



***Exploratory Fishing In Frobisher Bay/south
Baffin (summer 1992)
Date of Report: 1992
Author: Eda
Catalogue Number: 3-4-18***

EXPLORATORY FISHING IN FROBISHER BAY/SOUTH BAFFIN AREA

1. INTRODUCTION

In August and September, 1992, three vessels were chartered to undertake exploratory fishing in the coastal waters of Frobisher Bay, Hudson Strait, and nearby Davis Strait. Two vessels, the 60' Miss Jennifer and the 40' Judith Rose 111, and their crews were chartered from Iqaluit while the Seacraft, a 65' multi-purpose fishing vessel, was chartered with a core-crew from Newfoundland.

Collectively the vessels fished for groundfish, shrimp, crab, and scallops using a variety of gear that included an otter trawl, longlines, gillnets, scallop drags, shrimp and crab traps.

Approximately 3500 miles of ocean was surveyed. This intensive effort produced very few promising indicators of commercial fishing potential. Poor bottom conditions and lower than average water temperatures due to heavy ice conditions in the area surveyed appear to have contributed to a relatively low biological productivity. These unusual conditions may have also adversely affected the in-migration of fish into the study area.

In spite of the disappointing fishing results, training and technology transfer formed an valuable component to this years' exploratory fishery. The two Iqaluit based vessels hired local crews and were provided with a technical adviser for a portion of the fishing time. The Seacraft employed four Inuit trainees who worked under the core crew, which included a fisherman with twenty five years of Atlantic fishing experience and a captain with a master mariners certificate.

2. BACKGROUND

The Baffin fishing industry has made considerable gains in the past five years toward identifying and establishing commercial fish quotas in the region. In the offshore fishing industry 1.5 of the 17 available northern shrimp licenses are owned by Qikiqtaaluk who joint-venture with Farocan of Ottawa to fish the licenses. Offshore shrimp fishing brings a return of more than \$1.5 million per annum in wages for Inuit crew and in corporate revenues. Several Inuit are now in supervisory positions on shrimp vessels and several have qualified for officer positions.

Similar gains have been made by Cumberland Sound Fisheries (now Pangnirtung Fisheries Ltd.) of Pangnirtung and by Qikiqtaaluk with respect to accessing offshore quotas for groundfish (turbot, mackerel, silver hake) .

In the inshore fishing industry, most of the activity has taken place in Cumberland Sound where quotas have been established for 1000 tonnes of inshore turbot and 100 tonnes of scallops. The winter turbot fishery has created seasonal employment for more than 100 fishermen and plant workers who have earned a total local income of more than \$.5 million. Social assistance payments have been reduced by up to 25%.

In addition, small scale summer and winter exploratory fisheries have taken place throughout the Baffin region, with the greatest concentration of activity occurring in the south Baffin.

Commercial char fisheries have met with variable success. The available commercial arctic char quota in Baffin is over 500,000 pounds but only 30% of this is harvested due to difficult access and logistics as well as to low market prices.

The purpose of the exploratory fishery effort which commenced in the summer of 1992, was to undertake a multi-year program to determine the extent of commercial fish resources in the region. There is still a great deal of information required to determine if fisheries in the eastern arctic can be a viable economic activity. Identifying the presence of commercial fish stocks is **only the beginning of assessing the economic potential of the industry. The commercial development of the industry will hinge on such factors as market demand, achievable prices, infrastructure, transportation links, a skilled labour force and enabling climatic conditions.**

Based on the fisheries successfully developed to date, there is a reasonable expectation that the coastal waters surrounding Baffin Island contain fish stocks that can be commercially exploited in certain areas, under certain conditions, and using appropriate technology.

3. OBJECTIVES

Until the advent of the 1991-1996 Federal/Territorial Economic Development Agreement, planning for a multi-year, coordinated exploratory fishing has been constrained by the general unavailability of funding for research based projects. The new EDA provided the first-ever opportunity to dedicate a portion of available funds to a multi-year research project.

