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Toward Restructuring the Nova Scotia Fishing Fleets as a Result of the Establishment of Canada's 200-Mile Fishery Zone

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The Nova Scotia Fishing Fleets
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By

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TOWARD RESTRUCTURING THE NOVA SCOTIA FISHING FLEETS AS A RESULT OF THE ESTABLISHMENT OF CANADA'S 200-MILE FISHERY ZONES

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Abstract:

The first step in redeveloping the Nova Scotia fishery is the restructuring and rebuilding of the various Nova Scotia commercial fishing fleets. In this paper, the evolution of the Nova Scotia fishery and fleets is outlined as background for discussion of concerns, issues, and conflicts of the various participants involved in determining the future structure and composition of the Nova Scotia fleet mix. It is concluded that whatsoever the structure and composition of the fleet, there remains the need to protect a critical balance among the various sectors of the Nova Scotia fishery.

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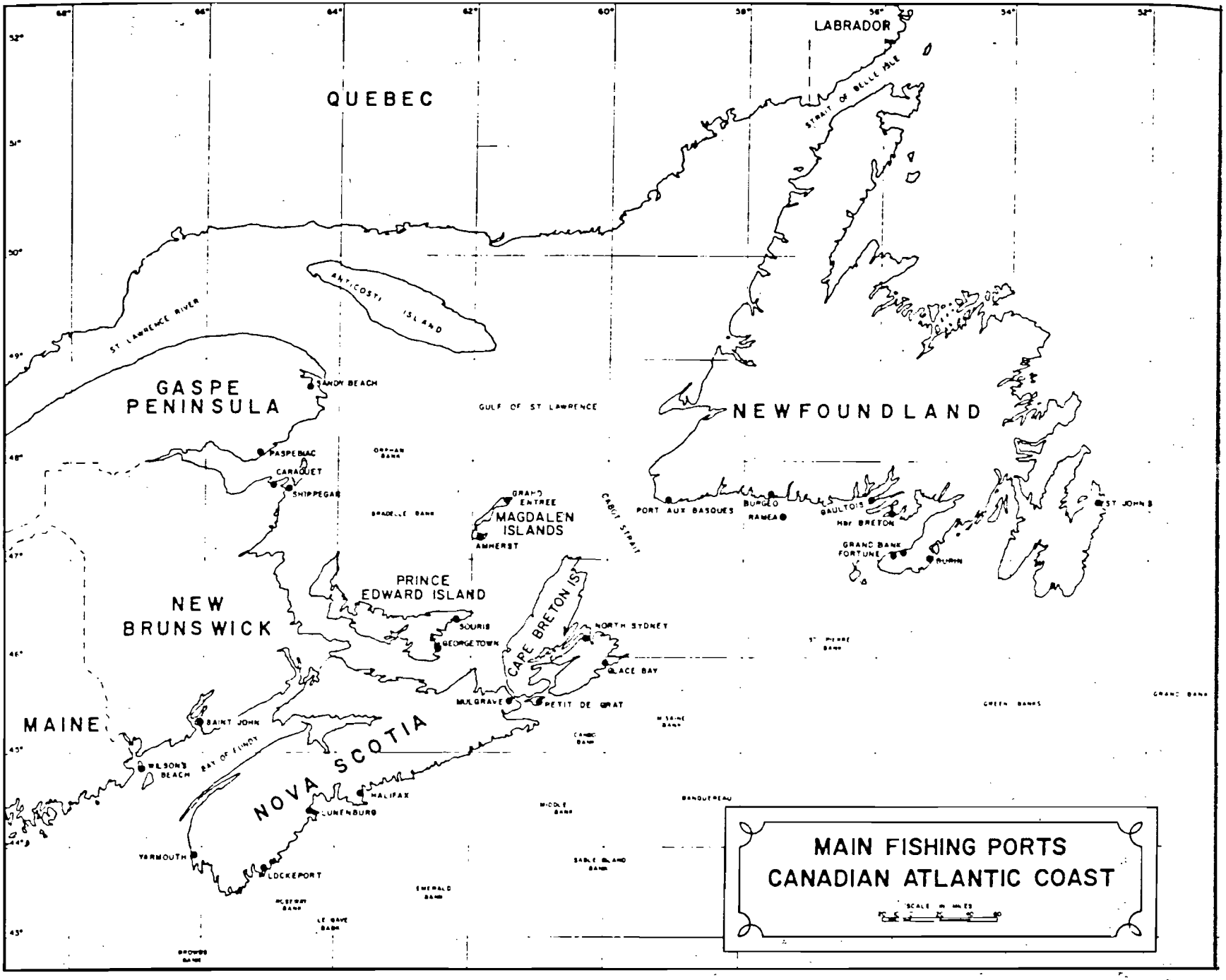
Figure 1


LABRADOR
QUEBEC
STRAIT OF BELLE ISLE
ANTICOSTI ISLAND
ST LAWRENCE RIVER
GASPE PENINSULA
SANDY BEACH
GULF OF ST LAWRENCE
NEWFOUNDLAND
PASPEBIAC
CARAQUET
SHIPPEGAN
ORPHAN BANK
BRADELLE BANK
GRAND ENTREE
MAGDALEN ISLANDS
AMHERST
CABOT STRAIT
PORT AUX BASQUES
BURGEO
RAMEA
GAULTOIS
Hbr BRETON
ST JOHN'S
GRAND BANK
FORTUNE
PLACENTIA
PRINCE EDWARD ISLAND
NEW BRUNSWICK
SOURIS
GEORGETOWN
CAPE BRETON IS
NORTH SYDNEY
PLACE BAY
MULGRAVE
PETIT DE GRAT
ST PIERRE BANK
GREEN BANKS
GRAND BANK
MAINE
SAINT JOHN
BAY OF FUNDY
WILSON'S BEACH
NOVA SCOTIA
HALIFAX
LUNENBURG
YARMOUTH
LOCKEPORT
EMERALD BANK
LE HAVE BANK
BROWNS BANK
SABLE ISLAND BANK
BANQUEREAU
MAIN FISHING PORTS
CANADIAN ATLANTIC COAST
SCALE IN MILES

Introduction:

Just six short years ago, in 1974, Nova Scotia's fisheries faced a crisis of major proportions. The east coast fisheries of Canada had experienced its ups and downs over the years, but in that year the fishing industry of Atlantic Canada was nearing total collapse. What were the causes of this disastrous situation? Essentially, there were three causes.

First and foremost was the decline in the fish resources. As a result of a significant overfishing by foreign nations and Canada's own policy of relatively open access or free entry for Canadians to fisheries, the stocks became so badly depleted that there just was not enough fish to harvest. Catch rates per day fell dramatically and fishing was a losing proposition. New capital investment in vessels, gear and processing plants ceased. When the planners and promoters of economic development went forth in search of investment opportunities for this region, they looked everywhere but to the sea.

Secondly, the sudden increase of the cost of fishing resulting from the energy crisis adversely affected the Nova Scotia fishery. Not only did fuel prices increase, but also the prices of gear, netting, and other equipment (derived in large measure from hydrocarbons).

A third reason was the decrease in demand for Canadian fish products. Prices dropped in Nova Scotia's groundfish market, the United States, due partly to cyclical changes but also as a result of significant increased imports of substitute fish products from Japan and Korea.

The result of these factors was the threatened collapse of this Atlantic Canadian industry in general and the bankruptcy of many enterprises in particular. The Federal Government of Canada responded with 1) a major program of short term financial assistance, and 2) the most thorough analysis of the Canadian fishing industry in decades. The result of this analysis lead to the adoption by the Canadian Government in 1975 of a new policy for the fishing industry entitled, Policy for Canada's Commercial Fisheries.[1] The obtaining of a 200-mile fishery zone was one of 25 major strategies (the major key) adopted.

Canada pushed very hard at the many Law of the Sea Conferences to have all the nations agree to the establishment of a 200-mile economic zone off the world's coastal states. However, agreement has not yet been reached since many of the nations refuse to consider fisheries in isolation and want to determine mineral rights as well. Canada decided she could not wait, and in June, 1976, the Canadian Minister of External Affairs announced that Canada would be extending her fishing zones to 200 miles off her coasts.

The new limit gave Canada control over all fisheries, both domestic and foreign, on nearly all the offshore fishing banks on its continental shelf (excluding the Flemish Cap). The purpose of the new limit was twofold: to allow fish stocks to recover from depletion by large fleets of foreign factory ships, and to gradually rebuild the Canadian sea fisheries. Redevelopment of the Canadian Atlantic fisheries in the 1980's is expected to double the size and value of the Nova Scotia fishing industry.

The first step in redevelopment of the Nova Scotia fishery is the restructuring and rebuilding of the Nova Scotia fleets. In discussing this restructuring, this paper is divided into three parts. In Part I the background of the Nova Scotia fishing industry is overviewed, a brief history of the Nova Scotia fleets is presented, and a description of the various Nova Scotia fleets is outlined. Part II examines the structure and dimensions of the various participants in the industry such as the characteristics of inshore and offshore components, and the roles of the federal and provincial governments in the fishery. Part III addresses the concerns, issues, and conflicts arising in determining a balanced Nova Scotia fleet mix. The complexities are examined relating to such factors as: the resource, federal and provincial policies and conflicts, fleet licensing, fleet replacement, fleet ownership, fleet financing, and fleet economics.

Part I. The Background:

1. THE NOVA SCOTIA FISHING INDUSTRY

Nova Scotia, occupying latitudes 43°N to 48°N, is today the biggest North American fishermen in the northwest Atlantic. The leading fishing province of Atlantic Canada, Nova Scotia catches more sea fish than any of the New England states which also border on the famed and fertile continental shelf that embraces this historic coast.[2] The major fishing grounds of the Nova Scotia fleets are the Scotian Shelf, the Gulf of St. Lawrence, the Grand Banks, Bay of Fundy, Gulf of Maine, and, of course, the eastern tip of George's Bank (see Figure 2).

Sea fishing is Nova Scotia's first and oldest industry, dating back as early as 1504, some seven years after John Cabot discovered and announced the abundance of fish in the waters off Newfoundland and Nova Scotia. By 1504, Bretons and Normans were reported on the coast of Cape Breton Island, Nova Scotia.

The early economy of Atlantic Canada was founded on neither furs nor fine plantations, but on the salt cod, a commodity so important in European trade that the North Atlantic coastal colonies were built on it.

The fisheries today form the largest primary industry in Nova Scotia in terms of employment, with 10,400 fishermen and 4,350 plant workers. A fleet of 8,900 fishing vessels and

small crafts supply 81 shore-based processing plants in the province. (Nova Scotia's population is approximately 830,000.)[3]

The value of the fishery to Nova Scotia fishermen in 1978 was $195.1 million. Their catch of 444,887 metric tons had a market value in excess of $400 million after processing.[4]

Table 1

Summary

Nova Scotia Fish Landings - 1978

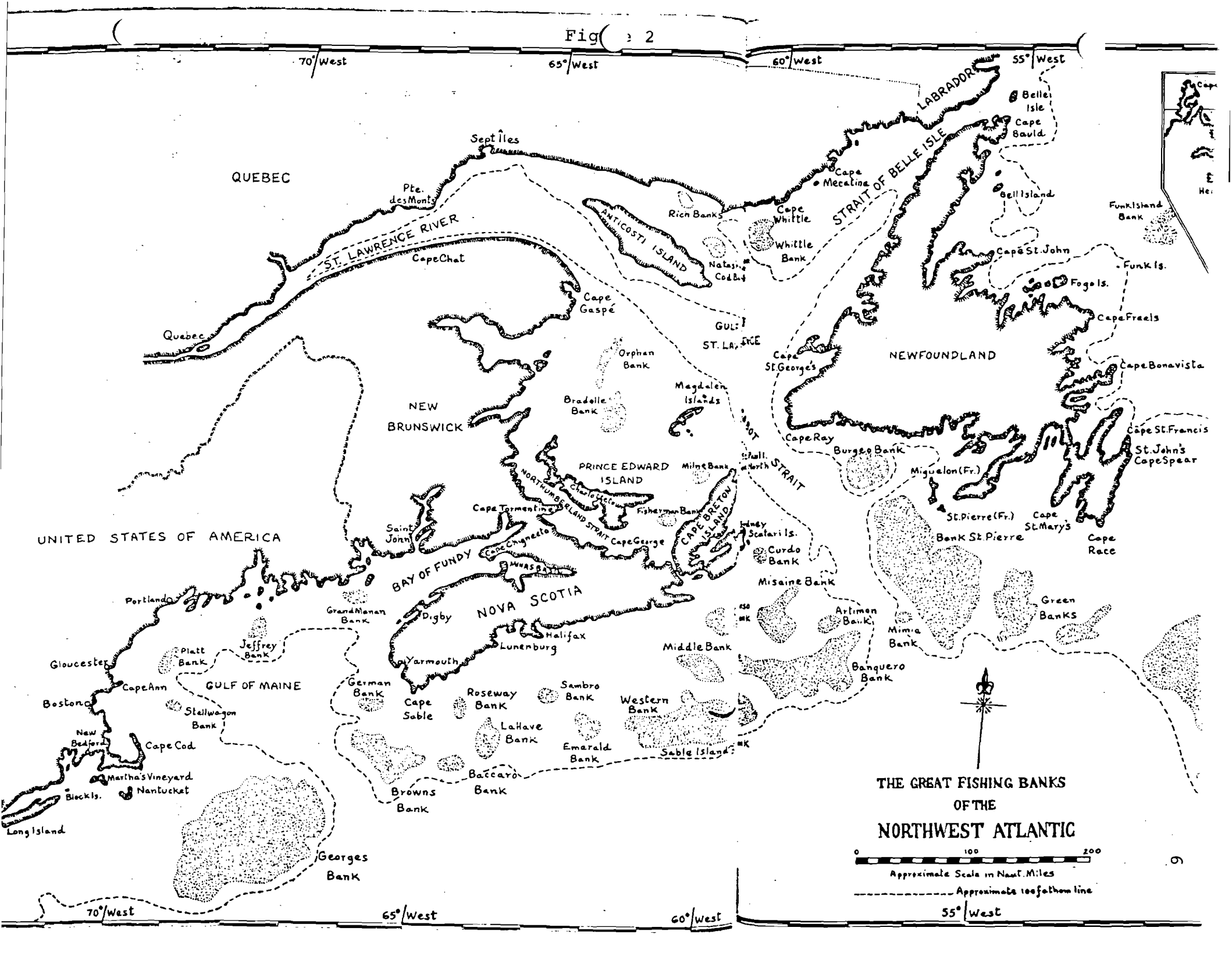
Species	Landings (Metric Tons)	Landed Value ($'000)
Scallops	106,399(1)	61,856
Lobster	6,161	30,532
Groundfish:		
Cod	80,518	25,829
Haddock	40,498	17,866
Flounders	8,165	2,212
Others	75,968	17,936
Herring	86,445	15,810
Mackeral	8,704	1,641
Other	52,029	21,450
TOTAL	444,887	195,132

(1) Live weight; actual meat weight 13,300 metric tons.

