Strait. With favourable winds (offshore), disruptions would be limited to waters well away from the

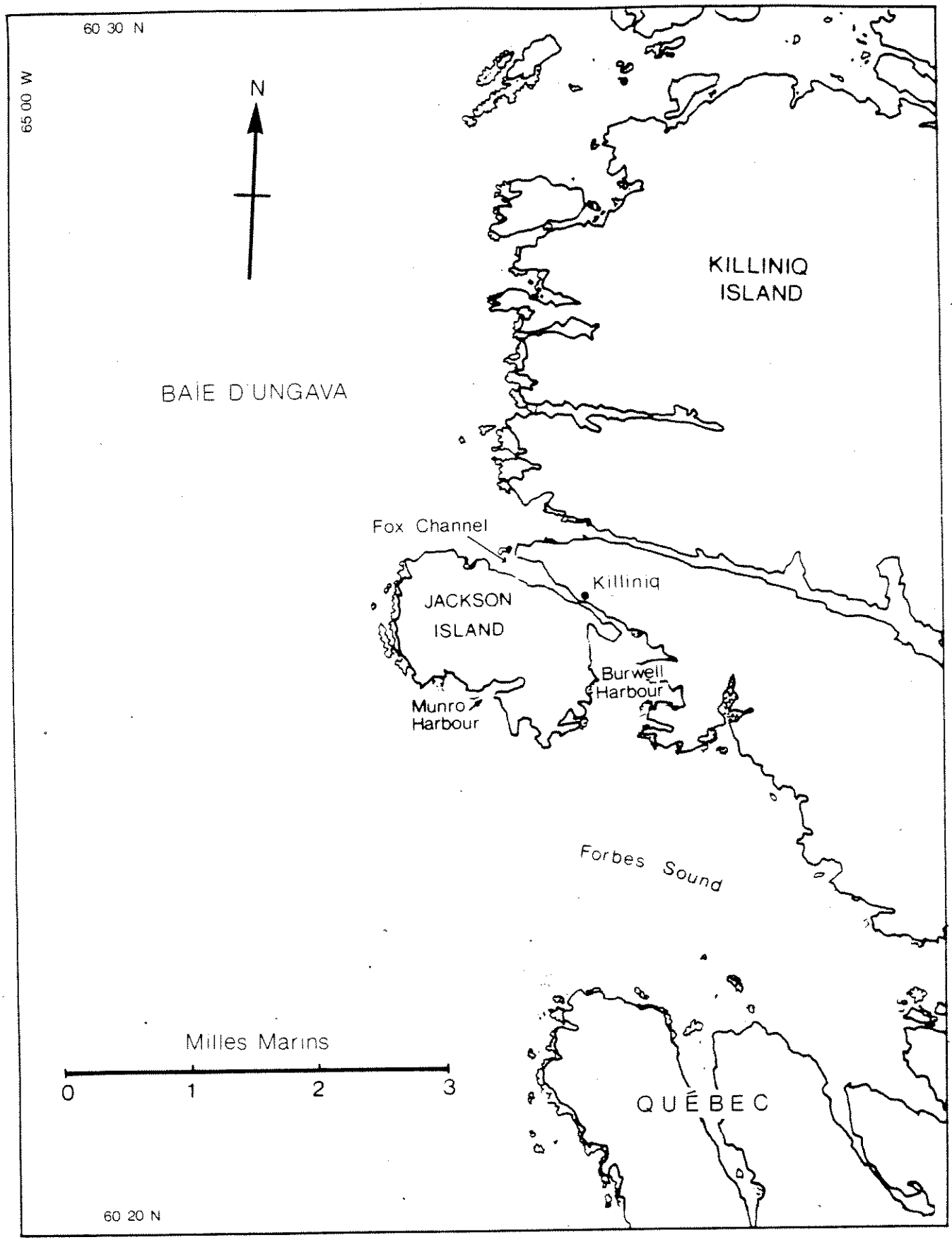

FIGURE 8 : ENVIRONS IMMÉDIATS DE KILLINIQ

coast. However, onshore winds may drive any loose ice in among the coastal islands and into the outer reaches of the fjords, as was observed in Phase I.

In the initial stages of the survey, longlines and gillnets were both deployed. The longlines sets were found less susceptable both to damage from currents and fouling by bottom flora. However, the herring baits, which were of good quality, were lost from the hooks quite quickly, seemingly in less than two hours. It is thought that the combination of large numbers of small benthic scavengers (primarily amphipods) loosening the bait and the action of the hooks against the bottom caused by the currents contributed to this phenomenon, even when the trawl line was buoyed. Once gillnet catches of Atlantic cod increased greatly with no corresponding improvement in the performance of the longlines, the latter were retired in favour of the more efficient nets. Upon examination, it was apparent that the cod caught in this area were gorging on an abundant supply of natural bait (section D.3), which would reduce the effectiveness of baited gears in any case. To this point in time, the "Cindy Rogers" had been used primarily for longlining and the "Silver Condor" for gillnetting. After discontinuing use of the longlines and rigging the "Cindy Rogers" for gillnets, most of all subsequent fishing operations were completed from this vessel, and the "Silver Condor" became the focus of sampling and processing activities (Photo 5, Appendix A). Retrieval of gillnets using the overhead trawl-net drum of "Silver Condor" had been resulting in some damage to the nets; due at least in part to the small diameter of the drum. The "Cindy Rogers" was more suitable both for handling gillnets and working in the extreme inshore fishing locations near Killiniq (Photo 6, Appendix A). Also, with the nets available reduced to approximately one half the original total and those fishing sites being surveyed situated immediately adjacent to the operations base, one vessel could easily handle the sampling workload.

Crab pots were deployed a total of five times early in the program, in the deeper offshore areas of Ungava Bay and along the Labrador coast. Where currents were strong, the heavy (5/8") haulup ropes were very susceptible to sinking even though they were well buoyed (Photo 4, Appendix

A). Once efforts became directed at the close coastal areas near Killiniq, exploratory crab fishing was discontinued.

e) Study Area Coverage

The ship time lost while sea-ice covered this area and the damaging effects of currents on the fishing gears had the combined effect of reducing that portion of the original study area that was actually surveyed during Phase I (figure 9). Only four days of effort with both vessels was directed at the Labrador side of the study area. These efforts were, however, spread over a variety of locations from inside the coastal fiords to some 18 nautical miles offshore. In Ungava, six sea-days were directed at the study area south and west of Killiniq Island, however, the currents in these areas made effective deployment of the gears difficult and sometimes hazardous. After August 30th most efforts were directed at a small area around the western end of Killiniq Island. Here, where a number of small coves faced a deep (up to 70 fathoms) channel just offshore, nets could be protected from the currents. Within this small area, a good number of sites suitable for nets were identified through the experiences of fourteen days of applied fishing efforts.

The deployments of a number of the gears, including the automatic jigging machines, lobster pots and experimental nets, which were planned were not possible due to physical and temporal constraints. Most of the planned environmental sampling program was dropped for the same reason. While the information and experience lost because of these deletions was regrettable, they were required to ensure that the primary gears (commercial gillnets and longlines) were adequately tested and to maximize the areas which could be surveyed with those primary gears.

Detailed information collected to describe each exploratory effort is presented in Appendix C.

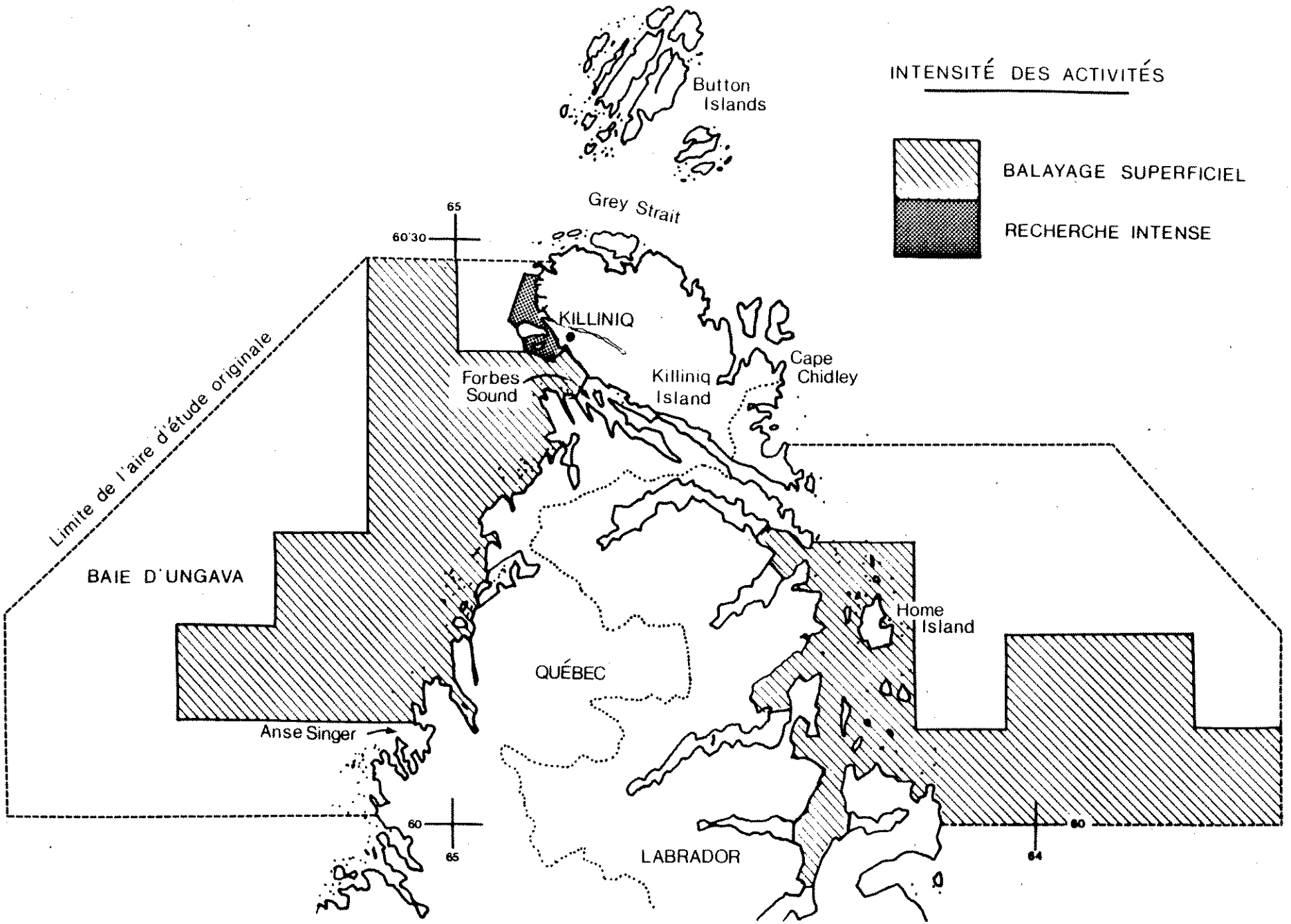

Figure 9: RÉGION DE KILLINIQ ISLAND – INTENSITÉ DES ACTIVITÉS DE LA PHASE I

2. RESOURCES

a) Species and Distributions

Documented catches of fish species by number and weight are summarized in Table 7. The raw catch data from each exploratory effort is presented in Appendix D. Atlantic cod was the only species encountered in commercially interesting concentrations, with a fresh catch of 3,160 fish totaling 13,053 kg (mean 4.13 kg). A further 112 Atlantic cod had been at least partially scavenged, particularly by the Hyas crab.

During this survey, Atlantic cod were not recorded from the northern Labrador coastal waters (figure 10) in exploratory sampling between August 20th and 23rd, however, the total effort directed here was low. Between August 25th and August 30th, sporadic small catches of Atlantic cod were recorded along the Ungava coast south of Killiniq to a point just north of Singer Inlet (figure 10). The majority of Atlantic cod taken were collected from sites close inshore on the west coast of Killiniq Island immediately adjacent to the Killiniq townsite.

The primary gears used in this survey were not effective in catching the numerous smaller marine fish species characteristic of this area (MacLaren Marex 1979, Imaqpik Fisheries 1981, Makivik Corporation unpublished) and the diversity of fish species caught in Phase I was, as expected, quite low (Table 7). Greenland cod (Gadus ogac) were encountered sporadically over the whole area but the total recorded catch amounted to only 13 fish. Five Greenland halibut (Reinhardtius hippoglossoides) were taken between 60 and 85 fathoms just southwest of the immediate Killiniq area. Very little fishing effort could be directed at the water depths normally associated with this species. Six small American plaice (Hippoglossoides platessoides) were taken in one set on the coast of Labrador. Shorthorn sculpins (Myoxocephalus scorpius) were a common catch while polar eelpout (Lycodes turneri) and arctic eelpout (Lycodes reticulatis) were collected occasionally.

TABLE 7 - LIST OF DOCUMENTED FISH SPECIES AND TOTAL CATCHES
KILLINIQ FISHERIES PROJECT, PHASE I

SPECIES	TOTAL #	WEIGHT (Kg)
Atlantic cod (Gadus morhua)	3160	13,053.4
Greenland Halibut (Reinhardtius hippoglossoides)	5	15.15
Greenland cod (Gadus ogac)	13	25.15
American Plaice (Hippoglossoides platessoides)	6	2.7
Polar eelpout (Lycodes turneri)	4	3.1
Arctic eelpout (Lycodes reticulatis)	1	1.2
Shorthorn sculpin (Myoxocephalus scorpius)	45*	N.A.
Atlantic salmon (Salmo solar)	3	14.4
Arctic char (Salvelinus alpinus)	2	N.A.

* Many Uncounted
N.A. = Not available

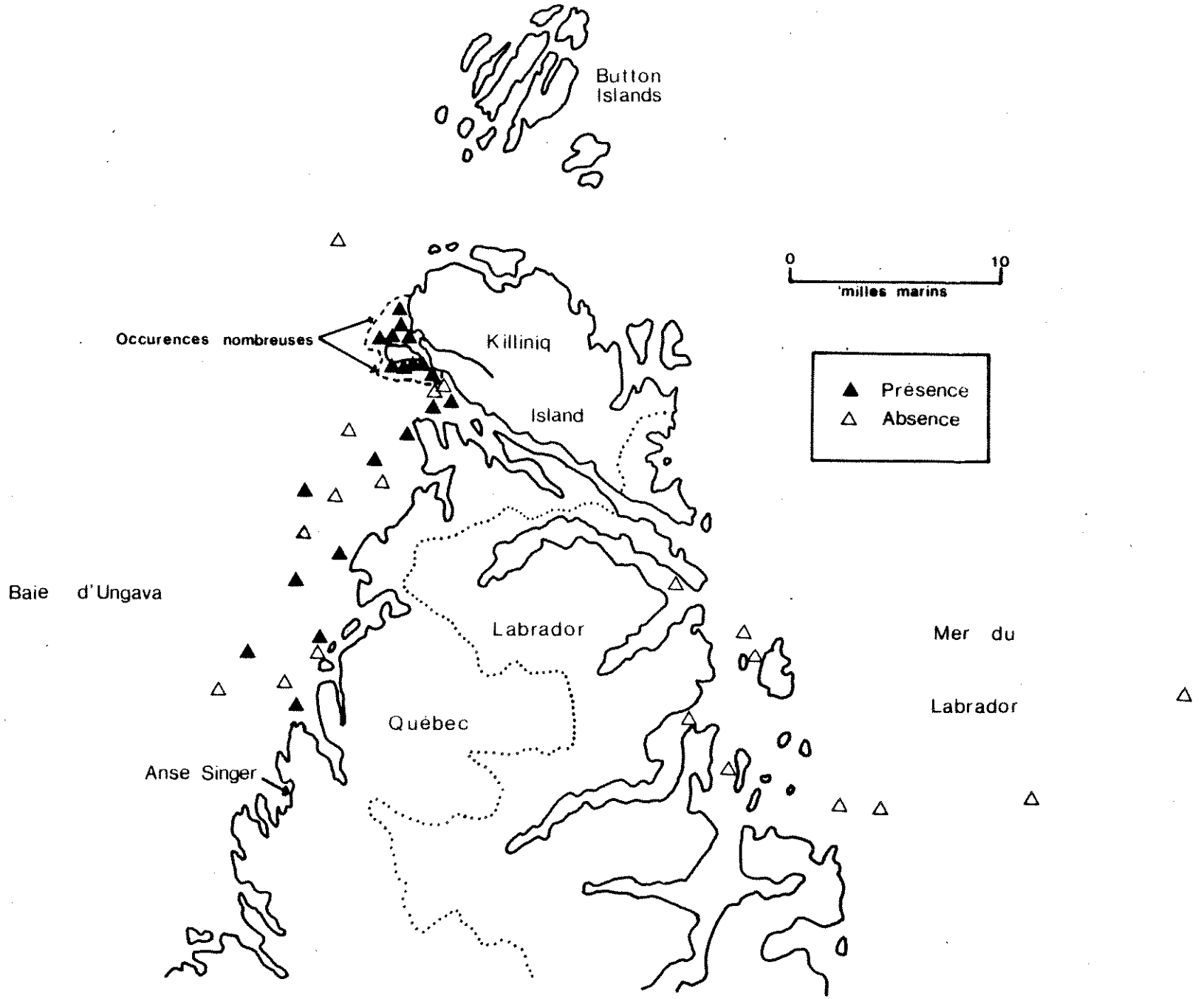

FIGURE 10: OCCURENCE DE MORUE DE L'ATLANTIQUE DANS LES ZONES EXPLORÉES DE LA RÉGION DE KILLINIQ, AOÛT - SEPTEMBRE 1983

A number of seals (approximately 30), primarily harp seals, were caught in cod gillnets during the study. Seals appeared to be numerous in the immediate vicinity of Killiniq. Large seals enlaughed in the nets had to be lifted carefully aboard from the waterline to avoid large tears in the webbing material.

Several invertebrate species deserve mention. While little effort was directed specifically at crab species, a small spider-type crab, probably Hyas coarcticus coarcticus, was omnipresent in gillnet catches. Though fairly small in size, this species was often quite numerous and while the ratio of edible meat was quite low, it was found to be very palatable. Iceland scallops (Chlamys islandicus) were collected from numerous places over the study area in the unusual manner of finding them clamped onto longline hooks and gillnet webbings. Some of these were of commercial size.

The spectacular beds of kelp (mostly Lamimaria sp. and Agarum sp.) which plagued our fishing efforts in many protected inshore areas, both in Ungava Bay and along the Labrador coast, represent in themselves a potentially exploitable resource. In addition to having a wide geographic distribution, these seaplants were found to extend over a wide range of depths from the shore line down to beyond 15 fathoms in some areas.

b) Catch Per Unit of Effort - Atlantic Cod

In Table 8, the area surveyed (figure 9) is divided into three regions and for each of these, the exploratory effort for each of the primary gears and the resultant catch of Atlantic cod per unit of effort is summarized. Only in the immediate vicinity of Killiniq were Atlantic cod found in concentration. Efforts there yielded a respectable overall return of 51.06 Kg of Atlantic cod per net-day. Of the total fresh catch of Atlantic cod during Phase I (13053.4 Kg, Table 7) 98.5% was taken from the immediate Killiniq area. The cod were observed to be distributed primarily

TABLE 8 - CATCHES PER UNIT OF EFFORT (CPUE) BY REGION AND GEAR TYPE, ATLANTIC COD
KILLINIQ FISHERIES PROJECT, PHASE I

REGIONS (SEE FIGURE 9)	LONGLINES		GILLNETS	
	EFFORT [1]	CPUE [2]	EFFORT [3]	CPUE [4]
North Labrador	2.3	0.0	20	0.0
Ungava, South of Killiniq	7.9	2.68	43	4.17
Killiniq vicinity (immediate)	0	-	251	51.06

1. 1000 hook-days
2. kg/1000 hook-day
3. net-days
4. kg/net-day

along the inshore slope of a deep (60 to 80 fathoms) channel extending from the western mouth of Burwell Harbour, along the south coast of Jackson Island and north along the west coast of Killiniq Island (figure 8). With strong currents racing just offshore and around the headlands, best fishing was had in the relatively quiet water between these parallel shore currents and the shoreline inside the headlands. Segregated in this way by natural barriers, catch parameters from more specific sites within the immediate Killiniq region can be isolated. The catches of Atlantic cod per unit of effort at six such sites are displayed in figure 11. Munro Harbour was clearly the most productive site with an overall return of 105.61 kg/net-day. Daily catches there were, on several occasions, quite spectacular (Photo 7), ranging up to a maximum of 2830.1 kg from one fleet of four nets. Curiously, catches in Burwell Harbour itself, where most of the successful fishing efforts in the previous cod fishery were directed (R. Buffitt, pers. comm.), were the lightest of all sites in the region, in spite of a considerable effort (52 net-days) directed there during Phase I.

Cod were found over a range of depths from the shoreline to more than 70 fathoms. At Munro Harbour good catches were distributed all over this depth range, but the highest individual catches were taken from less than 30 fathoms. This seemed to be in direct contrast to the other adjacent sites (figure 11) where catches in depths of less than 30 fathoms were light. The planned deployment of the cod trap at the site that had been successfully fished during the previous fishery was cancelled because that cod did not move close enough to the shore at that location during the Phase I field period.

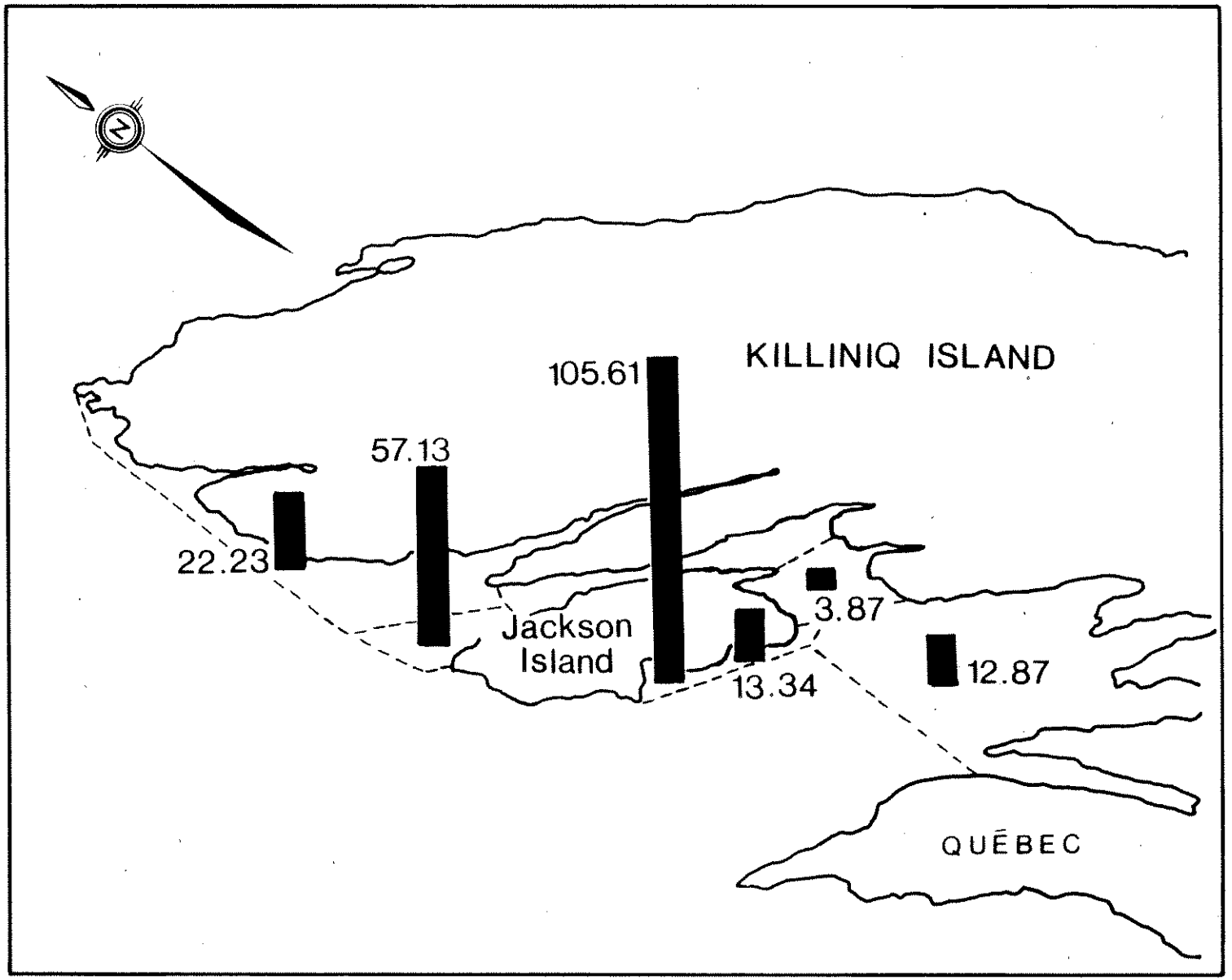

FIGURE 11: PRISE PAR UNITÉ D'EFFORT (kg/jour-filet) DE MORUE DE L'ATLANTIQUE (Gadus morhua) DANS LES ENVIRONS IMMÉDIATS DE KILLINIQ - 30 AOÛT - 15 SEPTEMBRE 1983

3. BIOLOGICAL CHARACTERISTICS OF THE RESOURCE

a) Atlantic Cod

The Atlantic cod encountered during Phase I were of a relatively large and strikingly uniform size. The frequency of individual lengths of cod chosen randomly from the catch is given in figure 12. In this frequency, 48.6% (1519) of all fresh Atlantic cod landed were included. Though they ranged from 43.0 cm to 109 cm, 95% of all fish measured fell between 61.7 cm and 87.9 cm. Males in the catch were of a slightly shorter length on average (73.14 cm, figure 13) than females (75.59 cm) but this difference was statistically significant ($z=6.17$, $p=0.025$). The record of each individual Atlantic cod included in the length frequency distributions may be found in Appendix E.

Detailed autopsies were performed on 633 Atlantic cod and these records are presented in Appendix F. Eight year old fish predominated in the catch (figure 14) with seven and nine year fish making up the bulk of the remainder. The apparent growth rate derived from length at age analysis is high (figure 15). Females were generally slightly larger than males of the same age. In both sexes, the mean asymptotic length, L_∞, (Ricker, 1975) indicated is approximately 105.0 cm.

Females consistantly outnumbered males over the entire range of ages in the catch (figure 16). The final ratio of the sexes was .33:.67 (M:F). With the exception of three small females (43.1 cm, age 3; 43.4 cm, age 4; 44.1 cm, age unknown) which were immature (Stage I), all individuals so examined were observed to be mature and in the recuperation stage (Stage VI).

With few exceptions, the Atlantic cod had been feeding quite heavily prior to capture. The results of analysis of the contents of 75 stomachs is given in Table 9 and Appendix H. . Fish, decapods and amphipods were the most widely recorded food groups. At the species level,

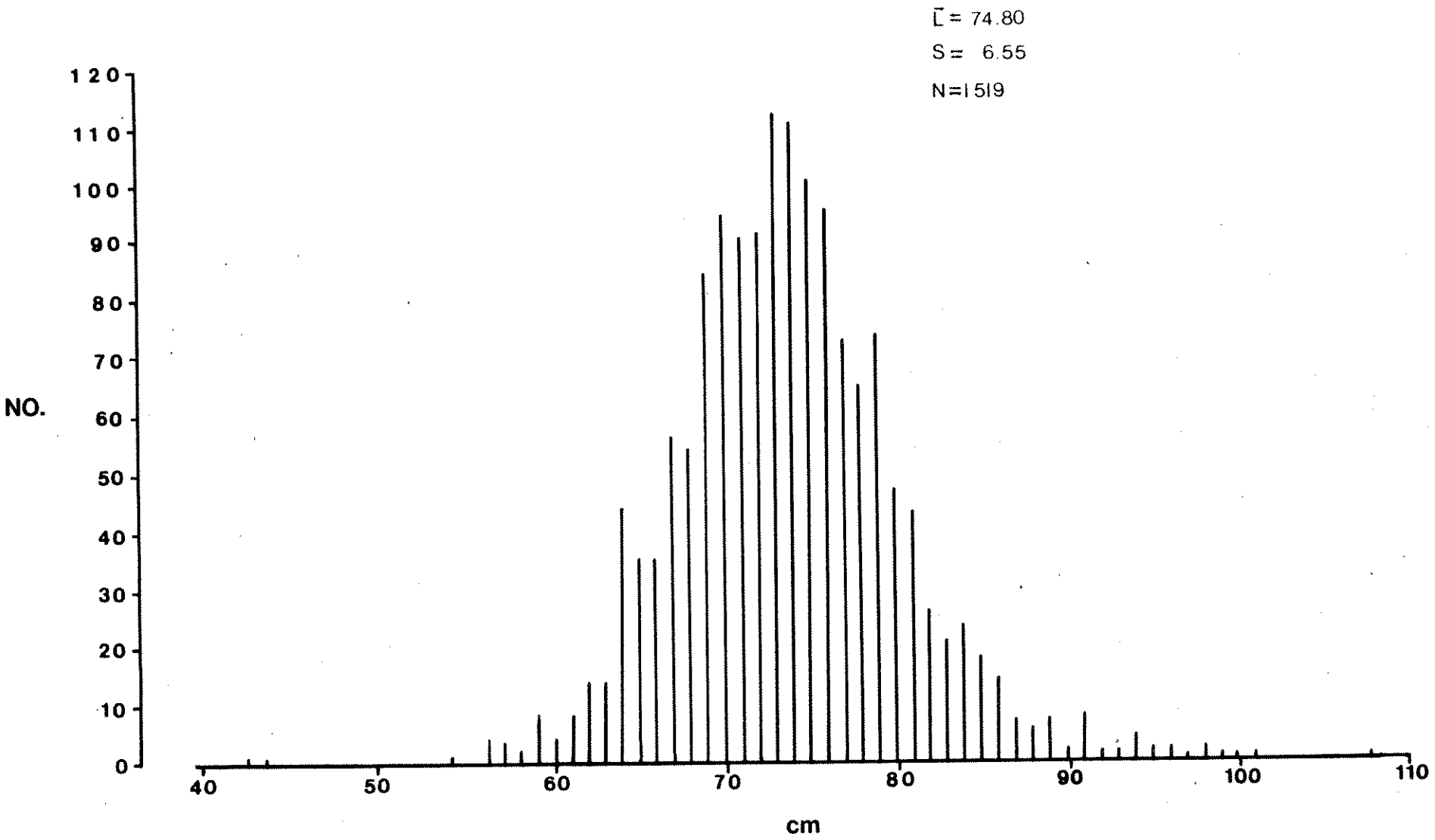

FIGURE 12: RÉPARTITION DES LONGUEURS TOTALES, MORUE DE L'ATLANTIQUE (Gadus morhua) DE LA RÉGION DE KILLINIQ, AOÛT – SEPTEMBRE, 1983

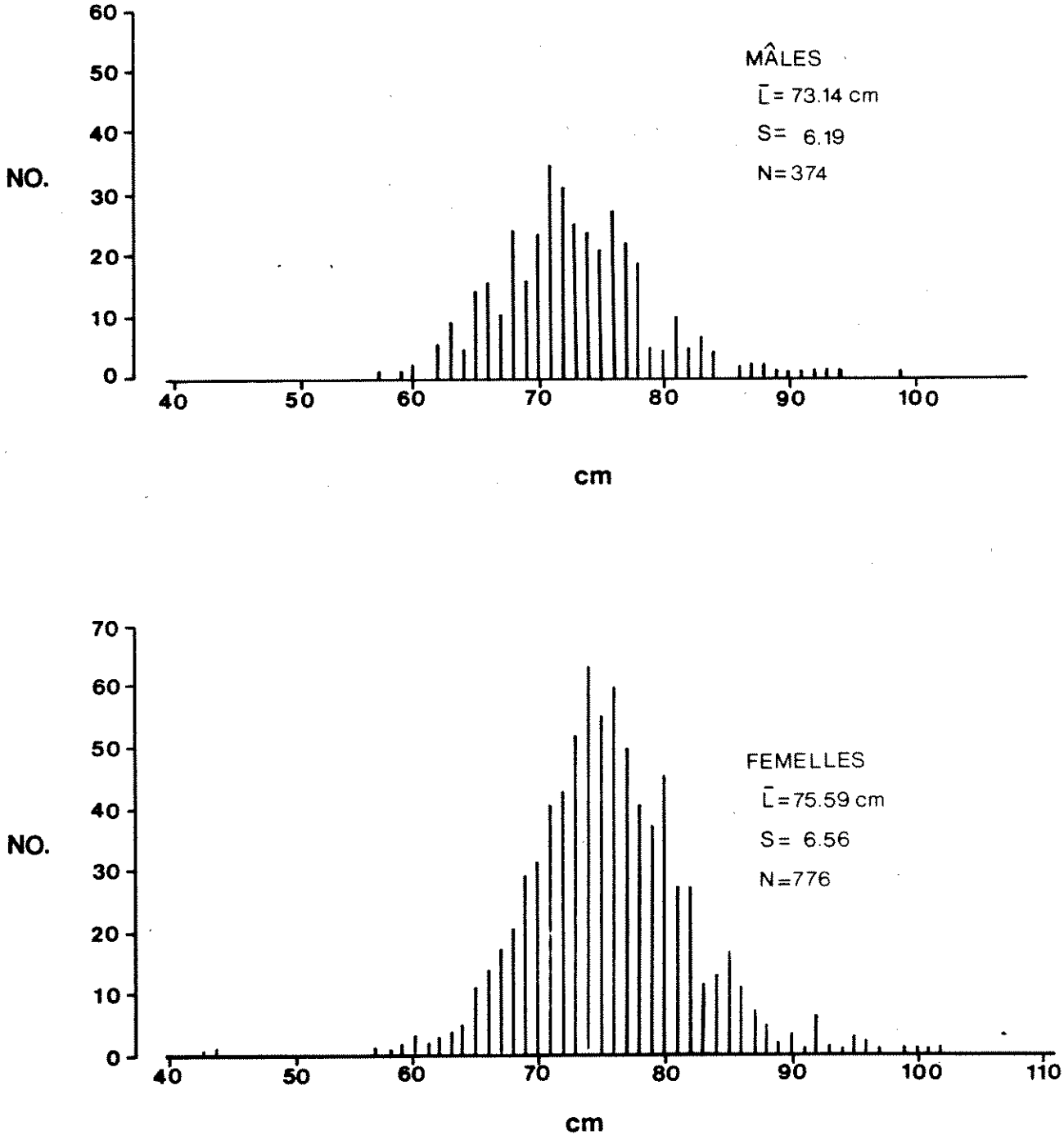

FIGURE 13: RÉPARTITION DES LONGUEURS TOTALES DES MÂLES ET DES FEMELLES: MORUE DE L'ATLANTIQUE (Gadus morhua) DE LA RÉGION DE KILLINIQ, AOÛT – SEPTEMBRE, 1983