The EDA Baffin Region Sub-Committee for Fisheries, established out of the EDA implementation process, gave priority to investigating the commercial potential of fish resources in Baffin coastal waters.

Prior to the 1992 summer fishing season the Baffin Region sub-committee sought to obtain information from **HTA's**, fishing industry representatives and from relevant government departments on the development of a workable exploratory fishing program. In March 1992 a Baffin Fisheries Workshop was sponsored by the **Baffin** Regional Inuit Association through funds obtained from EDA and relevant government agencies. Workshops were held by fish species (char, turbot, and shrimp) resulting in a tabled list of recommendations.

There was not unanimous support for the exploratory fishing effort nor was there consensus on how the exploratory fishing should be undertaken. Most of all it became obvious that little information existed in Baffin communities as to what exploratory fishing involved or could involve.

Through a series of pre-season meetings the Sub-Committee established key program objectives for the exploratory fishing plan. The plan would undertake to:

- a) **be** primarily an investment in research on the incidence of fish stocks in Baffin coastal waters. The structure of the Baffin commercial fishing industry should follow from the results of this research and the technologies that are **determined to** effectively fish those resources at sustainable levels;
- b) **achieve** optimum coverage of coastal waters surrounding Baffin Island through a mix of vessel capacity and technology, including where possible, the use of certified local vessels;
- c) **balance** community environmental and economic concerns through recognition of community priorities on sustainable development;
- d) recognize as a priority that training of northerners must occur simultaneously with exploratory fishing;
- e) recognize four distinct fishing zones around Baffin Island that will be fished progressively over a four-year period, subject to adjacent community consultation and support;
- f) have positive socio-economic impacts on adjacent communities through hiring, purchasing, identification of commercial fishing opportunities, training and technology transfer, and compatibility with the traditional subsistence economy;
- g) stimulate increased regional awareness of and interest in fisheries by making project results, including the catch available to the public.

4.0 CRITERIA FOR RESOURCE ASSESSMENT

From the outset of the discussions on where to fish, the Sub-Committee recognized that even in four **years** of effort, and presuming good fishing conditions, it would be impossible to cover all coastal waters in the Baffin Region.

Thus, in order to prioritize the four fishing zones of concentration the Sub-Committee established the following criteria that prospective fishing zones were to have:

1. some prior indicators of fish in the **area**
2. **local interest and support**
3. **some indication of previous fishing effort**
4. **demonstrated potential for transportation links to the market.**

The **Sub-Committee finalized** the program objectives and resource assessment **criteria in** June 1992, leaving **tight lead times** to launching the 1992 fishery. **It** was decided that since the **Frobisher Bay, Hudson Strait and Davis Strait** areas **immediately** demonstrated the resource assessment criteria established by the sub-committee, **this** would be the **first** zone of **concentration**.

5.0 RESEARCH METHODOLOGY

The Sub-Committee stressed that the program objectives must be reflected in the approach used to undertake exploratory fishing. In particular, the 1992 program had to experiment with various fishing technologies to determine if certain equipment and gear was better suited to fishing Baffin waters. The fishing effort had to achieve optimum coverage of coastal waters, ensure that the training of northerners was treated as a priority, and that where possible, the program would contract local fishing vessels certified by Canada Coast Guard.

The question of how to effectively fish the inshore waters was discussed at length by the Sub-Committee. The February 1992 CoPro study into vessel options recommended several possibilities. The Sub-Committee sought further opinions from an inshore **fisheries** specialist in the PEI Department of Fisheries, and from **officials in** the Fishing Industry Services Branch of the **Department** of Fisheries and Oceans in **Ottawa**. In the **end, it** was decided that the exploratory program **would** use a **mix** of locally based inshore vessels and a chartered **midshore** vessel.

The **Seacraft**, a 65' multi-purpose **fishing** vessel, was **chartered** from Port au **Choix**, Newfoundland to fish **with** two locally owned vessels, the **Judith** Rose 111 and **the** Miss Jennifer.