Source: Nova Scotia Dept. of Fisheries (See Note 4).

Nova Scotia fisheries are highly diversified. The inshore fisheries are as important as offshore, with about 70 percent of the fishermen working in inshore and nearshore boats. Ground-

Fig. 2


70° West
65° West
60° West
55° West
LABRADOR
Belle Isle
Cape Bauld
STRAIT OF BELLE ISLE
Cape Mecatina
Bell Island
Funk Island Bank
Cape St. John
Funk Is.
Fogo Is.
Cape Freels
Cape Bonavista
Cape St. Francis
St. John's
Cape Spear
Cape Race
Green Banks
Mima Bank
Banquero Bank
Artimon Bank
Misaine Bank
Middle Bank
Western Bank
Sable Island
Emerald Bank
LaHave Bank
Roseway Bank
Sambro Bank
German Bank
Cape Sable
Baccaro Bank
Browns Bank
Georges Bank
Stellwagon Bank
Platt Bank
Jeffrey Bank
GULF OF MAINE
Gloucester
Cape Ann
Boston
New Bedford
Cape Cod
Martha's Vineyard
Nantucket
Block Is.
Long Island
Portland
Grand Manan Bank
Digby
Yarmouth
Halifax
Lunenburg
NOVA SCOTIA
BAY OF FUNDY
Saint John
Cape Chignecto
Cape Tormentine
NORTHUMBERLAND STRAIT
Cape George
PRINCE EDWARD ISLAND
Charlottetown
Fisherman Bank
Milne Bank
CAPE BRETON ISLAND
Sydney
Scatari Is.
Curdo Bank
Bank St. Pierre
St. Pierre (Fr.)
Miquelon (Fr.)
Cape St. Mary's
Burgeo Bank
Cape Ray
NEWFOUNDLAND
Cape St. George's
Strait of Canso
Magdalen Islands
Bradelle Bank
Orphan Bank
NEW BRUNSWICK
GULF OF ST. LAWRENCE
Quebec
Cape Gaspé
Cape Chat
ST. LAWRENCE RIVER
Pte. des Monts
Sept Îles
QUEBEC
ANTICOSTI ISLAND
Natashquan
Rich Banks
Cape Whittle
Whittle Bank
UNITED STATES OF AMERICA
THE GREAT FISHING BANKS
OF THE
NORTHWEST ATLANTIC
0 100 200
Approximate Scale in Naut. Miles
Approximate 100 fathom line

fish are taken by Nova Scotia's offshore trawlers and draggers, as well as nearshore and inshore boats, including longliners. Herring are fished by seiners, large and small; scallops by offshore and inshore draggers; and lobster largely inshore by traditional Cape Island boats. Other fisheries, such as oysters, clams and commercial seaweeds are less dependent on boats, except for transportation.

2. HISTORY OF THE NOVA SCOTIA FLEETS

Nova Scotia entered the twentieth century with a growing tendency towards the use of small boats. The introduction of techniques in the 1920's such as the quick freezing of fish, and filleting before shipment gave an impetus to the fresh fish industry, and New England trawlers began to fish on the Scotian Shelf. However, in Nova Scotia, strong opposition from inshore fishermen and schooner owners to the introduction of trawlers led to the recommendation by a Canadian Royal Commission in 1928 that trawlers should be banned, and regulations imposing a tax on trawler-caught fish were adopted in 1929.[5] These restrictions, added to the impact of the depression in the 1930's, had serious effects in discouraging large scale capital investment in the fishing industry, particularly in the construction of new vessels.

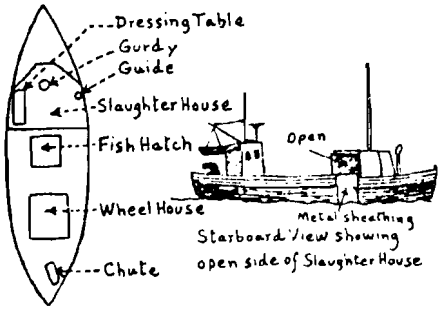
However, the demand for fresh and frozen fish during World War II increased, and prompted the Canadian government to offer subsidies and special depreciation allowances to encourage the

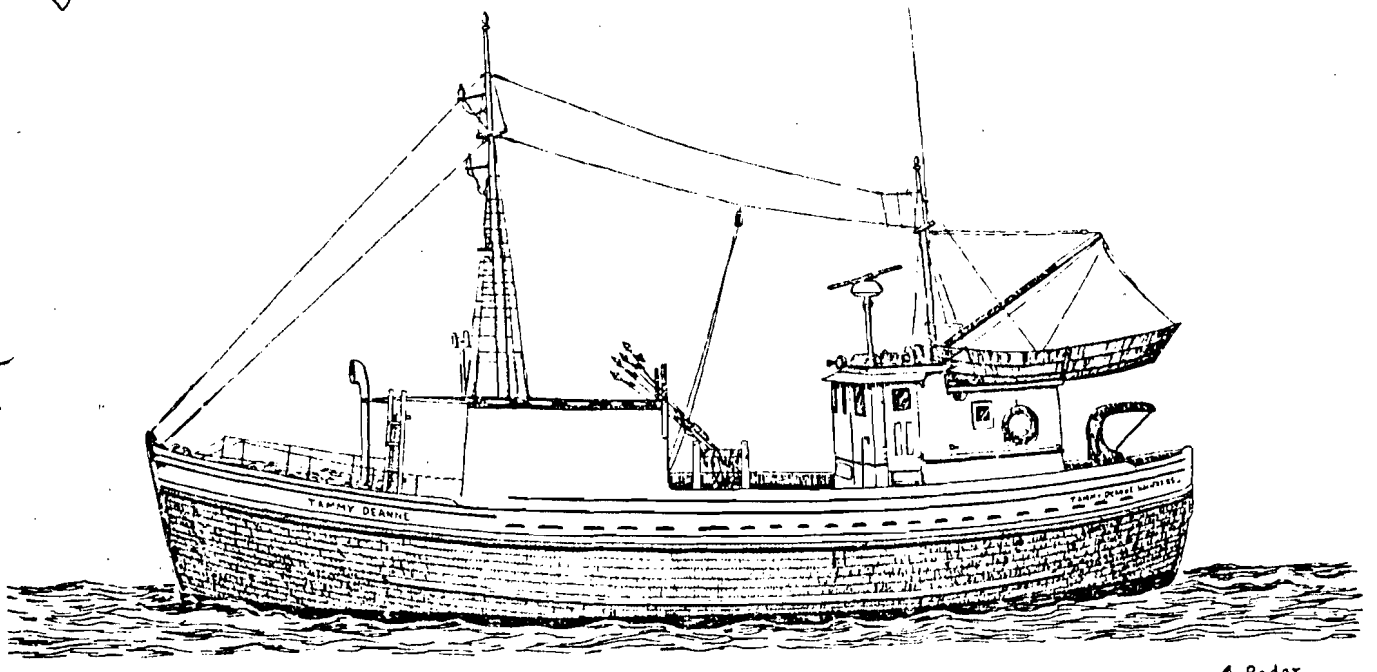
construction of draggers and trawlers, but due to wartime shortages of materials, the program was at first ineffective. The Nova Scotia Government created a fisheries division in 1943 and established the Fishermen's Loan Board in 1944, the same year that the federal government extended its subsidies to smaller fishing craft and longliners (see Figure 3).

After World War II (in 1947) the Canadian government offered a new plan to assist in the modernization of the fishing fleets by providing subsidies for draggers and longliners from 55 to 60 feet in length, if owned by fishermen, and over 60 feet if owned by groups of fishermen.[6] However, little use was made of the provision for larger boats. Longliners (in the 50 to 60 foot class) based on the "Cape Island" design of lobster boats proved to be most popular, and 21 loans for boats of this type were approved in 1956.[7] Meanwhile, the restrictions on large trawlers were relaxed only cautiously. Nova Scotia had only five trawlers in 1950, but by 1962 the trawler fleet had grown to 37 trawlers.[8]

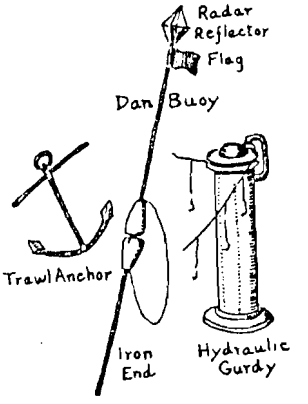
This federal construction subsidy has had an important effect upon the numbers and size of fishing vessels built between 1950 and 1973 for the Nova Scotia fishing industry. A total of 562 fishing vessels were built with subsidies[9] during this period, of which over one-third (34%) were under 25 tons, and only eight were 100 tons and over. Of these boats, 299 were built in the four-year period 1965 to 1969, including almost all the subsidized boats under 25 tons and 100 tons and over (see Appendix A for additional tabled information).

Figure 3





A 60 foot Double-Ender Longliner



The longline is set through the chute over the stern. A tub filled with coiled line with baited hooks is placed under the chute and set. The line from the next tub is knotted to the first line and set in turn; then the third tub and so on until the set is complete. The line is hauled inboard by a "gurdy" (a vertical winch) through roller guides on the stb'd. rail amidships into the "slaughter-house" where the fish are sorted and dressed and the hooks rebaited and the line coiled.

In the late 1960's and early 1970's, fishing vessel construction of crafts 10 tons and over declined dramatically as a result of heavy overfishing by both foreign and domestic fleets. In 1977, there were 2,782 commercial fishing vessels 30 feet in length and over registered in Nova Scotia. The major portion of these vessels are less than 45 feet in length (length overall). Vessels ranging in length from 30 to 44 feet represent 88% of the total fleet. Fishing vessels between 45 feet and 64 feet in length comprise 5% of the fleet. The offshore fleet, those vessels 65 feet and over, represent 7% of the Nova Scotia fishing fleet.[10] The types and sizes of distribution of vessels vary within each of the nine Nova Scotia Sea Fisheries Districts (see Appendix B).

The mean age of certain portions of the fleet, as of 1977 (see Table 2), is at a level which is unacceptable considering the optimistic future anticipated for the Nova Scotia fisheries.

Table 2

Age Distribution of the Nova Scotia Fleets

(Summary Table)

	30'-44'	45'-49'	50'-69'	70'+*
Number of Vessels	2,452	62	119	149
Avg. Age (As of 1977)	10.5 yr.	7.8 yr.	15 yr.	13 yr.
Estimated Retirement Age	16 yr.	18 yr.	20 yr.	25 yr.+
Annual Replacement Required to Maintain Current Age	160	4	6	9
Annual Replacement Required to Reduce Avg. Age to Acceptable Level	225	4	12	11

*70+ classification does not include freezer trawlers.

Sources: 1) Distribution, Size and Age Characteristics of the Nova Scotia Commercial Fishing Fleet (see Note 10).

2) Interview, Janice Raymond, Chief Economist, Dept. of Fisheries, Nova Scotia.

3. DESCRIPTION OF THE NOVA SCOTIA FLEETS

The fishing industry of Nova Scotia is based on three kinds of existing fleets, inshore, nearshore, and offshore, which have different characteristics, problems and opportunities. (The definition of inshore and nearshore varies within the industry. Some sectors of the fishery use nearshore and moderate sized vessels instead of the term inshore and nearshore).

A. Inshore Fleet

Table 3

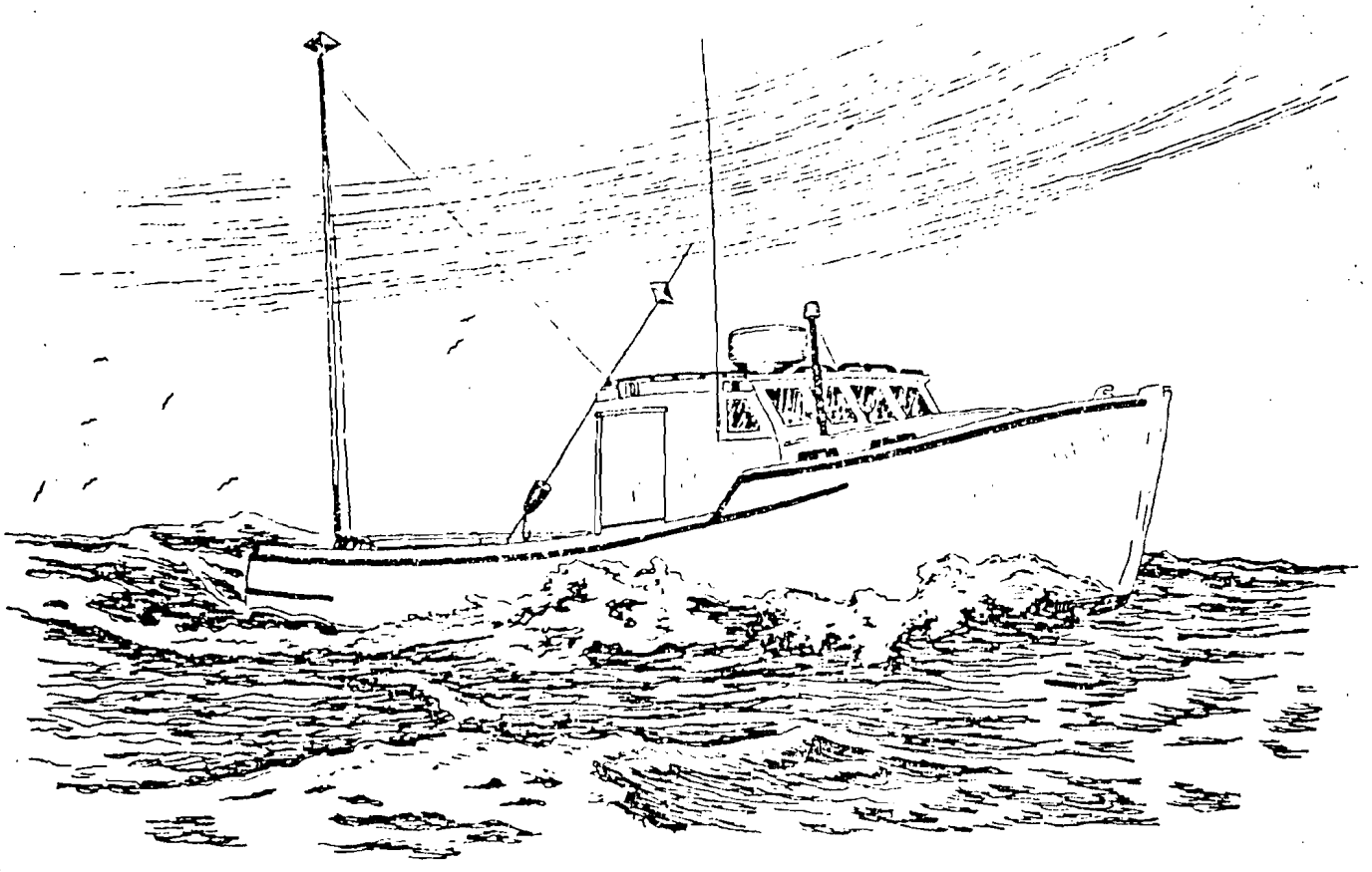
Inshore Fleet Characteristics

(See Also Figures 4 and 5)

Size	20 to 50 feet
Vessel Cost	$2 thousand to $200 thousand
Ownership	Almost entirely individual fishermen.
Fleet Size	5840 Nova Scotia (21,846 Atlantic, 1974)
Operating Range	Generally less than 24 hours but trending in the larger sizes to 2 to 4 day trips.
Boat Type	All Types - Cape Island predominates.
Boat Materials	Mostly wood, fiberglass becoming popular.
Crew Size	1 to 4.