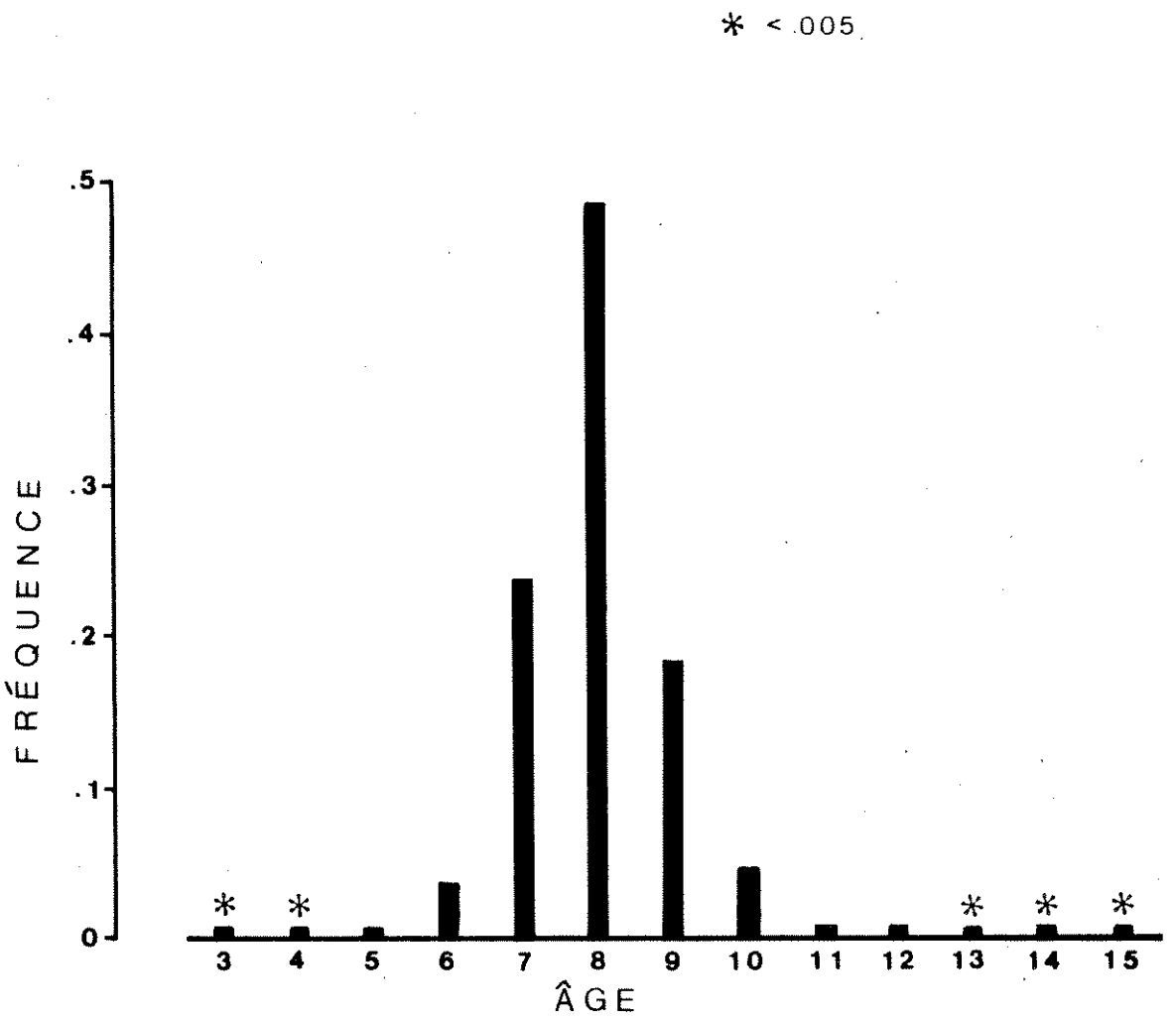

FIGURE 14 : FRÉQUENCES D'ÂGE DANS LA PRISE; MORUE DE L'ATLANTIQUE (Gadus morhua) DE LA RÉGION DE KILLINIQ, AOÛT – SEPTEMBRE 1983

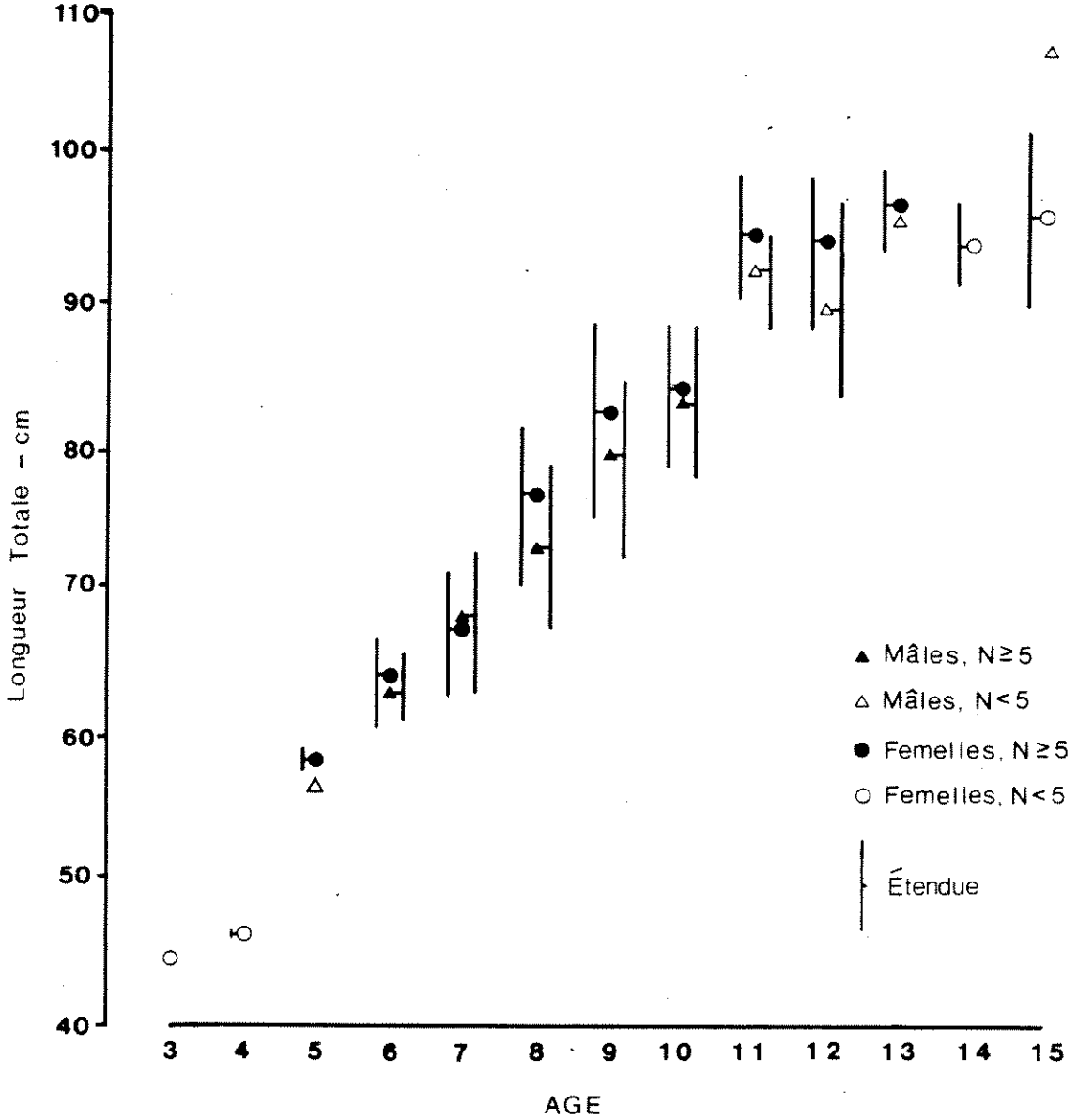

FIGURE 15: ÉTENDUE ET MOYENNE DES LONGUEURS TOTALES SELON L'ÂGE POUR LES MÂLES ET LES FEMELLES; MORUE DE L'ATLANTIQUE (Gadus morhua) DE LA RÉGION DE KILLINIQ, AOÛT – SEPTEMBRE, 1983

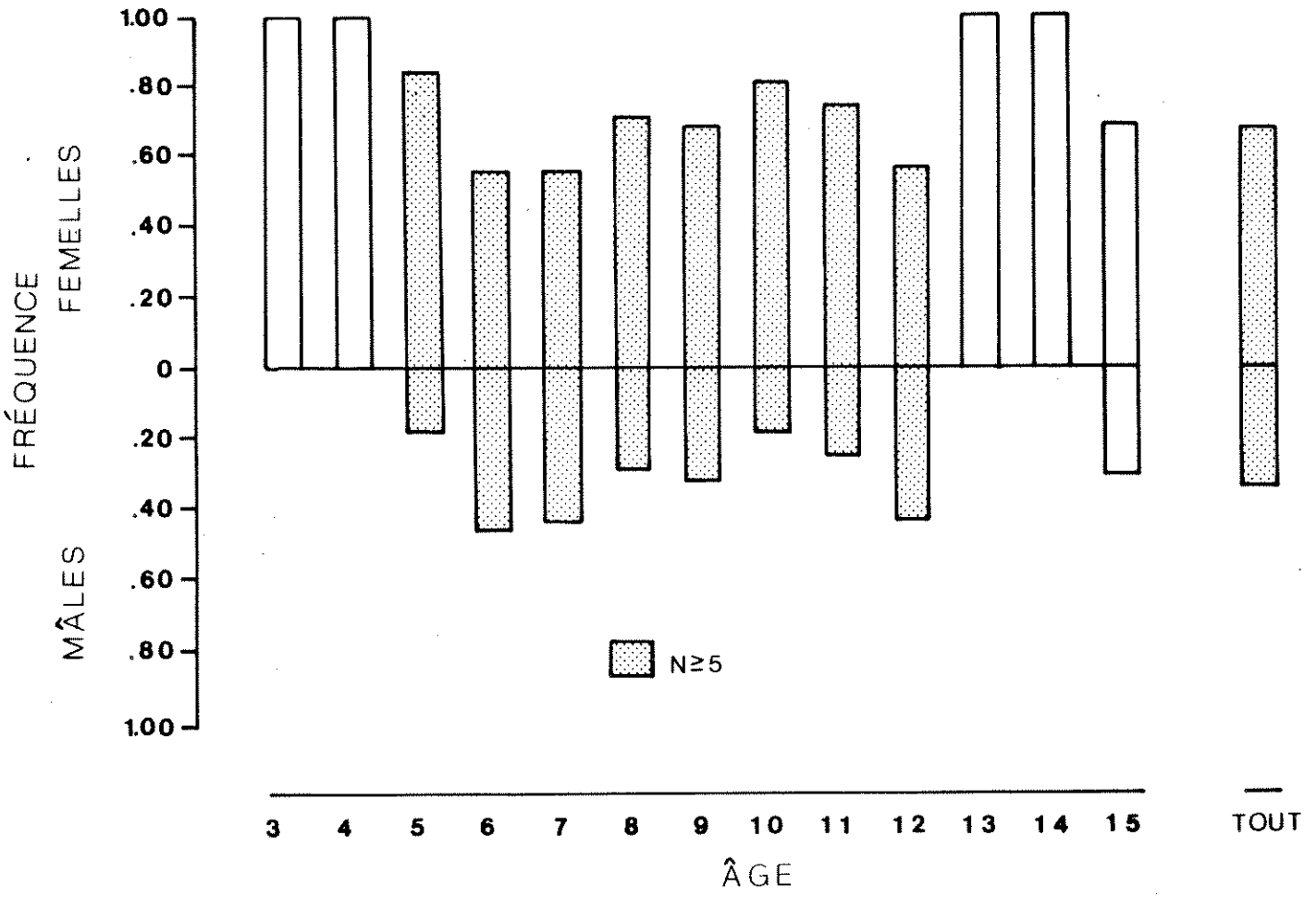

FIGURE 16: RAPPORT DES SEXES SELON L'ÂGE; MORUE DE L'ATLANTIQUE (Gadus morhua) DE LA RÉGION DE KILLINIQ, AOÛT – SEPTEMBRE 1983

TABLE 9 - PERCENT OCCURRENCE OF PREY GROUPS AND SPECIES IN ATLANTIC COD STOMACHS

KILLINIQ FISHERIES PROJECT, PHASE I

GROUP	ITEM	% OCCURRENCE (N=75)
VERTEBRATES		81.3
FISH		81.3
	Myctophum glaciale	49.3
	Reinhardtius hippoglossoides	32.0
	Lycodes reticulatis	9.3
	Ammodytes dubius	1.3
	Triglops pingeli	6.7
	Unidentified	40.0
INVERTEBRATES		93.3
AMPHIPODS		49.3
	Haploops setosa	38.7
	Anonyx nugax	14.7
	Parathemisto libellula	1.3
	Stegocephalus inflatus	1.3
	Gammarus wilkitzkii	1.3
	Unidentified	2.7
DECAPODS		73.3
	Lebbeus groenlandicus	25.3
	Lebbeus polaris	22.7
	Eualus fabricii	2.7
	Pandalus montagui	13.3
	Sabinea (septemcarinata ?)	1.3
	Spirontocaris (spinus ?)	1.3
	Spirontocaris lilljeborgi	2.7
	Spirontocaris sp.	1.3
	Sclerocrangon boreas	1.3
	Unidentified	34.7
MYSIDS		9.3
	Boreomysis nobilis	9.3
ISOPODS		1.3
	Mesidothea (entomon ?)	1.3
POLYCHAETES		8.0
	none identifiable	8.0
ECHINODERMS		2.6
	Holothuria	2.6
MOLLUSCS		12.0
	Cephalopod molluscs	12.0

the lantern fish, Myctophum glaciale, occurred most frequently (49.3% of stomachs), followed by an amphipod, Haploops setosa, (38.7%), juvenile Greenland halibut, Reinhardtius hippoglossoides (32.0%) and two decapod shrimp, Lebbeus groenlandicus (25.3%) and Lebbeus polaris (22.7%). In total, invertebrates (93.3%) were more frequently observed than fish prey items (83%), though only marginally. Most fish (86.7%) had been feeding on more than one species (average 3.33 species/stomach). The numbers of fish feeding exclusively on either fish or invertebrates were quite low at 6.7% and 18.7% respectively. Fulton's condition factors, K, (Ricker, 1975) were an average of 0.939 for all fish (Table 10), with an insignificant difference between the sexes.

TABLE 10 - FULTON'S CONDITION FACTORS (K), ATLANTIC COD BY SEX AND TOTAL KILLINIQ FISHERIES PROJECT, PHASE I

	MALES	FEMALES	TOTAL
Mean K-Factor	0.942	0.936	0.939
Standard Deviation	0.089	0.094	0.092
Range	0.715-1.341	0.616-1.315	0.616-1.341
N	239	384	625

A representative collection of parasitic organisms was retained in 5% glycerine alcohol from 41 Atlantic cod during the study for identification by Dr. Mark Curtis at the Institute of Parasitology in Ste-Anne-de-Bellevue. Out of these samples, three species, two nematods (Anisakis sp. and Thynnascaris adunca) and one cestode (Abothrium gadi) were identified (Curtis, 1984, Appendix I). Abothrium gadi is found in the intestines of cod and related species and is of no known pathogenic importance to the fish nor does it affect human consumers (Ibid.).

Thynnascaris and Anisakis are usually found in the liver of infected fish, although both may migrate into the flesh after death. The ingestion of either parasite species in raw or pickled fish may cause the condition anisakiasis in humans. However, serious complications to this condition are unusual (Ibid.).

No codworm (Phocanema decipiens) were identified among retained parasite specimens or observed during the study.

b) Other Species

With very low abundances by comparison, little biological data is available from commercial species other than Atlantic cod. This data is presented in Appendix G.

The average round weight of all Greenland cod recorded (13) was 1.93 kg. Autopsies on eight fish revealed 6 females (l = 531.0 mm, wt = 1.47 kg) and two males (490 mm, 1.20 kg; 580 mm, 2.80 kg). Of these fish, six were aged and all were 9+ or 10+ years old. Of five Greenland halibut caught, four were females (l = 652.2 mm, wt = 2.96 kg) and one male (686 mm, 3.30 kg). The ages of some fish could not be refined to one particular year-class and so ranged from 9 or 10 years to 14+ years.

The six American plaice (4 male:2 female) caught on the Labrador coast had an average total length of 385 mm (range 330 mm - 470 mm) and an average weight of 0.45 kg (range 0.25 kg - 0.70 kg). These fish were not aged.

4. PRODUCTION

It is estimated that 10% (1305 Kg) of the fresh Atlantic cod caught in Phase I were consumed locally, stored frozen or otherwise not produced as a heavy salt-cured product (Photo 8). Most fish were split and

salted onboard the "Silver Condor" (Photo 5 and 9) and carried in this manner to Lourdes-de-Blanc-Sablon, Québec, at the completion of the field season. There, it was sold to the Canadian Saltfish Corporation whose inspectors divided the product into standardized commercial grades (Photo 10). In size, over 90% of the produce was graded 'large' and 'extra large'. Total product weight at the time of sale was 3337 Kg. Of this, 45.5% (1515 Kg) was graded "choice" and 54.6% (1822 Kg) was "standard". Prices received for these grades ranged from $.60 to $1.43 per kilogram, depending on the size group. Revenues from the sale of the produce totalled $3390. Fish graded as "standard" were found to be incompletely cured. Two reasons for this have been put forward. Normally, the curing period for this product is 21 days while most of our catches had been taken within 21 days of the time of sale; the most recent catches were on salt for only 13 days. This situation was aggravated by the type of salt we chose (Fishery # 4) which apparently did not dissolve as readily as some other salts which are available. Nevertheless, the quality of the raw product and its treatment were otherwise judged to be excellent. Table 11 presents the ratios of various product states to round, fresh weight as recorded during Phase I.

TABLE 11 - RATIO OF THE YIELD OF VARIOUS PRODUCT STATES TO ROUND FRESH WEIGHT, FOR KILLINIQ ATLANTIC COD

KILLINIQ FISHERIES PROJECT, PHASE I

(N = no. of fish in measurement)

FORM	Round, Fresh	Gutted, Head-on	Split, Fresh
YIELD (INDEX)	1.0	0.779 (N=208)	0.529 (N=122)

E. DISCUSSION

1. GENERAL RESULTS

The physical characteristics of the Killiniq area presented a challenging set of conditions in which to fish with static fishing gears. Sea ice and then set and tidal currents precluded a rigorous exploration effort in large sections of the planned study area. Nevertheless, it was possible to carry out all of the essential elements of the planned program and the results are quite encouraging.

The Atlantic cod resource adjacent to Killiniq was re-located and knowledge of its geographic distribution, geological characteristics and abundance has been expanded. Though the known quantity of this resource is still relatively small, catch rates were of commercial levels and the fish and their products were of a very high quality. The operational experience gained early in the program resulted in a greatly increased efficiency of fishing effort over the course of the study. Further, the Inuit of Killiniq who have been involved directly in the project have shown an active interest and considerable ambition and aptitude in each of their roles.

On this basis, the completion of developmental studies toward re-establishing a commerical marine fishery in this region is warranted. The experience of working in the area during Phase I has identified the operational and logistical problems to be faced to the point where future studies may approach them more directly, and further improvements should result. Further exploratory fishing can now be focused on those sites within the operational radius of Killiniq which are most likely to be productive. A number of such sites have already been tentitively identified, particularly on the east side of Killiniq Island.

2. OPERATIONS

From an operational standpoint, the Killiniq area presents a challenging set of physical conditions in which to operate an inshore fishery using primarily static fishing gears. Without the benefit of any documented experience in such activities, our initial attempts at deploying static gears, in Ungava Bay in particular, met with problems. Though the nets and longlines used were well constructed and the vessels and crews well equipped for their operation, strong currents and lingering sea ice took its toll on many of our initial efforts. Fishing on the northern-most coast of Labrador would appear to be well within the capabilities of a small well-equipped multipurpose vessel down to the range of 12.2 meters in length, provided that the area is free of sea ice. To have sea ice lingering over these waters as late as in the 1983 season was quite unusual, but the adaptation of static gears to cope with even minor concentrations of drifting ice is, in any event, an operational problem for which there may be no immediate practical solution.

Conditions are most severe in Ungava Bay, where the major operational factors to be faced are the strong set and tidal currents. As designed, gears on hand during Phase I could only be effectively deployed over a small part of the study area in Ungava Bay. Certain modifications in the gears and in particular in the method of their deployment were made in the field, and these changes resulted in a marked improvement in the efficiency of our efforts over the course of the Phase I program. The number of net buoys used per set was increased to two in some cases to overcome tidal pressure on haulup lines, but the greatest improvement resulted from learning to anticipate where currents would be severe. Additional experience in the area and experimentation with gears and techniques used in similar situations elsewhere will undoubtedly result in a further improvement. It is recommended that future developmental studies incorporate a specific program to identify and test these alternatives under the guidance of specialists in that field. The evolution of efficient and cost-effective fishing methods will be a critical factor in the successful development of a commercial fishery in the Killiniq area.

The poor results from the fishing efforts with longlines during Phase I were disappointing. Longlines offer several important advantages over gillnets; they yield a better quality raw product and they pose less of a problem if they go adrift. The only other known attempt at using longlines in Ungava Bay met with similar results (Grainger and Dunbar, unpublished), although one quite successful trawl was set overnight on the bank east of Home Island, Labrador, in August, 1965 (R. Buffitt, pers. comm.). Further attempts should be made to investigate this gear's effectiveness, particularily in the quest for Greenland halibut in the deeper waters of the Labrador Bank, east and south of Killiniq (figure 9). In these attempts, emphasis should be placed on the effectiveness of local sources of bait or artifical baits thus avoiding the logistical difficulties of having to make the more traditional longline baits, such as squid or herring, available in the north.

Based on the experiences of Phase I, several other suggestions concerning vessels and gears can be stated. There will continue to be a continuing role for a multipurpose vessel(s) in the range of 12.2 meters in both the development and operation of an inshore fishery in this region. The extended operational radius and greater weather capability that these vessels offer over smaller craft is obviously an attractive feature. Nevertheless, all of the abundant fisheries resources so far identified were found quite close to the base at Killiniq, and were well within the range of a smaller vessel. These resources may be harvested quite efficiently with a trap boat suitably equipped for tending gillnets. The advantages of this approach are that the trap boats are relatively inexpensive to acquire and operate, and though they are of a heavier design, they are similar to the larger freighter canoes widely used by Inuit in the area. Trap boats are widely used in similar situations in other areas and should be considered in this case. With minimal modification, they are suited to the operation of a cod trap, gillnets, longlines, and both hand and automatic jigging gear. The automatic jigging machine remains untested after Phase I but may be quite effective for harvesting cod near Killiniq, particularly if, as was the case in Phase I, large numbers of cod remain in deeper waters beyond the reach of a shore-based cod trap fishery.

3. RESOURCES

a) Atlantic Cod

From the standpoint of commercializable fisheries resources, the results of our survey efforts were encouraging. Though no fish were taken from Labrador, the effort was minimal and, based on previous accounts (Wakeham, 1898; Bernier, 1910), it is likely that species such as Atlantic cod and Greenland halibut would be found in a more complete survey over a longer season. The extent to which Atlantic cod move into Ungava Bay south of Killiniq remains unclear. The sporadic small catches observed there during Phase I are somewhat inconclusive as a result of the difficulty of sampling those waters during this part of the survey. Because of the strong currents offshore, any sizable concentrations of Atlantic cod migrating into northeastern Ungava Bay may be restricted to the nearshore waters. In four research surveys for shrimp species in the offshore areas of Ungava Bay and Hudson Strait between 1978 and 1980, only three Atlantic cod were reported from a total of 283 bottom trawls with small mesh nets. (Maclaren Marex, 1979; Makivik Corporation, unpublished; Imaqpik Fisheries, Unpublished data; Imaqpik Fisheries, 1981).

On the other hand, the concentration of Atlantic cod located close to Killiniq Island is clearly of commercial potential. Overall catch per unit of effort was quite high and in fact was clearly increasing as the study progressed, though this was, at least in part, due to an increase in operational efficiency. The area over which this resource has been delineated is, so far, quite small, as only that section of coast from Burwell Harbour to the northwest tip of Killiniq Island was intensively surveyed. On the north and east coasts of the island, quite a number of likely sites remain untried, several of which, such as Harvey Bay, McLellan Strait (Bernier, 1910) and O'Brien Harbour (Wakeham, 1898) are known to have been fished for cod in the early years of this century.

The present study sheds little light on the question of the seasonal availability of Atlantic cod within the area. Fish may have been present in the area for some time before they were located in late August,

1983, although if this were the case, they would have to have been lingering under a cover of ice. When sampling ceased on September 15, cod were abundant. Various authors (Wakeham, 1898; Grenfell, 1909; Bernier, 1910; Grainger and Dunbar, unpublished; Evans, 1958) present arrival dates ranging from mid-July to late August. Similarly, the cod have been reported to leave the area anywhere between mid-September and mid-October. All these authors may be correct, as one major controlling factor in the cod's inshore summer feeding migration seems to be water temperature (Templeman, 1966), which is quite variable annually. Wakeham (1898) does say that there was a consistent delay of about one week between the arrival of Atlantic cod at O'Brien Harbour, on the east coast of Killiniq Island, and at Killiniq. He relates that good fishing also ended about two weeks earlier at Killiniq.

The fish themselves were uniformly large and in excellent physical condition. Results would indicate that their presence in such inshore areas is related to feeding activity, a widely documented seasonal phenomenon in other areas (Liem and Scott, 1966). These fish represent a superior raw material for a range of potential products. While these characteristics are encouraging from a commercial standpoint, they raise several important biological questions. Prior to the present study, the only complete biological account of Atlantic cod taken at Killiniq was done by E.H. Grainger and M.J. Dunbar (unpublished) based on samples collected between 1947 and 1950. Their fish were jigged from the Fisheries Research Board of Canada's vessel the "M.V. Calanus" on visits to Killiniq in the summer and early fall during studies of the biological and physical oceanography of the region. Comparisons of a wide range of descriptive parameters highlight some striking differences between the two samples. The fish in the 1983 sample were much larger (figure 17, Table 12), to the point where the average length of the catch in 1983 falls outside the observed range in the earlier sample. It must be pointed out that Grainger and Dunbar's fish are the summed catch from four years. Also, the earlier sample was jigged while the present sample was collected with gillnets, and these gears are differentially selective. Almost all of the fish represented in the length frequency of the 1983 catch were taken from a mixture of

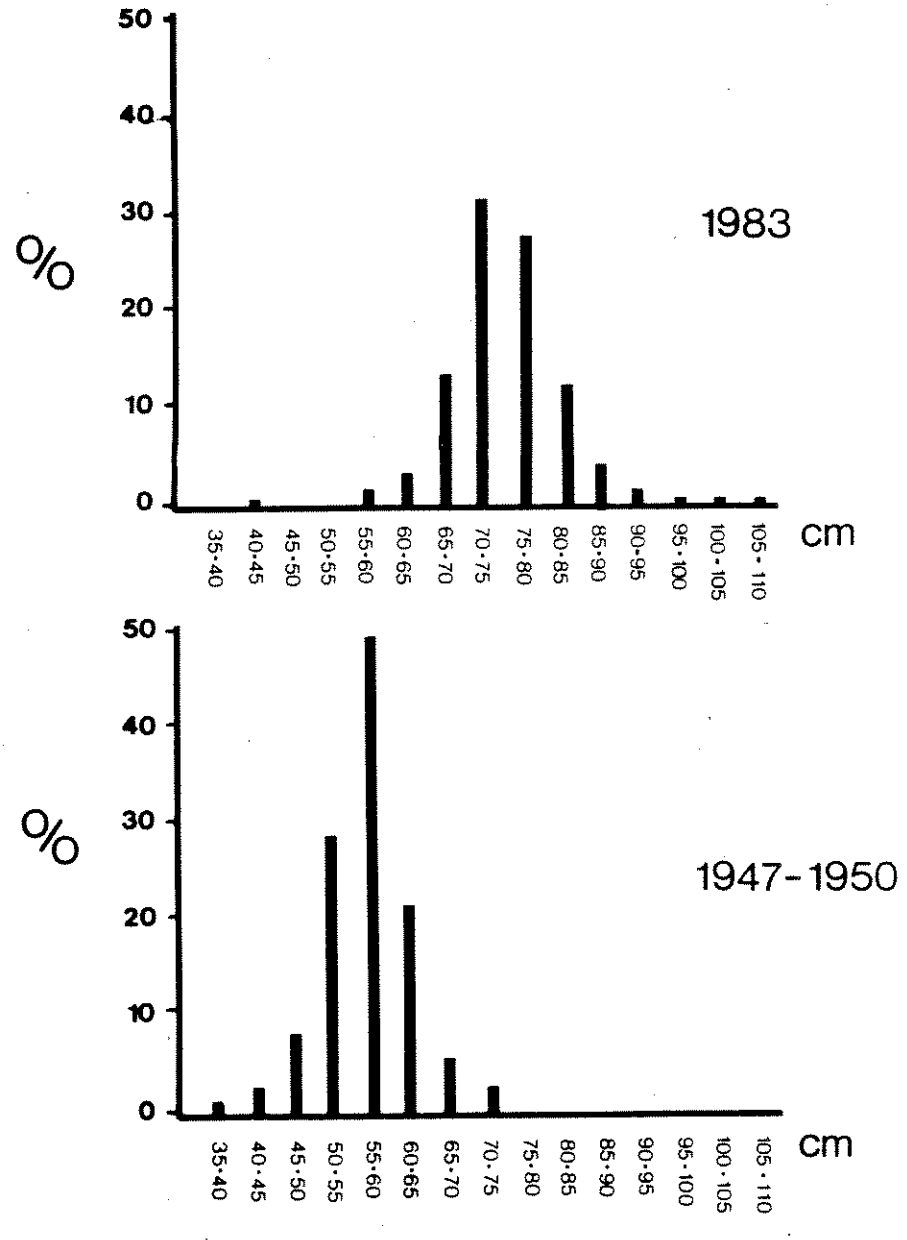

FIGURE 17: RÉPARTITION DE LA FRÉQUENCE RELATIVE DES LONGUEURS TOTALES – MORUE DE L'ATLANTIQUE PROVENANT DE LA RÉGION DE KILLINIQ – 1947–1950 (Grainger & Dunbar, inédit) et 1983 (présent rapport)

TABLE 12 - COMPARISON OF SOME DESCRIPTIVE PARAMETERS IN SAMPLES OF ATLANTIC COD TAKEN FROM KILLINIQ IN 1947-1950 (Grainger and Dunbar, unpublished) and 1983 (this report).