The Seacraft was equipped with state of the art electronics for locating and positioning fish, with the necessary hydraulic winches to tow gear in strong currents, and the mobile gear (otter trawl) necessary to achieve greater research coverage.

The Seacraft crew had lengthy fishing experience in Atlantic Canada. Their contract detailed that only a core **crew** could be brought north, with the balance of crew hired from the communities adjacent to the fishing effort (Iqaluit and Lake Harbour). The contract also required that the northern crew receive training from the core crew in the use of all fishing gear, and general operations of the vessel.

The decision to charter a vessel from Newfoundland was controversial and resulted in protests from local fishing vessel owners. While these concerns did not go unheeded, the sub-committee felt it was important to commit to the principal objective of undertaking research, using a combination of both a midshore and two inshore vessels. This would ensure optimal coverage of the zone, increase training opportunities, and result in technology transfer.

6. THE FISHING PLAN

The Miss Jennifer and the Judith Rose 111 were chartered to fish consecutively for a period of 35 days, approximately the period that the Seacraft would be fishing in the area. It was determined that the two local boats would fish within Frobisher Bay proper (within a line drawn between York Sound and Summer Island) using fixed gear as follows:

.gillnets & longlines for groundfish (cod and turbot)
traps for shrimp and crab

In addition, the Miss Jennifer was geared to drag for scallops.

The Seacraft was to vary its targeted fishing effort as follows:

otter trawling for groundfish	30%
otter trawling for shrimp	25%
gillnetting for groundfish	15%
longlining for groundfish	10%
scallop dragging	10%
crabfishing with traps	10%

Fishing Quotas

The Department of Fisheries and Oceans approved the following quotas under an Exploratory Fishing Licence issued August 12, 1992.

Species	Gear	Quota (Kg. round wt.)
Turbot	longline, otter trawl	50,000
Atlantic Cod	longline, gillnets, otter trawl	20,000
Iceland Scallops	scallop bucket	5,000
Shrimp	trap and otter trawl	25,000

7. LANDING THE CATCH

To maximize the exploratory fishing effort, the crews were instructed to limit set durations. Large catches from long sets would create problems with fish storage and extra steaming time to off-load the catch. It was decided that live catches would be returned to the water subject to the approval of the on board DFO observer.

Any catches off-loaded in Lake Harbour or Iqaluit were to be distributed throughout the communities to promote the program and industry potential.

8. PROJECT PREPARATION

Since no exploratory fishery of this magnitude had been previously launched from Iqaluit, it took a great deal of time and effort to ensure that preparations were in order.

The Sub-Committee advertised and recruited for three **positions** to support the exploratory program. Richard Moores of **St. John's** Newfoundland was hired as a three month project coordinator. He was identified through a recommendation from DFO **officials in** Ottawa. David Boudreau of Nova Scotia returned as the on board technical adviser for the two Iqaluit-based vessels. (David had participated **in** an exploratory fishery **in Frobisher Bay** in 1991) . Jerry Ell of Iqaluit was hired as the DFO **observer on board the Seacraft.**

Contacts were made with the Canadian Coast Guard and Emergency Measures to, assess infrastructure and support services available to ensure an effective and safe fishing program. Marine Radio was contacted to establish schedules and frequencies for daily radio contact with the vessels. Ice Operations arranged for daily faxed reports of ice conditions in the south Baffin area.

An ice machine was purchased and installed in Iqaluit Enterprises Ltd. in Iqaluit to provide ice for catch storage aboard the vessels. "

Arrangements were made through the Canadian Coast Guard in Iqaluit to provide a safety orientation to the crew trainees prior to commencement of fishing.

Project Coordinator Richard Moores visited Lake Harbour to discuss the program with the HTA, who **provided their support to the program, and recommended areas to concentrate the fishing effort in adjacent Hudson Strait.** Wharf facilities were examined to determine the logistics of refueling the Seacraft in Lake Harbour.