Source: Voluntary Planning Fisheries Sector, Nova Scotia.

Figure 4

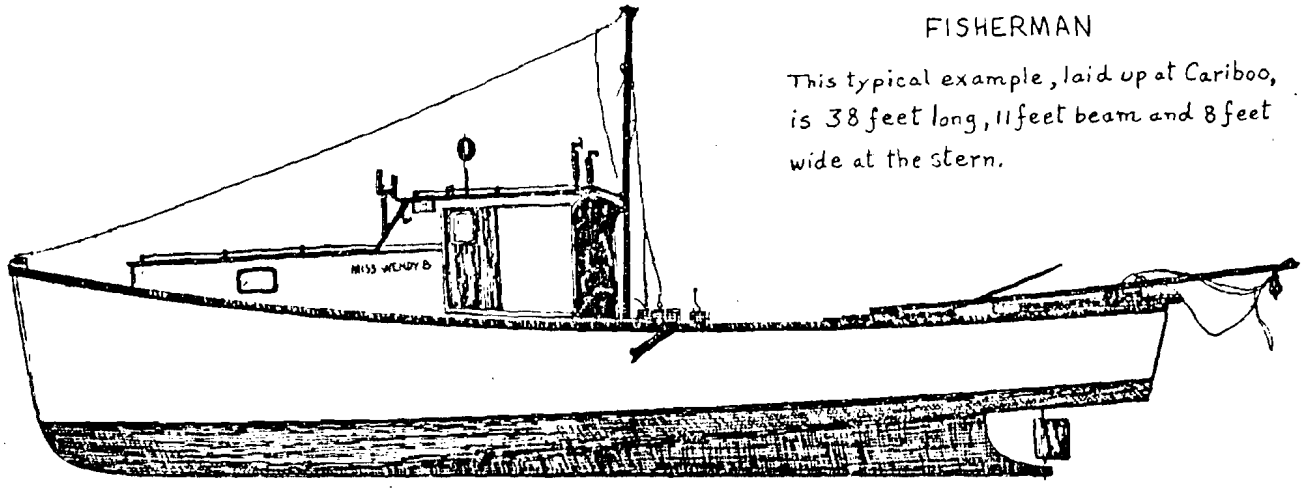


Workhorse of the Nova Scotia inshore fleet is the versatile Cape Island fishing boat.

Figure 5

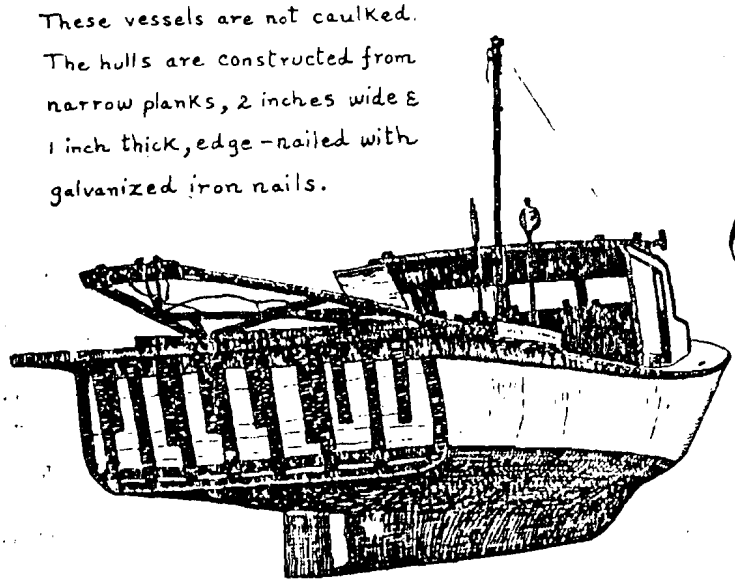
NORTHUMBERLAND STRAIT STYLE FISHERMAN

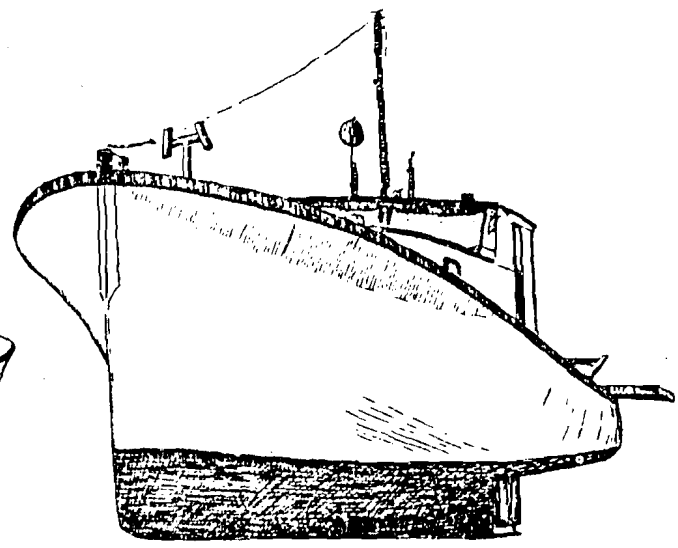
This typical example, laid up at Cariboo, is 38 feet long, 11 feet beam and 8 feet wide at the stern.



Construction:

These vessels are not caulked. The hulls are constructed from narrow planks, 2 inches wide & 1 inch thick, edge-nailed with galvanized iron nails.





Few, if any, of the inshore vessels have on-board ice making equipment and none do any processing on board. This fleet is characterized by being largely tied to the specific inshore area with the richness of the local fishing grounds therefore determining the profitability of the fleet. For example, off southwest Nova Scotia the grounds are rich and wide. Due to higher profitability, boats in this area tend to be larger, better equipped and operated more efficiently than those in areas which have less rich and narrower grounds. The basic catch of most of this southwest fleet is lobster with scallops and groundfish of secondary importance in this area.

B. Nearshore Fleet

Table 4

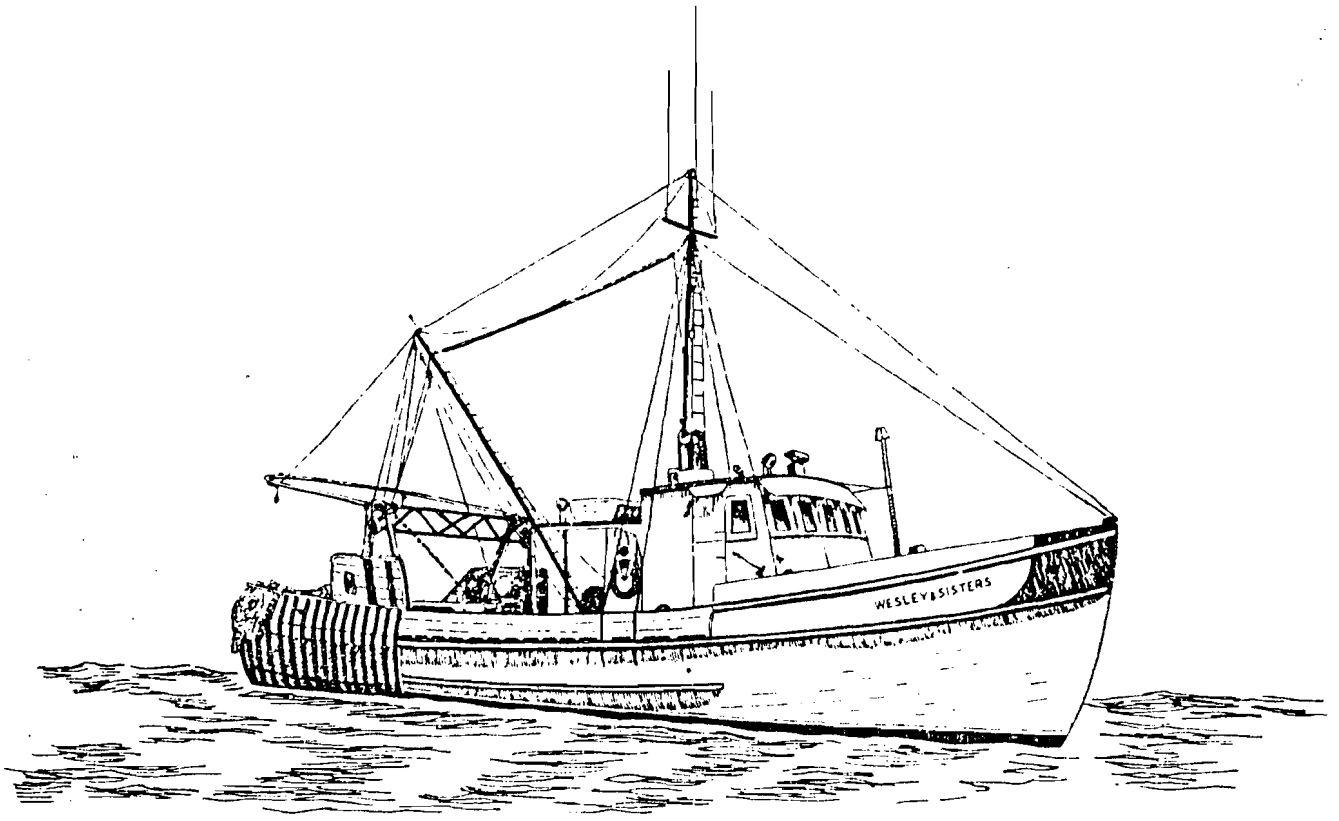
Nearshore Fleet Characteristics

(See Also Figure 6)

Size	50 to 100 feet
Cost	$200 thousand to $2 million
Ownership	Smaller fish companies, many individual owners.
Fleet Size	176 Nova Scotia (688 Atlantic, 1974).
Range	Variable.
Types	All types.
Average Trip Length	2 to 12 days.

Source: Voluntary Planning Fisheries Sector, Nova Scotia.

Figure 6



A 60-foot stern dragger used inshore and on the nearer banks for groundfishing with otter-trawl gear. Vessels of this type are also rigged for scallop dragging and longlining.

This nearshore fleet is a wet fish fleet using ice to preserve fish until landed, with no processing capabilities on board. The caliber of officers and crew is generally good with an adequate manpower supply (fleet could expand modestly with present manpower). It is the natural progression within this fleet for the most ambitious independent fishermen to own their vessels. Also this fleet is profitable mostly due to relatively low costs of operation. Many owners in this vessel class would expand their vessel size and capabilities if allowed to do so (federal license restrictions, discussed in Part III, 3. Fleet Licensing). At present, few vessels in this fleet can take advantage of the northern waters off Newfoundland, and few fish non-traditional species such as squid because of the lack of room to install freezer capabilities.

C. Offshore Fleet

Table 5

Offshore Fleet Characteristics

(See Also Figure 7)

Size	Over 100 feet, usually 120-155 ft.
Cost	$1.5 million to $5 million.
Ownership	Mostly large companies.
Fleet Size	Approximately 141 vessels in N.S. (300 Atlantic, 1974).
Range	Out to fishing limits, but limitations in northern ice.

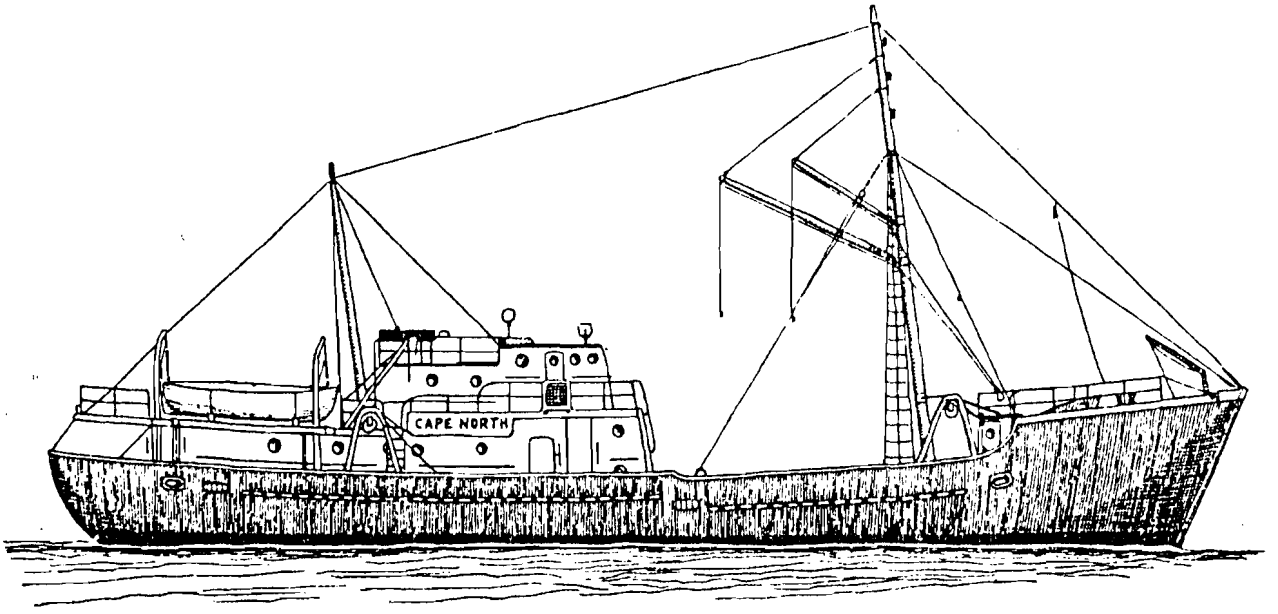
Type	Stern and side trawlers, some scallopers, no freezer/factory ships.
Vessel Materials	Steel in almost all cases.
Average Trip Length	5 to 10 days.
Average Fleet Age	13 years.