	SAMPLING PERIOD	
	1947-50	1983
N	666	1519
Length:		
Average	56.4 cm	74.8 cm
Stand. Dev.	N.A.	6.55 cm
Range	38.0 - 74.5 cm	43. - 109.0 cm
L_∞ (estimated)	65.0 cm	105.0 cm
M:F	36.9%:63.1%	33.0%:67.0%

5½", 6" and 7" meshes. Using the cod gillnet selectivity curves in Clay (1981), it is possible that length classes under 65.0 cm could have been significantly under-selected. It seems unlikely though that such discrepancies could be attributed solely to that source. Length at age also differs dramatically between the two samples (Table 13). Mean asymptotic length, L_∞ (Ricker, 1975), is estimated to be 65.0 cm and 105.0 cm for 1947-50 and 1983 respectively. The possibility always exists for a discrepancy of one year in the interpretation of age from the otolith by different researchers. However, in this case, the discrepancy would have to be at least several years, which seems unlikely.

Grainger and Dunbar (unpublished) recorded a much greater diversity of prey species in the stomachs from 1947 to 1950, albeit from a much larger sample (over 1000). All of the more numerous food species observed in 1983 (Table 9) were recorded in the previous study although the myctophid, Myctophum glaciale, was only of minor importance in 1947-50.

TABLE 13 - AVERAGE LENGTH AT AGE, ATLANTIC COD FROM KILLINIQ, 1947-1950 (GRAINGER AND DUNBAR, UNPUB.) AND 1983 (THIS REPORT)

AGE GROUP	1947 - 50 MALES		1947 - 50 FEMALES		1983 MALES		1983 FEMALES	
	N	L (cm)	N	L (cm)	N	L (cm)	N	L (cm)
3							1	43.1
4	1	41.0					2	44.0
5	5	45.1	9	45.7	1	56.7	5	59.0
6	11	48.3	21	48.7	16	63.9	14	64.3
7	17	50.6	26	49.6	61	68.6	61	67.7
8	35	52.7	48	53.5	80	73.9	104	76.7
9	34	53.3	51	54.5	49	79.3	69	82.7
10	23	54.5	29	57.5	11	84.1	24	84.5
11	19	56.9	35	57.7	3	92.6	9	95.8
12	29	57.8	39	58.1	4	91.3	8	94.7
13	28	59.1	54	60.8	1	96.7	6	97.6
14	15	60.3	46	61.1			2	95.3
15	14	58.7	37	63.4	1	108.5	4	97.2
16	10	62.7	18	63.7				
17	3	65.0	2	66.5				
18	1	61.0	1	74.5				
19	1	62.0	1	71.0				
20								
21								
22								
23			1	65.0				

Based on average vertebral counts, Grainger and Dunbar were able to show, as did Vladykov (1933) before them, a clear affinity between the fish in their sample and Atlantic cod from the Labrador coast and Newfoundland. No biological accounts of the Atlantic cod upon which the commercial fishery of the 1960's and early 1970's were based has been located, however, the recollections of some of those involved in these fisheries seem to generally fall in line with the account of Grainger and Dunbar (Raymond Buffitt, Economic Development Officer at Killiniq, 1961 to 1965; Neil Greig, Plant Manager, 1971-1972; personal communications). During these fisheries, cod were harvested primarily inside Burwell Harbour, in 20 fathoms of water or less. Conversely, in 1983, catches in the Harbour were light and sporadic; the cod only moved into shallower waters (less than 30 fathoms) in large numbers at Munro Harbour (Figure 8). As late as 1977, three small Atlantic cod jigged in Burwell Harbour (Maclaren Atlantic Ltd, 1978) were of individual lengths at ages (male, 42.7 cm, age 8; male, 47.5 cm, age 6; female, 46.8 cm, age 5) which seem typical only of those documented by Grainger and Dunbar (Table 13) from the same site.

Two explanations for the striking dissimilarity between the two accounts can be put forward. The first is that the 1983 cod may be of West Greenland origin, their occurrence at Killiniq possibly being related to a change in environmental conditions in the general area. The alternative is that the individual growth rates of Atlantic cod from the local area have increased substantially since 1950. Both explanations are feasible in the sense that there have been similar phenomenon documented in other areas. Unfortunately, meristic samples from the 1983 catch which would have indicated an affinity with either the West Greenland or Labrador stocks were not collected.

The apparent growth rate of the fish in the 1983 sample is quite similar to fish from the West Greenland stock (Meyer, 1973; Simachyova, 1975). A warming of the climate, and therefore sea temperatures, of the northwestern Atlantic between 1880-90 and 1945, altered the distribution of Atlantic cod off West Greenland, much to the benefit of the cod fishery there (Cushing, 1978). In eastern Canadian waters, the present trend in sea temperatures is uncertain following a prominent peak about 1950, how-

ever, the long-term pattern seems to be downward (Dunbar, 1982). The relationship between such changes in sea temperatures in Canadian waters and any corresponding changes in fish distributions has not yet been determined. At the present time, however, there is some evidence in support of the theory that there has been an increase in the rate of growth of local cod. Table 14 presents what length at age data is available fron NAFO division 2G and/or the Killiniq area itself from fish collected over the period between the two samples. Age 7 was chosen as the strongest common age class. Between 1947-50 and the mid-1960's a slight increase in growth is indicated. This parallels the results of May (1966) who analysed NAFO DIV. 2G inshore data over the same period and attributed the change to decreased stock densities due to greatly increased fishing off southern Labrador. The further increases recorded in 1979 and in 1983 are of a greater magnitude. Cod growth rates have been known to change substantially in response to external influences such as food availability (Kohler, 1964) stock densities (May, 1966; Wells, 1983), prey size (Lilly, 1980) and temperature (Taylor, 1958; Herman and Hansen, 1965; May et al, 1965). An upward shift in the growth rate of cod on the Flemish Cap southeast of Newfoundland over the last thirty years in which prey size (Lilly, 1980) and stock density (Wells, 1983) may have been contributing factors, has been of an even greater magnitude than the discrepancy between the two samples available from Killiniq.

Aside from the intriguing ecological implications, the resolution of this question is of direct importance to the re-development of the Killiniq fishery. If indeed the present cod resource is not of Labrador origin, its continuing availability in the short and long term becomes a matter of speculation. On the other hand, if they are Labrador cod growing at an increased rate, they should be available to a fishery on a more dependable basis. Meristic studies and a tagging program must be priority items on the agenda for Phase II.

TABLE 14 - MEAN TOTAL LENGTH AT AGE 7,
NAFO DIVISION 2G AND KILLINIQ, 1947 to 1983.

Year	Sampling Location	Source	N	L_7(cm)
1947-1950	Killiniq	1	43	50.0
1962	Offshore 2G	2	23	56.4
1962	Offshore 2G	2	29	53.2
1963	Offshore 2G	3	91	54.6
1966	Offshore 2G	4	44	52.0 *
1979	Offshore 2G	5	24	65.0 *
1983	Killiniq	6	61	68.6

Sources:
1 - Grainger & Dunbar, unpublished.
2 - ICNAF Sampling Yearbook, 1962 (USSR)
3 - ICNAF Sampling Yearbook, 1963 (USSR)
4 - ICNAF Sampling Yearbook, 1966 (Portugal)
5 - Fisheries and Oceans, Canada
6 - This report.

* From fork length

b) Other Species

The low catches of species other than Atlantic cod must be interpreted while considering the areas adequately sampled and the gears used during the survey. This is particularly true of Greenland halibut. Little effort was directed during Phase I over water depths with which this species is normally associated (Lear and Pitt, 1971). Good catches of sizable Greenland halibut are reported from an area 25 nautical miles WSW of Killiniq (MacLaren Marex Inc., 1978; Imaqpik Fisheries Inc., 1981) in August of both 1978 and 1979, where water depths ranged from 100 to 200 fathoms. Given that this area also features strong currents (Imaqpik Fisheries Inc., 1981), longlines or other static gears may be difficult to use effectively there. On the Labrador bank to the east of Killiniq Island, however, further exploratory fishing for Greenland halibut should be attempted.

Beds of Iceland scallops of commercial quality and quantity have been delineated as far north as Nain, Labrador (Barney, et al, 1982). In that survey, some scallops were found over most of the areas sampled but concentrations tended to be close to shore and in narrow passages. The inclusion of exploratory sampling with proper scallop dredges in future studies in both Ungava Bay and northern Labrador, is recommended. While the Hyas crab seemed to be generally abundant in the study area, it would seem that the small individual size and low edible weight per individual would remove it from consideration as a potentially commercial species. The occurrence of larger, more marketable species such as the snow crab (Chionoecetes opilio) remains virtually unassessed in these areas, although no significant catches have been reported from shrimp (Pandalus sp.) research efforts offshore. Exploration for marketable crabs should continue although, given the space that standard crab pots require on the small vessels presently used, these efforts may be of an opportunistic nature.

Several other potentially commercializable resources should be mentioned. Greenland shark (Somniosus microcephalus) are well known to residents of Killiniq, having been a freqent by-catch in the seal fishery in late fall (R. Buffitt, pers. comm.). There have been sporadic fisheries

for this shark in some northern regions (Dunbar, 1952), the oil of the enormous liver and, to a certain extent, the leather, being the primary products. The current market for shark products should be investigated. The apparently abundant beds of seaplants encountered in Phase I must be considered a potentially exploitable resource, although they were more often considered a nuisance which frustrated efficient gillnetting. Future surveys should at least collect specimens to identify species and continue to note its distribution.

4. PHASE II

Phase I of this study has provided much information about the resources of the Killiniq area, and has illuminated many of the operational realities to be faced there. Phase II can and should now address those problems directly and build on the results of Phase I.

The following recommendations are put forward to guide the development and realization of the Phase II program.

1. The involvement of Inuit fishermen and workers in the field studies should be increased, and the number of southern personnel reduced correspondingly. Two experienced southern fishermen could provide what supervision and training would be necessary to complete the major part of the field program recommended with an Inuit workforce. The familarization of these local people with the techniques and skills that they would require to operate a bona-fide fishery can only be accomplished properly if their involvement is of a very real nature.

2. An experimental fishery should be established at Killiniq based on the Atlantic cod resource surveyed during Phase I. The goal of the operation should be to test the ability of that resource to sustain a fishing operation over the full available season in a realistic manner. It would also provide the framework into

which several specialized studies may be integrated. All fishing and processing of fish should be done by Inuit with the technical support of the southern fishermen. Primary gears used should be a cod trap and/or commercial gillnets, however the latitude to incorporate other still untested gears when their efficiency becomes clear must be retained. The effectiveness of well-equipped trap boats (in the range of 9 meters) should be tested in this fishery. Cod should be split and heavy-salted. Once cured, a portion of the product should be further processed into dry salt fillets on an experimental basis. Fish products should be sold, at the end of the field studies to document market response, and the monies realized returned to the project specifically to offset production costs.

3. Exploratory fishing in adjacent areas for Atlantic cod and other species should continue, albeit, in deference to the physical realities of the area, within a more flexible sampling program. One small, well-equipped longliner, preferably in the range of 12 meters, should be available to undertake the exploratory fishing during the earlier part of the season and support the experimental fishery in the latter weeks when weather may become a factor inhibiting the effectiveness of the trap boats. Areas which should be focused upon are the north-east and east coasts of Killiniq Island, the offshore bank east and south of Killiniq Island and, subject to gear modification, sites along the coast of Ungava Bay south-west of Killiniq. Primary gears should be commercial and experimental cod nets although further attempts at longlining using local bait sources should be made particularly offshore on the Labrador side. Test fishing with purpose-built scallop gears seems warranted in Phase I.

4. A special program to observe, modify and test fishing gears and methods to better adapt them to the local conditions, is recommended. An appropriate gear specialist should be at the site for a period during the peak of the fishery to maximize the effect of this program.

5. Arrangements should be made to have a production specialist present at the site to observe and document first hand the raw resource and the logistical realities of the area. The subsequent report of this specialist could identify realistic options for present and future product forms, as well as outline the required facilities and the logistical considerations to be taken into account in each case.

6. Standard biological sampling should continue on commercial species, though in the case of the experimental fishery, disruption of the operation should be kept to a minimum. Stress must be placed during Phase II on the determination of the stock affinity of the Atlantic cod resource and collection of detailed growth parameters of individual fish.

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APPENDIX A - Photographs

The following collection of photographs depict many of the essential elements of the Killiniq Fisheries Project, Phase I.

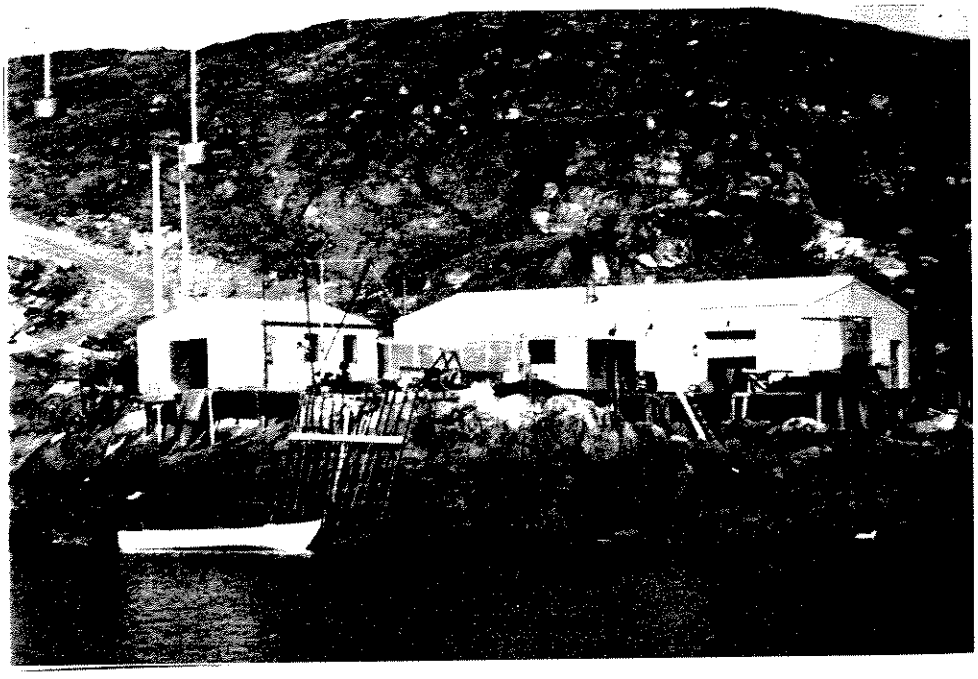


Photo 1. The Fish Plant at Killiniq.

The plant site assumed its present form in 1968 with the construction of the processing and storage building (large structure on the right). Other facilities include a small freezer (center - foreground) and the old plant building (left). A small power house is not visible behind the old plant building. All these facilities are connected by a plank deck which extends out over the sheer stone face of the point. This natural wharf can accommodate vessels up to 25 meters in length whenever the tide is at least ½ full. A small gasoline-powered hoist sits on the edge of the wharf. The road to the left runs to the townsite approximately 1/4 miles distant.

All these facilities are in reasonably good condition with the exception of the freezer building which requires a complete mechanical and structural overhaul.

The vessel in the foreground is the trap boat used by the project during Phase I.

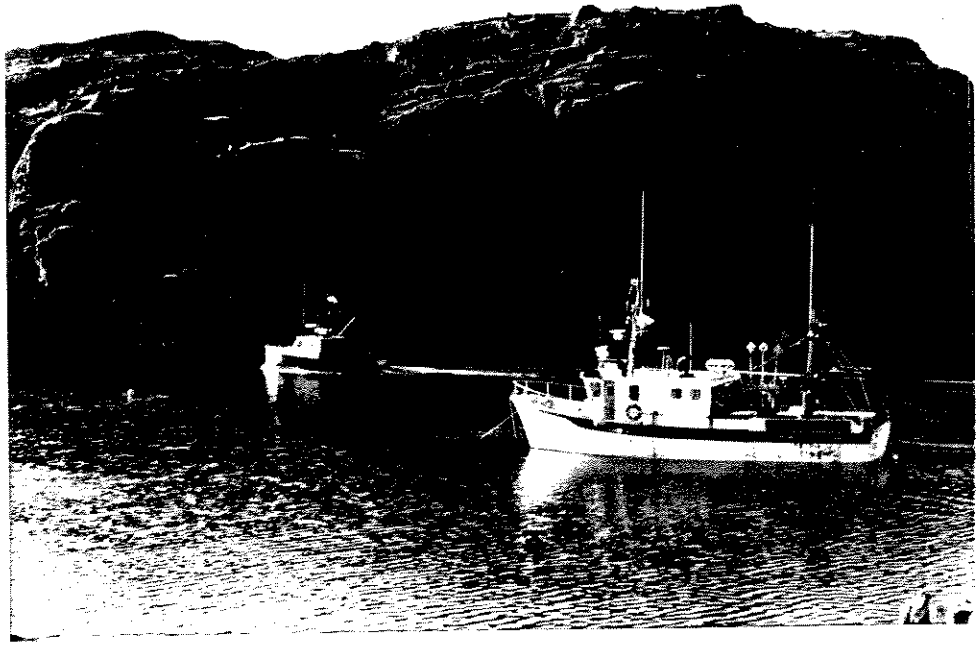


Photo 2. Two chartered fishing vessels in the harbour at Killiniq

The "F.V. Silver Condor" (at anchor in the foreground) is a 16.7 meter stern trawler. The "F.V. Cindy Roger" (departing to the left) is a 12.2 meter longliner/gillnetter. Details of both of these vessels are given in section C.2.b.i (Table 1) of this report.

This view is from the deck at the fish plant (Photo 1) with Jackson Island in the background. This inside harbour at Killiniq is ideal for such vessels, being completely protected and retaining sufficient water (6 fathoms) at low tide. Note the tide marks on the shore opposite.

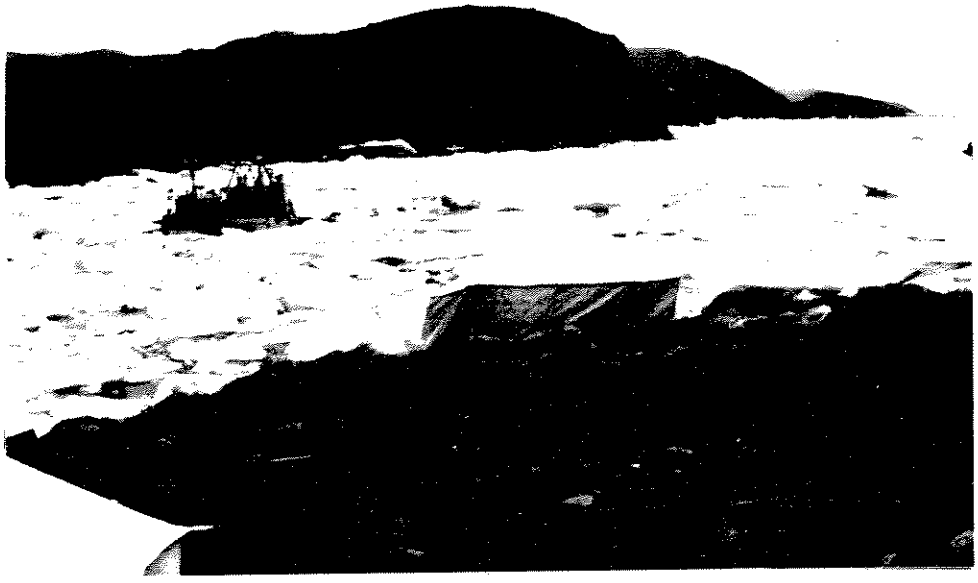


Photo 3. Project vessels trapped by ice in Fox Channel, Aug. 16th, 1983.

Fox Channel separates most of Jackson Island (background) from Killiniq Island (Figure 8). A sill, which is only temporarily covered at high tide, separates Fox Channel from the plant harbour (Photo 2).

The vessels became trapped when the ice pack in Ungava Bay (extreme right, background) moved against the coast between August 14th and 19th. While there was no danger to the vessels, they could not be moved for a number of days.

The tents in the foreground are the type widely used by the Inuit.

Photo 4. Staff buoy and trailing net buoy (60" dia) in Ungava Bay

Though not at their extreme in this particular case, tidal and set currents in Ungava Bay frequently submerged such floatation gears.

This location is approximately five miles due west of Killiniq Island (background) in Ungava Bay.

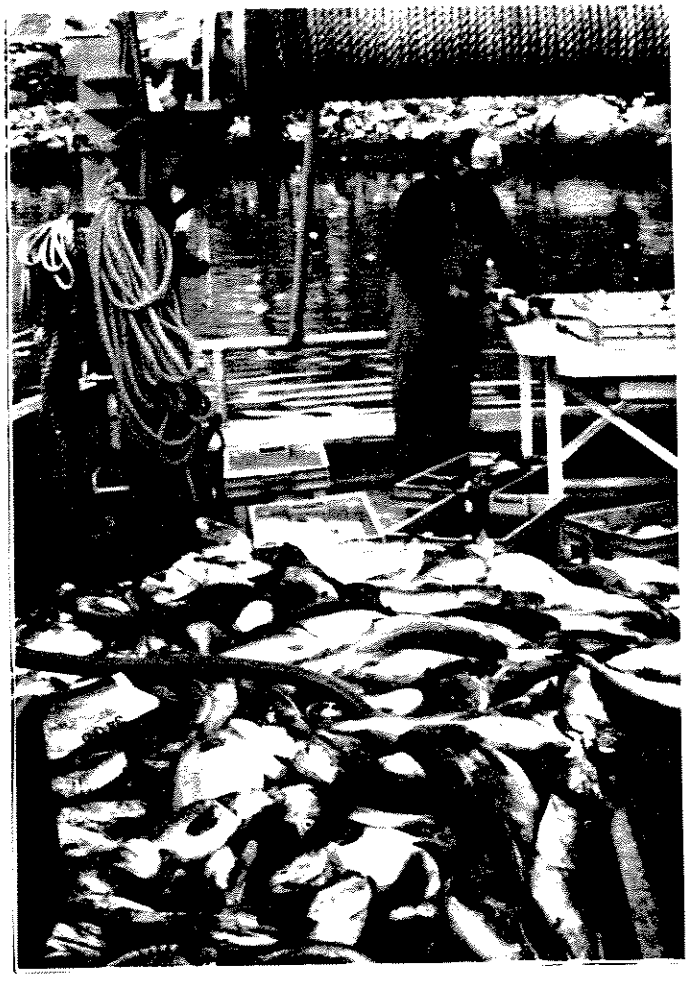


Photo 5. Processing Atlantic cod on board "F.V. Silver Condor"

Once fishing efforts were concentrated in the immediate area of Killiniq, all processing was done directly onboard the "Silver Condor". Gutting, splitting and washing were done on the stern deck and the split cod then lowered to the hold (lower right) and layered with salt. Note the uniform large sizes of fish in the catch.

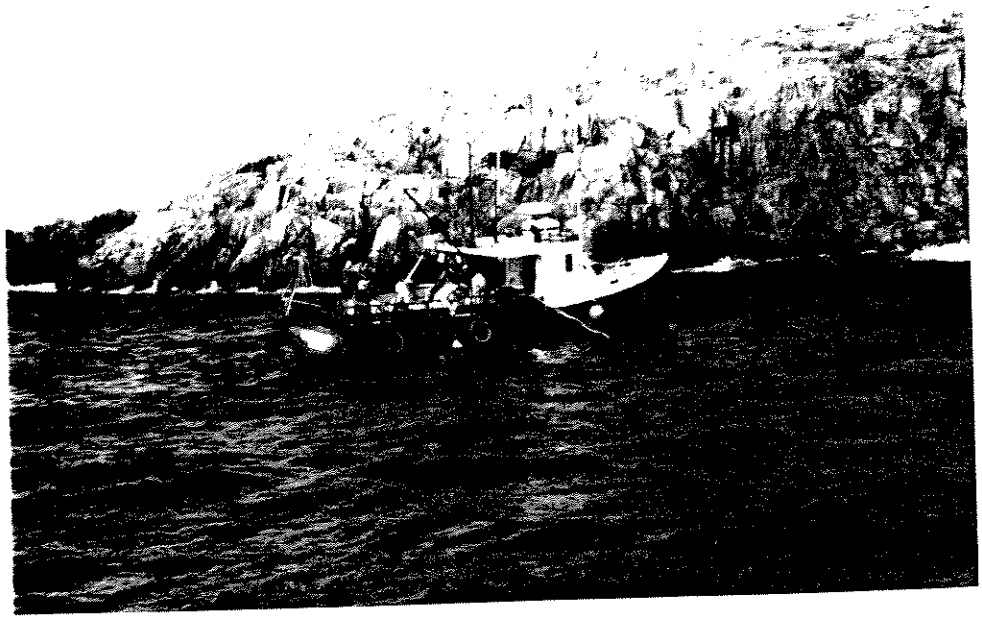


Photo 6. "F.V. Cindy Rogers" retreiving gillnets near Killiniq

Best catches of Atlantic cod during Phase I were taken very close inshore along the south coast of Jackson Island (see figure 8, section D.3). At these locations, the bottom was steeply sloped near the shoreline and depths dropped quickly to more than 60 fathoms. The "Cindy Rogers" being small and maneuverable, was ideally suited to working in such close quarters.

Photo 7. Heavily laden gillnet being retrieved onboard "F.V. Cindy Rogers"

Individual catches of Atlantic cod near Killiniq were, in some cases, quite spectactular. In one case, 2830.1 kilograms of cod were taken from one fleet of four nets in an overnight set.

Photo 8. Atlantic cod, split and cured at Killiniq

The Atlantic cod at Killiniq during Phase I were a superior raw material for a variety of potential products, being of a uniform large size. The quality of the salted product was independently judged to be excellent, although due to the "dryness" of the salt used (section D.4) and the shortness of the curing period, some of the catch was inadequately cured. The thickness of the flesh, evident in this photo, accentuated this problem.

Photo 9. Inuit fisherman preparing fish for salting

The four Inuit fishermen hired during Phase I, became involved in most aspects of the operation including fishing onboard the vessels, processing, and preparing and repairing fishing gears. With their knowledge of the surrounding areas, they provided key advice while navigating the vessels close to the coast.

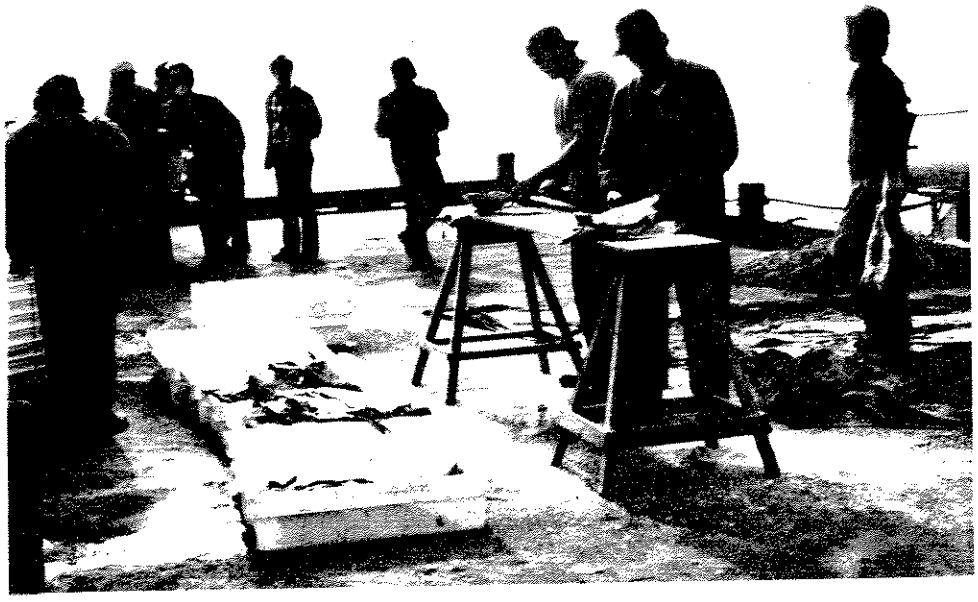


Photo 10. Grading of the salted product prior to sale at Lourdes-de-Blanc-Sablon, Québec

A total of 3337 kg of heavy-salted cod was sold at the completion of the Phase I survey. Over 90% of this product was graded "large" or "extra large".