Prior to commencement of fishing, a planning meeting was held with the Project Coordinator, the captains of the three vessels, a Fisheries and Oceans official, the Commercial Fisheries Advisor, the Fisheries Technician/Observer (who was also the Chairperson of the Iqaluit Hunters and Trappers Association), and members of the EDA Sub-Committee on Fisheries.

9. PROJECT BUDGET

The total cost of the 1992 summer exploratory fishing effort was \$360,000. The Department of Economic Development and Tourism contributed \$111,000 (31%) toward the total budget while the remaining \$249,000 came through the Canada/NWT Economic Development Agreement.

10. PROJECT RESULTS

The success of an exploratory fishing effort is measured in scientific terms by the information that is gathered on the incidence and volume of catches, the set records, the presence or absence of fish species or food in certain areas, detailed information on bottom conditions, water temperatures, biomass and prevailing conditions. **Baffin's** first year of exploratory fishing effort also sought to produce information on appropriate fishing technologies for the inshore fishery.

Exploratory fishing is not designed to be a commercial venture-and is distinguished from "test **fishing**" activities in that it seeks to determine where and at what time **significant quantities of** potential commercial species exist. By acquiring this information it is possible to piece together a knowledge base on which to make rational fisheries development decisions.

The heightened public interest in the program as **a** result of public consultation and controversy over methodology, put extraordinary pressure on the program to produce evidence of

commercial fish stocks. After each phase of the fishing effort, the news that **"no fish had been found"** received wide media attention, and unfortunately overshadowed the actual results of the research.

FROBISHBR BAY

The Judith Rose III fished both sides of Frobisher Bay for a total of seventeen days using longlines and traps. No significant catches were reported. (see map on following page) .

The Miss Jennifer concentrated its fishing effort on the west side Frobisher Bay and found some incidence of scallops in the Johnson Island area. The Miss Jennifer reported incidental catches of whelks and shrimp but not in commercial concentrations. The Miss Jennifer used digby scallop drags and later borrowed the scallop drags from the Seacraft. The Seacraft scallop drags were designed to allow rocks to pass through the rings while retaining the scallops. The rocky bottom of Frobisher Bay necessitates dragging equipment that minimizes rock entrapment.

The Seacraft sailed the length of Frobisher Bay four times directing fishing effort in the Hudson Strait and Resolution Island area. During these steaming times, the electronic sounders were activated and no concentrations of fish were recorded in Frobisher Bay.