Source: Voluntary Planning Fisheries Sector, Nova Scotia.

This offshore fleet is a wet fish fleet as well, also using ice to preserve fish until landed. The vessels in this fleet also have little or no on-board processing capabilities. Although the fleet is unionized, the caliber of officers and crew is uneven, and supply of well-qualified people is limited. Catching rates of this fleet have been in serious decline since the high peaks of the late 60's, but can be expected to improve as stocks increase.

This fleet, viewed in isolation, has not been profitable (discussed further in Part III, 7. Fleet Economics) over the past few years. The major seafood processing companies continue to support it however, as it supplies on average 70% of the throughput in groundfish for their plants (and in some cases up to 100%). Very few new groundfish vessels were added to this fleet in the past five years due to low catch rates and uncertainty in the industry, as well as the unavailability of new federal licenses. The oldest vessels, the side trawlers, are technically and economically obsolete (some are actually considered unsafe for year-round fishing).

Figure 7



"CAPE NORTH"

The side-trawler Cape North was one of the first Nova Scotia-built wooden trawlers of the port-war period. Now in the Lunenburg Fisheries Museum.

Part II. The Participants:

1. STRUCTURE AND DIMENSIONS OF THE NOVA SCOTIA FISHING INDUSTRY

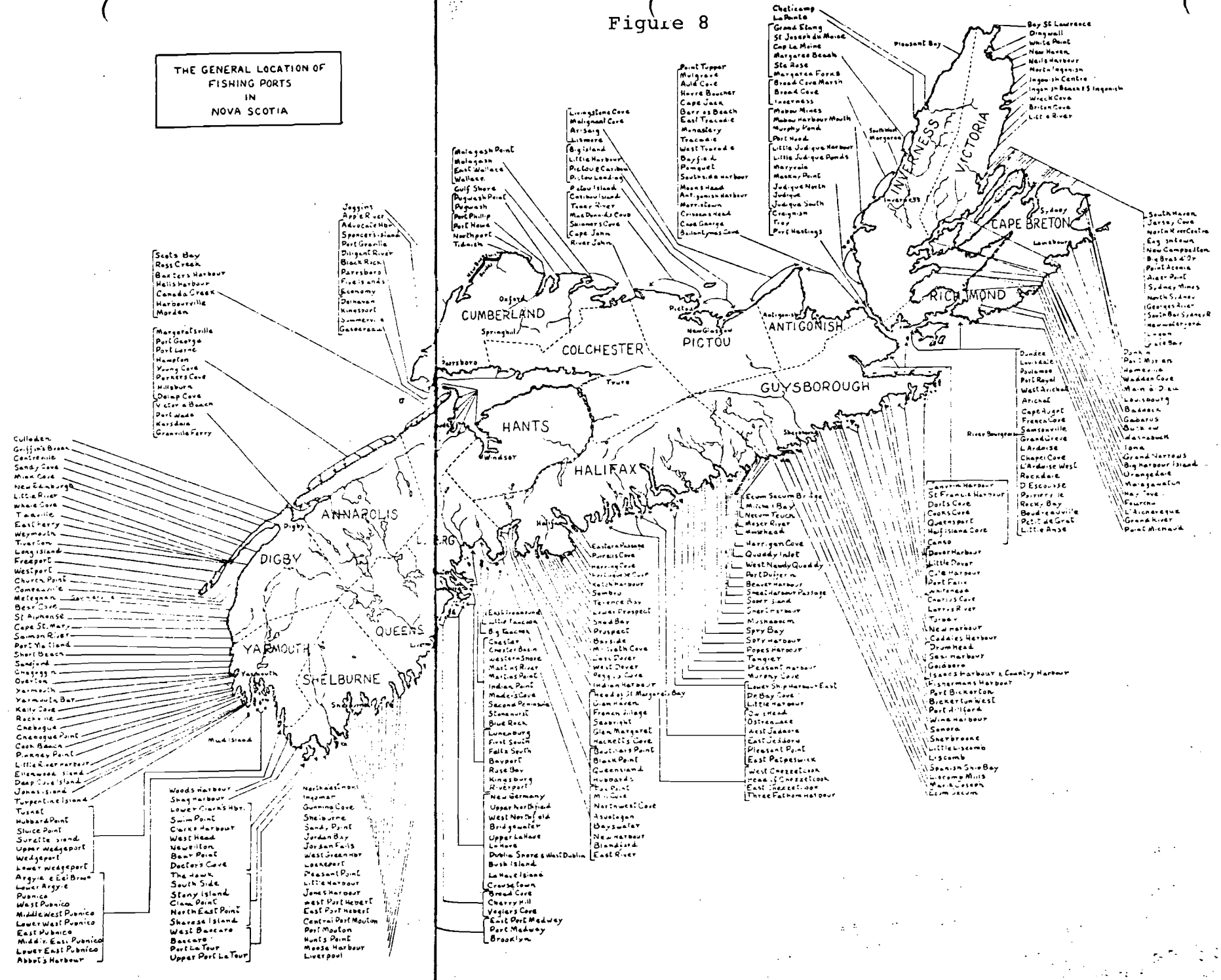
As described (in Part I, 3. Description of the Nova Scotia Fleets), the Nova Scotia fishery consists of two major components: the inshore fishery, including the nearshore fishery; and the offshore fishery. Both these components are necessary for a healthy Nova Scotia fishing industry.

The inshore and nearshore fleet employs the majority of fishermen and provides the basis for the economy of hundreds of small communities along the Nova Scotia coast (excess of 200 communities, see Figure 8). In many of these small fishing communities, the patterns of fisheries are extremely variable, incomes are generally low and alternative employment, in most instances, is non-existent.

These inshore fishermen (including nearshore) and their related fishing communities have been relatively disorganized and inarticulate. Problems exist in communication and consultation between the inshore fishermen and both the federal and provincial governments. Also, the inshore fisheries are composed of a diverse set of interest groups (lobster fishermen, mackerel trap fishermen, crab fishermen, groundfish fishermen, etc.) which contributes to disunity.

The offshore fishery is capital intensive and less profitable than the best of the inshore and nearshore fleets, but it has the ability to fish the stocks at greater distances

Figure 8


THE GENERAL LOCATION OF FISHING PORTS IN NOVA SCOTIA
CUMBERLAND
COLCHESTER
PICTOU
ANTIGONISH
GUYSBOROUGH
HANTS
HALIFAX
ANNAPOLIS
DIGBY
QUEENS
YARMOUTH
SHELBURNE
INVERNESS
VICTORIA
CAPE BRETON
RICHMOND

and without the seasonal restrictions of the inshore and nearshore fleets. The fish provided by the offshore fleet are vital to the economic viability of the processing plants and to the plants' abilities to provide year round employment.

The most significant difference between inshore (inshore and nearshore) and offshore fisheries is based upon their degree of political and/or economic power in a given region of Nova Scotia. Since 1975, some of the larger vertically integrated companies (having a number of processing plants and offshore vessels), accounting for a very large percentage of production, have merged, and so their economic power at the ex-vessel (dockside) level has increased still further.[11]

Economic concentration implies that at the landed fish stage, the larger processors are price-makers and the inshore fishermen are price-takers. Perhaps a more fundamental difference is related to this concentration of power. The larger offshore/processor interests have had a completely different approach to fisheries than their small processors and inshore/nearshore fishermen counterparts. The former appear to have attempted to control and plan events in the fisheries, while the inshore interests have until recently (union and associations movements have begun, along with greater emphasis on this interest group) always played an adaptive or reactive role.[12]

2. GOVERNMENTS' ROLE IN NOVA SCOTIA FISHERIES

A. Federal Dimension

The federal responsibility for fisheries has been in existence since the British North America Act of 1867 created Canada, but the majority of the current regulations and acts (listed below) did not exist a decade or so ago. Legislative jurisdiction over the fisheries was placed with the Parliament of Canada rather than the provinces, mainly because the waters of some provinces flow past others, and fish, in their feeding and spawning migrations, do not respect provincial boundaries. Fish is considered a natural resource of Canada to be utilized for the benefit of all Canadians.

Under the provisions of the Canada Fisheries Act,[13] the federal government has exclusive responsibility for the management of the fisheries including establishing the total allowable catch of the resource, determining the access and allocation of the resource, and issuing all commercial fishing licenses. Regulations under the Canada Fisheries Act pertaining to the Maritimes (Nova Scotia, New Brunswick, and Prince Edward Island) region include:

- Atlantic Fishery Regulations
- Gear Marking Regulations
- Atlantic Coast Marine Plant Regulations
- Atlantic Coast Herring Regulations
- Lobster Fishing Regulations

- Atlantic Crab Fishery Regulations
- New Brunswick Fishery Regulations
- Nova Scotia Fishery Regulations
- Prince Edward Island Fishery Regulations
- Seal Protection Regulation
- Tuna Fishery Regulation
- Fish Health Protection Regulations

Pressures in the recent past on the marine resources from foreign and domestic fishing fleets have produced an increasing number of formal international agreements and other acts and regulations which the regional officers must administer. Among these are regulations pertaining to the following acts:

- Coastal Fisheries Protection Act
- Whaling Convention Act
- Territorial Sea and Fishing Zone Act
- Ocean Dumping Control Act

Also, under the Fish Inspection Act, the Department of Fisheries and Oceans has a statutory responsibility to provide a uniform national program encompassing quality control and product inspection, from harvesting through processing of products for interprovincial trade and export from Canada. The prime objective of the Maritime Region Federal Fisheries Service (responsible for federal management in Nova Scotia New Brunswick and Prince Edward Island) are:

> To conserve and enhance the aquatic resource; and to develop, design and implement management programs (i.e. TAC quotas) which will ensure that the Canadian fishing industry receives the greatest possible benefit from the renewable fishery resource.[14]

The Maritime Region Federal Fisheries Service is divided into six major branches and various divisions, each responsible for different aspects of the fisheries objectives and management. (See Appendix C.)

B. Provincial Dimension

The Province of Nova Scotia has exclusive jurisdiction over undertakings dealing with sea products as a commodity, and the contractual relations among those engaged in the fisheries (fishermen, vessel owners and processors) together with the social welfare and education of those in the industry. The Nova Scotia Department of Fisheries is not involved with fish stock, assessment, fisheries research, management (except in advisory role), surveillance, protection or international negotiations as these are all under federal jurisdiction.

The main function of the Nova Scotia Department of Fisheries is to provide technical advice and financial assistance to fishermen and processors. The department structure (60 employees and an annual operating budget of $6 million) is organized along the lines of resource utilization, industrial

development (gear and vessels), training (fisheries school) and field services to the fishermen in nine fishery districts throughout Nova Scotia. (See Appendix B.)

The Nova Scotia Department also administers the Fisheries Development Act of 1978 within the Fishermen's Loan Board. The Act provides financial assistance in the form of low interest loans for new vessels, vessel conversions, equipment and aquaculture. (This will be examined further in Part III, 6. Fleet Financing.)

Part III. Conflicts, Issues and Concerns:

1. GOVERNMENT POLICIES AND CONFLICTS

A. Federal Policy

Policy for Canada's Commercial Fisheries (1976) produced a set of strategies recommending the rehabilitation and reconstruction of the industry over the long term. Like the problems they address, these initiatives were interlinked and overlapped (see Appendix D). The crisis which gave rise to this study affected primarily the groundfishery of the Atlantic coast, and research was concentrated in that region. In these provinces (Nova Scotia, Newfoundland, New Brunswick, and Prince Edward Island), household income tends to be lower in fishing communities than in the region generally (exceptions being southwestern Nova Scotia, the scallop fishery). Although commercial fishing has long been a highly regulated activity in

Canada, the object of regulation has, with careful exception, been protection of the renewable resource. In other words, fishing has been regulated in the interest of the fish. In the future, it would appear from the study that the fishery is to be regulated in the interest of the people who depend upon the fishing industry. Implicit in the new federal orientation was more direct intervention by the federal government in controlling the use of fishery resources, from the harvesting operation to the consumer, and also more direct participation by the people affected in the formulation and implementation of fishery policy.[15] The federal government considers the inshore fisheries as "a way of life", and its policy has been to continue to develop the Atlantic Canadian fisheries from the shore out to the 200 mile limit (favoring the inshore fishery).

In the early 1970's, all segments of the fishing industry were in agreement that the management of the east coast fishery was in need of change. The depleted state of certain east coast fishery resources, which called for severe restrictions of fishing effort, and the need to limit entry to most fisheries have combined in recent years to create dissent and dissatisfaction amongst users of the resource. This, in turn, has reflected adversely upon the current federal licensing system which is complicated and confusing and not easily understood by those administering the system.

Since 1967, when limited entry was first applied to the Maritime Provinces lobster fisheries, a series of restrictive measures involving moratoria have been put in place for the

following: the issuing of new licenses and replacement of certain fishing fleet units, and the allocation of catches amongst users, both offshore and inshore (fisheries development from the federal perspective since the 200 mile fishery zones were established has been a "go slow approach").

Since the federal government is responsible for issuing all commercial fishing licenses on the east coast, it undertook a study to review and evaluate the licensing systems of Canada's east coast commercial fisheries. Particular emphasis was placed on the groundfish fishery and its relationship with other fisheries. In April of 1979 the study entitled Toward An Atlantic Coast Commercial Fisheries Licensing System was released (portions of this study will be addressed below).[16]

B. Provincial Policy

In recent years the provinces of the Atlantic region, particularly Nova Scotia and Newfoundland, have called for greater provincial legislative authority over the fishery. This demand for a shift in the constitutional status quo has arisen in part because of a long standing sense of alienation felt by segments of the fisheries community toward the Ottawa bureaucratic machine. Provincial demands reflect the perception that the fishery will plan an increasingly important role in the industrial development of the east coast. Owing to the potential for increased catches and significant new forward linkages (onshore processing plants), the Atlantic provinces are seeking to channel the anticipated growth so as to maximize provincial benefits.