APPENDIX B - DAILY METEOROLOGICAL RECORDS

The following meteorological records were made at Killiniq between July and September 1983, by M.O.T. personnel at "VAW" Killiniq. (Source: Environment Canada, Canadian Climatological Centre)

KEY

PRECIPITATION:

TR = TRACE

PRESSURE TRENDS:

S = steady
V = variable
R = rising
F = falling

WIND DIRECTION:

VAR = variable

Appendix B

DATE	TEMPERATURE		PRECIP	SEALEVEL PRESSURE millebars			WINDS (km/hr)				COMMENTS
							MEAN		MAX		
	MIN°C	MAX°C	mm	HIGH	LOW	TREND	SPEED	DIR	SPEED	DIR	
July 1	0.0	2.5	TR	999.5	999.5	S	12.0	VAR	15	WSW	
2	0.4	4.0	3.4	1005.4	1000.2	R	19.8	SW	26	SW	TR SNOW
3	-0.3	2.6	6.4	1008.3	996.7	R	18.6	VAR	33	WSW	
4	-0.4	9.4	0	1008.7	997.8	F	27.0	ESE	56	ESE	
5	1.4	6.9	24.6	994.5	985.3	F	42.8	E	78	E	
6	0.2	6.0	1.8	1001.6	995.2	R	21.8	S	35	SSW	
7	0.4	4.7	0.1	1013.0	1006.1	R	11.8	VAR	24	SSW	TR SNOW
8	2.6	14.2	0.8	1011.0	1002.3	F	10.3	ESE	39	E	
9	1.4	10.3	0.2	1009.9	1002.9	R	9.9	VAR	22	ENE	
10	0.4	11.1	0.6	1010.3	1006.6	F	15.8	NNE	26	SE	
11	0.0	9.5	TR	1005.3	1002.7	V	8.4	S	15	SE	
12	1.3	10.9	6.2	1004.5	999.5	R	13.4	ENE	41	ENE	
13	0.0	4.8	18.2	1009.1	1005.2	R	34.8	ENE	46	ENE	
14	0.0	4.8	0.6	1012.3	1011.3	S	16.5	N	22	NE	
15	1.6	5.8	0	1015.4	1011.6	R	19.4	NE	28	NE	
16	1.1	7.4	1.8	1017.3	1015.9	S	15.0	VAR	22	NNE	
17	1.2	4.8	4.6	1012.5	1008.5	F	27.8	NE	37	NNE	
18	-0.1	6.2	0	1008.0	1007.0	S	21.0	NNE	32	NNE	
19	-0.1	7.2	0	1005.6	1002.8	F	5.5	SSE	11	S	
20	2.5	10.1	0	1003.7	1001.4	V	16.1	SE	28	SW	
21	2.5	9.5	0	1002.6	999.5	F	13.1	S	24	SSW	
22	-0.1	3.8	0.6	1005.3	997.4	R	21.6	SW	37	WSW	

Appendix B (cont'd)

DATE	TEMPERATURE		PRECIP	SEALEVEL PRESSURE millebars			WINDS (km/hr)				COMMENTS
							MEAN		MAX		
	MIN°C	MAX°C	mm	HIGH	LOW	TREND	SPEED	DIR	SPEED	DIR	
July 23	0.0	5.0	0	1007.0	1005.0	R	9.6	VAR	22	S	
24	2.6	14.9	3.2	1004.1	1001.6	V	6.6	VAR	28	E	
25	0.0	7.6	2.3	1012.0	1002.7	R	3.4	VAR	7	NE	
26	-0.6	4.8	0.4	1015.9	1012.6	V	13.0	S	19	SSW	
27	-0.5	5.8	0.5	1009.8	1007.7	V	10.9	VAR	19	SSW	
28	-0.8	7.6	0	1015.7	1009.5	R	10.6	S	22	SSE	
29	3.6	23.7	1.1	1014.1	1002.3	F	5.0	E	28	E	
30	0.4	12.6	9.0	1003.4	994.3	R	2.9	VAR	9	S	
31	1.2	5.0	0	1011.3	1006.9	V	16.5	W	33	W	
Aug. 1	1.1	8.6	11.2	1008.6	1002.4	F	8.9	S	22	S	
2	0.1	2.6	1.4	1001.6	1000.0	S	17.5	S	28	W	
3	-1.0	3.0	TR	1006.5	1001.1	R	22.0	W	33	W	
4	-0.8	2.7	0	1014.2	1006.9	R	13.4	WSW	20	SW	FOG
5	0.6	11.1	5.2	1012.6	993.2	F	16.5	VAR	37	ESE	
6	1.6	7.3	3.2	996.6	990.7	V	10.5	VAR	28	S	
7	0.0	3.3	1.6	1003.3	995.1	R	5.0	ENE	13	ENE	
8	-1.0	5.8	0	1004.7	1003.0	S	16.5	E	37	E	
9	-1.1	4.0	0	1005.7	1011.6	R	8.6	SSE	19	ENE	
10	1.8	7.3	0	1019.5	1013.8	R	10.9	SSE	19	S	
11	3.0	8.0	0	1018.9	1011.9	F	12.8	VAR	20	S	
12	4.0	10.0	1.0	1011.1	1007.1	F	13.0	SSW	24	WSW	FOG
13	1.4	12.0	1.0	1008.7	1004.9	V	5.0	VAR	9	SE	FOG

Appendix B (cont'd)

DATE	TEMPERATURE		PRECIP	SEALEVEL PRESSURE millebars			WINDS (km/hr)				COMMENTS
							MEAN		MAX		
	MIN°C	MAX°C	mm	HIGH	LOW	TREND	SPEED	DIR	SPEED	DIR	
Aug. 14	4.1	13.2	3.0	997.4	991.8	V	27.7	SSW	56	WSW	FOG
15	1.5	8.4	2.4	1004.8	992.1	R	29.8	W	48	W	
16	1.5	12.7	4.0	1009.8	999.1	F	11.0	SSE	28	NNE	
17	0.4	3.5	TR	1007.9	998.5	R	16.0	VAR	39	WSW	
18	1.6	6.5	0.2	1011.5	1008.4	R	22.1	WSW	33	SW	
19	6.2	10.5	2.8	1010.7	1007.2	F	6.4	ESE	19	E	SAMPLING BEGINS
20	3.9	14.9	0	1004.1	1002.1	S	9.4	ENE	22	E	
21	1.8	8.2	2.9	1007.5	1003.9	R	15.6	ESE	28	E	
22	0.4	2.6	TR	1007.0	1005.9	S	8.9	WNW	19	NNW	
23	0.9	3.0	TR	1010.6	1005.9	R	18.9	VAR	28	WSW	
24	1.4	4.6	9.1	1012.1	1001.6	F	22.4	SSW	28	S	
25	1.0	2.4	1.8	1004.9	999.6	R	19.0	W	30	W	
26	0.4	2.7	1.5	1013.1	1004.5	R	10.8	NNW	19	NNW	
27	-0.1	2.4	0	1019.0	1014.5	R	7.6	VAR	15	SSW	
28	-0.2	6.0	0	1019.3	1018.6	S	4.4	SSE	13	SSE	
29	1.3	9.3	0	1017.7	1016.5	S	7.1	VAR	15	SW	
30	1.1	4.9	0	1017.9	1016.8	S	7.2	SW	19	SW	
31	2.4	5.7	0	1016.3	1012.8	F	3.9	SSE	11	SSE	
Sept. 1	2.1	11.5	0	1012.4	1012.0	S	2.3	SSE	9	SSE	
2	1.0	9.8	0	1013.1	1011.4	R	8.3	E	19	SE	
3	-0.3	12.2	0	1012.1	1008.0	F	6.4	SSE	24	E	
4	2.0	8.4	0.2	1003.3	995.5	F	43.1	E	61	E	NO FISHG

Appendix B (cont'd)

DATE	TEMPERATURE		PRECIP	SEALEVEL PRESSURE millebars			WINDS (km/hr)				COMMENTS
							MEAN		MAX		
	MIN°C	MAX°C	mm	HIGH	LOW	TREND	SPEED	DIR	SPEED	DIR	
Sept. 5	-0.5	5.4	1.4	1008.9	998.0	R	36.4	E	50	E	LGT.SNOW NO FISHG
6	-0.6	4.7	0	1010.1	1012.6	R	17.9	E	28	E	
7	-0.9	7.4	0	1010.6	1004.6	F	27.8	E	52	E	NO FISHG
8	0.4	5.4	0	1013.0	1005.1	R	220	E	32	E	
9	0.0	2.6	0.5	1013.2	1012.1	F	15.1	NNE	22	NNE	
10	-2.4	2.5	TR	1012.9	1010.1	F	10.1	VAR	22	SSW	
11	-0.6	4.4	0	1007.1	999.1	F	14.5	SSW	28	SSW	
12	-1.1	7.1	0	1007.2	998.8	R	14.8	SE	22	E	
13	-2.9	0.6	0.4	1013.7	1009.1	R	8.5	SSW	22	S	SNOW
14	-3.5	-1.7	TR	1018.6	1014.0	R	5.9	VAR	15	SSW	TRACE OF SNOW
15	-2.2	0.0	0.1	1020.4	1019.5	S	15.3	SW	19	SW	SAMPLING ENDS
16	-1.2	1.3	2.3	1019.4	1019.0	S	13.1	VAR	22	SW	SNOW
17	-0.5	3.0	0	1021.7	1018.8	R	16.6	S	20	SSW	
18	-1.8	1.1	0	1021.4	1019.0	F	8.6	VAR	13	S	
19	-2.2	6.4	0	1016.4	1009.2	F	8.8	VAR	28	E	
20	-2.0	8.6	0	1017.8	1011.8	R	2.6	VAR	9	ESE	
21	0.1	3.0	14.2	1017.4	1003.9	F	34.1	E	70	ESE	
22	1.4	8.1	5.2	1002.6	1000.9	S	15.9	VQR	37	ESE	
23	2.0	6.9	2.8	1000.0	995.3	V	23.4	SSW	33	SSW	
24	1.0	2.7	1.8	1014.2	1003.4	R	31.0	SSW	37	SSW	SNOW
25	1.9	7.8	2.4	1016.9	1007.3	F	14.0	ESE	28	ESE	

Appendix B (cont'd)

DATE	TEMPERATURE		PRECIP	SEALEVEL PRESSURE millebars			WINDS (km/hr)				COMMENTS
							MEAN		MAX		
	MIN°C	MAX°C	mm	HIGH	LOW	TREND	SPEED	DIR	SPEED	DIR	
Sept. 26	1.8	7.5	8.0	1003.1	1002.1	S	16.9	S	28	S	
27	0.5	2.2	1.6	1015.8	1002.8	R	13.9	VAR	28	WSW	
28	-1.3	1.1	0.2	1020.2	1018.2	R	16.3	W	24	W	SNOW
29	-1.0	1.9	TR	1022.4	1019.7	V	8.4	NE	19	N	SNOW
30	-0.3	3.0	0.7	1022.3	1019.3	V	22.3	VAR	37	WSW	

APPENDIX C - SET DATA

A complete set of descriptive parameters concerning every fishing effort during Phase I is given in the following table.

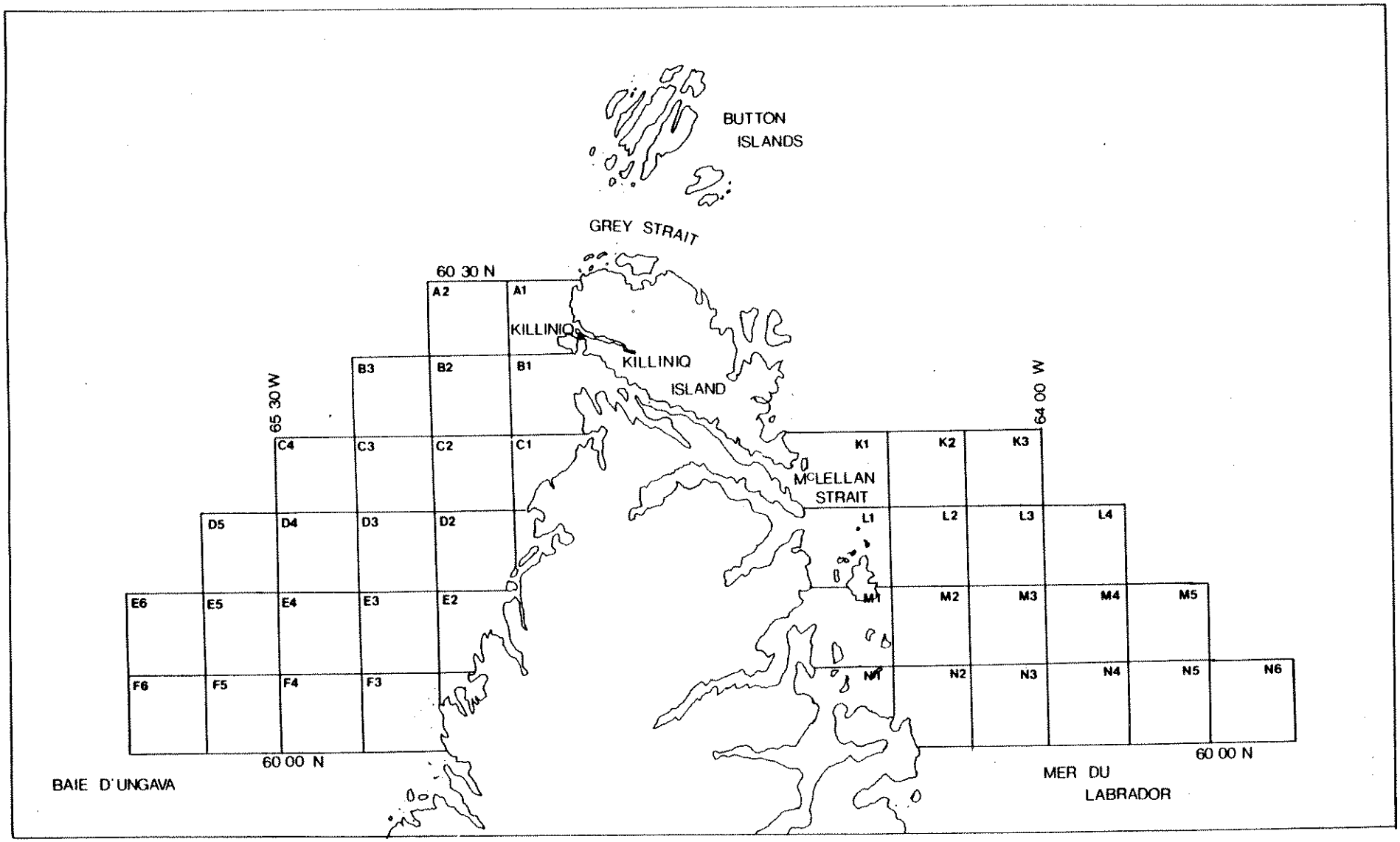
KEY

SET NO. and GEAR TYPE:

- L = longlines
- I = Inuit net
- CP = crab pot
- C = commercial gillnet
- J = jigger (N = Norwegian; NFLD = Newfoundland)

VESSEL:

- CR = "F.V. Cindy Rogers"
- SC = "F.V. Silver Condor"



GRILLE D'ECHANTILLONNAGE DE L' AIRE D'ETUDE, PROJET DES PÊCHERIES DE KILLINIQ, PHASE I

SET DATA, KILLINIQ FISHERIES PROJECT, PHASE I

							SETTING			HAULING				
SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE FM	DAMAGE	COMMENTS
499	canoe	JULY 22/23	DK	B-1	Seal Fishery Pt.	1x3-1/2" char	1930		0-5	0730		0-5		*net sunk from shore.
J-500	canoe	AUG. 18	MRK	B-1	Burwell Hb.	J- Nx2	1430		8-20		1500	8-20		*4 locations x 5 minutes.
L-201	"CR"	19	DR	A-2	60°31'.9N 64°58'.2W 180.	L-C	0925	1025	160-180	1124	1253	160-180	Anchor into trawl by ice	Loose ice. Very strong tide.
CP-1	"SC"	19	MF	A-2		CP			150				All gear lost	*100 f of line, only showed 50 f. Sounder malfunction.
CP-2	"SC"	19	MF		5-1/4M, CWS @ 197	CP			153				All gear lost	Tide very strong. 200 f rope and 2 floats.
L-202	CR	20/21	D	N-2	60°03'.5 64°19'.2 130.	L-C	1125	1212	9-13	1800	1916	9-13		Set with 800 hooks. 200 f rope and 2 floats.
L-203	CR	20/21	D	L-1	60°14' 60°14'.3 64°24' 64°26'.1	L-H	1500	1552	16-30	1125		16-30	Minor tangle from ice; no damage	Surface temp - 3.0°C
L-204	CR	20/21	D	M-1	60°08.3 60°07.5 64°23.2 64°26.0	L-H	1842	1921	22-24	0546	0705	22-24		Trawl hooked on ice; sea temp. 2.2°C.
C-1	SC	20/21	MF	M-2	60°09N 64°18W	C- 5x5-1/2"	1058	1104	12-16	1235	1257	12-16	Minor damage to net, anchor	Lots of kelp.
C-2	SC	20/21	MF	L-2	60°11 64°20.15W	C- 5x5-1/2"	1132	1137	6-27	1155	1217	6-27	Anchor bent, net torn, float missing	Lots of kelp.
C-3	SC	21/22	MF	N-1	60°04.6 64°21.55 1/4M to Hutton Penin.	C- 3x5-1/2" 2x6"	1446	1452	36-36	0954	1016	36-36		Little kelp.
C-4	SC	21/22	MF	N-2	60°03.50 64°10.30	C- 5x5-1/2"	1551	1605	9-10	1235	1320	9-12	Several tears, anchor in net	Lots of kelp. Video detection on bottom.

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							SETTING			HAULING				
SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE FM	DAMAGE	COMMENTS
C-5	SC	21/22	MF	N-3	60°03.50N 64°07.70W	C- 5nets	1628	1645	24-30				all gear lost by ice	Video detection at surface.
L-205	CR	22/23	D	N-4	60°04'.9 63°53'.0 60°03'.9 63°51'.3	L-C	1005	1120	43-56	1200	1214	43-56	150 hooks retrieved	Trawl line broken by ice.
L206	CR	22	D	M-6	60°09'.5 63°39'.4 60°07'.2 63°37'.5	L-H	1230	1320	88-92	1515	1630	88-92	---	Wind and ice increasing. Feared losing gear.
CP-3	SC	21/22	MF	N-1	Ekortiarsuk Fjord south of Gordon Point	CP	1945		40	0925				No crab, bait eaten.
CP-4	SC	21/22	MF	N-1		CP	1952		39	0917				No crab, bait eaten.
CP-5	SC	21/22	MF	N-1		CP	2000		38	0905		38		No crab, bait eaten by sea ice.
C-501; C-506	canoe	24-29	MRTK	B-1	Burwell Harbour	1x5-1/2" C- 1x6 1x7"	1015	1040	15-19					Checked daily with no catch.
L-207	CR	25/26	D	B-1/ C-1	60°20'.2 64°57'.8 60°19'.9 64°55'.7	L-C	0914	1100	35-36	1715	0915	35-36	Trawl broken but retrieved. Kelp on inside.	Line chaffed by tide on bottom.
C-6	SC	25/26	MF		CWS then 307° 3m SW	C- 5x5-1/2"	0855	0858	26-	0717	0805	31-43		
C-7	SC	25/26	MFR	C-3	6-1/4 m, SW f CWS	C- 5x5-1/2"	1017	1025	143-152				All gear lost.	Staff buoy & floats; floats (2) disappeared during set.
J-208	CR	26	DKL	C-1	60°18' 64°55' app	J- 1xN 2xNFLD	0945		5-17		1020	5-17		5 diff. places. Kelp everywhere.
L-209	CR	26/27	D	C-1	60°19'.5 64°51'.5 60°19'.9 64°52'.3	L-C 16 floats	1058	1220	9-22	0620	0750	9-22	Trawl broken but retrieved	Very little kelp, few holdfasts.
L-210	CR	26/27	DK	C-1	60°16.3 64°54.5 60°17.6 64°55.0	L-H	1500	1545	5-38	0845	0915	5-38	Trawl broken in two places.	Set across Channel with heavy current. Heavy kelp.

SET DATA, KILLINIQ FISHERIES PROJECT, PHASE I

							SETTING			HAULING				
SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE FM	DAMAGE	COMMENTS
C-8	SC	26/27	MF	B-1	60°22'.50N/64°50'.75W 1/2 m Inside CWS	5x5-1/2	1128	1131	26-39	0717	0755	19-28	Net twisted by current tide.	Lots of kelp.
L-211	CR	27/28	D	D-2	60°12.7 65°04.6 60°12.2 65°02.0	L-C (16 floats)	1025	1140	22-33	1115	1307	22-23	Trawl tangled.	
L-212	CR	27/28	D	E-2	60°09.1 65°00.0 60°08.6 65°01.3	L-C (16 floats)	1242	1337	10-18	0940	1048	10-18	Trawl broken but retrieved.	
C-9	SC	27/28	MF	C-1	60°14'.3 65°58'.25	C- 5x5-1/2	0921	0925	28-28	1212	1242	28-29		6 totes of kelp.
C-10	SC	27/28	MF	D-1	60°10.6 64°59.25	C- 5x5-1/2"	1001		18-	1102	1135	20-26	Lots of damage.	16 totes of kelp. 0.5 tons.
C-11	SC	27/28	MF	E-2	60°07.45 65°03.50	C- 4x5-1/2"	1051	1054	17-21	0936	1005	12-16		
L-213	CR	28/29	D	E-2	60°07.7 65°09.8	L-C (32 floats)	1620	1725	42-50	0810	0920	42-50	Several tangles in trawl.	
L-214	CR	28/29	D	E-2	60°07.6 65°04.1 60°07.7 65°03.0	L-C (32 floats)	1800	1850	9-26	0640	0750	9-26	Trawl broken but retrieved.	20 hooks with bait bones.
C-12	SC	28/29	MF		60°15.20N 65°02.00W	C- 3x5-1/2" 1x6"	1320	1324	32-52	1128	1150	60-62		Drifted far - many brittle stars.
C-13	SC	28/29	MF	C-2	60°17.40N 65°01.80W	C- 5x5-1/2"	1727	1731	63-84	1041	1116	68-74	Nets ruined.	Staff buoy submerged. Many brittle stars.
C-14	SC	28/29	MF	E-2	60°09.40N 65°07.60W	C- 5x5-1/2	1914	1917	63-70	0655	0717	61-61		
C-507	canoe	29/30	R	B-1	Burwell Harbour	C- 1x5-1/2" 1x6" 1x7"	1130		15-19		1730	15-19		
C-15	SC	29/30	MF	B-1	Munro Harbour	C- 3x5-1/2" 1x6"	1300	1303	63-72	0724	0753	40-62		One end (outside) swung out.

SET DATA, KILLINIQ FISHERIES PROJECT, PHASE I

SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	SETTING			HAULING			DAMAGE	COMMENTS
							START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE FM		
C-508	canoe	30/31	R	B-1	Burwell Harbour	C- 1x5-1/2" 1x6" 1x7"	1730				1300			
L-215	CR	30/31	D	B-1	60°22.4 60°22.1 64°51.7 64°49.7	L-C (32 floats)	0745	0854	4-18	0625	0730	4-18		About 6 baits left as hauled in.
L-216	CR	30/31	D	B-1	60°23.6 60°23.2 64°52.0 64°49.9	L-H	0910	1002	44-60	0750	0855	44-60		Hooks very clean. 5 bait heads only.
C-16	SC	30/31	MF	B-1	Munro Harbour		0822	0825	40-41	1146	1225	40		
C-17	SC	30/31	MF	B-1	Forbes Sound	C- 4x5-1/2"	0842	0847	45-46	1320	1450	46		
C-509	canoe	31/08 01/09	R	B-1	Trap Harbour 60°24'35 64°52'30	C- 1x5-1/2"	1600		0-7			0-7		Set from shore where trap will be set.
C-510	canoe	31/08 01/09	R	B-1	Burwell Harbour	C- 1x5-1/2" 1x6" 1x7"	1300							Same place as before.
C-18	SC	31/08 01/09	MF	B-1	Munro Harbour	C- 2x6" 1x5-1/2"	1252	1257	33-70	1025	1117	34-38		
C-19	SC	31/08 01/09	MF	B-1	Munro Harbour	C- 4x5-1/2"	1443	1447	34-43	0930	1000	30-43		
C-511	canoe	SEPT. 01/02	R	B-11	Trap Harbour	C- 5-1/2" floats			0-7					
C-512	canoe	01/02	R	B-1	Burwell Harbour	C- 1x5-1/2" 1x6" 1x7"			15-19					
C-20	SC	01/02	MF	B-1	Munro Harbour	C- 4x6"	0847	0849	40-50	0938		-47		
C-21	SC	01/02	MF	B-1	Fritz's Arm	C-	0908	0911	38-40	1039				

SET DATA, KILLINIQ FISHERIES PROJECT, PHASE I

							SETTING			HAULING				
SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE FM	DAMAGE	COMMENTS
C-22	SC	01/02	MF	B-1	South of mouth of Foxe Channel	C- 3x5-1/2" 1x6"				0717	0755	41-56		
C-23	SC	01/02	MF	B-1	Munro Harbour	C- 2x6" 1x5-1/2"	1136	1140	40-55	0814	0850	60-65		End of net swung out and drifted.
C-24	SC	02/03	MF	B-1	West side of Munro Hb.	C- 3x6"	0920		38-41	0950	1035	38-41		
C-25-A	SC CR	02/02	DMF	B-1	Outside Foxe Channel	C- 4x5-1/2"	1013	1016	43-45	1712	1740	43-45	Set as C-25. CR picks up our net and set it inshore and called it C-25A.	
C-220	CR	02/03	D	B-1	West mouth of Burwell Harbour	C- 3x6" 1x5-1/2"	1630		35-44	0750	0824			
C-221	CR	02/03	D	B-1	East side Munro Hb.	C - 4x5-1/2"	1638		15-40	0855	0920			
C-25	CR/SC	02/03	DMF	B-1	Foxe Harbour	C- 4x5-1/2"	1746		34-43	0959	1027	36-44		Reset by C.R.
C-26	SC	02/03	MF	B-1	Marc's Cove	C- 4x6"	1140	1143	16-19	0828	0852	20-23	Anchor into net	
C-27	SC	02/03	MF	B-1	South of Mikes Head	C- 3x5-1/2" 1x6"	1147	1151	30-56	0910	0934	39-38	One 6" net torn. Taken to shore for repairs.	
C-513	canoe	02/03	R	B-1	Trap Harbour	C- 5-1/2"	1400		0-7	1400		0-7		
C-514	canoe	02/03	R	B-1	Burwell Harbour	C- 1x5-1/2" 1x6" 1x7"			15-19			15-19		
C-222	CR	03/06	DM	B-1	West side Burwell Harbour	C- 3x6 1x5-1/2"	Sept. 3			Sept. 6				Many fish eaten, but many alive.
							0830		50-54	0802	0830	54-62		
C-223	CR	03/06	DM	B-1	East side Munro Hb.	C- 4x5-1/2"	0925		30-30	0905	1010	26-		Net dragged while hauling.

SET DATA, KILLINIQ FISHERIES PROJECT, PHASE I

							SETTING			HAULING				
SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE FM	DAMAGE	COMMENTS
C-224	CR	03/09	DM	B-1	West side Munro Hb.	C- 3x6	1040			0720	0742	38-40		Gear lost 6 days. Badly mauled and very dirty.
C-225	CR	06	DM	B-1	West side Burwell Hb.	C- 1x5-1/2, 3x6	0836	0839	58-60	1040				Pull all gear up.
C-515	canoe	03/07	MTK	B-1	Trap Hb.	C- 5-1/2" surface				1015	1030			
C-516	canoe	03/07	MTK	B-1	Burwell Hb.	C- 1x5-1/2, 1x6", 1x7"				1045	1200	?		Bad waves and current. Gear not reset straight.
C-28	SC	03/06	F	B-1	North of Fox Hb.	C- 4x5-1/2"	1101	1104	26-44	0937	1132	32-32	web in bad shape	Buoy and float submerged.
C-29	SC	03/06	F	B-1	Marc's Cove	C- 3x5-1/2	1123	1125	12-44				all gear lost	
C-30	SC	03/06	F	B-1	South of Fox Hb.	C- 4x6"	1147	1149	34-50	0958	1045	44-53		One net did not fish. Net all tangled.
C-517	canoe	07/08	JY	B-1	Trap Cove	C- 5-1/2" surface	1015	1030	0-7	1130		0-7		
C-518	CR	07/08	D	B-1	Burwell Hb.	C- 1x5-1/2, 1x6, 1x7	1045	1200	?	1122	1145	9-12		Left net and rerig for CR: now is C-200 series.
C-226	CR	08/09	DM	B-1	East mouth Burwell Hb.	C- 5-1/2", 6", 7"	1157	1200	10-26	1016	1040	18-28		Lots of kelp.
C-227	CR	08/09	DM	B-1	Inside south side, Fox Hb.	C- 3x6", 1x5-1/2"	1222	1225	34-43	0758	0843	21-38		Great deal of kelp. Some rocks. Therefore dragged.
C-228	CR	08/09	DM	B-1	Inside Munro Hb., east side	C- 4x5-1/2"	1253	1256	11-22	0935	0950	12-24		Nets very clean.
C-229	CR	08/09	DM	B-1	East side, Inside Burwell Hb.	C- 3x6", 1x5-1/2"	1305	1307	14-20	1050	1107	18-22		Some kelp.
C-519	canoe	08/09	AY	B-1	Trap Cove	C- 5-1/2"(surface)	1130		0-7	1300		0-7		
C-520	canoe	09/10	AY	B-1	Trap Cove	C- 5-1/2"(surface)	1300		0-7	1000		0-7		

SET DATA, KILLINIQ FISHERIES PROJECT, PHASE I

							SETTING			HAULING				
SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE FM	DAMAGE	COMMENTS
C-230	CR	09/10	MD	B-1	East side Munro Hb.	C- 4x5-1/2"	952	954	25-30	858	920	30-42		
C-231	CR	09/10	MD	B-1	West side Munro Hb.	C- 3x6 1x5-1/2	0956	0959	22-42	0925		22-28		"Discovered that one 6" = 7".
C-232	CR	09/10	MD	B-1	Centre Burwell Hb.	C- 1x5-1/2" 1x6 1x7	1118	1120	20-28	1106	1125	18-26		
C-233	CR	09/10	MD	B-1	West mouth Burwell Hb.	C- 3x6 1x5-1/2	1113	1115	38-40	0812	0846	35-50		
C-234	CR	10/11	M	B-1	West mouth Burwell Hb.	C- 3x6 1x5-1/2	950	952	25-	1017	1040	42-44		
C-235	CR	10/11	MKT	B-1	Munro Harbour	C- 1x7 2x6 1x5-1/2	1027	1033	10-40	1057	1215	42-?		Drifted out around point.
C-236	CR	10/11	MKT	B-1	Munro Harbour	C- 3x6 1x5-1/2	1037	1039	30-68	1226	1320	40-?		
C-237	CR	10/11	MKT	B-1	Burwell Harbour	C- 1x5-1/2 1x6 1x7	1127		28-	1359	1410	25-		
C-238	CR	11/12	MD	B-1	Munro Harbour	C- 1x7 1x6 1x5-1/2	1214	1217	10-60	0850	0925	5-30		
C-239	CR	11/12	MD	B-1	Munro Harbour	C- 3x6 1x5-1/2	1220	1222	10-18	937	1000	0-8		Almost all fish in last net * Mostly fresh caught.
C-240	CR	11/12	MD	B-1	West Mouth Burwell Hb.	C- 1x7 2x6 1x5-1/2	1439	1442	9-36	1100	1120	5-42		
C-241	CR	11/12	MD	B-1	Seal Fishing Point	C- 5-1/2, 6, 7	1426	1428	20-20	1250	1305	18-20		
C-521	canoe	10/11		B-1	Trap Cove	C- 5-1/2 (surface)	1000		0-7	1200		0-7		

SET DATA, KILLINIQ FISHERIES PROJECT, PHASE I

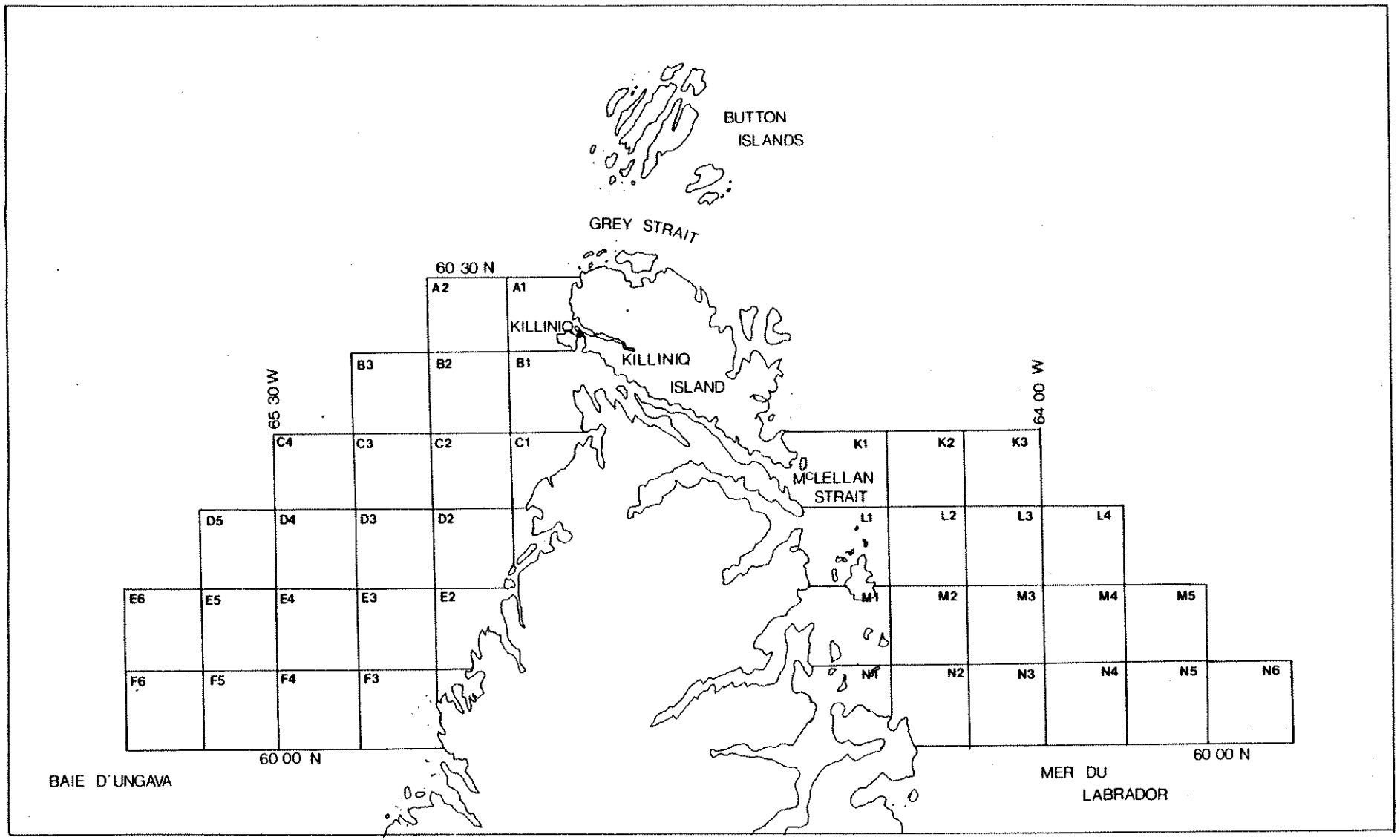
							SETTING			HAULING				
SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE FM	DAMAGE	COMMENTS
C-522	canoe	11/12		B-1	Trap Cove	C- 5-1/2 (surface)	1200		0-7	1100		0-7		
C-523	canoe	12/13	-	B-1	Trap Cove	C- 5-1/2 (surface)	1100		0-7	app. 24 hrs.		0-7		
C-242	CR	12/13	DM	B-1	West Munro Harbour	C- 1-7" 2-6" 1-5-1/2"	1042	1043	8-30	1050	1217	2-20		Drifted against pt.
C-243	CR	12/13	DM	B-1	West Munro Harbour	C- 3x6", 1x5-1/2"	1040	1041	10-65	1002	1042	16-40		
C-244	CR	12/13	DM	B-1	Mouth of Amittoq In.	C- 3x6", 1x5-1/2"	1216	1218	13-30	0914	0935	24-28	Much damage to net. Anchor straight.	Drifted out to shoals.
C-245	CR	12/13	DM	B-1	Center mouth Burwell Harbour	C- 5-1/2", 6", 7"	1310	1312	15-30	1241	1257	26-28		
C-524	canoe	13/14	-	B-1	Trap Cove	C- 5-1/2" surface	app. 24 hrs.		0-7	app. 24 hrs.		0-7		
C-246	CR	13/14	MKTD	B-1	Mouth Trap Cove	C- 1-7" 2-6" 1-5-1/2"	1226	1228	18-50	0840	0906	12-18		
C-247	CR	13/14	MKTD	B-1	North side Forbes Sound	C- 3x6", 1x5-1/2"	1231	1234	50-50	0915	0937	43-43		
C-248	CR	13/14	MKTD	B-1	Seal Fishery Point	C- 5-1/2", 6", 7"	1259	1301	6-22	1056	1117	3-12		

SET DATA, KILLINIQ FISHERIES PROJECT, PHASE I

							SETTING			HAULING				
SET NO.	VESSEL	DATE	CREW	BLOCK	LOCATION	GEAR	START TIME	FINISH TIME	DEPTH RANGE FM	START TIME	FINISH TIME	DEPTH RANGE M	DAMAGE	COMMENTS
C-525	canoe	14/15	---	B-1	Trap Cove	C- 5-1/2" (surface)	app. 24 hrs.		0-7	app. 24 hrs.		0-7		
C-249	CR	14/15	DF	B-1	Forbes Sound, E. of Burwell Harbour	C- 3x6", 1x5-1/2"	0951	0953	11-19	0615	0625	1430		
C-250	CR	14/15	DF	B-1	Centre of Forbes Sound	C- 1x7", 2x6", 1x5-1/2"	1000	1002	41-44	0642	0715	44-44		
C-251	CR	14/15	DF	B-1	Seal Fishery Point	C- 5-1/2", 6", 7"	1118	1120	12-27	0819	0831	?		Net did not seem moved.
C-252	CR	14/15	DF	B-1	Channel off Jackson Island	C- 2x6"	1345	1347	72-72	0734	0800	?		Many stars.