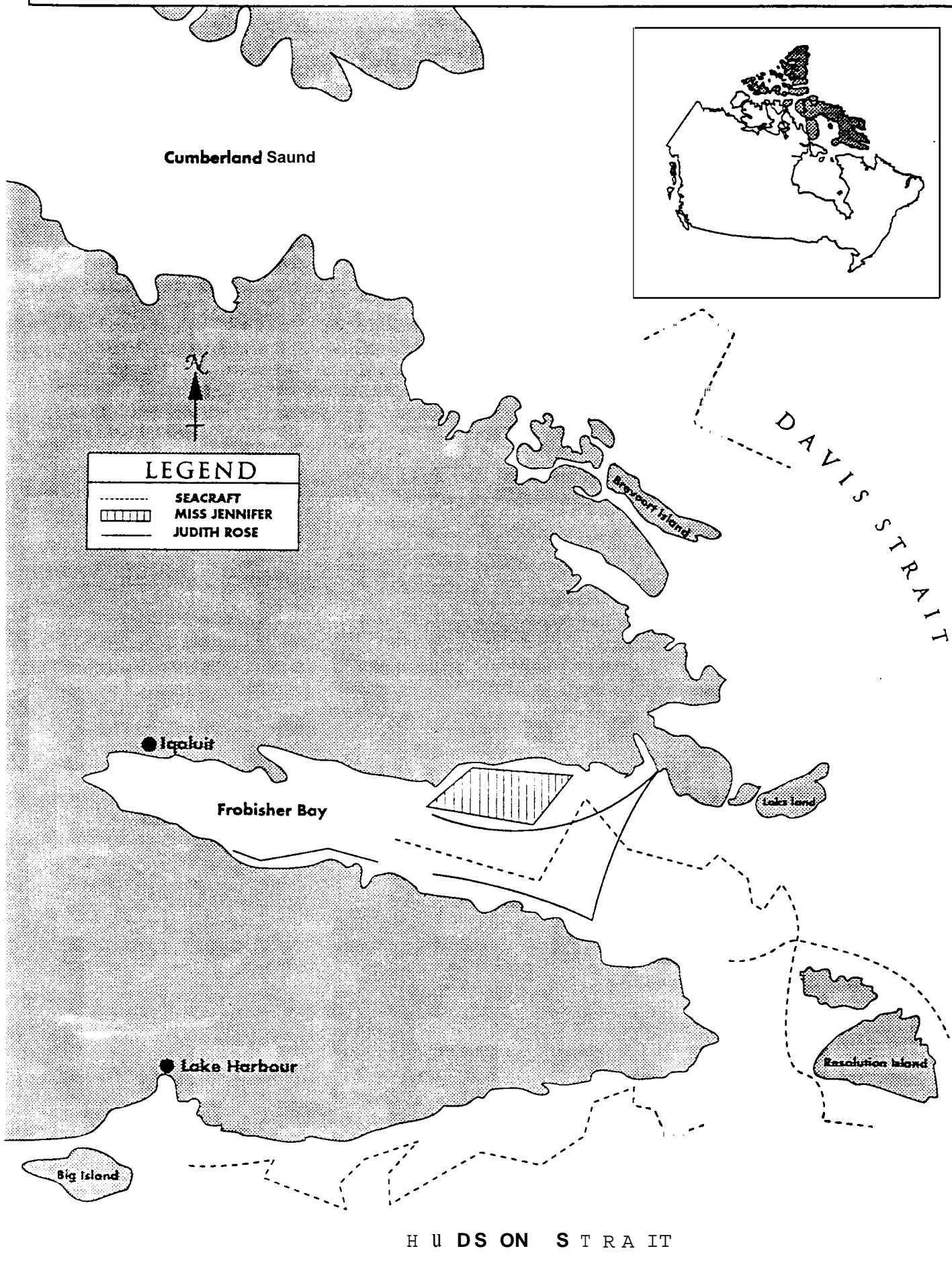
A large concentration of small shrimp were detected at the mouth of Frobisher Bay by the Seacraft. In the Resolution Island area the **Seacraft's** fishing efforts were hampered by dense concentrations of ice. The Seacraft made contact with the offshore shrimp freezer trawler the Aqvik, who reported that catch results were significantly lower than historical catch efforts in that area. The Aqvik also reported that catch rates were below normal in more northern waters of the Davis Strait.

Resolution Island, west Davis Strait, and Hudson Strait

The Seacraft completed 36 days of fishing covering 3500 miles of ocean. The crew regularly reported poor bottom conditions not conducive to groundfish habitat. In areas where fish concentrations were evidenced through electronics, the otter trawl was deployed, without significant result.

The farthest north attained by the Seacraft was 63' 59. Muddier bottoms were reported in the western Davis Strait phase of the effort but there was no indication of fish. Previous exploratory fishing records had found an incidence of smaller turbot in the Big Island area of Hudson Strait and this was confirmed by the Seacraft.

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5. The role of the project coordinator and commercial fisheries advisor should be reviewed. Where possible the project coordinator position should be hired from the region. Effort should begin immediately to identify a roster of qualified technical advisors to work on board locally chartered vessels and provide training in gear use, vessel maintenance and fishing methods.

6. Radio communications between vessels and, between vessels and Baffin communities, must be improved to allow for daily contact. Adequate radio equipment must be in place prior to commencing the 1993 fishery.

7. The Canadian Coast Guard should be kept informed on the exploratory fishery to ensure that support services for inshore vessels is enhanced in future years.

8. The exploratory fishing season should be preceded by a shore-based training program for local crews in vessel and fishing safety.