Following from this, in November of 1977, the provinces of Nova Scotia and Newfoundland submitted a Joint Provincial Fisheries Development Proposal[17] to the federal government for consideration. The following is from this proposal:

> "It is also our collective belief that the required development of the fishing industry can best be done by the private sector, with strategic assistance from Government. The past depletion of our resource base has placed the Canadian fishing industry in such a financial state that it cannot adequately prepare for these future opportunities by itself. Therefore, specific action by the Government of Canada and the Provincial Governments of the Atlantic Provinces is required, especially in this transition period during which our stocks are being regenerated. This proposal will focus on the three areas where this requirement for action is considered to be most urgent; fleet development, markets, and foreign arrangements."[18]

The total investment required to implement the proposed fleet replacement and expansion (development) program is summarized below:

Table 6

Atlantic Provinces Fleet Replacement Proposal

1.	Inshore and Nearshore Fleet (50% fleet replacement)	= $260 million
2.	Offshore Trawler Fleet (50% fleet replacement)	= $500 million
3.	New Freezer Trawlers or Factory Freezer Trawlers	= $150 million
	(over a 10 year period) TOTAL	= $910 million*

*These cost estimates are based on the assumption that all of the vessels would be built in Canadian yards.

Source: Joint Provincial Fisheries Development Proposal, Halifax, 1977.

In preparing this joint proposal, it was the position of the provinces of Nova Scotia and Newfoundland that it would be helpful to the Government of Canada to have a statement of views from the Atlantic provinces on such concerns as fleet development, markets, and foreign arrangements. However this 1977 fisheries proposal was scorned and discounted by the federal minister and his department before it was even presented and was simply ignored.[19] Needless to say, Nova Scotia did not take kindly to the federal government's reaction. The manifestations of the conflicting government roles still exist as indicated by the following quote:

> "Nova Scotia must be able to develop this vital industry in a manner which will best achieve its

> overall economic and social goals. The economic development of its industry is very properly a matter of Provincial responsibility. Since it is not practical to pursue fisheries development separately from fisheries management, close cooperation between the two levels of Government is essential. Provinces must therefore have a major input into fisheries policy, not merely in an advisory role, but as a partner in decision making on matters of resource management."[20]

In the study, A Discussion Paper on the Proposed Nova Scotia Fisheries Policy (1979), the Nova Scotia government indicated once again that federal government involvement in the fishery should be as limited as possible, consistent with its responsibility to protect the resource and Canada's interests. Governments should attempt to move towards a role of "serving the industry" and away from "controlling the industry".[21] The province of Nova Scotia's position is that the fleet and fleet mix should not be used as a vehicle for social policy or redistribution of wealth. It should become a prosperous way of life, economically self-supporting and a net contributor to the Canadian economy. The fishing industry can best be developed by the private sector, in a free-enterprise and competitive environment.[22]

2. The Resource

The availability of fish will depend upon the natural productivity of the marine resources and the success of the management regime respecting the regulation of harvesting. Given the opportunities for resources regeneration, or replacement of foreign fleets or both, what will happen to that critical variable, catch rates, which determines the basic viability of fishing? Although the projections of the Voluntary Planning Board of Nova Scotia (Fisheries Sector, See Table 7) indicate a doubling of the Nova Scotian landings between 1978 and 1988, the picture varies depending upon species and region. A brief review of the varying prospects for some of the major fishing grounds is necessary as Table 7 does not show the details for all resource projections. The information which follows is adopted from Toward An Atlantic Coast Commercial Fisheries Licensing System (see note 16).

Overall, the Gulf of St. Lawrence groundfish resource situation appears to indicate few possibilities for increased effort on redfish or flatfish, but rather a need to divert fleet efforts in order to rationalize the activities of the existing fleet. Cod fisheries will allow some expansion of effort in the future but not enough or soon enough to accommodate the efforts diverted from redfish and flatfish.

In general, the stocks of the Scotian Shelf are projected to increase gradually, with the exception of the central Scotia

Table 7

Projections of Fish & Values to 1988 (000's metric tons & 000,000 dollars)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finfish (All nations) (mt x 10^3)	1638	1304	1700	1709	1722	1735	1769	1809	1868	1933	2000	2100	2200
Finfish Canada (mt x 10^3)	717	774	920	1110	1102	1128	1168	1266	1401	1546	1600	1680	1760
Finfish Canada's (%)	44	48	54	63	64	65	66	70	75	80	80	80	80
At'l. Canada (all species) (mt x 10^3)	914	1006	1062	1270	1310	1340	1390	1500	1600	1750	1850	1930	2000
At'l. Canada (all species) ($ x 10^6)	224	283	367	461	499	536	584	662	741	851	945	1035	1126
At'l. Canada finished products ($ x 10^6)	470	580	735	968	1098	1233	1402	1655	1927	2298	2646	3002	3378
N. S. landings mt (%)	42	40	38	37	36	35	35	36	37	38	39	40	40
N. S. landings At'l. value (%)	47	47	45	44	43	42	43	44	45	45	46	47	48
N. S. landings (mt x 10^3)	369	407	401	470	472	469	487	540	592	665	721	772	800
N. S. landed value ($ x 10^6)	106	133	168	203	215	235	251	292	333	383	435	486	540
N. S. finished products ($ x 10^6)	222	273	336	426	472	518	603	728	867	1034	1217	1411	1620

NOTE:
(1) Canada's share of finfish projected to reach 80% of total TAC by 1985 if Canada plans a freezer-factory replacement of foreign effort
(2) 1976, 1977 & 1978 are actual catches with 1978 preliminary figures
(3) 1979 onward are TAC (Total Allowable Catch) projections
(4) 1976 and 1977 dollar value at landings are actual with 1978 dollar values preliminary
(5) All dollar values above from 1979 onward are projected ahead at a 5% inflation rate per year
(6) All finished product values not only include the 5% inflation factor, but upgrading factor over landed value at 2x works toward 3x landed value by 1988; e.g. 1979 is 2.1x, 1980 is 2.2x, 1981 is 2.3x etc.

Shelf cod which is expected to continue to decline. Thus the Scotian Shelf does not offer the opportunity for any increase in effort levels beyond those expended in 1977. The Grand Banks' groundfish fisheries provide some hope for expansion over time, provided that the by-catch in an expanded cod fishery does not have significant impact on the flatfish stocks.

The most rapid recovery is expected in the Northern Newfoundland and Labrador cod stock. The total allowable catch for this stock should increase significantly (from 135,000 in 1977 to over 300,000 tons in 1985),[23] while allowing the stock size to attain levels that will greatly increase availability to the offshore Nova Scotia fleet. Growth of stocks, however, is not expected to be as rapid in the Grand Banks area off eastern Newfoundland.

In summary, slow growth is expected in fisheries of the Gulf of St. Lawrence, Scotian Shelf and Grand Banks. Fisheries in the Gulf of St. Lawrence entrance are expected to decline. The cod stocks to the north of Newfoundland offer possibilities for rapid and sustained growth.

3. Fleet Licensing

Because the resource base projections are only one of the factors influencing fleet viability and distribution of access to the resource, conclusions reached regarding fleet expansion based solely on projections are dangerous. Fleet viability can only be determined in the administration of licensing measures in specific fisheries.

The report, Toward An Atlantic Coast Commercial Fisheries Licensing System (1979, See Note 16) makes the following points concerning licensing in the Atlantic fisheries. It indicates traditional groundfish efforts, especially offshore, should be restrained until the resource improvements create more viable fishing operations for the existing offshore fleet. The extent of this restraint will not be clear until replacement of the existing offshore fleet proceeds to a point where few really old vessels are still operating.

The report also emphasizes that the opportunities for expansion created by groundfish currently underutilized by Canadians are still unclear. It does not appear that there are assured successes for vessels which would fish underutilized groundfish species only. Indeed, as the more traditional groundfish stocks improve, less interest may well result for species such as silver hake, roundnose grenadier and argentine. Vessels should be licensed to fish such species only on the clear understanding that access to the traditional groundfish fisheries will not be available.

Overall, with the possible exception of mackerel and, now to a lesser extent, capelin, it appears the pelagic species cannot support additional effort. Licensing in these fisheries appears faced with improving the viability of fishing units engaged and eliminating certain distortions in types of effort and the geographical distribution of access to these resources.

Apart from offshore squid where no real Canadian capacity exists, and northern shrimp where Canadian effort is being developed, it would appear all major invertebrate fisheries have sufficient catching capacity from either a biological or economic viewpoint or both. In only a few minor cases is there room for additional fishing effort and then only on a local restricted basis. Few potential new fisheries exist in this overall category thus offering little scope of solving the catch-effort problem in existing fisheries. The main requirements for licensing in this group of fisheries is to generally concentrate on improving the economic viability of fishing operations, and to provide for redistribution of access to the resource in certain cases.

Development of a Canadian offshore squid fishery remains the classical case of initiating a fishery for an underutilized species. There is considerable interest in participating, but clear Canadian content proposals are generally lacking. In some quarters, there is a reluctance to undertake squid fishing only, especially if an expensive vessel must be acquired for such a single operation. However, this reluctance is dwindling in the case of northern shrimp and may also occur in offshore squid. Licensing could allow existing offshore vessel owners to enter this fishery by replacing existing wetfish vessels with freezer trawlers which, of course, would also have access to other groundfish stocks.

In general, the implication of the recent resource projections for licensing is that in almost all fisheries there

must be greater concentration on management for economic purposes. This is an obvious consequence of an overall situation where traditional fisheries will not provide for significant expansion on all fronts. The degree of this restraint will have to vary from fishery to fishery or even from area to area. In many cases, the economic objective will have to include altering the present distribution of access to resources within an overall effort restriction.

4. Fleet Replacement and Restructuring

The part of the restructuring question relating to control of fishing effort is rather complex. At present, where federal replacement guidelines exist in Nova Scotia licensing, two principal types of control are exercised. The first is based on allowing a percentage increase in length of the new vessel; the second is based on permitting replacement on an equivalent tonnage basis. The purpose of both is to keep increases in fishing capacity or effort under some sort of control. Experience has shown that, even in cases where the number of fishing units is limited, fishing effectiveness can increase through larger and more efficient vessels being brought into the fishery. Coupled with increase in size, there is also the application of new technology, such as new fish finding devices, more powerful engines and winches, and improved types of fishing gear.

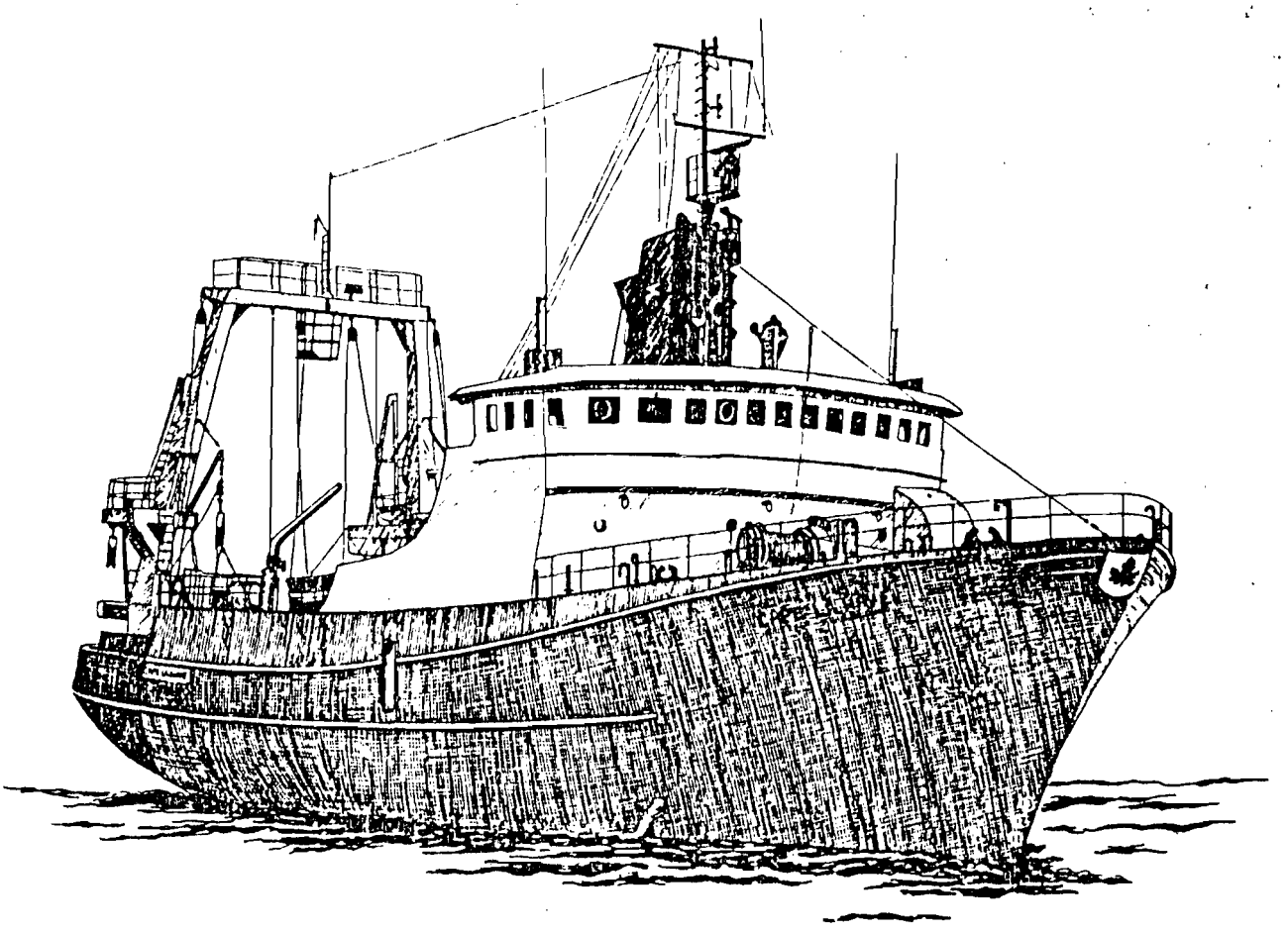
In examining the present replacement criteria for control of fishing effort, two opposite situations exist. The first

relates primarily to the large offshore trawler fleet where present replacement guidelines for length increase do not allow certain vessel owners (especially of smaller offshore trawlers) to acquire the proper size and type of vessel to harvest the slowly improving fish stocks. In some of these offshore groundfish situations, the proper vessel may exceed the federal licensing length increase allowance by a very small amount. There are no doubt similar situations in other fisheries where or when expanding stocks or access to new stocks become available. Of course, the danger in such situations is that new larger vessels will continue to have licenses to fish the old stocks and grounds, and might result simply in adding too much capacity where it is not needed (see Figure 9). It is possible that federal fishing management may, in fact, have to force the diversion that was the rationale for allowing larger than normal increased sized vessels to be acquired.