APPENDIX D - CATCH DATA

A complete record of the catch realized from each set (Appendix C) is given in the following table.



GRILLE D'ECHANTILLONNAGE DE L' AIRE D'ETUDE, PROJET DES PÊCHERIES DE KILLINIQ, PHASE I

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #											
			499	J-500	L-201	CP-1	CP-2	L-202	L-203	L-204	C-1	C-2	C-3	C-4
FISH	ATLANTIC COD	#, TOTAL		NO CATCH	NO CATCH	GEAR LOST	GEAR LOST							NO CATCH
		#, SCAVENGED												
		#, LOST												
		#, FRESH												
		WT., FRESH												
	GREENLAND COD	#										1		
		WT.										2.35		
	GREENLAND HALIBUT	#												
		WT.												
	AMERICAN PLAICE	#											6	
		WT.											2.70	
	POLAR EELPOUT	#						1						
		WT.						0.60						
	ARCTIC EELPOUT	#												
		WT.												
	SHORTHORN SCULPIN	#							2		4	1	1	
		WT.							1.00		-	-		
	ATLANTIC SALMON	#	1											
		WT.												
	ARCTIC CHAR	#												
		WT.												
INVERTEBRATES	ICELAND SCALLOPS	#								1				
		WT.												
	HYAS COARTICUS	#							2		1	1	4	
		WT.												

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #											
			C-5	L-205	L-206	CP-3	CP-4	CP-5	C-501	C-502	C-503	C-504	C-505	C-506
FISH	ATLANTIC COD	#, TOTAL	GEAR LOST	NO CATCH	NO CATCH	NO CATCH	NO CATCH		NO CATCH	NO CATCH	NO CATCH	NO CATCH	NO CATCH	NO CATCH
		#, SCAVENGED												
		#, LOST												
		#, FRESH												
		WT., FRESH												
	GREENLAND COD	#												
		WT.												
	GREENLAND HALIBUT	#												
		WT.												
	AMERICAN PLAICE	#												
		WT.												
	POLAR EELPOUT	#												
		WT.												
	ARCTIC EELPOUT	#												
		WT.												
	SHORTHORN SCULPIN	#												
		WT.												
	ATLANTIC SALMON	#												
		WT.												
	ARCTIC CHAR	#												
		WT.												
INVERTEBRATES	ICELAND SCALLOPS	#												
		WT.												
	HYAS COARTICUS	#						2						
		WT.												

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #										
			L-207	C-6	C-7	J-208	L-209	L-210	C-8	L-211	L-212	C-9	C-10	C-11
FISH	ATLANTIC COD	#, TOTAL		21			1		9	5		25	4	13
		#, SCAVENGED		8			0		3	-		16	1	8
		#, LOST		0			0		0	1		0	0	0
		#, FRESH		13			1		6	4		9	3	5
		WT., FRESH		54.05			3.60		22.90	17.55		39.40	12.65	17.50
	GREENLAND COD	#					2			1	3			
		WT.					3.10			-	4.70			
	GREENLAND HALIBUT	#												
		WT.												
	AMERICAN PLAICE	#												
		WT.												
	POLAR EELPOUT	#					1				2			
		WT.					1.00				1.50			
	ARCTIC EELPOUT	#									1			
		WT.									1.20			
	SHORTHORN SCULPIN	#		7					1		2		6	4
		WT.		-							1.30		-	-
	ATLANTIC SALMON	#												
		WT.												
	ARCTIC CHAR	#												
		WT.												
INVERTEBRATES	ICELAND SCALLOPS	#	1	1			1		1	2				
		WT.												
	HYAS COARTICUS	#		72+				1	86					59
		WT.												

GEAR LOST NO CATCH

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #											
			L-213	L-214	C-12	C-13	C-14	C-507	C-15	C-508	L-215	L-216	C-16	C-17
FISH	ATLANTIC COD	#, TOTAL				10	1	1	39				49	7
		#, SCAVENGED				1	0	0	0				0	0
		#, LOST				0	0	0	0				0	0
		#, FRESH				9	1	1	39				49	7
		WT., FRESH				28.20	4.45	4.00	162.75				194.15	20.80
	GREENLAND COD	#		1					1		2		1	
		WT.		1.60					-		6.20		-	
	GREENLAND HALIBUT	#				4								
		WT.				10.80								
	AMERICAN PLAICE	#												
		WT.												
	POLAR EELPOUT	#												
		WT.												
	ARCTIC EELPOUT	#												
		WT.												
	SHORTHORN SCULPIN	#												
		WT.												
	ATLANTIC SALMON	#												
		WT.												
	ARCTIC CHAR	#												
		WT.												
INVERTEBRATES	ICELAND SCALLOPS	#												
		WT.												
	HYAS COARTICUS	#		1			1							
		WT.												

NO CATCH

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #											
			C-509	C-510	C- 18	C-19	C-511	C-512	C-20	C-21	C-22	C-23	C-24	C-25A
FISH	ATLANTIC COD	#, TOTAL			29	20			25	36	22	52	71	4
		#, SCAVENGED			0	0			3	1	0	2	0	0
		#, LOST			0	0			1	2	0	4	0	0
		#, FRESH			29	20			21	33	22	46	71	4
		WT., FRESH			110.70	78.80			97.6	128.20	89.0	186.20	306.00	19.40
	GREENLAND COD	#												
		WT.												
	GREENLAND HALIBUT	#												
		WT.												
	AMERICAN PLAICE	#												
		WT.												
	POLAR EELPOUT	#												
		WT.												
	ARCTIC EELPOUT	#												
		WT.												
	SHORTHORN SCULPIN	#												
		WT.												
	ATLANTIC SALMON	#	2				1							
		WT.	9.60				-							
	ARCTIC CHAR	#	2				1							
		WT.	-				-							
INVERTEBRATES	ICELAND SCALLOPS	#												
		WT.												
	HYAS COARTICUS	#												
		WT.												

NO CATCH

NO CATCH

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #											
			C-220	C-221	C-25	C-26	C-27	C-513	C-514	C-222	C-223	C-224	C-225	C-515
FISH	ATLANTIC COD	#, TOTAL	21	45	39	23	28	NO CATCH	NO CATCH	38	175	38	5	NO CATCH
		#, SCAVENGED	0	0	1	1	1			12	17	18	0	
		#, LOST	0	0	1	0	0			0	0	0	0	
		#, FRESH	21	45	37	22	27			26	158	20	5	
		WT., FRESH	80.10	192.90	175.80	101.80	105.60			105.80	617.40	70.00	17.50	
	GREENLAND COD	#		1										
		WT.		2.90										
	GREENLAND HALIBUT	#												
		WT.												
	AMERICAN PLAICE	#												
		WT.												
	POLAR EELPOUT	#												
		WT.												
	ARCTIC EELPOUT	#												
		WT.												
	SHORTHORN SCULPIN	#									3			
		WT.									-			
	ATLANTIC SALMON	#												
		WT.												
	ARCTIC CHAR	#												
		WT.												
INVERTEBRATES	ICELAND SCALLOPS	#												
		WT.												
	HYAS COARTICUS	#												
		WT.												

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #											
			C-516	C-28	C-29	C-30	C-517	C-518	C-226	C-227	C-228	C-229	C-519	C-520
FISH	ATLANTIC COD	#, TOTAL	30	76		283		10	1	5				
		#, SCAVENGED	12	0		0		1	0	1				
		#, LOST	0	0		0		0	0	0				
		#, FRESH	18	76		283		9	1	4				
		WT., FRESH	68.20	286.8		1070.00		31.40	7.00	17.00				
	GREENLAND COD	#			N		N					N		N
		WT.			O		O					O		O
	GREENLAND HALIBUT	#												
		WT.			C A T C H		C A T C H					C A T C H		C A T C H
	AMERICAN PLAICE	#												
		WT.												
	POLAR EELPOUT	#												
		WT.												
	ARCTIC EELPOUT	#												
		WT.												
	SHORTHORN SCULPIN	#	6	2							5		1	
		WT.	-	-							-		-	
	ATLANTIC SALMON	#												
		WT.												
	ARCTIC CHAR	#												
		WT.												
INVERTEBRATES	ICELAND SCALLOPS	#												
		WT.												
	HYAS COARTICUS	#	35											
		WT.												

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #											
			C-230	C-231	C-232	C-233	C-234	C-235	C-236	C-237	C-238	C-239	C-240	C-241
FISH	ATLANTIC COD	#, TOTAL	9	280		6	13	458	17	2	174	192	5	6
		#, SCAVENGED	0	0		0	0	0	0	2	0	0	0	0
		#, LOST	0	0		0	0	0	0	0	0	0	0	0
		#, FRESH	9	280		6	13	458	17	0	174	192	5	6
		WT., FRESH	37.60	1164.60		24.70	54.60	1895.30	70.30	-	705.40	803.60	23.00	27.30
	GREENLAND COD	#			NO CATCH									
		WT.												
	GREENLAND HALIBUT	#												
		WT.												
	AMERICAN PLAICE	#												
		WT.												
	POLAR EELPOUT	#												
		WT.												
	ARCTIC EELPOUT	#												
		WT.												
	SHORTHORN SCULPIN	#												
		WT.												
	ATLANTIC SALMON	#												
		WT.												
	ARCTIC CHAR	#												
		WT.												
INVERTEBRATES	ICELAND SCALLOPS	#												
		WT.												
	HYAS COARTICUS	#												
		WT.												

KILLINIQ FISHERIES PROJECT, CATCH RECORDS (WEIGHTS IN KG)

			SET #											
			C-521	C-522	C-523	C-242	C-243	C-244	C-245	C-524	C-525	C-246	C-247	C-248
FISH	ATLANTIC COD	#, TOTAL				705	100		2			34	57	12
		#, SCAVENGED				0	0		0			0	0	1
		#, LOST				0	0		0			0	0	0
		#, FRESH				705	100		2			34	57	11
		WT., FRESH				2830.10	400.00		8.03			138.70	210.10	41.60
	GREENLAND COD	#	NO CATCH	NO CATCH	NO CATCH			NO CATCH		NO CATCH	NO CATCH			
		WT.												
	GREENLAND HALIBUT	#												
		WT.												
	AMERICAN PLAICE	#												
		WT.												
	POLAR EELPOUT	#												
		WT.												
	ARCTIC EELPOUT	#												
		WT.												
	SHORTHORN SCULPIN	#												
		WT.												
	ATLANTIC SALMON	#												
		WT.												
	ARCTIC CHAR	#												
		WT.												
INVERTEBRATES	ICELAND SCALLOPS	#												
		WT.												
	HYAS COARTICUS	#												
		WT.												

KILLINIQ FISHERIES PROJECT, CATCH RECORDS
(WEIGHTS IN KG)

			SET #			
			C-249	C-250	C-251	C-252
FISH	ATLANTIC COD	#, TOTAL	2	2	4	3
		#, SCAVENGED	0	0	0	0
		#, LOST	0	0	0	0
		#, FRESH	2	2	4	3
		WT., FRESH	8.00	7.0	21.7	16.1
	GREENLAND COD	#				
		WT.				
	GREENLAND HALIBUT	#				
		WT.				
	AMERICAN PLAICE	#				
		WT.				
	POLAR EELPOUT	#				
		WT.				
	ARCTIC EELPOUT	#				
		WT.				
	SHORTHORN SCULPIN	#				
		WT.				
	ATLANTIC SALMON	#				
		WT.				
	ARCTIC CHAR	#				
		WT.				
INVERTEBRATES	ICELAND SCALLOPS	#	1			
		WT.				
	HYAS COARTICUS	#				
		WT.				

APPENDIX E - LENGTH FREQUENCY DATA, ATLANTIC COD

The following are records of the individual Atlantic cod which comprise the length frequency data base.

KEY

GEAR TYPE/TYPE D'ENGIN

C = commercial gillnet
L = longlines

MESH SIZE/MAILLE:

#S = stretched mesh size in inches
M = mixed sizes of meshes

SEX/SEXE:

M = male
F = female
0 = not sexed

TOTAL LENGTH/LONGUEUR TOTALE: mm

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C10	2808	D1	C	5.5	F	740
C10	2808	D1	C	5.5	F	805
C10	2808	D1	C	5.5	M	750
C11	2808	E2	C	5.5	F	702
C11	2808	E2	C	5.5	F	585
C11	2808	E2	C	5.5	F	750
C11	2808	E2	C	5.5	F	780
C11	2808	E2	C	5.5	F	727
C13	2908	C2	C	5.5	M	680
C13	2908	C2	C	5.5	F	870
C13	2908	C2	C	5.5	F	730
C13	2908	C2	C	5.5	F	730
C13	2908	C2	C	5.5	F	750
C13	2908	C2	C	5.5	M	740
C13	2908	C2	C	5.5	F	620
C13	2908	C2	C	5.5	F	800
C13	2908	C2	C	5.5	F	770
C13	2908	C2	C	5.5	F	780
C14	2908	E2	C	5.5	M	815
C15	3008	B1	C	M	M	710
C15	3008	B1	C	M	M	742
C15	3008	B1	C	M	F	739
C15	3008	B1	C	M	M	700
C15	3008	B1	C	M	F	715
C15	3008	B1	C	M	M	735
C15	3008	B1	C	M	F	715
C15	3008	B1	C	M	M	805
C15	3008	B1	C	M	F	765
C15	3008	B1	C	M	F	670
C15	3008	B1	C	M	M	650
C15	3008	B1	C	M	F	725
C15	3008	B1	C	M	F	692
C15	3008	B1	C	M	F	809
C15	3008	B1	C	M	M	690
C15	3008	B1	C	M	M	722
C15	3008	B1	C	M	M	623
C15	3008	B1	C	M	M	661
C15	3008	B1	C	M	M	737
C15	3008	B1	C	M	F	766
C15	3008	B1	C	M	M	660
C15	3008	B1	C	M	M	755
C15	3008	B1	C	M	M	650

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C15	3008	B1	C	M	F	852
C15	3008	B1	C	M	F	852
C15	3008	B1	C	M	F	770
C15	3008	B1	C	M	F	697
C15	3008	B1	C	M	F	790
C15	3008	B1	C	M	F	577
C15	3008	B1	C	M	F	710
C15	3008	B1	C	M	F	902
C15	3008	B1	C	M	F	728
C15	3008	B1	C	M	F	790
C15	3008	B1	C	M	M	720
C15	3008	B1	C	M	M	770
C15	3008	B1	C	M	F	852
C15	3008	B1	C	M	M	780
C15	3008	B1	C	M	F	660
C15	3008	B1	C	M	M	687
C15	3008	B1	C	M	F	770
C15	3008	B1	C	M	F	741
C15	3008	B1	C	M	F	759
C15	3008	B1	C	M	F	730
C15	3008	B1	C	M	M	755
C15	3008	B1	C	M	M	772
C15	3008	B1	C	M	F	595
C15	3008	B1	C	M	M	810
C15	3008	B1	C	M	M	770
C15	3008	B1	C	M	M	804
C15	3008	B1	C	M	F	742
C15	3008	B1	C	M	M	704
C15	3008	B1	C	M	M	830
C15	3008	B1	C	M	F	571
C15	3008	B1	C	M	F	790
C15	3008	B1	C	M	M	715
C15	3008	B1	C	M	F	736
C15	3008	B1	C	M	F	815
C15	3008	B1	C	M	M	690
C15	3008	B1	C	M	F	800
C15	3008	B1	C	M	M	704
C15	3008	B1	C	M	F	776
C15	3008	B1	C	M	F	760
C15	3008	B1	C	M	M	736
C15	3008	B1	C	M	F	732
C15	3008	B1	C	M	F	735

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C15	3008	B1	C	M	M	780
C15	3008	B1	C	M	F	783
C15	3008	B1	C	M	M	786
C15	3008	B1	C	M	M	770
C15	3008	B1	C	M	M	760
C15	3008	B1	C	M	M	770
C15	3008	B1	C	M	F	915
C15	3008	B1	C	M	M	682
C15	3008	B1	C	M	M	721
C15	3008	B1	C	M	F	702
C15	3008	B1	C	M	M	711
C15	3008	B1	C	M	M	700
C15	3008	B1	C	M	F	736
C15	3008	B1	C	M	F	840
C15	3008	B1	C	M	F	865
C15	3008	B1	C	M	F	750
C15	3008	B1	C	M	F	762
C15	3008	B1	C	M	F	744
C15	3008	B1	C	M	F	815
C15	3008	B1	C	M	F	715
C15	3008	B1	C	M	M	715
C15	3008	B1	C	M	F	805
C15	3008	B1	C	M	F	750
C17	3108	B1	C	5.5	F	694
C17	3108	B1	C	5.5	F	730
C17	3108	B1	C	5.5	F	742
C17	3108	B1	C	5.5	M	750
C17	3108	B1	C	5.5	F	742
C17	3108	B1	C	5.5	M	765
C17	3108	B1	C	5.5	F	655
C18	0109	B1	C	M	M	722
C18	0109	B1	C	M	F	670
C18	0109	B1	C	M	F	640
C18	0109	B1	C	M	M	790
C18	0109	B1	C	M	M	721
C18	0109	B1	C	M	F	785
C18	0109	B1	C	M	F	831
C18	0109	B1	C	M	M	676
C18	0109	B1	C	M	F	715
C18	0109	B1	C	M	F	811
C18	0109	B1	C	M	F	644
C18	0109	B1	C	M	F	710

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C18	0109	B1	C	M	M	772
C18	0109	B1	C	M	M	634
C18	0109	B1	C	M	M	825
C18	0109	B1	C	M	F	686
C18	0109	B1	C	M	M	700
C18	0109	B1	C	M	M	720
C18	0109	B1	C	M	M	734
C18	0109	B1	C	M	M	761
C18	0109	B1	C	M	F	634
C18	0109	B1	C	M	F	799
C18	0109	B1	C	M	M	710
C18	0109	B1	C	M	M	783
C18	0109	B1	C	M	F	874
C18	0109	B1	C	M	F	709
C18	0109	B1	C	M	M	674
C18	0109	B1	C	M	F	782
C18	0109	B1	C	M	F	778
C19	0109	B1	C	5.5	F	795
C19	0109	B1	C	5.5	M	760
C19	0109	B1	C	5.5	M	740
C19	0109	B1	C	5.5	F	821
C19	0109	B1	C	5.5	M	770
C19	0109	B1	C	5.5	F	850
C19	0109	B1	C	5.5	F	717
C19	0109	B1	C	5.5	M	655
C19	0109	B1	C	5.5	M	706
C19	0109	B1	C	5.5	F	820
C19	0109	B1	C	5.5	M	700
C19	0109	B1	C	5.5	M	745
C19	0109	B1	C	5.5	M	705
C19	0109	B1	C	5.5	F	790
C19	0109	B1	C	5.5	M	704
C19	0109	B1	C	5.5	F	832
C19	0109	B1	C	5.5	F	686
C19	0109	B1	C	5.5	F	754
C19	0109	B1	C	5.5	M	652
C19	0109	B1	C	5.5	F	700
C20	0209	B1	C	M	M	670
C20	0209	B1	C	M	M	761
C20	0209	B1	C	M	M	775
C20	0209	B1	C	M	F	755
C20	0209	B1	C	M	F	695

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C20	0209	B1	C	M	F	760
C20	0209	B1	C	M	F	695
C20	0209	B1	C	M	M	780
C20	0209	B1	C	M	F	790
C20	0209	B1	C	M	F	847
C20	0209	B1	C	M	F	800
C20	0209	B1	C	M	M	710
C20	0209	B1	C	M	F	672
C20	0209	B1	C	M	M	670
C20	0209	B1	C	M	F	800
C20	0209	B1	C	M	M	706
C20	0209	B1	C	M	M	770
C20	0209	B1	C	M	F	702
C20	0209	B1	C	M	M	752
C20	0209	B1	C	M	M	675
C20	0209	B1	C	M	F	675
C20	0209	B1	C	M	F	621
C20	0209	B1	C	M	F	616
C20	0209	B1	C	M	F	917
C20	0209	B1	C	M	M	1085
C20	0209	B1	C	M	F	590
C20	0209	B1	C	M	F	860
C20	0209	B1	C	M	M	710
C20	0209	B1	C	M	F	819
C20	0209	B1	C	M	F	693
C20	0209	B1	C	M	M	790
C20	0209	B1	C	M	F	782
C20	0209	B1	C	M	F	686
C20	0209	B1	C	M	M	660
C20	0209	B1	C	M	M	710
C20	0209	B1	C	M	F	855
C20	0209	B1	C	M	M	620
C20	0209	B1	C	M	M	645
C20	0209	B1	C	M	F	760
C20	0209	B1	C	M	F	765
C20	0209	B1	C	M	M	717
C20	0209	B1	C	M	M	762
C20	0209	B1	C	M	F	750
C20	0209	B1	C	M	F	725
C20	0209	B1	C	M	F	785
C20	0209	B1	C	M	F	752
C20	0209	B1	C	M	F	780

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C20	0209	B1	C	M	F	760
C20	0209	B1	C	M	0	789
C20	0209	B1	C	M	F	705
C20	0209	B1	C	M	F	740
C20	0209	B1	C	M	F	735
C20	0209	B1	C	M	M	657
C20	0209	B1	C	M	F	695
C20	0209	B1	C	M	F	654
C20	0209	B1	C	M	M	650
C20	0209	B1	C	M	M	705
C20	0209	B1	C	M	M	649
C20	0209	B1	C	M	M	740
C20	0209	B1	C	M	F	864
C20	0209	B1	C	M	F	800
C20	0209	B1	C	M	F	855
C20	0209	B1	C	M	F	1015
C20	0209	B1	C	M	M	783
C20	0209	B1	C	M	M	915
C20	0209	B1	C	M	F	709
C20	0209	B1	C	M	M	780
C20	0209	B1	C	M	F	856
C20	0209	B1	C	M	M	775
C20	0209	B1	C	M	M	715
C20	0209	B1	C	M	F	755
C20	0209	B1	C	M	M	626
C20	0209	B1	C	M	F	705
C20	0209	B1	C	M	M	736
C20	0209	B1	C	M	F	803
C20	0209	B1	C	M	F	715
C20	0209	B1	C	M	F	652
C20	0209	B1	C	M	M	805
C20	0209	B1	C	M	F	825
C20	0209	B1	C	M	F	795
C20	0209	B1	C	M	M	647
C20	0209	B1	C	M	F	791
C20	0209	B1	C	M	F	772
C20	0209	B1	C	M	F	725
C20	0209	B1	C	M	F	745
C20	0209	B1	C	M	F	739
C20	0209	B1	C	M	F	755
C20	0209	B1	C	M	0	770
C20	0209	B1	C	M	F	791

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C20	0209	B1	C	M	F	750
C20	0209	B1	C	M	M	742
C20	0209	B1	C	M	F	820
C20	0209	B1	C	M	F	722
C20	0209	B1	C	M	F	760
C20	0209	B1	C	M	F	790
C20	0209	B1	C	M	F	740
C20	0209	B1	C	M	F	705
C20	0209	B1	C	M	M	710
C20	0209	B1	C	M	F	702
C20	0209	B1	C	M	F	712
C20	0209	B1	C	M	F	774
C20	0209	B1	C	M	M	710
C20	0209	B1	C	M	F	690
C20	0209	B1	C	M	F	703
C20	0209	B1	C	M	F	720
C20	0209	B1	C	M	F	769
C20	0209	B1	C	M	F	770
C20	0209	B1	C	M	F	760
C20	0209	B1	C	M	M	763
C20	0209	B1	C	M	F	740
C20	0209	B1	C	M	F	725
C20	0209	B1	C	M	M	716
C20	0209	B1	C	M	M	713
C20	0209	B1	C	M	F	740
C20	0209	B1	C	M	F	732
C20	0209	B1	C	M	F	751
C20	0209	B1	C	M	F	743
C20	0209	B1	C	M	F	740
C220	0309	B1	C	M	F	700
C220	0309	B1	C	M	F	670
C220	0309	B1	C	M	F	650
C220	0309	B1	C	M	F	950
C220	0309	B1	C	M	M	680
C220	0309	B1	C	M	F	700
C220	0309	B1	C	M	M	620
C220	0309	B1	C	M	M	640
C220	0309	B1	C	M	M	650
C220	0309	B1	C	M	F	720
C220	0309	B1	C	M	M	720
C220	0309	B1	C	M	M	800
C220	0309	B1	C	M	M	690

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C220	0309	B1	C	M	F	800
C220	0309	B1	C	M	F	750
C220	0309	B1	C	M	F	730
C220	0309	B1	C	M	F	750
C220	0309	B1	C	M	F	700
C220	0309	B1	C	M	F	710
C220	0309	B1	C	M	F	750
C220	0309	B1	C	M	F	750
C221	0309	B1	C	5.5	M	700
C221	0309	B1	C	5.5	M	630
C221	0309	B1	C	5.5	M	700
C221	0309	B1	C	5.5	M	680
C221	0309	B1	C	5.5	M	680
C221	0309	B1	C	5.5	M	810
C221	0309	B1	C	5.5	F	710
C221	0309	B1	C	5.5	F	720
C221	0309	B1	C	5.5	M	710
C221	0309	B1	C	5.5	M	720
C221	0309	B1	C	5.5	M	730
C221	0309	B1	C	5.5	M	740
C221	0309	B1	C	5.5	M	750
C221	0309	B1	C	5.5	M	750
C221	0309	B1	C	5.5	M	770
C221	0309	B1	C	5.5	M	780
C221	0309	B1	C	5.5	M	670
C221	0309	B1	C	5.5	F	690
C221	0309	B1	C	5.5	F	810
C221	0309	B1	C	5.5	F	810
C221	0309	B1	C	5.5	M	830
C221	0309	B1	C	5.5	F	740
C221	0309	B1	C	5.5	F	750
C221	0309	B1	C	5.5	F	760
C221	0309	B1	C	5.5	F	760
C221	0309	B1	C	5.5	F	780
C221	0309	B1	C	5.5	F	780
C221	0309	B1	C	5.5	F	800
C221	0309	B1	C	5.5	F	810
C221	0309	B1	C	5.5	M	650
C221	0309	B1	C	5.5	F	630
C221	0309	B1	C	5.5	F	630
C221	0309	B1	C	5.5	M	840
C221	0309	B1	C	5.5	M	860

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C221	0309	B1	C	5.5	F	610
C221	0309	B1	C	5.5	F	850
C221	0309	B1	C	5.5	F	860
C221	0309	B1	C	5.5	F	650
C221	0309	B1	C	5.5	F	650
C221	0309	B1	C	5.5	F	690
C221	0309	B1	C	5.5	F	860
C221	0309	B1	C	5.5	F	840
C221	0309	B1	C	5.5	F	840
C221	0309	B1	C	5.5	F	960
C221	0309	B1	C	5.5	F	920
C222	0609	B1	C	6.0	F	700
C222	0609	B1	C	6.0	F	660
C222	0609	B1	C	6.0	M	830
C222	0609	B1	C	6.0	M	790
C222	0609	B1	C	6.0	F	770
C222	0609	B1	C	6.0	F	750
C222	0609	B1	C	6.0	F	760
C222	0609	B1	C	6.0	F	760
C222	0609	B1	C	6.0	M	760
C222	0609	B1	C	6.0	F	730
C222	0609	B1	C	6.0	F	710
C222	0609	B1	C	6.0	F	720
C222	0609	B1	C	6.0	F	720
C222	0609	B1	C	6.0	F	730
C222	0609	B1	C	6.0	F	780
C222	0609	B1	C	6.0	F	750
C222	0609	B1	C	6.0	M	700
C222	0609	B1	C	6.0	M	710
C222	0609	B1	C	6.0	M	760
C222	0609	B1	C	6.0	F	800
C222	0609	B1	C	6.0	F	800
C222	0609	B1	C	6.0	F	780
C222	0609	B1	C	6.0	F	770
C222	0609	B1	C	6.0	F	960
C223	0609	B1	C	5.5	M	770
C223	0609	B1	C	5.5	M	780
C223	0609	B1	C	5.5	M	650
C223	0609	B1	C	5.5	M	650
C223	0609	B1	C	5.5	M	940
C223	0609	B1	C	5.5	F	430
C223	0609	B1	C	5.5	F	650

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C223	0609	B1	C	5.5	F	650
C223	0609	B1	C	5.5	F	660
C223	0609	B1	C	5.5	M	780
C223	0609	B1	C	5.5	M	780
C223	0609	B1	C	5.5	M	810
C223	0609	B1	C	5.5	M	820
C223	0609	B1	C	5.5	M	840
C223	0609	B1	C	5.5	M	870
C223	0609	B1	C	5.5	M	630
C223	0609	B1	C	5.5	M	630
C223	0609	B1	C	5.5	M	640
C223	0609	B1	C	5.5	M	640
C223	0609	B1	C	5.5	M	770
C223	0609	B1	C	5.5	M	760
C223	0609	B1	C	5.5	F	780
C223	0609	B1	C	5.5	F	780
C223	0609	B1	C	5.5	F	790
C223	0609	B1	C	5.5	F	790
C223	0609	B1	C	5.5	F	790
C223	0609	B1	C	5.5	F	790
C223	0609	B1	C	5.5	F	790
C223	0609	B1	C	5.5	F	790
C223	0609	B1	C	5.5	F	790
C223	0609	B1	C	5.5	F	800
C223	0609	B1	C	5.5	F	800
C223	0609	B1	C	5.5	F	800
C223	0609	B1	C	5.5	F	800
C223	0609	B1	C	5.5	F	800
C223	0609	B1	C	5.5	F	660
C223	0609	B1	C	5.5	F	660
C223	0609	B1	C	5.5	F	670
C223	0609	B1	C	5.5	F	680
C223	0609	B1	C	5.5	F	680
C223	0609	B1	C	5.5	F	680
C223	0609	B1	C	5.5	F	680
C223	0609	B1	C	5.5	F	680
C223	0609	B1	C	5.5	F	690
C223	0609	B1	C	5.5	F	690
C223	0609	B1	C	5.5	F	690
C223	0609	B1	C	5.5	F	690
C223	0609	B1	C	5.5	F	690
C223	0609	B1	C	5.5	F	700

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C223	0609	B1	C	5.5	F	700
C223	0609	B1	C	5.5	F	710
C223	0609	B1	C	5.5	F	710
C223	0609	B1	C	5.5	F	720
C223	0609	B1	C	5.5	F	720
C223	0609	B1	C	5.5	F	720
C223	0609	B1	C	5.5	F	720
C223	0609	B1	C	5.5	F	720
C223	0609	B1	C	5.5	F	720
C223	0609	B1	C	5.5	F	720
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	730
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	740
C223	0609	B1	C	5.5	F	750
C223	0609	B1	C	5.5	F	750
C223	0609	B1	C	5.5	F	750
C223	0609	B1	C	5.5	F	750
C223	0609	B1	C	5.5	F	750
C223	0609	B1	C	5.5	F	750
C223	0609	B1	C	5.5	F	750
C223	0609	B1	C	5.5	F	750
C223	0609	B1	C	5.5	F	760

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	M	670
C223	0609	B1	C	5.5	M	680
C223	0609	B1	C	5.5	M	680
C223	0609	B1	C	5.5	M	680
C223	0609	B1	C	5.5	M	690
C223	0609	B1	C	5.5	M	690
C223	0609	B1	C	5.5	M	700
C223	0609	B1	C	5.5	M	700
C223	0609	B1	C	5.5	M	710
C223	0609	B1	C	5.5	M	710
C223	0609	B1	C	5.5	M	720
C223	0609	B1	C	5.5	M	720
C223	0609	B1	C	5.5	M	730
C223	0609	B1	C	5.5	M	730
C223	0609	B1	C	5.5	M	730
C223	0609	B1	C	5.5	M	730
C223	0609	B1	C	5.5	M	740
C223	0609	B1	C	5.5	M	740
C223	0609	B1	C	5.5	M	740
C223	0609	B1	C	5.5	M	750
C223	0609	B1	C	5.5	M	760
C223	0609	B1	C	5.5	M	760
C223	0609	B1	C	5.5	F	780
C223	0609	B1	C	5.5	F	780
C223	0609	B1	C	5.5	F	840
C223	0609	B1	C	5.5	F	840
C223	0609	B1	C	5.5	F	850
C223	0609	B1	C	5.5	F	850
C223	0609	B1	C	5.5	F	860
C223	0609	B1	C	5.5	F	870
C223	0609	B1	C	5.5	F	880
C223	0609	B1	C	5.5	0	660
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	800
C223	0609	B1	C	5.5	F	800
C223	0609	B1	C	5.5	F	810