9. Briefings should take place with captains before each season to outline the program objectives including the expectations on training locally hired crew. Charter contracts must detail a requirement for a detailed daily log of activities (including set duration, catch per unit effort), detailed mapping, comprehensive sampling including water temperature.

10. Effort should be made to seek sponsorship for one or two Inuit participants in the marine training institute in Nova Scotia or Newfoundland.

11. Fishing must commence as early as possible in July/August to maximize effort before the weather deteriorates in September and **October**.

12. **Provision** should be made to equip Canada Coast Guard certified **local vessels** chartered for the exploratory fishery with adequate **and efficient** fishing equipment and gear.

13. **In the** 1992 exploratory program, the Seacraft relied extensively on its sonar, navigation electronics and bottom charts (though some bottom charts were proven to be inaccurate). This increased the coverage of the area searched and reduced gear loss due to poor bottom conditions. The limitation of this approach is that it reduces the training opportunities for the locally hired crew, when fish catches are scarce. Future contracts must include a detailed training plan and contract provisions to ensure training objectives are fulfilled.

14. Northern expenditures in the exploratory fishing program must be increased in the 1993 program.

15. Frobisher Bay appears to show little potential for commercial groundfish due to poor bottom conditions. Isolated beds of scallops and whelks may generate income for a one or two fishermen who fish as an incidental activity to other work in Frobisher Bay. Future exploratory fishing effort should concentrate on areas outside of Frobisher Bay. (This does not preclude future applications for exploratory fishing in Frobisher Bay, however each year the effort must be shifted to another zone) .

12. Looking to 1993

The 1992 exploratory fishing effort represents 25% of a four year program in which the primary objective is to research the incidence of commercial fish stocks in Baffin inshore waters.

The results of the 1992 exploratory fishery reflect biological conditions in the area fished at that point in time. Conditions may change in the future that could favorably impact fish migrations into areas previously fished without success.

While the results of the fishing effort were disappointing to participants, sponsors and observers, it may have been optimistic to think that confirmed fish stocks would have been evidenced after only one year of effort.

The exploratory fishing program for 1993 will commence in January with community consultations on the location of the fishing effort. It is anticipated that the next zone of concentration will be in the Cumberland Sound area and as far north as **Cape Dyer**, subject to the outcome of community consultations in both Pangnirtung and Broughton Island.

Coinciding with the community consultations on the exploratory fishing plan for 1993, will be discussions with government and industry representatives on the EDA Baffin Inshore Fishery work plan for 1993.

THE FOLLOWING BACKGROUND REPORTS AND SUPPLEMENTARY INFORMATION ON THE 1992 EXPLORATORY FISHERY ARE AVAILABLE UPON REQUEST TO THE DEPARTMENT OF ECONOMIC DEVELOPMENT AND TOURISM IN THE BAFFIN REGION.

1. Exploratory Fishing Licence issued by the Department of Fisheries and Oceans dated August 12, 1992.
2. 1992 Summer Exploratory Fishing Program Coordinator's Report.
3. Vessel Specifications - M/V Miss **Jennifer**
 - M/V **Judith Rose III**
 - M/V **Seacraft**
4. Summary of Gear Deployed, Location and Depth during 1992 Exploratory Fishery by the Miss Jennifer, Judith Rose III and the Seacraft.
5. Example Soundings of Sea Bottoms in Frobisher Bay and Nanuk Harbour as Recorded by the Seacraft.
6. **Captain's** Logs
 - M/V Miss Jennifer
 - M/V Judith Rose III
 - M/V Seacraft
7. Electronic Specifications used aboard vessels.
8. Terms of Reference for Project Coordinator, Commercial Fisheries Advisor, Observer/Technician and Fishermen Trainees.
9. Debriefing Notes with Captain Derek Genge and **Sub-Committee** representatives, September 18, 1992.
10. Minutes of Sub-Committee Meeting with **Ben En, Jerry Ell and Russell chislett on October 05, 1992.**
11. Baffin Exploratory Fishing Plan, June 1992=
12. Summary of Baffin Fisheries Workshop Recommendations, March 1992.

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