The opposite type of replacement problem is evident in certain relatively small scale fisheries where the total catch is not expected to increase greatly. In such cases, even the smallest size increases in new vessels will result in a situation where fewer and fewer vessels can be supported by the fishery, as larger, more efficient and more costly vessels are brought in.

These types of replacement issues center on the question of technological improvement and the extent to which it should be permitted or controlled. It now appears to be a fairly

Figure 9



The modern stern trawler Cape LaHave, built in 1973 and capable of carrying over 400,000 pounds of fish from the offshore banks.

general situation that new larger vessels (i.e. offshore vessels and freezer trawlers) are more efficient but also more costly to obtain and operate. These vessels usually can catch more fish, and must do so because of their higher cost structures. In any event, even if costs did not increase and the resource did not improve at the same rate as technological advance of the vessels, fewer units will be required to catch the available amount of fish. Indeed in many situations, maintaining fleet size, while bringing in new and more technically efficient vessels, will simply result in preventing the full benefits of technological improvement from being achieved.

Therefore, replacement guidelines should not be overly rigid and not the same for all fisheries, even on a relative basis. A balance must be struck between permitting technological increase but controlling it so that it does not get out of hand. The management objective for each fishery must take active account of the technological and associated economic and biological consequences of vessel replacement allowances. A range of situations can be predicted such as: uncontrolled technological improvement by replacement with fleet size reduced accordingly; controlled improvement with some concurrent restriction of new vessels on adjacent grounds; and, no technological advancement allowed so that present fleet size can be maintained or increased.

There appears to be a number of problems affecting replacement and restructuring of the inshore, nearshore, and offshore fleets. However, many of the problems are not dealt with adequately due to political considerations and bureaucratic inertia. Some of the problems will be examined below.

A. Inshore Fleet

One of the major problems in restructuring the inshore fleet is that universal rules and rigid enforcement (which are the easiest way out for a bureaucracy) do not work in all locations. For example, the methods and ideas which work in southwest Nova Scotia may be unsuitable to the Northumberland shore or to the Bay of Fundy.

Another problem in the inshore fleet is overregulation; a license is needed for everything the fishermen does and with every license goes another book of regulations.

In some areas of Nova Scotia there are too many occasional or part-time fishermen. Many occasional fishermen fish only lobster or merely dabble in other fisheries. This has put the full-time fishermen in a precarious position as too many fishermen chase the available stocks and in some areas of Nova Scotia the voice of such occasional fishermen drowns out the full-time professional.

The Nova Scotia Department of Fisheries believes[24] that the solution to these problems could best be dealt with by

increasing self-management by the industry. The objective of having increasing self-management by the industry could be best achieved through the establishment of regional management councils, committees or boards.

In the report entitled A Discussion Paper on the Proposed Nova Scotia Fisheries Policy (1979, see Note 24), an overview of structure of a typical board's characteristics was as follows:

a) Membership of such Boards would include fishermen, other industry representatives such as processors, labor representation, some independent members from outside the industry, as well as Federal and Provincial Government representatives.

b) Government officials would essentially become advisors to such Boards, rather than the present system of industry and fishermen being advisors to Government.

c) The role of Government in regard to such Boards could include the provision of broad policy, provision of biological and other data, final decisions on unresolved conflicts, and implementation of Board decisions.[25]

In addition to the above, the Nova Scotia Department of Fisheries believes that the separation of the province within the organization of the Federal Department of Fisheries, would benefit not only the inshore fleet but also the offshore fleet. At present, Newfoundland and Quebec are separate

federal fisheries regions, whereas Nova Scotia, New Brunswick, and Prince Edward Island are combined into the Maritime Region. This situation in unhealthy in that the interest of Nova Scotia's fishing industry, which is more diversified and has a higher production than any other Atlantic Province, is diluted and becomes only part of the Maritime Fishery. Newfoundland and Quebec can each speak separately in Ottawa and are therefore probably better able to present their cases effectively.[26]

B. Nearshore Fleet

Although the direction outlined above will also benefit this sector, this fleet has its own unique problems. The best vessels of the fleet can fish anywhere within the 200 mile zone (severe limitations in ice) and in most seasons, if they wish to do so. They have, however, been somewhat more restricted in their range; in practice, they tend to stay within a one-day steaming time of home port even if they stay out several days.

The smallest of the fleet (vessels in the 50 to 65 foot range) are classed as inshore boats by federal regulations and can therefore travel within the 12 mile inshore limit. It has been the practice to build boats at 64'11" to stay within the classification but to increase beam, draft, and engine power to that of much larger boats. That class of boat can therefore haul as big a trawl as some of the larger boats with similar horsepower.

The 12 mile inshore limit, therefore, does not present a good enough answer to the problem of conflict between the inshore and nearshore fleet. The owners of the nearshore fleet want to expand and would do so without subsidy if allowed. Hence, the federal licensing and regulations pertaining to this fleet should be reviewed for size restrictions.

There is, however, some encouraging happenings in the nearshore fleet. In 1978 two new types of steel fishing vessels for use in the nearshore fishing industry were designed in Halifax for the Nova Scotia Department of Fisheries. Both boats are expected to extend the length of the fishing season and improve safety, productivity and quality control. Dual purpose boats, each rigged for two different types of fishery, they are 52 feet long with a fish hold capacity of 30,000 pounds, and 65 feet with a 60,000 pound fish hold capacity. This new breed of vessels represents the first new design for the Nova Scotia nearshore fleet since the Digby draggers and longliners were introduced in the 1950's.

C. Offshore Fleet

This fleet offers some of the most difficult problems. As a whole, the fleet has not been profitable in the past few years due to lower catch rates and restricted quotas (as mentioned earlier). These company owned vessels continue to be supported because they provide an average 70% of the throughput of groundfish. These offshore vessels are old (average age 13 years), technologically and economically

obsolete, and in some cases are actually unsafe to fish offshore in anything but fine weather.

The new vessels needed are very expensive. For example, a modern 160 foot ice-strengthened sterm trawler will cost in the range of $5 to $7 million dollars. In addition to replacing existing vessels with similar crafts having improved technology, some companies would prefer the introduction of freezer trawlers.

D. Freezer Trawlers and Factory Freezer Trawlers

Some sectors of the fishery (as indicated) say that Nova Scotia needs new catching and freezing capacities in the form of freezer trawlers and factory freezer trawlers.[27]

This proposed freezer fleet would enable Nova Scotia to catch and harvest those species which must be frozen at sea to retain marketable quality.

Some of these species, presently underutilized by Canadian standards, include:

Lloigo Squid	Labrador Cod
Ilex Squid	Far North Red Fish
Grenadier	Shrimp
Silver Hake	Flemish Cap Cod
Offshore Mackerel	Greenland Halibut
Capelin	Argentines

A typical freezer trawler can vary from less than 100 feet in length to over 250 feet. Factory ships are larger on average and range up to 300 feet or more. To take just one

example, a 250 feet freezer trawler with a hold capacity of 750 metric tons and capable of freezing at least 40 metric tons per day might harvest a maximum of approximately 9,000 metric tons of live fish per year.[28] However, it would appear that for a Nova Scotia freezer fleet, smaller vessels would be more economical because of the relatively short return distances to port.

The freezer trawler issue is a controversial one in Nova Scotia and throughout Atlantic Canada with the inshore and nearshore fishermen, and even some buyers and processors, opposed to the introduction of these trawlers into the traditional fisheries.

The report, Freezing At Sea - A Canadian Opportunity (1979, see Note 27) was prepared by the Nova Scotia Fish Packers Association in an effort to set out the issues relating to the introduction of freezing-at-sea technology to the Canadian Atlantic fishing industry. The report favored freezing at sea; however, it lacked a feasibility analysis for such a venture. The report was basically a lobbying document for those supporting freezing at sea.

However, freezer trawlers are a necessary adjunct to the Nova Scotia fleet, especially in the harvesting of more distant traditional fisheries and in taking non-utilized and under-utilized species where initial preservation at sea is required.

The report, A Discussion Paper on the Proposed Nova Scotia Fisheries Policy (1979), states:

> There must be an immediate start to the development of a freezer trawler fleet. Such a fleet should be developed in a planned, phased way, starting with a trial operation of a small fleet. These vessels should be focused on replacing existing foreign effort on non-traditional stocks, rather than adding new effort on existing stocks harvested by our fleet.[29]

However, the Federal Department of Fisheries in it's report, Toward An Atlantic Coast Commercial Fisheries Licensing System, recommends that the factory freezer trawler issue be studied at greater depth by the Department before a decision is made on their introduction to traditional fisheries.[30] Further, the report concludes that there does not appear to be any valid reason to refuse licenses to freezer or factory trawlers that would be acquired to fish solely for non- or under-utilized species, and that acquisition of freezer trawlers be permitted only through replacement or conversion of existing licensed units, subject to guidelines established for offshore groundfish vessels.[31]

On February 18, 1980, the Federal Department of Fisheries issued four freezer trawler licenses to fish under-utilized shrimp. Two licenses were acquired by Nova Scotia companies (the remaining two by Newfoundland companies). However, the

by-catch allotment of groundfish caused considerable confusion among the Atlantic provinces, and in particular between Nova Scotia and the federal government.[32] As would be expected, no clear concensus has emerged; balancing of the various interests will undoubtedly take time.

5. Fleet (Vessel) Ownership

The issue of vessel ownership (and the resulting composition of the various fishing fleets) must be addressed. There is obviously a fundamental right in Canada to own property, including fishing vessels. There is not, however, a fundamental right to engage in fishing since the authorization to do so is granted by the Federal Department of Fisheries and direct control on ownership can be exercised through licensing.

Because control can be exercised through ownership, because a concentration of ownership may lead to price leadership in the primary sector and, because fishing privileges have been issued to owners of fishing vessels, the ownership question is high in the minds of many in the industry.

The fishermen, of course, support the principle of ownership by fishermen, particularly for inshore vessels but, in the case of larger vessels, they recognize this would be difficult in the short term. On the other hand, many of them see no reason why fish buyers and processors should not be permitted to own vessels, especially in the offshore sector. Most

fishermen find it difficult to conceive the reality of owning large vessels (over 100 feet in length) for the following reasons: the large capital outlay involved; the crewing, maintenance, operational and general management problems; the uncertainty as to the economic viability of large vessels; and the fact that their return on investment could be higher in a non-fishing sector of the economy.

A few fishermen are obviously interested in obtaining large fishing craft and some buyers and processors would be pleased to divest themselves of large vessel operation if they could be certain of continuous supplies to processing establishments.

The buyers and processors argue, however, that they require some ownership of fishing vessels, especially in the offshore fisheries, if they are to be guaranteed a supply of raw material to their processing plants, and if there is to be an increase in the overall efficiency of the industry through improved coordination of the harvesting, processing and marketing activities. This argument appears to have some validity and is especially applicable during periods of reduced activity in the inshore fisheries due to ice problems, severe weather conditions and stock migrations. Otherwise, serious supply problems at certain periods of the year could adversely affect processing plants and whole communities which depend upon them.

The Federal Department of Fisheries summarizes its view of the ownership issue in the following manner:

a. The ownership of particular units within the fishing fleet can be controlled effectively through a licensing program wherein free transfers are not permitted to license additional units in the future.

b. When fishing vessels owned by buyers and processors require replacement, the first right of refusal could go to the independent fishermen to acquire the replacement vessel and the authority (license) to operate it.

c. When a vessel is repossessed or sold, all relevant fishing privileges under which that vessel was used would revert to the licensing authority.

d. Any program involving ownership of large vessels by fishermen is a long term one and there is need to establish a financial institution or fund to assist fishermen to this end.

e. Fish buyers and processors require ownership of large offshore trawlers to insure supply of raw material, especially during slack inshore periods, to their plants.[33]

6. Fleet Financing

The major financing of Nova Scotia commercial fishing vessels, since the introduction of the 200-mile zone, has been

through the Fisheries Loan Board. (There are other sources of funding, but applicants are few.) The year 1978 witnessed the return of the Fisheries Loan Section (formerly part of the Resources Development Board of the Province of Nova Scotia) to the Department of Fisheries and the re-establishment of the Fishermen's Loan Board. In addition, the Fishermen's Loan Act was replaced by the Fisheries Development Act; and even though the Regulations under the Fisheries Development Act were generally similar to those under the Fishermen's Loan Act, there were a few significant changes such as: no down payments required on engine and equipment loans, lower down payments on all other loans, a lower interest rate and lengthening of the terms on most loans, a provision for loans for aquaculture projects and for wiers.

In accordance with the Fisheries Development Act, the Board may make loans to fishermen, companies, cooperatives and associations for the purposes of: purchasing or building a fishing boat; purchasing and installing an engine or equipment in a boat; converting, modifying or upgrading an existing boat; or developing aquaculture facilities.

The rates of interest for these loans are 6½% for vessels under 45 feet and 7½% for vessels upward from 45 feet. On engines and equipment, the rate is 6½% regardless of the size of vessel. A 10% down payment is required on vessels; there is no deposit required on engines and equipment. The period of the loan varies from 10 to 15 years, depending on the size of the vessel.[34]

As security for a loan, the Board requires a first mortgage on the vessel for which the loan is made.

The number of applications dealt with by the Board increased tremendously during 1978 as the following figures indicate.

Table 8

Nova Scotia Fishermen's Loan Board Financing

Year Ending March 31	Loans Considered	Loans Approved	Net Amount Financed
1973	98	87	1,161,812
1974	115	115	1,254,702
1975	137	114	1,434,860
1976	116	107	1,510,450
1977	169	158	4,598,894
1978	179	169	3,190,554
1979	641	607	30,400,000

Source: Fishermen's Loan Board.