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C223	0609	B1	C	5.5	F	810
C223	0609	B1	C	5.5	F	810
C223	0609	B1	C	5.5	F	810
C223	0609	B1	C	5.5	F	820
C223	0609	B1	C	5.5	F	820
C223	0609	B1	C	5.5	F	820
C223	0609	B1	C	5.5	F	830
C223	0609	B1	C	5.5	F	780
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	770
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	780
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	760
C223	0609	B1	C	5.5	F	770
C223	0609	B1	C	5.5	F	770
C223	0609	B1	C	5.5	F	770
C223	0609	B1	C	5.5	F	770
C223	0609	B1	C	5.5	F	770
C223	0609	B1	C	5.5	F	770
C223	0609	B1	C	5.5	F	770
C224	0909	B1	C	6.0	F	720
C224	0909	B1	C	6.0	F	720
C224	0909	B1	C	6.0	F	720
C224	0909	B1	C	6.0	F	790
C224	0909	B1	C	6.0	F	790
C224	0909	B1	C	6.0	F	800
C224	0909	B1	C	6.0	F	670
C224	0909	B1	C	6.0	F	680
C224	0909	B1	C	6.0	F	760
C224	0909	B1	C	6.0	F	720
C224	0909	B1	C	6.0	F	730
C224	0909	B1	C	6.0	F	750
C224	0909	B1	C	6.0	F	750
C224	0909	B1	C	6.0	F	680
C224	0909	B1	C	6.0	F	790
C224	0909	B1	C	6.0	M	780
C224	0909	B1	C	6.0	M	780
C224	0909	B1	C	6.0	M	740

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C224	0909	B1	C	6.0	M	720
C224	0909	B1	C	6.0	M	770
C225	0609	B1	C	0	F	810
C225	0609	B1	C	0	M	630
C225	0609	B1	C	0	M	670
C225	0609	B1	C	0	0	650
C225	0609	B1	C	0	M	730
C226	0909	B1	C	M	F	925
C227	0909	B1	C	0	M	750
C227	0909	B1	C	0	F	690
C227	0909	B1	C	0	F	740
C227	0909	B1	C	0	F	950
C230	1009	B1	C	5.5	F	860
C230	1009	B1	C	5.5	M	780
C230	1009	B1	C	5.5	F	800
C230	1009	B1	C	5.5	F	680
C230	1009	B1	C	5.5	F	690
C230	1009	B1	C	5.5	M	760
C230	1009	B1	C	5.5	F	790
C230	1009	B1	C	5.5	F	640
C230	1009	B1	C	5.5	F	720
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	M	700
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C231	1009	B1	C	0	M	710
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	790
C231	1009	B1	C	0	F	790
C231	1009	B1	C	0	F	790
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	730
C231	1009	B1	C	0	M	740
C231	1009	B1	C	0	M	740
C231	1009	B1	C	0	M	740
C231	1009	B1	C	0	M	740
C231	1009	B1	C	0	M	740
C231	1009	B1	C	0	M	750
C231	1009	B1	C	0	M	750
C231	1009	B1	C	0	M	750
C231	1009	B1	C	0	M	750
C231	1009	B1	C	0	M	720
C231	1009	B1	C	0	M	750
C231	1009	B1	C	0	M	750
C231	1009	B1	C	0	M	750
C231	1009	B1	C	0	M	760
C231	1009	B1	C	0	M	760
C231	1009	B1	C	0	M	760
C231	1009	B1	C	0	M	760

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C231	1009	B1	C	0	M	760
C231	1009	B1	C	0	M	760
C231	1009	B1	C	0	M	760
C231	1009	B1	C	0	M	760
C231	1009	B1	C	0	M	770
C231	1009	B1	C	0	M	770
C231	1009	B1	C	0	M	770
C231	1009	B1	C	0	M	770
C231	1009	B1	C	0	M	780
C231	1009	B1	C	0	M	780
C231	1009	B1	C	0	M	780
C231	1009	B1	C	0	M	790
C231	1009	B1	C	0	M	800
C231	1009	B1	C	0	M	800
C231	1009	B1	C	0	M	810
C231	1009	B1	C	0	M	810
C231	1009	B1	C	0	M	810
C231	1009	B1	C	0	M	810
C231	1009	B1	C	0	M	820
C231	1009	B1	C	0	M	820
C231	1009	B1	C	0	M	830
C231	1009	B1	C	0	M	840
C231	1009	B1	C	0	M	870
C231	1009	B1	C	0	M	880
C231	1009	B1	C	0	F	640
C231	1009	B1	C	0	M	600
C231	1009	B1	C	0	M	630
C231	1009	B1	C	0	M	640
C231	1009	B1	C	0	M	660
C231	1009	B1	C	0	M	660
C231	1009	B1	C	0	M	660
C231	1009	B1	C	0	M	660
C231	1009	B1	C	0	M	670
C231	1009	B1	C	0	M	680
C231	1009	B1	C	0	M	680
C231	1009	B1	C	0	M	680
C231	1009	B1	C	0	M	680
C231	1009	B1	C	0	M	680
C231	1009	B1	C	0	M	680
C231	1009	B1	C	0	M	750
C231	1009	B1	C	0	M	690
C231	1009	B1	C	0	M	690

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C231	1009	B1	C	0	M	690
C231	1009	B1	C	0	M	700
C231	1009	B1	C	0	M	700
C231	1009	B1	C	0	M	700
C231	1009	B1	C	0	M	700
C231	1009	B1	C	0	M	700
C231	1009	B1	C	0	F	700
C231	1009	B1	C	0	F	700
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	710
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	720
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	810
C231	1009	B1	C	0	F	810
C231	1009	B1	C	0	F	820
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	730
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	740
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	750
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	760
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	M	690
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	780
C231	1009	B1	C	0	F	840
C231	1009	B1	C	0	F	840
C231	1009	B1	C	0	F	840
C231	1009	B1	C	0	F	840
C231	1009	B1	C	0	F	850
C231	1009	B1	C	0	F	850
C231	1009	B1	C	0	F	850
C231	1009	B1	C	0	F	850
C231	1009	B1	C	0	F	860
C231	1009	B1	C	0	F	860
C231	1009	B1	C	0	F	870
C231	1009	B1	C	0	F	880
C231	1009	B1	C	0	F	880
C231	1009	B1	C	0	F	790
C231	1009	B1	C	0	F	790
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800.
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	800
C231	1009	B1	C	0	F	810
C231	1009	B1	C	0	F	690
C231	1009	B1	C	0	F	690
C231	1009	B1	C	0	F	690
C231	1009	B1	C	0	F	820
C231	1009	B1	C	0	F	820
C231	1009	B1	C	0	F	820
C231	1009	B1	C	0	F	820
C231	1009	B1	C	0	F	820
C231	1009	B1	C	0	F	820
C231	1009	B1	C	0	F	830
C231	1009	B1	C	0	F	830
C231	1009	B1	C	0	F	830
C231	1009	B1	C	0	F	700
C231	1009	B1	C	0	F	670
C231	1009	B1	C	0	F	640
C231	1009	B1	C	0	F	650
C231	1009	B1	C	0	F	660
C231	1009	B1	C	0	F	660
C231	1009	B1	C	0	F	1000
C231	1009	B1	C	0	F	670
C231	1009	B1	C	0	F	680
C231	1009	B1	C	0	F	680
C231	1009	B1	C	0	F	690
C231	1009	B1	C	0	F	700
C231	1009	B1	C	0	F	1010
C231	1009	B1	C	0	F	890
C231	1009	B1	C	0	F	900
C231	1009	B1	C	0	F	990
C231	1009	B1	C	0	F	690

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C231	1009	B1	C	0	F	690
C231	1009	B1	C	0	F	700
C231	1009	B1	C	0	F	700
C231	1009	B1	C	0	F	700
C231	1009	B1	C	0	F	770
C231	1009	B1	C	0	F	700
C231	1009	B1	C	0	F	690
C233	1009	B1	C	0	F	740
C233	1009	B1	C	0	M	700
C233	1009	B1	C	0	F	760
C233	1009	B1	C	0	F	740
C233	1009	B1	C	0	F	650
C233	1009	B1	C	0	F	840
C24	0309	B1	C	6.0	M	680
C24	0309	B1	C	6.0	F	940
C24	0309	B1	C	6.0	M	680
C24	0309	B1	C	6.0	M	730
C24	0309	B1	C	6.0	M	670
C24	0309	B1	C	6.0	F	710
C24	0309	B1	C	6.0	F	710
C24	0309	B1	C	6.0	M	690
C24	0309	B1	C	6.0	M	730
C24	0309	B1	C	6.0	M	700
C24	0309	B1	C	6.0	M	710
C24	0309	B1	C	6.0	M	720
C24	0309	B1	C	6.0	M	730
C24	0309	B1	C	6.0	M	690
C24	0309	B1	C	6.0	M	730
C24	0309	B1	C	6.0	F	710
C24	0309	B1	C	6.0	F	760
C24	0309	B1	C	6.0	F	760
C24	0309	B1	C	6.0	F	760
C24	0309	B1	C	6.0	F	760
C24	0309	B1	C	6.0	F	760
C24	0309	B1	C	6.0	F	770
C24	0309	B1	C	6.0	F	770
C24	0309	B1	C	6.0	F	770
C24	0309	B1	C	6.0	M	730
C24	0309	B1	C	6.0	F	780
C24	0309	B1	C	6.0	F	790
C24	0309	B1	C	6.0	F	790
C24	0309	B1	C	6.0	F	800

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C24	0309	B1	C	6.0	F	810
C24	0309	B1	C	6.0	F	810
C24	0309	B1	C	6.0	F	810
C24	0309	B1	C	6.0	F	810
C24	0309	B1	C	6.0	M	740
C24	0309	B1	C	6.0	M	750
C24	0309	B1	C	6.0	F	770
C24	0309	B1	C	6.0	M	750
C24	0309	B1	C	6.0	M	760
C24	0309	B1	C	6.0	M	760
C24	0309	B1	C	6.0	M	760
C24	0309	B1	C	6.0	M	770
C24	0309	B1	C	6.0	M	770
C24	0309	B1	C	6.0	M	770
C24	0309	B1	C	6.0	M	770
C24	0309	B1	C	6.0	M	810
C24	0309	B1	C	6.0	M	910
C24	0309	B1	C	6.0	M	930
C24	0309	B1	C	6.0	M	990
C24	0309	B1	C	6.0	F	440
C24	0309	B1	C	6.0	F	610
C24	0309	B1	C	6.0	F	670
C24	0309	B1	C	6.0	F	680
C24	0309	B1	C	6.0	F	870
C24	0309	B1	C	6.0	F	870
C24	0309	B1	C	6.0	F	890
C24	0309	B1	C	6.0	F	720
C24	0309	B1	C	6.0	F	720
C24	0309	B1	C	6.0	F	730
C24	0309	B1	C	6.0	M	750
C24	0309	B1	C	6.0	F	750
C24	0309	B1	C	6.0	F	750
C24	0309	B1	C	6.0	F	750
C24	0309	B1	C	6.0	F	750
C24	0309	B1	C	6.0	F	860
C24	0309	B1	C	6.0	F	820
C24	0309	B1	C	6.0	F	820
C24	0309	B1	C	6.0	F	920
C24	0309	B1	C	6.0	F	830
C24	0309	B1	C	6.0	F	850
C24	0309	B1	C	6.0	F	830
C24	0309	B1	C	6.0	F	750

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C246	1409	B1	C	0	M	880
C246	1409	B1	C	0	F	770
C246	1409	B1	C	0	M	830
C246	1409	B1	C	0	M	760
C246	1409	B1	C	0	M	750
C246	1409	B1	C	0	F	750
C246	1409	B1	C	0	F	760
C246	1409	B1	C	0	F	780
C246	1409	B1	C	0	F	660
C246	1409	B1	C	0	F	780
C246	1409	B1	C	0	F	790
C246	1409	B1	C	0	F	800
C246	1409	B1	C	0	F	770
C246	1409	B1	C	0	F	850
C246	1409	B1	C	0	0	730
C246	1409	B1	C	0	F	750
C246	1409	B1	C	0	F	730
C246	1409	B1	C	0	F	730
C246	1409	B1	C	0	F	740
C246	1409	B1	C	0	M	660
C246	1409	B1	C	0	M	700
C246	1409	B1	C	0	M	700
C246	1409	B1	C	0	M	710
C246	1409	B1	C	0	F	820
C246	1409	B1	C	0	M	720
C246	1409	B1	C	0	M	730
C246	1409	B1	C	0	M	750
C246	1409	B1	C	0	F	660
C246	1409	B1	C	0	F	680
C246	1409	B1	C	0	M	720
C246	1409	B1	C	0	F	750
C246	1409	B1	C	0	F	710
C246	1409	B1	C	0	F	720
C246	1409	B1	C	0	F	690
C246	1409	B1	C	0	F	700
C247	1409	B1	C	0	M	700
C247	1409	B1	C	0	M	710
C247	1409	B1	C	0	M	680
C247	1409	B1	C	0	M	690
C247	1409	B1	C	0	F	700
C247	1409	B1	C	0	F	700
C247	1409	B1	C	0	F	700

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C247	1409	B1	C	0	F	730
C247	1409	B1	C	0	M	660
C247	1409	B1	C	0	F	740
C247	1409	B1	C	0	F	740
C247	1409	B1	C	0	F	740
C247	1409	B1	C	0	F	740
C247	1409	B1	C	0	F	740
C247	1409	B1	C	0	F	750
C247	1409	B1	C	0	F	750
C247	1409	B1	C	0	F	760
C247	1409	B1	C	0	F	760
C247	1409	B1	C	0	F	770
C247	1409	B1	C	0	F	770
C247	1409	B1	C	0	F	770
C247	1409	B1	C	0	F	770
C247	1409	B1	C	0	M	720
C247	1409	B1	C	0	M	720
C247	1409	B1	C	0	F	740
C247	1409	B1	C	0	M	740
C247	1409	B1	C	0	M	780
C247	1409	B1	C	0	M	780
C247	1409	B1	C	0	M	840
C247	1409	B1	C	0	F	600
C247	1409	B1	C	0	F	650
C247	1409	B1	C	0	F	650
C247	1409	B1	C	0	F	660
C247	1409	B1	C	0	F	660
C247	1409	B1	C	0	F	660
C247	1409	B1	C	0	F	670
C247	1409	B1	C	0	F	670
C247	1409	B1	C	0	F	670
C247	1409	B1	C	0	F	680
C247	1409	B1	C	0	F	680
C247	1409	B1	C	0	F	680
C247	1409	B1	C	0	F	690
C247	1409	B1	C	0	F	690
C247	1409	B1	C	0	F	700
C247	1409	B1	C	0	F	720
C247	1409	B1	C	0	F	720
C247	1409	B1	C	0	F	710
C247	1409	B1	C	0	M	720
C247	1409	B1	C	0	F	710

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C247	1409	B1	C	0	F	810
C247	1409	B1	C	0	F	900
C247	1409	B1	C	0	F	720
C247	1409	B1	C	0	F	730
C247	1409	B1	C	0	F	730
C247	1409	B1	C	0	F	920
C247	1409	B1	C	0	F	710
C247	1409	B1	C	0	F	790
C248	1409	B1	C	0	F	700
C248	1409	B1	C	0	F	670
C248	1409	B1	C	0	M	830
C248	1409	B1	C	0	M	820
C248	1409	B1	C	0	F	790
C248	1409	B1	C	0	F	710
C248	1409	B1	C	0	M	680
C248	1409	B1	C	0	M	740
C248	1409	B1	C	0	F	730
C248	1409	B1	C	0	M	660
C248	1409	B1	C	0	F	720
C25+	0309	B1	C	M	F	667
C25+	0309	B1	C	M	M	675
C25+	0309	B1	C	M	M	660
C25+	0309	B1	C	M	M	651
C25+	0309	B1	C	M	F	840
C25+	0309	B1	C	M	F	839
C25+	0309	B1	C	M	F	905
C25+	0309	B1	C	M	F	973
C25+	0309	B1	C	M	F	916
C25+	0309	B1	C	M	F	741
C25+	0309	B1	C	M	F	821
C25+	0309	B1	C	M	F	740
C25+	0309	B1	C	M	M	736
C25+	0309	B1	C	M	F	600
C25+	0309	B1	C	M	F	675
C25+	0309	B1	C	M	F	675
C25+	0309	B1	C	M	M	735
C25+	0309	B1	C	M	F	702
C25+	0309	B1	C	M	F	792
C25+	0309	B1	C	M	F	795
C25+	0309	B1	C	M	F	773
C25+	0309	B1	C	M	M	710
C25+	0309	B1	C	M	F	730

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C25+	0309	B1	C	M	F	790
C25+	0309	B1	C	M	F	772
C25+	0309	B1	C	M	F	738
C25+	0309	B1	C	M	M	902
C25+	0309	B1	C	M	F	671
C25+	0309	B1	C	M	F	795
C25+	0309	B1	C	M	F	659
C25+	0309	B1	C	M	F	805
C25+	0309	B1	C	M	F	635
C25+	0309	B1	C	M	M	671
C25+	0309	B1	C	M	F	810
C25+	0309	B1	C	M	M	690
C25+	0309	B1	C	M	M	687
C25+	0309	B1	C	M	F	808
C25+	0309	B1	C	M	F	821
C25+	0309	B1	C	M	F	785
C25+	0309	B1	C	M	F	730
C25+	0309	B1	C	M	F	823
C25+	0309	B1	C	M	F	804
C25+	0309	B1	C	M	F	694
C25+	0309	B1	C	M	F	821
C25+	0309	B1	C	M	F	711
C25+	0309	B1	C	M	F	778
C25+	0309	B1	C	M	F	760
C25+	0309	B1	C	M	F	712
C25+	0309	B1	C	M	F	759
C25+	0309	B1	C	M	F	720
C25+	0309	B1	C	M	F	800
C25+	0309	B1	C	M	F	764
C25+	0309	B1	C	M	F	687
C25+	0309	B1	C	M	F	790
C25+	0309	B1	C	M	M	732
C25+	0309	B1	C	M	M	684
C25+	0309	B1	C	M	F	779
C25+	0309	B1	C	M	F	694
C25+	0309	B1	C	M	F	776
C25+	0309	B1	C	M	F	742
C25+	0309	B1	C	M	F	850
C25+	0309	B1	C	M	M	781
C25+	0309	B1	C	M	F	687
C25+	0309	B1	C	M	M	729
C25+	0309	B1	C	M	M	677

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C25+	0309	B1	C	M	M	642
C25+	0309	B1	C	M	F	876
C25+	0309	B1	C	M	F	954
C25+	0309	B1	C	M	F	880
C25+	0309	B1	C	M	M	663
C25+	0309	B1	C	M	M	680
C25+	0309	B1	C	M	M	885
C25+	0309	B1	C	M	F	627
C25+	0309	B1	C	M	F	745
C25+	0309	B1	C	M	F	755
C25+	0309	B1	C	M	F	698
C25+	0309	B1	C	M	F	793
C25+	0309	B1	C	M	F	720
C25+	0309	B1	C	M	F	743
C25+	0309	B1	C	M	F	780
C25+	0309	B1	C	M	M	705
C25+	0309	B1	C	M	M	759
C25+	0309	B1	C	M	F	696
C25+	0309	B1	C	M	F	820
C25A	0209	B1	C	5.5	F	851
C25A	0209	B1	C	5.5	M	707
C25A	0209	B1	C	5.5	F	777
C25A	0209	B1	C	5.5	M	825
C28+	0609	B1	C	M	0	660
C28+	0609	B1	C	M	0	660
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	690
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	670
C28+	0609	B1	C	M	0	670
C28+	0609	B1	C	M	0	670
C28+	0609	B1	C	M	0	670
C28+	0609	B1	C	M	0	670
C28+	0609	B1	C	M	0	670
C28+	0609	B1	C	M	0	670

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	680
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	660
C28+	0609	B1	C	M	0	660
C28+	0609	B1	C	M	0	660
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	690
C28+	0609	B1	C	M	0	690

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DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	690
C28+	0609	B1	C	M	0	690
C28+	0609	B1	C	M	0	690
C28+	0609	B1	C	M	0	690
C28+	0609	B1	C	M	0	690
C28+	0609	B1	C	M	0	690
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	700
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	710
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	720
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	730
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	740
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	750
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	760
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	770
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	820

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	830
C28+	0609	B1	C	M	0	830
C28+	0609	B1	C	M	0	830
C28+	0609	B1	C	M	0	830
C28+	0609	B1	C	M	0	830
C28+	0609	B1	C	M	0	830
C28+	0609	B1	C	M	0	830
C28+	0609	B1	C	M	0	840
C28+	0609	B1	C	M	0	840
C28+	0609	B1	C	M	0	840
C28+	0609	B1	C	M	0	840
C28+	0609	B1	C	M	0	850
C28+	0609	B1	C	M	0	850
C28+	0609	B1	C	M	0	850
C28+	0609	B1	C	M	0	850
C28+	0609	B1	C	M	0	850
C28+	0609	B1	C	M	0	850
C28+	0609	B1	C	M	0	850
C28+	0609	B1	C	M	0	860
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	780
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	790
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	800
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	810

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	810
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	570
C28+	0609	B1	C	M	0	580
C28+	0609	B1	C	M	0	600
C28+	0609	B1	C	M	0	820
C28+	0609	B1	C	M	0	860
C28+	0609	B1	C	M	0	860
C28+	0609	B1	C	M	0	860
C28+	0609	B1	C	M	0	860
C28+	0609	B1	C	M	0	870
C28+	0609	B1	C	M	0	870
C28+	0609	B1	C	M	0	870
C28+	0609	B1	C	M	0	870
C28+	0609	B1	C	M	0	870
C28+	0609	B1	C	M	0	890
C28+	0609	B1	C	M	0	890
C28+	0609	B1	C	M	0	890
C28+	0609	B1	C	M	0	900
C28+	0609	B1	C	M	0	900
C28+	0609	B1	C	M	0	920
C28+	0609	B1	C	M	0	950
C28+	0609	B1	C	M	0	970
C28+	0609	B1	C	M	0	550
C28+	0609	B1	C	M	0	570
C28+	0609	B1	C	M	0	640
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	600
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	600
C28+	0609	B1	C	M	0	610
C28+	0609	B1	C	M	0	610
C28+	0609	B1	C	M	0	630
C28+	0609	B1	C	M	0	640
C28+	0609	B1	C	M	0	640
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C28+	0609	B1	C	M	0	650
C516	0709	B1	C	M	M	650
C516	0709	B1	C	M	M	650
C516	0709	B1	C	M	F	750
C516	0709	B1	C	M	M	620
C516	0709	B1	C	M	F	680
C516	0709	B1	C	M	F	710
C516	0709	B1	C	M	F	740
C516	0709	B1	C	M	F	750
C516	0709	B1	C	M	F	680
C516	0709	B1	C	M	F	780
C516	0709	B1	C	M	F	790
C516	0709	B1	C	M	M	820
C516	0709	B1	C	M	F	670
C516	0709	B1	C	M	F	730
C516	0709	B1	C	M	F	680
C516	0709	B1	C	M	0	900
C516	0709	B1	C	M	F	830
C516	0709	B1	C	M	F	810
C518	0809	B1	C	M	F	750
C518	0809	B1	C	M	F	810
C518	0809	B1	C	M	M	660
C518	0809	B1	C	M	F	810
C518	0809	B1	C	M	F	760
C518	0809	B1	C	M	M	690
C518	0809	B1	C	M	F	770
C518	0809	B1	C	M	M	770
C518	0809	B1	C	M	M	620
C6	2608	B1	C	5.5	F	736
C6	2608	B1	C	5.5	F	765
C6	2608	B1	C	5.5	F	810
C6	2608	B1	C	5.5	F	786
C6	2608	B1	C	5.5	F	765
C6	2608	B1	C	5.5	F	712
C6	2608	B1	C	5.5	F	761
C6	2608	B1	C	5.5	F	825
C6	2608	B1	C	5.5	F	752
C6	2608	B1	C	5.5	F	750
C6	2608	B1	C	5.5	F	673

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE FRÉQUENCE DES LONGUEURS; MORUE DE L'ATLANTIQUE

LEVÉE	DATE	BLOC	TYPE D'ENGIN	MAILLE	SEXE	LONGUEUR TOTALE
C6	2608	B1	C	5.5	M	860
C6	2608	B1	C	5.5	F	666
C8	2708	B1	C	5.5	F	850
C8	2708	B1	C	5.5	M	745
C8	2708	B1	C	5.5	M	630
C8	2708	B1	C	5.5	F	705
C8	2708	B1	C	5.5	M	625
C8	2708	B1	C	5.5	F	720
C9	2808	C1	C	5.5	F	830
C9	2808	C1	C	5.5	F	820
C9	2808	C1	C	5.5	F	790
C9	2808	C1	C	5.5	F	710
C9	2808	C1	C	5.5	F	760
C9	2808	C1	C	5.5	F	740
C9	2808	C1	C	5.5	F	680
C9	2808	C1	C	5.5	F	730
C9	2808	C1	C	5.5	F	780
L209	2708	C1	LC	0	F	750
L211	2808	D2	LC	0	F	818
L211	2808	D2	LC	0	F	838
L211	2808	D2	LC	0	F	760
L211	2808	D2	LC	0	M	668

APPENDIX F - AUTOPSY DATA, ATLANTIC COD

The following are records of the individual Atlantic cod which were autopsied during Phase I.

KEY

SEX/SEXE:

M = male
F = female
0 = not sexed

PARASITES/PARASITES:

# = sample #
0 = no sample

OTOLITH LENGTH/LONGUEUR DES OTOLITHS:

# = maximum length (mm)
0 = not available

LENGTH/LONGUEUR: total (mm)

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0826	C006	0	0736	4.00		F	6	9	1.003	17.95	0
0826	C006	0	0765	4.40		F	6	9	0.983	18.25	0
0826	C006	0	0810	5.30		F	6	9	0.997	0	0
0826	C006	0	0786	4.80		F	6	9	0.988	18.45	0
0826	C006	0	0765	4.10		F	6	8	0.916	0	0
0826	C006	0	0712	3.60		F	6	7	0.997	17.91	0
0826	C006	0	0860	6.00		M	6	10	0.943	20.17	0
0826	C006	0	0666	3.00		F	6	7	1.016	17.97	0
0826	C006	0	0673	2.60		F	6	7	0.853	0	0
0826	C006	0	0750	3.40		F	6	8	0.806	0	0
0826	C006	0	0761	4.00		F	6	8	0.908	16.95	0
0826	C006	0	0825	5.00		F	6	9	0.890	20.98	0
0826	C006	0	0752	3.85		F	6	8	0.905	19.89	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0827	C008	B1	0705	3.80		F	6	8	1.084	18.31	0
0827	C008	B1	0630	2.55		M	6	6	1.020	16.64	0
0827	C008	B1	0850	6.15		F	6	9	1.001	18.87	0
0827	C008	B1	0745	4.15		M	6	8	1.004	20.27	0
0827	C008	B1	0720	3.65		F	6	8	0.978	0	0
0827	C008	B1	0625	2.60		M	6	8	1.065	17.10	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0827	L209	C1	0750	3.60		F	6	10	0.853	18.25	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0828	L211	D2	0818	4.55		F	6	9	0.831	0	0
0828	L211	D2	0760	4.50		F	6	8	1.025	19.23	0
0828	L211	D2	0838	5.60		F	6	8	0.952	20.79	0
0828	L211	D2	0668	2.90		M	6	7	0.973	17.56	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0828	C009	C1	0830	5.20		F	6	8	0.909	20.69	0
0828	C009	C1	0730	4.25		F	6	8	1.093	18.83	0
0828	C009	C1	0820	5.70		F	6	8	1.034	20.59	0
0828	C009	C1	0760	3.80		F	6	7	0.866	0	0
0828	C009	C1	0780	5.15		F	6	9	1.085	19.06	0
0828	C009	C1	0790	4.60		F	6	8	0.933	20.02	0
0828	C009	C1	0710	4.05		F	6	7	1.132	17.85	0
0828	C009	C1	0680	2.90		F	6	7	0.922	18.31	0
0828	C009	C1	0740	3.75		F	6	9	0.925	17.86	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0828	C010	D1	0805	4.60		F	6	8	0.882	19.57	0
0828	C010	D1	0740	4.25		F	6	8	1.049	18.15	0
0828	C010	D1	0750	3.80		M	6	9	0.901	20.26	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0828	C011	E2	0702	3.45		F	6	8	0.997	0	0
0828	C011	E2	0750	4.50		F	6	8	1.067	18.16	0
0828	C011	E2	0585	1.90		F	6	5	0.949	0	0
0828	C011	E2	0780	4.80		F	6	8	1.011	21.16	0
0828	C011	E2	0727	2.85		F	6	8	0.742	19.00	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0829	C013	C2	0775	4.10		F	6	8	0.881	17.76	8
0829	C013	C2	0750	4.20		F	6	9	0.996	18.37	4
0829	C013	C2	0725	3.20		F	6	8	0.840	17.90	0
0829	C013	C2	0730	3.10		F	6	7	0.797	0	3
0829	C013	C2	0766	4.15		F	6	9	0.923	17.78	6,7
0829	C013	C2	0799	4.40		F	6	8	0.863	0	5
0829	C013	C2	0615	1.90		F	6	7	0.817	17.11	2
0829	C013	C2	0677	3.15		M	6	7	1.015	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0828	C014	E2	0815	4.45		M	6	8	0.822	0	1

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0830	C015	B1	0730	4.30		F	6	8	1.105	17.84	0
0830	C015	B1	0690	3.70		M	6	7	1.126	17.39	9,10
0830	C015	B1	0759	4.35		F	6	8	0.995	19.71	0
0830	C015	B1	0741	4.10		F	6	9	1.008	20.60	0
0830	C015	B1	0755	4.70		M	6	7	1.092	17.14	0
0830	C015	B1	0650	2.80		M	6	6	1.020	16.90	22
0830	C015	B1	0755	3.70		M	6	8	0.860	19.49	21
0830	C015	B1	0790	4.70		F	6	8	0.953	20.00	40
0830	C015	B1	0722	3.45		M	6	7	0.917	19.30	12,13
0830	C015	B1	0623	2.15		M	6	7	0.889	17.72	14
0830	C015	B1	0661	2.60		M	6	6	0.900	17.27	15
0830	C015	B1	0737	3.90		M	6	8	0.974	0	16,17
0830	C015	B1	0766	4.60		F	6	8	1.023	17.78	18
0830	C015	B1	0660	2.80		M	6	7	0.974	18.24	19,20
0830	C015	B1	0770	4.40		F	6	8	0.964	19.05	0
0830	C015	B1	0704	3.60		M	6	7	1.032	0	0
0830	C015	B1	0830	5.25		M	6	8	0.918	17.18	0
0830	C015	B1	0571	4.40		F	6	7	2.363	0	0
0830	C015	B1	0772	4.70		M	6	9	1.022	17.85	0
0830	C015	B1	0595	2.00		F	6	5	0.949	0	0
0830	C015	B1	0810	5.70		M	6	9	1.073	21.22	0
0830	C015	B1	0770	4.60		M	6	7	1.008	18.95	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0830	C015	B1	0804	5.00		M	6	8	0.962	19.35	0
0830	C015	B1	0742	3.90		F	6	8	0.955	0	0
0830	C015	B1	0687	2.90		M	6	6	0.894	17.57	0
0830	C015	B1	0710	3.20		F	6	8	0.894	19.01	35
0830	C015	B1	0902	7.55		F	6	8	1.029	22.79	36,37
0830	C015	B1	0728	3.90		F	6	7	1.011	16.99	38,39
0830	C015	B1	0720	3.30		M	6	8	0.884	17.65	0
0830	C015	B1	0770	3.90		M	6	9	0.854	17.45	0
0830	C015	B1	0852	6.50		F	6	8	1.051	18.89	0
0830	C015	B1	0780	4.20		M	6	9	0.885	18.73	0
0830	C015	B1	0660	2.70		F	6	7	0.939	0	0
0830	C015	B1	0577	5.00		F	6	6	2.603	18.53	33,34
0830	C015	B1	0852	6.30		F	6	10	1.019	20.62	26,27,28
0830	C015	B1	0770	4.60		F	6	8	1.008	20.41	29
0830	C015	B1	0697	3.15		F	6	7	0.930	17.09	30
0830	C015	B1	0852	6.15		F	6	8	0.994	21.15	23,24,25
0830	C015	B1	0790	4.00		F	6	8	0.811	0	31,32