Gross values for the year ending March 31, 1979 represented by approved loans totalled $38,755,700. After down payments and federal and provincial subsidies were deducted, the net total of approved loans amounted to $30,400,000. Vessel con-

struction subsidies for the same period amounted to $4,600,000 (comprised of 101 federal and 6 provincial applications). The federal subsidy is paid to shipyards based on a percentage of the approved cost of a ship (35% before March 19, 1977; 20% from March 19, 1977 to December 31, 1979; and 9% from December 31, 1979 to the present.)[35]

A breakdown of the types of loans approved by the Fishermen's Loan Board is as follows:

Table 9

Nova Scotia Fishermen's Loan Board

Types of Loans

	Number	Amount
New Boats Over 65'	2	$4,060,000
New Boats 45'-65'	27	4,300,000
New 44'11" Draggers	27	3,900,000
Shore Boats to 45'	153	3,500,000
Used Boats 45' & Over	16	7,400,000
Used Boats Under 45'	198	3,800,000
Diesel Engines	42	1,300,000
Gas Engines	37	80,000
Equipment	97	500,000
Conversion	17	1,000,000
Aquaculture	1	20,000
TOTAL	607	$30,400,000

Source: Fishermen's Loan Board.

As a result of the funding of the Fishermen's Loan Board, an additional fifteen approved boat builders were established in Nova Scotia between 1978 and 1979.

In addition, some representatives of the fishing industry believe that most of the capital required to modernize the offshore fleet can be raised privately, with the addition of the traditional loans from provincial loan boards.[36] It is also believed that all duties and tariffs related to vessels and their gear could be removed. Further, if the federal government wished to subsidize Nova Scotia and other Canadian vessel manufacturers, it could do so directly as an item, separate from the fishery. Some fleet representatives have proposed a system of tax credits for this purpose.[37]

7. Fleet (Vessel) Economics

Year-to-year fluctuations are to be expected for primary fishing enterprises which are subject to a number of variables such as weather and oceanographic conditions, abundance of species, prices received for landings and vessel operating costs. For example, in the report entitled Costs and Earnings of Selected Fishing Enterprises, Nova Scotia, 1977;[38] the 155-foot stern trawler experienced its biggest losses ever in 1977. On the other hand, the 43-foot longliners, the 48-foot longliners, and the 62-foot stern draggers had their biggest profits in 1977 (see Tables 10, 11 and 12). Other regional[39] and international[40] studies have concluded that smaller vessels are usually more profitable.

In terms of capital investment, broad differences in fishing techniques are reflected in the distinction between the inshore vessels and the offshore vessels. For middle and distance (off Newfoundland, Grand Banks) fisheries, the large vessels have an economic advantage over the smaller vessels, but the relationship is perhaps the reverse in the nearshore and inshore fisheries of Nova Scotia. Normally, with a certain relative abundance of fish offshore and nearshore, offshore and inshore vessels can probably supply enough fish to yield comparable incomes.

A typical Nova Scotian offshore trawler representing an investment of approximately five million dollars with a crew of 15 men can land up to six million pounds of groundfish annually. A successful nearshore longliner costing $400,000 (wooden construction) and normally operated by a 4 man crew can land one million pounds of groundfish annually. Thus, 12 longliners, representing an investment equivalent to one trawler, can land up to twice the amount of fish as a trawler and provide employment for 48 men at sea compared to 15.

Also, it has been estimated that an offshore vessel creates three jobs in a processing plant for each job at sea, but this estimate probably is not applicable to the smaller inshore vessel fishery. However, even assuming one job on land for each job at sea on a nearshore longliner, this will generate 1.4 times the employment in the processing plants as compared to the same investment in a trawler.

Table 10

YEAR-TO-YEAR VARIATIONS IN AVERAGE PROFITABILITY, NOVA SCOTIA, 1962-1977
(Dollars)

Year	40-foot Lobster Boats	Longliners			62-foot Stern Draggers	98-foot Scallop Draggers	155-foot Stern Trawlers
		43-foot	48-foot	63-foot			
1962						18,767	
1963						13,170	
1964					5,010	8,892	
1965					3,843	20,286	
1966					18,151	-473	
1967					3,615	2,081	-18,807
1968					6,363	18,805	-18,830
1969		2,383			889	786	-34,756
1970		3,508			5,029	-1,194	-36,486
1971		3,380			8,954	-12,326	-45,955
1972	5,437	3,669			11,197	23,100	-53,566
1973	4,630	451		11,190	12,746	-2,835	5,830
1974	1,707	3,715		-4,109	14,418	6,282	-85,416
1975	6,594	-703		-10,011	18,753	40,207	-127,146
1976	1,378	5,340	13,470	-174	11,493	87,370	-100,578
1977	4,374	6,557	18,066	4,425	47,142	84,746	-149,663
Average for Years Reported	4,020	3,144	15,768	264	11,972	19,229	-60,488

Source: Cost and Earnings of Selected Fishing Enterprises, Nova Scotia, 1977.

Table 11

RELATIONSHIP BETWEEN RECEIPTS AND EXPENDITURES, NOVA SCOTIA, 1977

Type of Vessel	Average LOA	Average Size of Crew	Vessels Total	Vessels Reporting Profit	Vessels Reporting Loss	Averages per Vessel Gross Receipts	Percentage of Gross Receipts for Total Cash Expense	Net Crew Earnings	Depreciation	Total
	ft.	no.	no.	no.	no.	$	%	%	%	%
Lobster boats	40	2.2	5	4	1	29,023	42.2	38.9	3.8	84.9
Longliners	43	3.7	4	4	-	66,507	37.5	49.7	3.0	90.2
Longliners	48	3.5	5	5	-	111,992	32.4	47.9	3.6	83.9
Longliners	63	4.2	3	2	1	67,085	41.3	44.7	7.4	93.4
Stern draggers	62	3.3	4	4	-	190,640	29.3	42.7	3.3	75.3
Scallop draggers	98	16.2	4	4	-	574,663	27.3	56.2	1.8	85.3
Stern trawlers	155	14.6	5	-	5	598,803	67.0	51.4	6.6	125.0

Table 12

RELATIONSHIP BETWEEN AVERAGE COST AND PRICE RECEIVED PER POUND OF FISH, NOVA SCOTIA, 1977

Type of Vessel	Averages per Vessel LOA	Cost[1] Pound of Fish Landed	Price Received per Pound[2]	Profit of Loss per Pound
	ft.	¢	¢	¢
Lobster boats	40	122.75	141.66	18.91
Longliners	43	18.68	18.97	0.29
Longliners	48	19.40	21.21	1.81
Longliners	63	20.44	19.90	-0.54
Stern draggers	62	12.20	14.62	2.42
Scallop draggers	98	120.24	141.04	20.80
Stern trawlers	155	16.32	10.65	-5.67

1/ Total costs including depreciation.
2/ Not including groundfish subsidy.

Source: Cost and Earnings of Selected Fishery Enterprises, Nova Scotia, 1977.

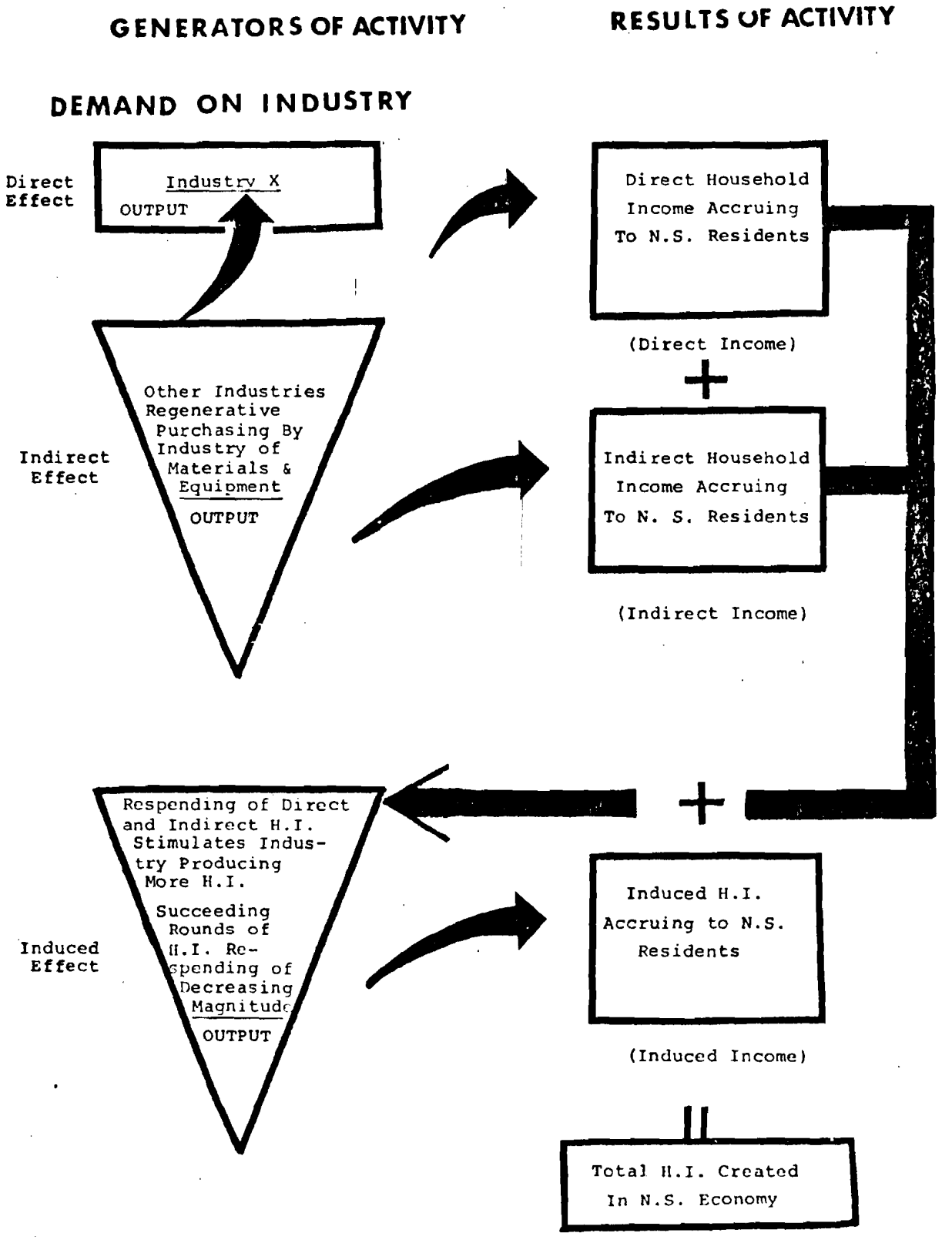
Further, inshore and nearshore vessels are generally constructed in or near the smaller fishing communities; whereas offshore vessel construction is usually focused in a few central locations where diverse economic employment opportunities exist. Repairs and refits of vessels usually follow the same pattern as vessel construction. Thus, the distributed effect of construction and repair facilities have both direct and indirect effects and induce economic and social impacts on many small communities (see Figure 10).

However, the offshore fleet is necessary to maintain the continuous operation of fish processing plants, since the vessels in this fleet can fish year round in the waters off Nova Scotia and Newfoundland (where ice and weather conditions prevent the inshore and nearshore fleet from operating from three to four months) and can provide the volume of fish needed to keep Nova Scotia processing plants operating at or near capacity.

Where diversified fishing activities are possible in order to extend the fishing season, the inshore fisheries and nearshore fisheries, if not over-capitalized, may be the least costly method of harvesting a given tonnage of fish from the waters off Nova Scotia. Moreover, they seem to provide more employment and require less investment for the same capacity than the offshore fisheries. However, the seasonal distribution of inshore fishing and its geographical locations may result in higher processing, handling and transportation costs than

Figure 10

Impact Framework



for the same tonnage caught offshore and delivered to large scale, well-situated Nova Scotia plants. It would appear that the economic efficiency and the sum of net social benefits of the sectors must be balanced in the restructuring of the Nova Scotia fleet mix.

Conclusion:

In reviewing the complex question of restructuring the Nova Scotia fishing fleets, conflicts, issues and concerns of the various participants have been examined. Because of the complicated nature of this whole question, it is difficult to reach clear-cut directions for the restructuring process. However, the following statements and recommendations are made as a result of the information studied in this paper:

1) Conflicts will continue between the federal and provincial governments. On the one hand the federal government policy (a "go slow approach") has been to develop the Atlantic Canadian fisheries, and thus its fleets, from the shore out to the 200 mile limit (favoring the inshore fishery). Whereas, provincial demands reflect the perception that the fishery should play an increasingly important role in the industrial development of Nova Scotia (so as to maximize provincial benefits).
2) Although projected fish landings for Nova Scotia indicate a doubling between 1978 and 1988, the growth rate of stocks available will vary in the

major fishing grounds. Thus, fleet replacement and expansion, especially for inshore and nearshore vessels, which usually do not fish any great distance from home port, must be considered on a fishery by fishery, and region by region basis. The offshore fleet which is much more mobile in character can fish various offshore grounds.

3) The implication of the these resource projections for licensing is that in almost all fisheries there must be greater concentration on management for economic purposes. In many cases, the economic objectives will have to include altering the present distribution of access to resources within the overall effort restriction.

4) Federal vessel replacement guidelines should not be overly rigid and not the same for all fisheries, even on a general basis. A balance must be struck between permitting technological increase but controlling it so that it does not get out of hand. The management objectives for each fishery must take active account of technological and associated economic and biological consequences of vessel replacement allowances.

5) The ownership of particular vessels within a fishing fleet can be controlled effectively through a licensing program. However, in the future a

licensing program should balance the landing capacity of independent vessel owners with that of processing company vessel owners (at present 70% of processing plant throughput is supplied by company vessels).

6) It would appear that the present structure of credit and terms of loans provided by the Nova Scotia Fishermen's Loan Board is needed. As the Nova Scotia fishery recovers, commercial banking sources should be encouraged to provide credit to the fishing industry (especially for inshore and nearshore vessels).

7) The inshore fisheries and nearshore fisheries, if not over-capitalized, may be the least costly method of harvesting a given tonnage of fish from the waters off Nova Scotia. Moreover, these fisheries provide more employment and require less investment for the same capacity than offshore fisheries. However, the seasonal distribution of inshore and nearshore fishing and its geographical locations may result in higher processing, handling and transportation costs than for the same tonnage caught offshore and delivered to large scale, well-situated Nova Scotia plants. It would appear that the economic efficiency and social benefits of these sectors must be balanced in the restructuring of the Nova Scotia fleet mix.