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0831	C016	B1	0744	4.20		F	6	8	1.020	18.77	0
0831	C016	B1	0790	5.00		F	6	8	1.014	19.39	0
0831	C016	B1	0815	4.90		F	6	10	0.905	18.71	0
0831	C016	B1	0762	4.50		F	6	9	1.017	17.76	0
0831	C016	B1	0776	3.90		F	6	8	0.835	18.75	0
0831	C016	B1	0760	4.10		F	6	8	0.934	0	0
0831	C016	B1	0736	4.00		M	6	9	1.003	19.32	0
0831	C016	B1	0721	3.40		M	6	8	0.907	20.31	0
0831	C016	B1	0715	3.40		M	6	8	0.930	19.51	0
0831	C016	B1	0736	3.05		F	6	8	0.765	18.90	0
0831	C016	B1	0815	5.15		F	6	8	0.951	16.86	0
0831	C016	B1	0690	2.60		M	6	7	0.791	16.99	0
0831	C016	B1	0800	4.60		F	6	9	0.898	0	0
0831	C016	B1	0704	3.65		M	6	8	1.046	0	0
0831	C016	B1	0750	3.40		F	6	8	0.806	17.92	0
0831	C016	B1	0715	3.30		F	6	8	0.903	18.37	0
0831	C016	B1	0750	3.50		F	6	8	0.830	18.26	0
0831	C016	B1	0805	4.60		F	6	9	0.882	20.28	0
0831	C016	B1	0732	3.65		F	6	8	0.931	18.70	0
0831	C016	B1	0715	3.70		F	6	9	1.012	19.98	0
0831	C016	B1	0715	3.60		M	6	8	0.985	20.11	0
0831	C016	B1	0739	3.95		F	6	8	0.979	18.40	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0831	C016	B1	0742	3.80		M	6	8	0.930	18.12	0
0831	C016	B1	0710	3.65		M	6	8	1.020	17.28	0
0831	C016	B1	0735	3.95		M	6	8	0.995	18.06	0
0831	C016	B1	0715	3.75		F	6	8	1.026	18.67	0
0831	C016	B1	0805	4.70		M	6	9	0.901	17.98	0
0831	C016	B1	0765	4.80		F	6	8	1.072	19.82	0
0831	C016	B1	0670	2.55		F	6	7	0.848	17.77	0
0831	C016	B1	0650	2.50		M	6	7	0.910	17.30	0
0831	C016	B1	0725	3.40		F	6	8	0.892	17.96	0
0831	C016	B1	0692	3.60		F	6	8	1.086	18.24	0
0831	C016	B1	0809	5.00		F	6	10	0.944	20.11	0
0831	C016	B1	0700	3.60		M	6	7	1.050	20.63	0
0831	C016	B1	0865	5.90		F	6	0	0.912	0	0
0831	C016	B1	0770	4.70		M	6	9	1.03	20.02	0
0831	C016	B1	0915	5.65		F	6	12	0.738	0	0
0831	C016	B1	0682	2.85		M	6	7	0.898	0	0
0831	C016	B1	0735	3.60		F	6	7	0.907	18.29	0
0831	C016	B1	0780	3.80		M	6	8	0.801	0	0
0831	C016	B1	0783	4.20		F	6	8	0.875	19.02	0
0831	C016	B1	0786	4.10		M	6	7	0.844	19.72	0
0831	C016	B1	0770	4.70		M	6	8	1.03	18.03	0
0831	C016	B1	0760	4.20		M	6	7	0.957	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0831	C016	B1	0702	3.35		F	6	8	0.968	19.38	0
0831	C016	B1	0711	3.50		M	6	7	0.974	17.46	0
0831	C016	B1	0700	3.20		M	6	8	0.933	17.13	0
0831	C016	B1	0736	3.70		F	6	8	0.928	17.19	0
0831	C016	B1	0840	5.25		F	6	9	0.886	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0831	C017	B1	0742	3.60		F	6	9	0.881	18.07	0
0831	C017	B1	0742	3.70		F	6	9	0.906	19.08	0
0831	C017	B1	0655	2.60		F	6	8	0.925	18.04	0
0831	C017	B1	0730	3.40		F	6	7	0.874	17.21	0
0831	C017	B1	0750	4.00		M	6	8	0.948	19.00	0
0831	C017	B1	0765	4.40		M	6	9	0.983	0	0
0831	C017	B1	0694	2.70		F	6	7	0.808	17.90	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0901	C018	B1	0722	3.80		M	6	8	1.010	17.22	0
0901	C018	B1	0782	4.35		F	6	9	0.910	18.14	0
0901	C018	B1	0790	4.80		M	6	8	0.974	16.95	0
0901	C018	B1	0721	3.30		M	6	8	0.880	17.24	0
0901	C018	B1	0778	4.45		F	6	8	0.945	18.22	0
0901	C018	B1	0825	6.40		M	6	12	1.140	17.82	0
0901	C018	B1	0686	3.10		F	6	7	0.960	18.76	0
0901	C018	B1	0700	3.30		M	6	8	0.962	17.71	0
0901	C018	B1	0720	3.35		M	6	8	0.898	19.64	0
0901	C018	B1	0734	3.20		M	6	7	0.809	19.00	0
0901	C018	B1	0676	2.90		M	6	7	0.939	17.75	0
0901	C018	B1	0715	3.95		F	6	8	1.081	17.45	0
0901	C018	B1	0811	4.60		F	6	8	0.862	19.96	0
0901	C018	B1	0644	2.70		F	6	6	1.011	19.47	0
0901	C018	B1	0710	3.05		F	6	7	0.852	18.03	0
0901	C018	B1	0772	4.30		M	6	8	0.935	0	0
0901	C018	B1	0634	2.05		M	6	6	0.804	17.77	0
0901	C018	B1	0874	6.90		F	6	9	1.034	21.17	0
0901	C018	B1	0709	3.20		F	6	7	0.898	21.55	0
0901	C018	B1	0674	2.65		M	6	7	0.865	18.88	0
0901	C018	B1	0640	2.40		F	6	7	0.916	18.98	0
0901	C018	B1	0761	4.60		M	6	8	1.044	17.04	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0901	C018	B1	0634	2.05		F	6	6	0.804	0	0
0901	C018	B1	0799	4.85		F	6	8	0.951	18.81	0
0901	C018	B1	0710	3.70		M	6	8	1.034	17.79	0
0901	C018	B1	0783	4.35		M	6	8	0.906	16.99	0
0901	C018	B1	0670	3.00		F	6	7	0.997	16.94	0
0901	C018	B1	0831	5.10		F	6	8	0.889	19.59	0
0901	C018	B1	0785	4.30		F	6	8	0.889	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0901	C019	B1	0717	3.10		F	6	7	0.841	17.90	0
0901	C019	B1	0850	5.00		F	6	9	0.814	19.85	0
0901	C019	B1	0700	2.95		F	6	7	0.860	0	0
0901	C019	B1	0655	2.60		M	6	8	0.925	17.77	0
0901	C019	B1	0706	3.25		M	6	8	0.924	18.05	0
0901	C019	B1	0760	3.80		M	6	8	0.866	0	0
0901	C019	B1	0740	4.10		M	6	9	1.012	17.18	0
0901	C019	B1	0821	5.00		F	6	9	0.904	0	0
0901	C019	B1	0770	4.10		M	6	8	0.898	17.65	0
0901	C019	B1	0745	4.75		M	6	8	1.149	17.10	0
0901	C019	B1	0754	4.05		F	6	8	0.945	19.10	0
0901	C019	B1	0686	2.70		F	6	7	0.836	0	0
0901	C019	B1	0704	3.30		M	6	9	0.946	16.36	0
0901	C019	B1	0795	3.90		F	6	8	0.776	0	0
0901	C019	B1	0705	4.70		M	6	7	1.341	16.97	0
0901	C019	B1	0790	4.20		F	6	9	0.852	19.52	0
0901	C019	B1	0700	3.30		M	6	8	0.962	18.78	0
0901	C019	B1	0832	5.85		F	6	9	1.016	0	0
0901	C019	B1	0652	2.70		M	6	7	0.974	0	0
0901	C019	B1	0820	5.45		F	6	9	0.988	20.68	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0902	C20+	B1	0800	4.30	3.3	F	6	8	0.840	0	0
0902	C20+	B1	0706	3.30	2.5	M	6	8	0.938	0	0
0902	C20+	B1	0770	5.10	3.5	M	6	7	1.117	19.62	0
0902	C20+	B1	0702	3.20	2.7	F	6	6	0.925	17.45	0
0902	C20+	B1	0752	4.30	3.3	M	6	7	1.011	17.60	0
0902	C20+	B1	0675	2.20	2.0	M	6	7	0.715	19.00	0
0902	C20+	B1	0675	2.70	2.2	F	6	7	0.878	18.16	0
0902	C20+	B1	0621	2.30	1.6	F	6	6	0.960	17.12	0
0902	C20+	B1	0616	2.30	1.8	F	6	7	0.984	19.23	0
0902	C20+	B1	0917	8.20	5.8	F	6	15	1.063	0	0
0902	C20+	B1	1085	11.50	9.4	M	6	15	0.900	24.64	0
0902	C20+	B1	0590	2.10	1.4	F	6	5	1.023	0	0
0902	C20+	B1	0860	5.80	4.1	F	6	8	0.912	18.85	0
0902	C20+	B1	0710	3.20	2.5	M	6	8	0.894	17.42	0
0902	C20+	B1	0819	4.50	3.7	F	6	8	0.819	19.00	0
0902	C20+	B1	0693	3.40	2.6	F	6	8	1.022	0	0
0902	C20+	B1	0790	4.40	3.4	M	6	8	0.892	19.22	0
0902	C20+	B1	0782	3.50	2.7	F	6	7	0.732	18.59	0
0902	C20+	B1	0686	3.20	2.6	F	6	7	0.991	18.18	0
0902	C20+	B1	0660	2.80	2.2	M	6	7	0.974	18.84	0
0902	C20+	B1	0710	3.20	2.5	M	6	7	0.894	18.54	0
0902	C20+	B1	0855	6.00	4.6	F	6	9	0.960	19.64	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0902	C20+	B1	0620	2.20	1.7	M	6	6	0.923	0	0
0902	C20+	B1	0645	2.50	2.0	M	6	7	0.932	17.64	0
0902	C20+	B1	0672	3.60	2.8	F	6	7	1.186	17.95	0
0902	C20+	B1	0670	2.60	2.2	M	6	7	0.864	18.18	0
0902	C20+	B1	0670	2.60	2.1	M	6	6	0.864	17.40	0
0902	C20+	B1	0755	4.80	3.7	F	6	8	1.115	19.01	0
0902	C20+	B1	0695	3.60	2.7	F	6	7	1.072	19.48	0
0902	C20+	B1	0760	4.20	3.2	F	6	7	0.957	0	0
0902	C20+	B1	0695	3.30	2.4	F	6	8	0.983	17.45	0
0902	C20+	B1	0780	3.70	3.0	M	6	7	0.780	19.41	0
0902	C20+	B1	0790	5.20	4.1	F	6	8	1.055	19.17	0
0902	C20+	B1	0847	4.80	4.0	F	6	9	0.790	18.74	0
0902	C20+	B1	0800	4.10	3.2	F	6	8	0.801	18.27	0
0902	C20+	B1	0710	3.20	2.6	M	6	7	0.894	18.40	0
0902	C20+	B1	0761	4.60	3.2	M	6	8	1.044	18.21	0
0902	C20+	B1	0775	4.00	3.3	M	6	8	0.859	19.55	0
0902	C20+	B1	0657	2.80	1.7	M	6	6	0.987	0	0
0902	C20+	B1	0695	3.00	2.3	F	6	7	0.894	18.44	0
0902	C20+	B1	0654	2.80	2.1	F	6	7	1.001	18.02	0
0902	C20+	B1	0650	2.70	2.1	M	6	7	0.983	17.80	0
0902	C20+	B1	0705	3.50	2.7	M	6	7	0.999	17.39	0
0902	C20+	B1	0649	2.50	1.8	M	6	7	0.915	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0902	C20+	B1	0740	4.20	3.3	M	6	8	1.036	19.54	0
0902	C20+	B1	0864	6.90	5.0	F	6	9	1.070	0	0
0902	C20+	B1	0800	4.50	3.6	F	6	7	0.879	0	0
0902	C20+	B1	0855	5.80	4.6	F	6	9	0.928	0	0
0902	C20+	B1	1015	11.20	7.7	F	6	12	1.071	0	0
0902	C20+	B1	0783	4.70	3.5	M	6	8	0.979	19.92	0
0902	C20+	B1	0915	7.70	6.2	M	6	10	1.005	21.83	0
0902	C20+	B1	0709	3.40	2.4	F	6	8	0.954	19.88	0
0902	C20+	B1	0780	4.30	3.6	M	6	9	0.906	17.36	0
0902	C20+	B1	0856	6.10	4.3	F	6	9	0.973	20.44	0
0902	C20+	B1	0775	4.50	3.6	M	6	7	0.967	19.55	0
0902	C20+	B1	0715	3.10	2.3	M	6	7	0.848	17.84	0
0902	C20+	B1	0755	4.30	3.5	F	6	8	0.999	21.15	0
0902	C20+	B1	0626	2.00	1.9	M	6	6	0.815	16.82	0
0902	C20+	B1	0705	2.80	2.1	F	6	7	0.799	18.15	0
0902	C20+	B1	0736	4.20	3.3	M	6	7	1.053	17.10	0
0902	C20+	B1	0803	4.60	3.6	F	6	8	0.888	18.22	0
0902	C20+	B1	0715	3.90	2.9	F	6	8	1.067	17.68	0
0902	C20+	B1	0652	2.70	1.9	F	6	6	0.974	18.72	0
0902	C20+	B1	0805	4.90	3.9	M	6	8	0.939	17.48	0
0902	C20+	B1	0825	5.00	3.9	F	6	8	0.890	18.98	0
0902	C20+	B1	0795	5.00	3.6	F	6	8	0.995	19.21	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0902	C20+	B1	0647	2.40	2.0	M	6	7	0.886	16.55	0
0902	C20+	B1	0791	4.30	3.1	F	6	0	0.869	0	0
0902	C20+	B1	0772	4.20	3.1	F	6	0	0.913	0	0
0902	C20+	B1	0725	3.60	2.7	F	6	0	0.945	0	0
0902	C20+	B1	0745	4.60	3.6	F	6	0	1.112	0	0
0902	C20+	B1	0760	4.90	4.2	F	6	0	1.116	0	0
0902	C20+	B1	0765	4.50	3.6	F	6	0	1.005	0	0
0902	C20+	B1	0717	4.00	3.1	M	6	0	1.085	0	0
0902	C20+	B1	0762	3.80	3.1	M	6	0	0.859	0	0
0902	C20+	B1	0750	3.60	2.9	F	6	0	0.853	0	0
0902	C20+	B1	0725	3.80	3.1	F	6	0	0.997	0	0
0902	C20+	B1	0785	4.50	3.7	F	6	0	0.930	0	0
0902	C20+	B1	0752	3.90	2.7	F	6	0	0.917	0	0
0902	C20+	B1	0780	3.90	3.2	F	6	0	0.822	0	0
0902	C20+	B1	0760	4.30	3.5	F	6	0	0.980	0	0
0902	C20+	B1	0789	4.50	3.4	0	6	0	0.916	0	0
0902	C20+	B1	0705	3.00	2.4	F	6	0	0.856	0	0
0902	C20+	B1	0740	3.80	3.0	F	6	0	0.938	0	0
0902	C20+	B1	0735	3.70	3.0	F	6	0	0.932	0	0
0902	C20+	B1	0712	3.30	2.7	F	6	0	0.914	0	0
0902	C20+	B1	0774	4.30	3.7	F	6	0	0.927	0	0
0902	C20+	B1	0710	3.60	2.6	M	6	0	1.006	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0902	C20+	B1	0690	3.30	2.4	F	6	0	1.005	0	0
0902	C20+	B1	0703	3.60	2.5	F	6	0	1.036	0	0
0902	C20+	B1	0720	3.40	2.7	F	6	0	0.911	0	0
0902	C20+	B1	0769	4.80	3.4	F	6	0	1.056	0	0
0902	C20+	B1	0770	4.50	3.5	F	6	0	0.986	0	0
0902	C20+	B1	0760		2.7	F	6	0	0	0	0
0902	C20+	B1	0739	3.50	2.6	F	6	0	0.867	0	0
0902	C20+	B1	0755	4.40	3.1	F	6	0	1.022	0	0
0902	C20+	B1	0770	4.20	3.2	0	6	0	0.920	0	0
0902	C20+	B1	0791	4.70	3.6	F	6	0	0.950	0	0
0902	C20+	B1	0750	3.50	3.1	F	6	0	0.830	0	0
0902	C20+	B1	0742	4.00	3.3	M	6	0	0.979	0	0
0902	C20+	B1	0820	5.20	3.9	F	6	0	0.943	0	0
0902	C20+	B1	0722	4.10	2.7	F	6	0	1.089	0	0
0902	C20+	B1	0760	4.00	3.0	F	6	0	0.911	0	0
0902	C20+	B1	0790	4.20	3.4	F	6	0	0.852	0	0
0902	C20+	B1	0740	3.80	2.7	F	6	0	0.938	0	0
0902	C20+	B1	0705	3.30	2.8	F	6	0	0.942	0	0
0902	C20+	B1	0710	3.50	2.5	M	6	0	0.978	0	0
0902	C20+	B1	0702	3.30	2.7	F	6	0	0.954	0	0
0902	C20+	B1	0716	3.90	3.1	M	6	0	1.062	0	0
0902	C20+	B1	0713	3.90	3.1	M	6	0	1.076	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0902	C20+	B1	0740	3.90	3.0	F	6	0	0.962	0	0
0902	C20+	B1	0740	3.90	2.8	F	6	0	0.962	0	0
0902	C20+	B1	0725	4.40	3.3	F	6	0	1.155	0	0
0902	C20+	B1	0743	3.60	2.8	F	6	0	0.878	0	0
0902	C20+	B1	0751	4.10	2.9	F	6	0	0.968	0	0
0902	C20+	B1	0740	3.80	2.7	F	6	0	0.938	0	0
0902	C20+	B1	0732	4.10	3.3	F	6	0	1.045	0	0
0902	C20+	B1	0763	4.50	3.4	M	6	0	1.013	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0902	C25A	B1	0707	3.10		M	6	8	0.877	17.04	0
0902	C25A	B1	0825	5.60		M	6	9	0.997	0	0
0902	C25A	B1	0777	5.35		F	6	10	1.140	19.66	0
0902	C25A	B1	0851	5.35		F	6	10	0.868	19.38	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0903	C25+	B1	0800	4.90		F	6	0	0.957	0	0
0903	C25+	B1	0764	2.60	1.9	M	6	0	0.583	0	0
0903	C25+	B1	0698	3.40	2.7	F	6	0	1.000	0	0
0903	C25+	B1	0793	4.30	3.2	F	6	0	0.862	0	0
0903	C25+	B1	0696	3.20	2.4	F	6	0	0.949	0	0
0903	C25+	B1	0780	4.30	3.5	F	6	0	0.906	0	0
0903	C25+	B1	0735	3.90	2.2	M	6	0	0.982	0	0
0903	C25+	B1	0702	3.00	2.3	F	6	0	0.867	0	0
0903	C25+	B1	0792	4.20	3.5	F	6	0	0.845	0	0
0903	C25+	B1	0795	5.10	4.0	F	6	0	1.015	0	0
0903	C25+	B1	0820	5.30	4.2	F	6	0	0.961	0	0
0903	C25+	B1	0745	4.20	3.3	F	6	0	1.016	0	0
0903	C25+	B1	0755	4.50	3.2	F	6	0	1.046	0	0
0903	C25+	B1	0759	4.40	2.8	M	6	0	1.006	0	0
0903	C25+	B1	0705	2.90	2.3	M	6	0	0.828	0	0
0903	C25+	B1	0710	2.90	2.4	M	6	0	0.810	0	0
0903	C25+	B1	0773	4.00	3.2	F	6	0	0.866	0	0
0903	C25+	B1	0730		2.9	F	6	0	0	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0903	C25+	B1	0660	2.50	2.0	M	6	6	0.870	16.63	0
0903	C25+	B1	0667	3.10	2.1	F	6	6	1.045	18.09	0
0903	C25+	B1	0659	2.80	2.1	F	6	7	0.978	17.84	0
0903	C25+	B1	0805	4.70	3.6	F	6	8	0.901	17.48	0
0903	C25+	B1	0720	3.80	3.0	F	6	0	1.018	0	0
0903	C25+	B1	0743	4.10	3.0	F	6	0	1.000	0	0
0903	C25+	B1	0779	3.70	2.9	F	6	0	0.783	0	0
0903	C25+	B1	0694	3.60	2.7	F	6	0	1.077	0	0
0903	C25+	B1	0776	4.30	3.4	F	6	0	0.920	0	0
0903	C25+	B1	0742	3.30	2.5	F	6	0	0.808	0	0
0903	C25+	B1	0821	5.00	4.1	F	6	0	0.904	0	0
0903	C25+	B1	0785	4.60	3.6	F	6	0	0.951	0	0
0903	C25+	B1	0730	3.90	3.0	F	6	0	1.003	0	0
0903	C25+	B1	0823	4.80	3.8	F	6	0	0.861	0	0
0903	C25+	B1	0804	6.10	4.2	F	6	0	1.174	0	0
0903	C25+	B1	0694	3.10	2.5	F	6	0	0.927	0	0
0903	C25+	B1	0821	5.70	4.6	F	6	0	1.030	0	0
0903	C25+	B1	0711	3.50	3.0	F	6	0	0.974	0	0
0903	C25+	B1	0778	4.10	3.4	F	6	0	0.871	0	0
0903	C25+	B1	0760	3.70	3.1	F	6	0	0.843	0	0
0903	C25+	B1	0712	3.50	2.8	F	6	0	0.970	0	0
0903	C25+	B1	0759	3.50	2.8	F	6	0	0.800	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0903	C25+	B1	0795	5.10	4.1	F	6	8	1.015	18.70	0
0903	C25+	B1	0687	3.20	2.7	F	6	8	0.987	18.01	0
0903	C25+	B1	0790	4.60	3.5	F	6	8	0.933	0	0
0903	C25+	B1	0732	3.60	2.9	M	6	8	0.918	17.78	0
0903	C25+	B1	0684	2.80	2.3	M	6	7	0.875	17.69	0
0903	C25+	B1	0810	5.00	3.8	F	6	8	0.941	21.10	0
0903	C25+	B1	0690	2.90	2.4	M	6	7	0.883	0	0
0903	C25+	B1	0687	2.40	2.1	M	6	8	0.740	17.18	0
0903	C25+	B1	0808	4.10	3.2	F	6	9	0.777	19.38	0
0903	C25+	B1	0850	6.20	4.3	F	6	8	1.010	20.19	0
0903	C25+	B1	0781	2.80	2.4	M	6	8	0.588	18.83	0
0903	C25+	B1	0687	2.90	2.4	F	6	8	0.894	17.69	0
0903	C25+	B1	0729	3.80	3.1	M	6	7	0.981	18.07	0
0903	C25+	B1	0677	2.90	2.2	M	6	7	0.935	0	0
0903	C25+	B1	0642	3.20	2.5	M	6	7	1.209	19.26	0
0903	C25+	B1	0876	5.20	4.2	F	6	8	0.774	19.64	0
0903	C25+	B1	0954	7.70	6.3	F	6	12	0.887	22.45	0
0903	C25+	B1	0880	6.90	5.4	F	6	9	1.013	20.00	0
0903	C25+	B1	0663	2.50	2.1	M	6	7	0.858	18.46	0
0903	C25+	B1	0680	3.10	2.4	M	6	8	0.986	0	0
0903	C25+	B1	0885	7.30	5.6	M	6	9	1.053	20.44	0
0903	C25+	B1	0627	2.50	1.9	F	6	6	1.014	17.37	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0903	C25+	B1	0790	5.10	4.0	F	6	0	1.034	0	0
0903	C25+	B1	0772	4.60	3.5	F	6	0	1.000	0	0
0903	C25+	B1	0738	3.80	2.8	F	6	0	0.945	0	0
0903	C25+	B1	0635	2.60	2.0	F	6	6	1.015	18.91	0
0903	C25+	B1	0671	2.60	2.0	M	6	7	0.861	18.45	0
0903	C25+	B1	0741	3.70	2.9	F	6	0	0.909	0	0
0903	C25+	B1	0821	4.10	3.7	F	6	0	0.741	0	0
0903	C25+	B1	0740	4.10	3.5	F	6	0	1.012	0	0
0903	C25+	B1	0736	3.40	2.9	M	6	0	0.853	0	0
0903	C25+	B1	0600	2.10	1.6	F	6	6	0.972	15.60	0
0903	C25+	B1	0675	2.80	2.3	F	6	6	0.910	18.75	0
0903	C25+	B1	0902	7.20	5.8	M	6	12	0.981	21.15	0
0903	C25+	B1	0675	2.80	2.3	F	6	7	0.910	19.06	0
0903	C25+	B1	0839	5.40	4.3	F	6	8	0.914	19.25	0
0903	C25+	B1	0905	7.50	5.8	F	6	9	1.012	21.00	0
0903	C25+	B1	0973	9.50	7.1	F	6	14	1.031	0	0
0903	C25+	B1	0916	7.40	6.1	F	6	9	0.963	19.44	0
0903	C25+	B1	0651	2.60	2.0	M	6	7	0.942	17.16	0
0903	C25+	B1	0840	5.20	4.1	F	6	8	0.877	20.05	0
0903	C25+	B1	0675	2.70	2.1	M	6	7	0.878	0	0
0903	C25+	B1	0720	4.10	3.4	F	6	8	1.098	18.59	0
0903	C25+	B1	0671	2.70	2.5	F	6	7	0.894	17.30	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0903	C024	B1	0985	8.30		M	6	12	0.868	21.63	0
0903	C024	B1	0441	0.80		F	1	0	0.933	0	0
0903	C024	B1	0925	7.10		M	6	10	0.897	18.85	0
0903	C024	B1	0871	6.90		F	6	9	1.044	0	0
0903	C024	B1	0905	7.10		M	6	8	0.958	18.93	0
0903	C024	B1	0944	9.45		F	6	11	1.123	20.65	0
0903	C024	B1	0855	5.45		F	6	9	0.872	20.33	0
0903	C024	B1	0892	6.70		F	6	9	0.944	19.67	0
0903	C024	B1	0920	6.90		F	6	9	0.886	19.99	0
0903	C024	B1	0611	3.00		F	6	7	1.315	0	0
0903	C024	B1	0870	5.25		F	6	8	0.797	19.33	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0906	C222	B1	0804	5.45		F	6	8	1.049	19.10	0
0906	C222	B1	0797	5.15		F	6	8	1.017	19.74	0
0906	C222	B1	0829	5.00		M	6	8	0.878	18.44	0
0906	C222	B1	0696	3.65		M	6	8	1.083	19.13	0
0906	C222	B1	0792	5.15		M	6	8	1.037	19.11	0
0906	C222	B1	0656	2.95		F	6	7	1.045	18.50	0
0906	C222	B1	0964	7.85		F	6	11	0.876	20.79	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0906	C223	B1	0804	4.25		F	6	8	0.818	19.15	0
0906	C223	B1	0685	3.00		M	6	7	0.933	16.96	0
0906	C223	B1	0676	2.80		F	6	7	0.906	0	0
0906	C223	B1	0726	3.40		F	6	7	0.889	17.75	0
0906	C223	B1	0828	5.50		F	6	9	0.969	17.83	0
0906	C223	B1	0828	5.25		M	6	8	0.925	19.95	0
0906	C223	B1	0665	2.80		F	6	6	0.952	18.73	0
0906	C223	B1	0725	3.90		M	6	8	1.023	0	0
0906	C223	B1	0674	3.20		F	6	7	1.045	18.30	0
0906	C223	B1	0873	6.55		F	6	9	0.984	18.40	0
0906	C223	B1	0656	2.50		F	6	7	0.886	17.32	0
0906	C223	B1	0627	2.20		M	6	6	0.893	0	0
0906	C223	B1	0653	2.35		F	6	6	0.844	17.75	0
0906	C223	B1	0815	5.60		M	6	9	1.034	19.16	0
0906	C223	B1	0812	4.80		F	6	9	0.897	18.79	0
0906	C223	B1	0830	5.30		F	6	9	0.927	17.27	0
0906	C223	B1	0663	3.10		M	6	8	1.064	17.48	0
0906	C223	B1	0940	7.70		M	6	12	0.927	18.82	0
0906	C223	B1	0727	3.70		M	6	9	0.963	18.75	0
0906	C223	B1	0678	2.80		F	6	7	0.898	18.79	0
0906	C223	B1	0658	3.10		F	6	7	1.088	20.08	0
0906	C223	B1	0869	6.40		M	6	9	0.975	19.46	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0906	C223	B1	0745	3.70		M	6	8	0.895	19.12	0
0906	C223	B1	0635	2.05		M	6	7	0.801	18.00	0
0906	C223	B1	0872	6.05		F	6	9	0.912	19.08	0
0906	C223	B1	0831	4.60		F	6	8	0.802	0	0
0906	C223	B1	0808	5.40		F	6	8	1.024	18.30	0
0906	C223	B1	0431	0.59		F	6	3	0.737	0	0
0906	C223	B1	0642	2.45		F	6	7	0.926	0	0
0906	C223	B1	0696	3.20		M	6	8	0.949	16.95	0
0906	C223	B1	0681	3.20		F	6	8	1.013	17.67	0
0906	C223	B1	0805	4.25		M	6	7	0.815	18.10	0
0906	C223	B1	0631	2.55		M	6	7	1.015	16.54	0
0906	C223	B1	0807	5.50		F	6	8	1.047	18.64	0
0906	C223	B1	0664	2.55		F	6	7	0.871	17.83	0
0906	C223	B1	0640	2.65		M	6	8	1.011	17.49	0
0906	C223	B1	0647	2.15		F	6	6	0.794	15.82	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0906	C225	B1	0812	5.45		F	6	10	1.018	19.88	0
0906	C225	B1	0662	2.35		M	6	9	0.810	17.95	0
0906	C225	B1	0625	2.50		M	6	9	1.024	16.85	0
0906	C225	B1	0721	3.90		M	6	9	1.041	17.84	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0906	C28+	B1	0810	5.05		M	6	10	0.950	17.30	0
0906	C28+	B1	0836	5.60		F	6	10	0.958	19.48	0
0906	C28+	B1	0807	4.55		M	6	9	0.866	19.38	0
0906	C28+	B1	0619	2.10		F	6	7	0.885	0	0
0906	C28+	B1	0830	5.00		F	6	9	0.874	20.24	0
0906	C28+	B1	0605	1.80		F	6	7	0.813	17.27	0
0906	C28+	B1	0870	5.45		F	6	9	0.828	18.13	0
0906	C28+	B1	0679	3.05		M	6	9	0.974	0	0
0906	C28+	B1	0947	7.95		F	6	13	0.936	21.47	0
0906	C28+	B1	0812	5.25		F	6	10	0.981	19.08	0
0906	C28+	B1	0701	3.40		M	6	8	0.987	18.21	0
0906	C28+	B1	0669	2.55		F	6	9	0.852	17.11	0
0906	C28+	B1	0868	7.35		M	6	10	1.124	17.71	0
0906	C28+	B1	0676	2.70		F	6	9	0.874	16.90	0
0906	C28+	B1	0820	4.85		M	6	9	0.880	19.84	0
0906	C28+	B1	0649	2.25		M	6	8	0.823	17.25	0
0906	C28+	B1	0837	4.80		F	6	10	0.819	20.24	0
0906	C28+	B1	0826	4.70		F	6	10	0.834	18.50	0
0906	C28+	B1	0695	3.30		M	6	9	0.983	17.94	0
0906	C28+	B1	0822	9.65		F	6	10	1.737	19.96	0
0906	C28+	B1	0666	2.40		F	6	7	0.812	17.01	0
0906	C28+	B1	0847	4.30		F	6	10	0.708	17.83	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0906	C28+	B1	0693	3.05		M	6	9	0.916	18.29	0
0906	C28+	B1	0686	2.35		M	6	9	0.728	18.30	0
0906	C28+	B1	0833	4.75		F	6	10	0.822	20.00	0
0906	C28+	B1	0869	6.00		F	6	11	0.914	20.69	0
0906	C28+	B1	0681	2.85		F	6	8	0.902	17.59	0
0906	C28+	B1	0910	6.40		F	6	10	0.849	19.13	0
0906	C28+	B1	0689	2.50		F	6	8	0.764	16.74	0
0906	C28+	B1	0720	2.30		F	6	9	0.616	19.60	0
0906	C28+	B1	0656	2.25		M	6	8	0.797	17.17	0
0906	C28+	B1	0827	4.85		M	6	10	0.857	19.59	0
0906	C28+	B1	0663	2.30		F	6	8	0.789	16.69	0
0906	C28+	B1	0672	2.80		F	6	9	0.923	0	0
0906	C28+	B1	0695	2.60		F	6	8	0.774	0	0
0906	C28+	B1	0661	2.45		F	6	8	0.848	17.71	0
0906	C28+	B1	0590	1.80		M	6	8	0.876	0	0
0906	C28+	B1	0752	2.65		F	6	8	0.623	0	0
0906	C28+	B1	0757	3.65		M	6	10	0.841	0	0
0906	C28+	B1	0792	4.60		F	6	10	0.926	19.94	0
0906	C28+	B1	0791	4.70		M	6	10	0.950	19.11	0
0906	C28+	B1	0972	7.75		F	6	13	0.844	22.71	0
0906	C28+	B1	0675	2.25		F	6	7	0.732	0	0
0906	C28+	B1	0630	2.25		F	6	9	0.900	17.15	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0906	C28+	B1	0787	4.50		M	6	8	0.923	18.58	0
0906	C28+	B1	0834	5.30		F	6	9	0.914	0	0
0906	C28+	B1	0661	2.70		F	6	8	0.935	17.87	0
0906	C28+	B1	0699	2.95		M	6	8	0.864	16.75	0
0906	C28+	B1	0738	3.55		M	6	8	0.883	19.48	0
0906	C28+	B1	0681	6.00		M	6	8	1.900	19.63	0
0906	C28+	B1	0861	6.35		F	6	9	0.995	20.60	0
0906	C28+	B1	0672	2.75		M	6	8	0.906	18.59	0
0906	C28+	B1	0641	2.45		F	6	7	0.930	17.74	0
0906	C28+	B1	0753	3.30		M	6	8	0.773	0	0
0906	C28+	B1	0649	2.25		F	6	7	0.823	0	0
0906	C28+	B1	0912	7.20		M	6	0	0.949	0	0
0906	C28+	B1	0680	2.50		F	6	7	0.795	0	0
0906	C28+	B1	0874	6.10		M	6	9	0.914	19.69	0
0906	C28+	B1	0748	3.95		M	6	8	0.944	0	0
0906	C28+	B1	0690	2.75		M	6	7	0.837	16.81	0
0906	C28+	B1	0746	4.15		M	6	8	1.000	17.74	0
0906	C28+	B1	0670	2.05		F	6	7	0.682	19.95	0
0906	C28+	B1	0820	4.75		F	6	10	0.861	23.17	0
0906	C28+	B1	0824	5.25		M	6	9	0.938	0	0
0906	C28+	B1	0706	3.15		M	6	8	0.895	16.89	0
0906	C28+	B1	0810	4.65		M	6	9	0.875	17.80	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0906	C28+	B1	0821	5.15		F	6	9	0.931	0	0
0906	C28+	B1	0710	2.80		M	6	8	0.782	16.68	0
0906	C28+	B1	0655	2.50		F	6	7	0.890	18.65	0
0906	C28+	B1	0622	1.80		M	6	7	0.748	0	0
0906	C28+	B1	0733	3.95		M	6	7	1.003	17.40	0
0906	C28+	B1	0872	6.20		F	6	12	0.935	19.41	0
0906	C28+	B1	0622	2.00		M	6	6	0.831	16.75	0
0906	C28+	B1	0795	5.00		M	6	10	0.995	0	0
0906	C28+	B1	0740	4.00		M	6	8	0.987	19.29	0
0906	C28+	B1	0795	4.65		M	6	8	0.925	19.04	0
0906	C28+	B1	0688	2.75		F	6	8	0.844	17.71	0
0906	C28+	B1	0645	2.25		M	6	7	0.839	16.58	0
0906	C28+	B1	0900	6.50		F	6	9	0.892	0	0
0906	C28+	B1	0816	4.35		M	6	8	0.801	18.34	0
0906	C28+	B1	0870	5.95		F	6	9	0.904	18.71	0
0906	C28+	B1	0863	5.15		F	6	9	0.801	19.56	0
0906	C28+	B1	0867	5.80		M	6	9	0.890	18.92	0
0906	C28+	B1	0577	1.70		F	6	5	0.885	16.61	0
0906	C28+	B1	0893	5.90		M	6	11	0.829	20.51	0
0906	C28+	B1	0906	7.05		F	6	12	0.948	19.04	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0908	C518	B1	0665	2.60		M	6	7	0.884	18.54	0
0908	C518	B1	0614	1.85		M	6	6	0.799	17.97	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0909	C226	B1	0925	7.00		F	6	10	0.884	19.09	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0909	C227	B1	0950	8.50		F	6	11	0.991	19.95	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0910	C230	B1	0859	5.70		F	6	9	0.899	20.32	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0910	C231	B1	0875	5.60		F	6	8	0.836	19.51	0
0910	C231	B1	0922	7.90		F	6	15	1.008	21.79	0
0910	C231	B1	0790	5.00		M	6	9	1.014	19.57	0
0910	C231	B1	1010	11.70		F	6	13	1.136	0	0
0910	C231	B1	0877	6.00		M	6	9	0.890	20.32	0
0910	C231	B1	0799	5.10		M	6	8	1.000	18.38	0
0910	C231	B1	0802	4.60		M	6	9	0.892	18.11	0
0910	C231	B1	0898	7.00		F	6	9	0.967	20.37	0
0910	C231	B1	0637	2.30		F	6	7	0.890	17.22	0
0910	C231	B1	0829	5.20		M	6	9	0.913	18.72	0
0910	C231	B1	0880	6.90		F	6	9	1.013	19.31	0
0910	C231	B1	0801	5.70		M	6	8	1.109	20.96	0
0910	C231	B1	0836	5.20		M	6	9	0.890	18.63	0
0910	C231	B1	0995	8.80		F	6	11	0.893	22.47	0
0910	C231	B1	0598	2.30		M	6	7	1.076	0	0
0910	C231	B1	0780	4.80		M	6	8	1.011	18.31	0
0910	C231	B1	0863	6.70		F	6	10	1.042	20.30	0
0910	C231	B1	0633	2.20		M	6	6	0.867	18.52	0
0910	C231	B1	0813	4.90		M	6	9	0.912	18.06	0
0910	C231	B1	0885	7.30		F	6	10	1.053	18.64	0
0910	C231	B1	0636	2.50		M	6	8	0.972	0	0
0910	C231	B1	0815	6.30		M	6	9	1.164	19.70	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0910	C231	B1	0640	2.60		F	6	7	0.992	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0910	C233	B1	0623	2.00		M	6	7	0.827	17.19	0
0910	C233	B1	0835	5.70		F	6	8	0.979	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0911	C234	B1	0446	0.75		F	6	4	0.845	0	0
0911	C234	B1	0870	6.40		M	6	10	0.972	20.59	0
0911	C234	B1	1024	11.50		F	6	11	1.071	19.59	0
0911	C234	B1	0884	5.50		F	6	10	0.796	0	0
0911	C234	B1	0434	0.75		F	6	4	0.917	0	0
0911	C234	B1	0882	6.95		F	6	9	1.013	0	0
0911	C234	B1	0935	7.45		F	6	11	0.911	0	0
0911	C234	B1	0912	6.95		F	6	10	0.916	0	0
0911	C234	B1	0928	6.85		F	6	9	0.857	20.13	0
0911	C234	B1	1020	9.90		F	6	12	0.933	0	0
0911	C234	B1	0609	2.35		F	6	7	1.040	0	0
0911	C234	B1	0914	7.50		F	6	9	0.982	19.86	0
0911	C234	B1	0847	5.70		M	6	8	0.938	17.56	0
0911	C234	B1	1009	9.90		F	6	13	0.964	20.86	0
0911	C234	B1	0960	8.10		F	6	13	0.916	21.07	0
0911	C234	B1	0897	6.80		F	6	9	0.942	18.74	0
0911	C234	B1	0642	2.45		M	6	7	0.926	18.82	0
0911	C234	B1	0962	8.30		F	6	11	0.932	19.31	0
0911	C234	B1	1013	10.85		F	6	15	1.044	21.07	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0912	C238	B1	0600	2.00		M	6	6	0.926	15.46	0
0912	C238	B1	0946	7.45		F	6	9	0.880	0	0
0912	C238	B1	0819	5.40		M	6	9	0.983	18.18	0
0912	C238	B1	0923	7.50		M	6	11	0.954	20.95	0
0912	C238	B1	0866	5.95		M	6	9	0.916	18.20	0
0912	C238	B1	0961	8.90		M	6	11	1.003	18.92	0
0912	C238	B1	0851	6.20		M	6	9	1.006	18.96	0
0912	C238	B1	0634	2.50		M	6	7	0.981	16.74	0
0912	C238	B1	0599	2.30		M	6	7	1.070	16.42	0
0912	C238	B1	0812	5.50		M	6	9	1.027	18.78	0
0912	C238	B1	0967	8.15		M	6	13	0.901	22.84	0
0912	C238	B1	1036	11.10		F	6	15	0.998	0	0
0912	C238	B1	0845	6.10		F	6	8	1.011	17.66	0
0912	C238	B1	0814	5.30		M	6	9	0.983	18.66	0
0912	C238	B1	0831	5.20		M	6	9	0.906	20.12	0
0912	C238	B1	0631	2.15		M	6	6	0.856	0	0
0912	C238	B1	0567	2.05		M	6	5	1.125	0	0
0912	C238	B1	0634	2.80		F	6	7	1.099	17.68	0
0912	C238	B1	0916	8.50		F	6	12	1.106	0	0
0912	C238	B1	0885	6.65		F	6	9	0.959	20.83	0
0912	C238	B1	0974	7.60		F	6	12	0.823	21.50	0
0912	C238	B1	0932	7.90		F	6	14	0.976	0	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0912	C238	B1	0876	6.55		F	6	9	0.974	19.68	0
0912	C238	B1	0978	8.95		F	6	11	0.957	21.98	0
0912	C238	B1	0848	5.85		M	6	9	0.959	20.45	0
0912	C238	B1	0905	6.71		F	6	9	0.905	18.15	0
0912	C238	B1	0902	8.30		F	6	10	1.131	21.11	0
0912	C238	B1	0818	5.80		M	6	9	1.060	17.22	0
0912	C238	B1	0822	5.00		M	6	8	0.900	0	0
0912	C238	B1	0614	2.35		M	6	7	1.015	16.95	0
0912	C238	B1	0958	9.70		F	6	13	1.103	21.08	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0914	C246	B1	0909	7.30		F	6	9	0.972	18.46	0
0914	C246	B1	0880	6.40		M	6	9	0.939	20.51	0
0914	C246	B1	0602	1.80		F	6	5	0.825	0	0
0914	C246	B1	0829	5.25		M	6	10	0.922	18.72	0
0914	C246	B1	0911	7.70		F	6	10	1.018	18.78	0
0914	C246	B1	0843	6.10		M	6	9	1.018	18.43	0

PROJET DES PÊCHERIES DE KILLINIQ - PHASE I (1983)

DONNÉES DE DISSECTION; MORUE DE L'ATLANTIQUE

DATE	LEVÉE	BLOC	LONGUEUR	POIDS	POIDS NET	SEXE	MATU-RITÉ	AGE	FACTEUR -K	LONG. DES OTOLITHES	PARA-SITES
0914	C248	B1	0821	5.20		M	6	9	0.940	18.08	0
0914	C248	B1	0840	5.30		M	6	9	0.894	17.60	0

APPENDIX G - BIOLOGICAL DATA, OTHER SPECIES

Records of the autopsies of species other than Atlantic cod are given in the following table.

KEY

SEX:

M = male
F = female

AGE:

N.A. = not available

SPECIES	SET #	TOTAL LENGTH (mm)	TOTAL WEIGHT (kg)	SEX	AGE
Greenland halibut (Reinhardtius hippoglossoides)	C-13	686	3.30	M	12-13
		556	2.90	F	9-10
		612	2.10	F	10-11
		652	2.50	F	10-11
	C-15	789	4.35	F	14+
American plaice (Hippoglossoides platessoides)	C-3	330	0.25	M	N.A.
		340	0.25	M	N.A.
		390	0.55	M	N.A.
		410	0.55	M	N.A.
		470	0.70	F	N.A.
		370	0.40	F	N.A.
Greenland cod (Gadus ogac)	C-2	570	2.35	F	N.A.
	L-209	490	1.20	M	10
		530	1.90	F	10
	L-212	491	1.20	F	9
		538	1.75	F	9
		546	1.75	F	9
	L-214	513	1.60	F	9
	C-16	580	2.80	M	N.A.

APPENDIX H - REPORT ON STOMACH CONTENT ANALYSIS

REPORT ON STOMACH CONTENT SAMPLES

KILLINIQ FISHERIES PROJECT

PHASE I

DR. MAX DUNBAR

MARCH 1983

Cod stomachs, Port Burwell, 1983.

Not all, in fact, were cod stomachs; Four were Greenland Halibut.

Gadus morhua	80 samples
Gadus ogac	6 samples
Reinhardtius hippoglossoides	4 samples

1. Gadus morhua stomach samples.

a) fishes.

Myctophum glaciale. By far the commonest fish in the cod stomachs, sometimes over 80 in one stomach. Not all specimens were kept. Found in the following samples (see separate list for sample number and label information):
1, 2, 3, 5, 6, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 29, 30, 31, 32, 33, 34, 35, 36, 37, 44, 45, 48, 49, 50, 51, 53. 54, 55, 56, 58, 61, 62, 63, 71, 72, 74, 75, 77, 79, 88.

Reinhardtius hippoglossoides. One or two (highest number in one stomach - 9) in several stomachs. Found in samples 6, 8, 9, 11, 19, 22, 25, 29, 30, 31, 35, 44, 45, 51, 52, 54, 55, 61, 62, 63, 69, 71, 72, 79.

Lycodes reticulatus. Possibly some belonged to other species of the genus -- many were partly digested -- but reticulatus was certainly identified in the better specimens. It was the only species recorded in Ungava Bay by Dunbar and Hildebrand (1951). A few taken, usually singly in the samples. Found in samples 12?. 14, 18, 29, 30, 41, 44?.

Three large specimens of this species, apparently caught on the longline, were identified.

Ammodytes dubius? One specimen, sample number 2.

Triglops pingeli. Taken in samples 35, 52, 68, 72, 87.

Unidentified fish. Many stomachs contained fish remains so far digested as to defy identification. Samples 15, 16, 17, 18, 20, 22, 30, 35, 36, 42, 44, 45, 46, 49, 50, 51, 52, 53, 56, 57, 59, 61, 64, 66, 67, 69, 73, 75, 76, 78, 79, 87, 88.

[Gadus morhua stomachs, continued]

b) amphipods

Haploops setosa. By far the most abundant. Taken in samples 2, 3, 5, 6, 8, 11, 13, 15, 17, 23, 24, 25, 26, 30, 31, 33, 37, 49, 51, 53, 55, 57, 58, 70, 71, 72, 75, 77, 78, 88.

Anonyx nugax. A few, except for one stomach (no. 43, which contained 112 specimens and nothing else). Samples 3, 16, 43, 44, 51, 64, 67, 72, 75, 79, 88.

Parathemisto libellula. One specimen in sample 16.

Stegocephalus inflatus. One specimen, sample 31.

Gammarus wilkitzkii. One specimen, sample 35.

Unidentified amphipods: Samples 57, 66.

c) Decapod crustaceans

Lebbeus groenlandicus. The commonest decapod in the collection. Samples 41, 44, 45, 46, 48, 49, 51, 52, 53, 54, 59, 60, 62, 67, 68, 70, 75, 81, 85, 87.

Lebbeus polaris. Also fairly anundant. Samples 25, 41, 42, 44, 47, 50, 51, 52, 53, 54, 66, 68, 70, 72, 85, 87, 88. Frequently found in the same stomachs as L. groenlandicus.

Eualius fabricii. Samples 1, 70.

Pandalus montagui. Samples 6, 10?, 12, 21?, 22?, 31, 35, 69, 74, 79.

Sabinea septemcarinata (?) Sample 52.

Spirontocaris spinus.(?). Sample 52.

Spirontocaris lilljeborgi. Samples 59, 60.

Spirontocaris sp. Sample 62.

Sclerocrangon boreas. One specimen, sample 88.

Unidentified shrimps: Many macerated specimens. Samples 4, 5, 8, 9, 14, 15, 16, 20, 28, 29, 30. 31, 33, 34, 37, 47, 48, 50, 55, 56, 57, 60, 61, 62, 63, 67.

[Gadus morhua, continued]

d) Mysidacea.

Boreomysis nobilis. Not common, usually only one per stomach, in samples 2, 12, 14, 35, 37, 48, 88.

e) Isopoda.

Mesidothea sp. entomon?. Sample 54, one specimen.

f) Polychaete worms. A few, all much digested and not identifiabl Samples 2, 20, 46, 52, 74, 85.

g) Holothuria. Not identified: samples 75, 87.

h) Cephalopod molluscs. Not identified. Samples 6, 10, 11, 15, 22, 37, 45, 53, 74.

2. Gadus ogac.

Anonyx nugax (amphipod). A few; samples 65, 76, 86.

Haploops setosa (amphipod). Sample 78.

Lebbeus groenlandicus (shrimp). Samples 65, 78, 83, 84, 86.

Lebbeus polaris (shrimp). Samples 65, 78, 83, 86.

Unidentified polychate: Samples 65, 76, 78.

Triglops sp. (sculpin). Sample 83.

Unidentified fish: Samples 76, 78, 83.

3. Reinhardtius hippoglossoides.

Liparis cyclostigma (lumpsucker). Samples 89, 73.

Triglops sp. (sculpin). Sample 73.

R. hippoglossoides (Greenland halibut). Sample 73 (cannibal).

Myctophum glaciale (lantern fish). Sample 73.

This material shows very much less variety than the stomach contents taken from Atlantic cod at Burwell during the "Calanus" expeditions, which appear to have been a different stock of cod. This lesser diversity is especially remarkable in the decapod crustacea and the amphipods, but is found in all groups.

APPENDIX I - REPORT ON PARASITE SAMPLE ANALYSIS

Killiniq Fisheries

Report on Parasite Samples

Obtained in August 1983

Introduction

This brief report identifies the parasites collected by Makivik personnel during the experimental fisheries program near Killiniq in August 1983. The usefulness of obtaining information on fish parasites in the region is primarily related to marketability of the fish. Codworm (Phocanema decipiens), a major source of economic loss to fisheries in the Gulf of St. Lawrence and Scotian Shelf, was not expected to occur in the Killiniq region and it is important to confirm this. Furthermore, it was considered worthwhile to gather data on any parasites that did occur in order to evaluate their economic or human health significance.

Methods

Parasites were collected from the viscera of Atlantic cod (Gadus morhua) and Greenland cod (G. ogac)between August 21 and August 30, 1983. A total of 44 fish were sampled. The parasites were fixed and preserved in 5% glycerine alcohol and sent to the Institute of Parasitology for further processing. Nematodes were cleared by repeated additions of glycerine alcohol and evaporation. Cestodes were stained and cleared by several routine methods.

Taxonomic keys used in identifying the nematodes were Myers (1975) and Anderson et al. (1974). Cestodes were identified by reference to Wardle and McLeod (1952). A reference collection has been retained for future use.

Results and Discussion

Table 1 lists all parasites identified from the collected material. Data on the fish in which the parasites occurred is available by reference to the code numbers assigned by Makivik.

The parasite species found consisted of two nematodes (Anisakis sp., Thynnascaris adunca) and one cestode (Abothrium gadi). In some publications Thynnascaris adunca is referred to by its synonym, Contracaecum aduncum. It occurs as an adult in the viscera,

frequently the liver, of its host fish and is reported to cause atrophy of the liver in heavily infected cod (Margolis, 1970). Thynnascaris is occasionally found in the flesh of commercial fish, particularly if the nematodes have been allowed sufficient time to migrate there from the viscera after the death of the fish. Thynnascaris was the most common of the parasites encountered in the samples. It is usually acquired by fish feeding upon infected crustaceans or other invertebrates, and can be transmitted from prey fish to their predators.

Anisakis sp. occurs as a larval form in marine fish, and thus the specimens obtained are difficult to identify to the species level. Carried primarily by fish which consume pelagic food such as euphausids, Anisakis has dolphins and porposes as its normal definitive hosts. In common with Thynnascaris, this parasite also is known to damage the liver of its host fish. Anisakis is implicated in human health problems associated with the consumption of raw or pickled fish (often herring) and the medical community now generally refers to the clinical manifestations of this as "anisakiasis". This is further discussed below.

The cestode Abothrium gadi is found as an adult form in the intestine of cod and related fish. It is of no known pathogenic importance to the fish and is of no consequence to human health.

Anisakiasis

Because the two nematodes identified above are listed by Cheng (1976) as genera implicated in anisakiasis, it is perhaps useful to provide some further information here. The phenomenon of anisakiasis first became recognized in the Netherlands during the 1950's and has since become known in other parts of Europe, North America and Japan. Human anisakiasis is generally the result of living nematodes attempting to penetrate the digestive tract (most commonly the stomach) of an individual who has just consumed raw, pickled or undercooked fish contaminated with the parasites. Serious complications are rare, but because of the prevalence of nematodes in many marine commercial fish populations most nations now have adopted regulations to minimize the possibility of further cases of anisakiasis, for example by stipulating that fish must be frozen before pickling. For detailed accounts of cases of anisakiasis and the parasites involved one should refer to the relevant literature (Cheng, 1976; Margolis, 1977; Myers, 1970). One case of anisakiasis has been reported in arctic Alaska (Lichtenfels and Brancato, 1976).

Summary and conclusions

Although only preliminary findings are available to date, at least some interesting information has resulted from the parasite samples obtained last summer. The absence of codworm from any of the samples would appear to endorse the existing view that it does not occur in the Killiniq region. In consideration of the fact that grey seals, the primary definitive hosts for codworm, are absent from the adjacent Labrador and Ungava coasts, this result was to be expected.

The presence of two forms of anisakine nematode (Thynnascaris adunca and Anisakis sp.) in the samples is noteworthy because of the known association of these parasites with human anisakiasis. However, the occurrence of anisakine nematodes is a regular feature of most cod stocks and is only of concern when parasite incidence is high. It would be useful to observe the percentage of heavily infected fish in future work in the region.

As a recommendation for continued work, it should be seen as important that some samples of fish flesh be taken for parasite analyses. In the light of the occurrence of Thynnascaris and Anisakis from visceral samples, it would appear that a follow-up study be carried out to determine whether or not these parasites also may be present in the flesh. Simple procedures for the digestion of fish flesh and recovery of parasites are available and could easily be incorporated into the general work already planned.

M. Curtis
May 8, 1984

Literature cited

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Cheng, T.C. 1976. The natural history of anisakiasis in animals. J. Milk Food Technol. 39: 32-46.

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Myers, B.J. 1970. Nematodes transmitted to man by fish and aquatic animals. J. Wild. Dis. 6: 266-271.

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Table 1

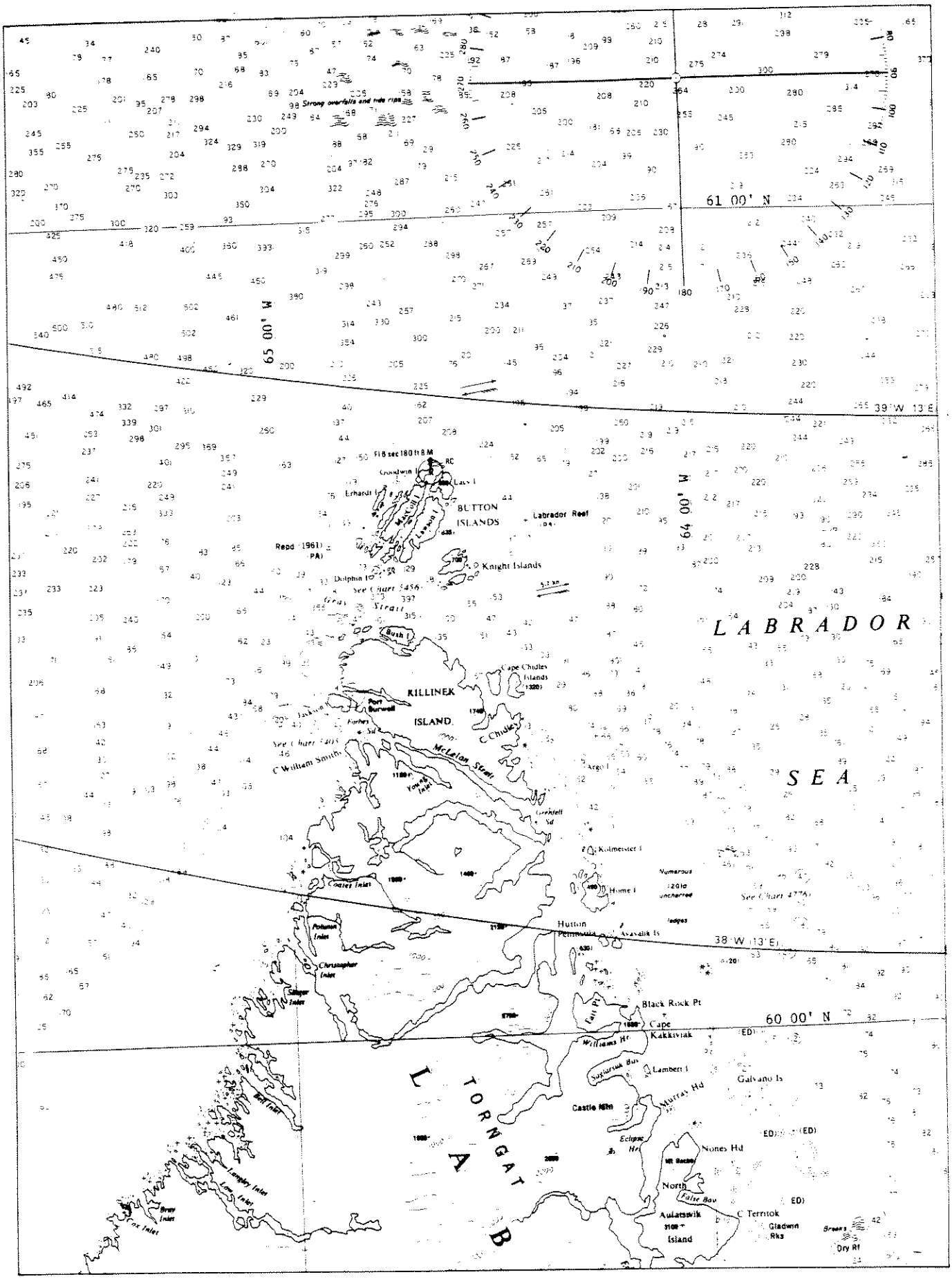
Sample #	Identification
1	4 *Thynnascaris adunca* 1 *Abothrium gadi*
2	8 *T. adunca* 1 *A. gadi*
3	2 *T. adunca*
4	8 *T. adunca*
5	3 *Anisakis* sp.
6	4 *T. adunca*
7	1 *Anisakis* sp.
8	4 *T. adunca* 1 *Anisakis* sp.
9	15 *T. adunca*
10	Nothing found**
11	Nothing found
12	1 *Anisakis* sp.
13	1 *Anisakis* sp.
14	1 *Anisakis* sp.
15	Nothing found
16	2 *T. adunca*
17	10 *T. adunca*
18	1 *Anisakis* sp.
19	8 *T. adunca* 1 *Anisakis* sp.
20	1 Anisakis sp.

**"Nothing found" means that non-parasitic material was included, or specimens were not in sufficiently good condition for identification.

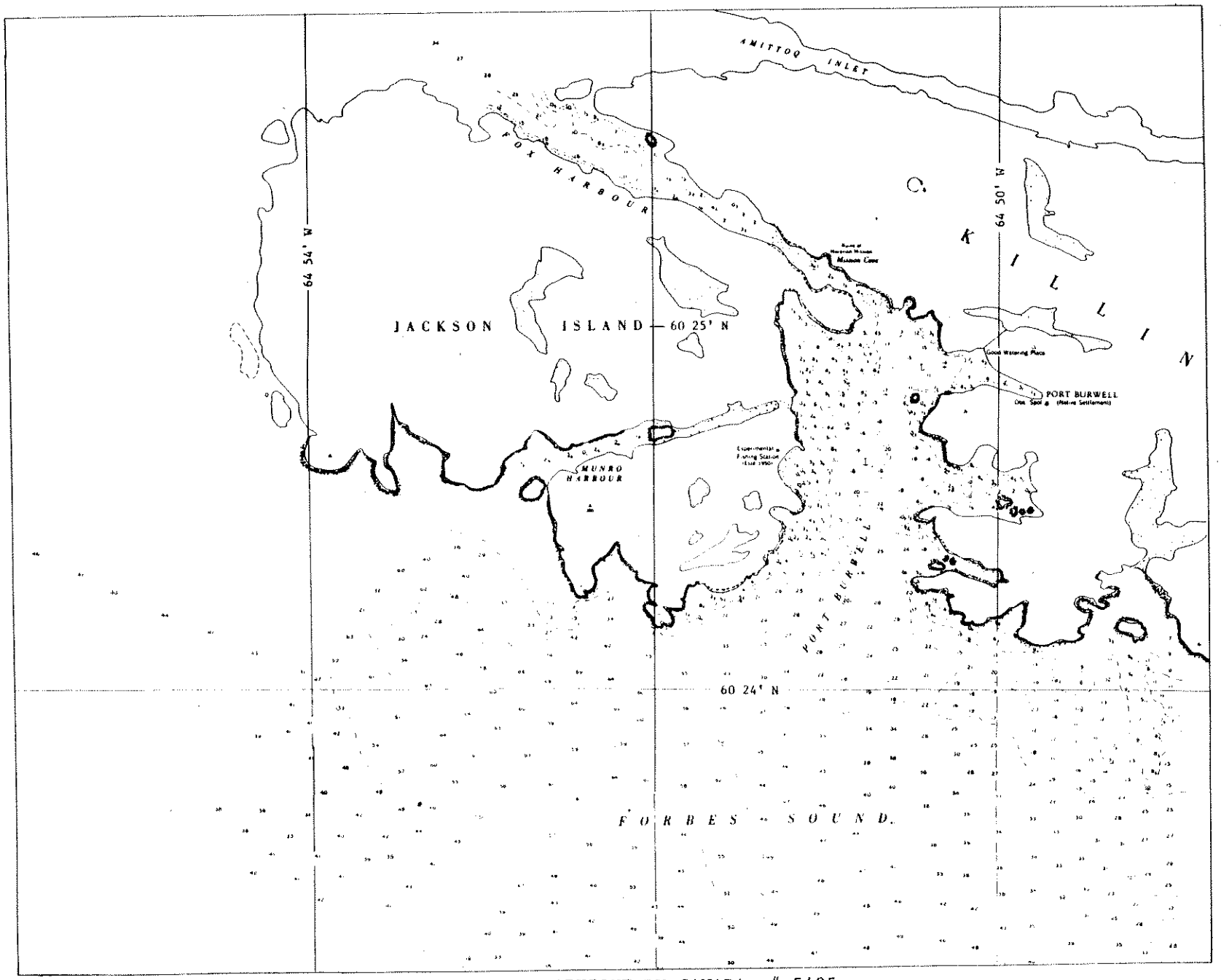
Sample #		Identification
21	1	*T. adunca*
22		Nothing found
23	1	*T. adunca*
24		Nothing found
25		Nothing found
26	2	*Anisakis* sp.
27	4	*T. adunca*
28		Nothing found
29	2	*Anisakis* sp.
30	1	*Anisakis* sp.
31	1	*Anisakis* sp.
32	3	*T. adunca*
	1	*Anisakis* sp.
33	1	*Anisakis* sp.
34	4	*T. adunca*
	1	*Anisakis* sp.
35	1	*T. adunca*
	1	*Anisakis* sp.
36	1	*T. adunca*
	1	*Anisakis* sp.
37	18	*T. adunca*
	3	*Anisakis* sp.
38	1	*Anisakis* sp.
39	1	*T. adunca*
40	2	*T. adunca*
"21.08.83 L2 Set 2	6	*T. adunca*
Gillnet Greenland cod	1	*Anisakis* sp.
F. 570 mm, 2.35 kg"	4	*A. gadi*

Sample #	Identification
"Greenland cod 49 cm, 1.2 kg L-C/C-1 Aug 27, 83 m-II"	5 *T. adunca* 1 *Anisakis* sp.
"Greenland cod 53 cm/ 1.9 kg L-C/G1 Aug 27, 83 F-I"	7 *T. adunca* 1 *A. gadi*
"*Gadus ogac*-Set A F II, 513 mm, 575 g"	8 *T. adunca* 1 *Anisakis* sp. 1 *A. gadi*
"Atlantic cod 75 cm/3.6 kg L-C/C-1 Aug 27, 83 F II"	1 *Anisakis* sp.

APPENDIX J - AVAILABLE BATHYMETRIC INFORMATION



SERVICE HYDROGRAPHIQUE DU CANADA # 5300



SERVICE HYDROGRAPHIQUE DU CANADA # 5405