The interim period (1978-1982) in fleet restructuring is expected to be principally a holding operation (although there will be vessel replacements) until the fleet harvesting capacity matches the stock availability. The decade hence most probably will be marked by expansion among all existing fleets along with the introduction of Canadian freezer trawlers. Given such considerations, there is nevertheless, the criticism that at present no integrated fleet mix plan exists for the Nova Scotia fisheries (nor the Atlantic Canadian fisheries). Yet, owing to regional differences, and vested interests, there are doubts that a national or provincial plan is the answer. To some extent, the debate hinges on the meaning of "plan". There appears to be a federal strategy to manage the 200-mile zone and another to license vessels and/or fishermen, both domestic and foreign. There exists the federal objective to manage the fisheries optimally from the standpoint of Canadian producers and consumers, but, understandably, no targets have as yet been struck for the construction of and relative sizes of the inshore, nearshore, offshore, and freezer trawler fleets.

As indicated, the Nova Scotia government presently views the fishing industry as an integrated whole. The harvesting, processing, distribution, and marketing segments of the industry are all essential and closely interrelated. Therefore, government policies must not focus on just one of these segments in isolation, but must consider possible effects on the industry as a whole. There must be a balance in fleet mix. The fisheries

can only be fully and effectively developed if there is an appropriate size and geographical mix of larger and smaller vessels.

A prosperous fishery based on an economically viable mix of inshore, nearshore, and offshore efforts, and equitable access to the resource by all user groups, should maintain the social fabric of Nova Scotia. To this end, priority should be given to maintaining existing jobs, existing fishing communities, and "a way of life". At the same time, however, such a goal should not be allowed to discourage technical innovation, or developments which display clear advantages in terms of job creation and economic linkages (processing plants, ship builders, suppliers, etc.).

Appendix A

Statistical Review of the Nova Scotia Fleet

(Before 1972)

Table A.1

NUMBER AND VALUE OF FISHING CRAFT, SEA FISHERIES, BY GROSS TONNAGE, NOVA SCOTIA, 1967-1972

Gross Tonnage	1967	1968	1969	1970	1971	1972[p]
Number:						
Under 10 tons	8,176	8,358	8,209	7,925	7,723	8,016
10 to 24.9 tons	859	865	885	924	952	1,008
25 to 49.9 tons	120	131	118	114	106	135
50 to 99.9 tons	108	119	111	106	102	88
100 to 149.9 tons	41	36	38	36	32	28
150 tons & over	144	159	140	154	152	135
Total	9,448	9,668	9,501	9,259	9,067	9,410
Value: (thousand dollars)						
Under 10 tons	5,122	5,198	5,124	5,108	5,043	5,562
10 to 24.9 tons	2,185	2,201	2,252	2,421	2,519	2,774
25 to 49.9 tons	2,165	2,485	2,238	2,097	2,091	2,769
50 to 99.9 tons	5,390	5,417	5,053	4,681	4,829	4,333
100 to 149.9 tons	4,171	3,553	3,750	3,375	3,285	2,989
150 tons & over	40,792	47,739	42,035	46,613	47,463	43,841
Total	59,825	66,593	60,452	64,295	65,230	62,268

[p] Preliminary.

Source: Department of the Environment, Annual Statistical Review of Canadian Fisheries, Vol. 4, and Fisheries Intelligence Service.

Table A.2

NUMBER OF FISHING CRAFT, SEA FISHERIES, BY OVERALL LENGTH, NOVA SCOTIA, 1967-1972

Overall Length	1967	1968	1969	1970	1971	1972[p]
Craft under 10 tons:						
Under 40 feet	4,740	5,110	4,939	4,828	4,748	4,911
40 feet and over	237	216	300	267	226	288
Row Boats	3,133	2,982	2,916	2,785	2,712	2,769
Carrying Smacks	66	50	54	45	37	48
Total	8,176	8,358	8,209	7,925	7,723	8,016
Craft 10 tons and over:						
Under 35 feet	13	14	11	11	7	68
35 to 49.9 feet	873	880	880	939	973	1,007
50 to 74.9 feet	199	217	224	193	177	178
75 to 99.9 feet	58	65	56	58	53	41
100 feet and over	129	134	121	133	134	100
Total	1,272	1,310	1,292	1,334	1,344	1,394
Grand Total	9,448	9,668	9,501	9,259	9,067	9,410

[p] Preliminary.

Source: Department of the Environment, Annual Statistical Review of Canadian Fisheries, Vol. 4, and Fisheries Intelligence Service.

Table A.3

NUMBER OF FISHING CRAFT 10 TONS AND OVER, SEA FISHERIES, BY OVERALL LENGTH AND TYPE OF GEAR USED, NOVA SCOTIA, 1972

	Overall Length					
	Under 35 feet	35 - 49.9 feet	50 - 74.9 feet	75 - 99.9 feet	100 feet and over	Total
Number of Boats	68	1,007	178	41	100	1,394
Gear Used:						
Otter Trawl	6	89	48	10	59	212
Line Trawl	20	495	55	9	1	580
Scallop Drag	1	52	47	20	34	154
Danish Seine	-	11	25	-	1	37
Purse Seine	1	17	18	1	8	45
Gill Net	14	314	9	-	-	337
Harpoon	2	20	4	-	-	26
Other	35	807	12	3	10	867

Source: Department of the Environment; Fisheries Intelligence Service.

Table A.4

NEW CAPITAL INVESTMENT IN COMMERCIAL FISHERY, NOVA SCOTIA, 1961-1972

(thousands of dollars)

Year	Craft Under 10 Tons	Craft 10 Tons and Over	Fishing Gear	Total Investment
1961	313	1,457	2,990	4,760
1962	343	4,137	3,327	7,807
1963	354	6,066	3,822	10,242
1964	321	9,134	3,961	13,416
1965	247	6,347	2,862	9,456
1966	325	12,358	4,427	17,110
1967	273	10,783	5,455	16,511
1968	261	12,475	4,494	17,230
1969	294	1,761	5,491	7,546
1970	378	3,584	6,022	9,984
1971	487	2,349	5,781	8,617
1972[p]	470	3,399	6,244	10,113

[p] Preliminary

Source: Statistics Canada, 24-205; Department of the Environment.

Table A.5

NUMBER OF FISHING VESSELS BUILT WITH SUBSIDY, BY GROSS TONNAGE SIZE CATEGORY AND TOTAL AMOUNT OF SUBSIDY, NOVA SCOTIA, FISCAL YEARS 1950-1973

Fiscal Year	Under 24.9	25-49.9	50-99.9	100 & Over	Total No.	Total Amount $
1950-51	-	3	-	-	3	13,263
1951-52	-	11	-	-	11	60,553
1952-53	-	12	1	-	13	101,264
1953-54	-	7	1	-	8	65,500
1954-55	-	5	1	-	6	40,045
1955-56	-	12	4	-	16	124,694
1956-57	-	9	15	-	24	203,107
1957-58	-	6	25	-	31	274,154
1958-59	-	3	12	1	16	174,920
1959-60	-	9	8	-	17	136,174
1960-61	-	10	6	-	16	117,683
1961-62	-	6	3	-	9	97,159
1962-63	1	6	7	-	14	167,659
1963-64	-	12	2	-	14	150,302
1964-65	-	14	11	-	25	298,516
1965-66	43	7	8	8	66	1,183,700
1966-67	77	8	7	12	104	1,559,803
1967-68	68	5	19	20	112	3,238,944
1968-69	4	4	6	3	17	301,287
1969-70 (1)	-	-	-	-	-	-
1970-71 (1)	-	3	3	1	7	266,475
1971-72	-	20	2	2	24	772,014
1972-73	-	8	1	-	9	149,898
Total	193	180	142	47	562	9,497,215
Per Cent of Total Number	34.3%	32.0%	25.3%	8.4%	100.0%	

(1) Subsidy withdrawn during 1969-70 fiscal year, re-started in June, 1970

Source: Department of Fisheries and Forestry, Canadian Fisheries Reports, No. 14, June, 1970, Nova Scotia Department of Development.

Table A.6

RECENT AND PRESENT RANGES OF SUBSIDIES ON FISHING VESSELS PROVIDED BY FEDERAL GOVERNMENT TO NOVA SCOTIA

(a) Fishing Vessel Construction Assistance Program, administered by the Department of the Environment[1]

	From Feb. 1, 1968 to March, 1969[2]	From July 1970[2] to July, 1973	From July, 1973
Up to 35 ft. length	No Subsidy	No Subsidy	No Subsidy
35 ft. - 45 ft. length	No Subsidy	No Subsidy	35% approved Cost
45 ft. upwards, wooden, up to maximum size 100 gross tons	30% approved Cost	All boats, 45 ft. to 75 ft. length 35% approved Cost	35% approved Cost
Wooden, 100 gross tons upwards	40% approved Cost		

Notes: (1) Subsidy payments under this program are made through the Fishermen's Loan Board, who obtain and provide evidence of the contract for construction to the Federal Department and ensure that the vessel is kept actively engaged in fishing for 5 years from date of inspection.
(2) No subsidies were paid on behalf of Nova Scotian fishing vessels of 45-75 ft. length from March, 1969 to July, 1970.

(b) Canadian Vessel Construction Assistance Program, administered by the Department of Industry, Trade and Commerce

	From Feb. 29, 1968 to July, 1970	From July, 1970
Steel fishing trawlers	35% approved Cost	All boats over 75 ft. length 35% approved Cost

Source: Department of the Environment, Canadian Fisheries Reports No. 14, "Government Programs of Assistance for Fishing Craft Construction in Canada: An Economic Appraisal", Nova Scotia Department of Fisheries Annual Report.

Appendix B

Nova Scotia Commercial Fishing Fleet

(Statistics)

Table B.1

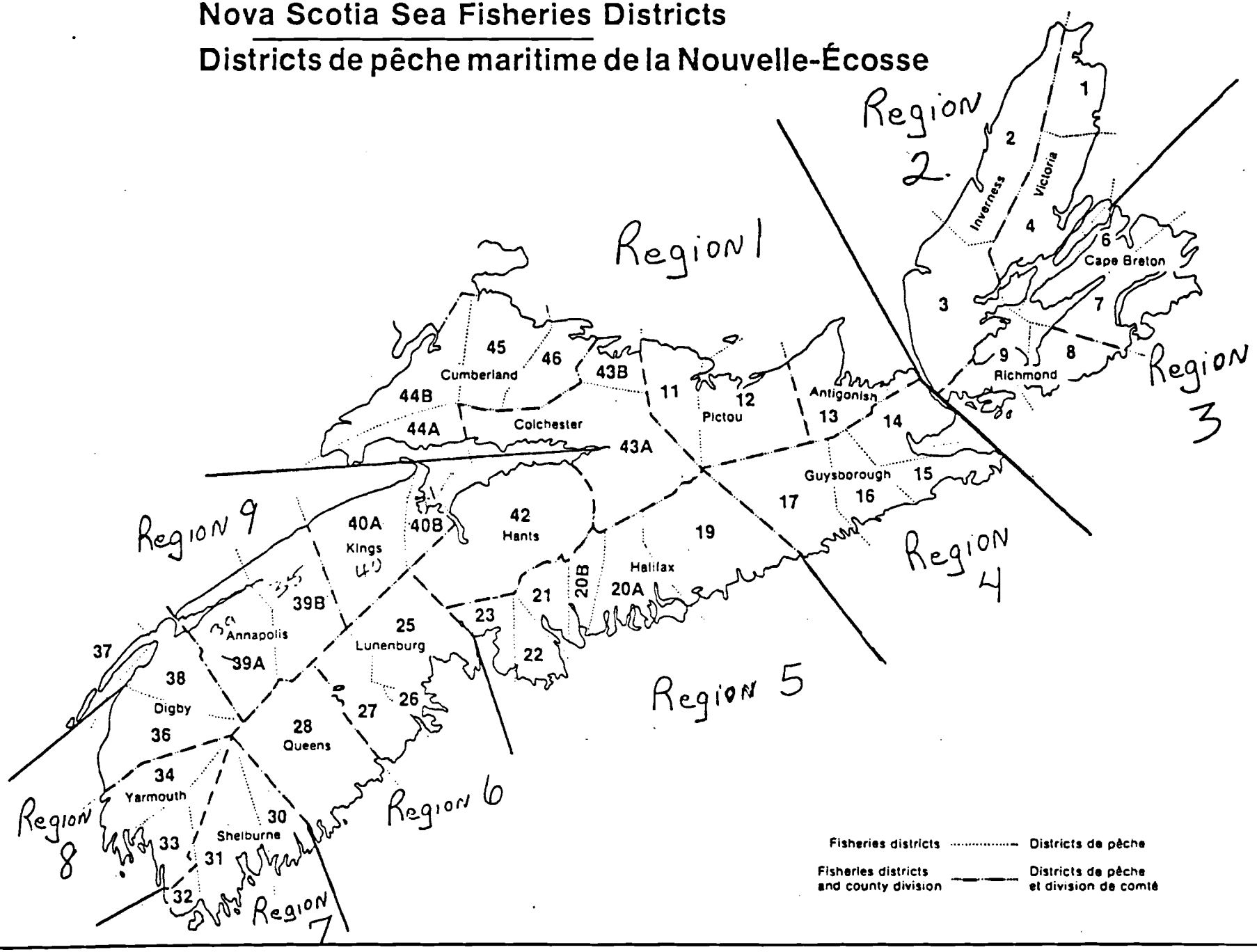
FISHING VESSELS IN NOVA SCOTIA
(OVER 30 FT.)

BY SIZE AND DISTRICT
(DISTRICTS DEFINED ON NEXT PAGE)

LENGTH	REGION								
	1	2	3	4	5	6	7	8	9
30'- 34'	43	94	95	97	82	123	85	28	77
35'- 39'	167	48	51	26	45	98	311	214	104
40'- 44'	160	21	25	15	31	28	160	193	31
45'- 49'	12	5	2	6	2	3	17	7	8
50'- 54'	3	-	-	-	1	1	2	3	7
55'- 59'	-	4	-	-	1	1	3	5	15
60'- 64'	-	-	4	1	3	7	9	6	12
65'- 69'	-	2	1	3	-	1	2	14	8
70'- 79'	-	-	-	-	-	1	1	2	-
80'- 89'	-	-	-	-	-	2	2	1	-
90'- 99'	-	-	-	-	-	27	4	2	-
100'-109'	-	-	-	1	-	14	5	22	-
110'-119'	-	-	-	-	-	9	2	4	-
120'-129	-	-	7	3	-	6	1	-	-
130'-139'	-	-	1	-	1	4	-	-	-
140'-149'	-	-	-	-	3	-	1	-	-
150'-159'	-	-	-	8	3	11	-	-	-
263	-	-	-	-	-	1	-	-	-
TOTAL	385	174	186	160	172	337	605	501	262

Nova Scotia Sea Fisheries Districts

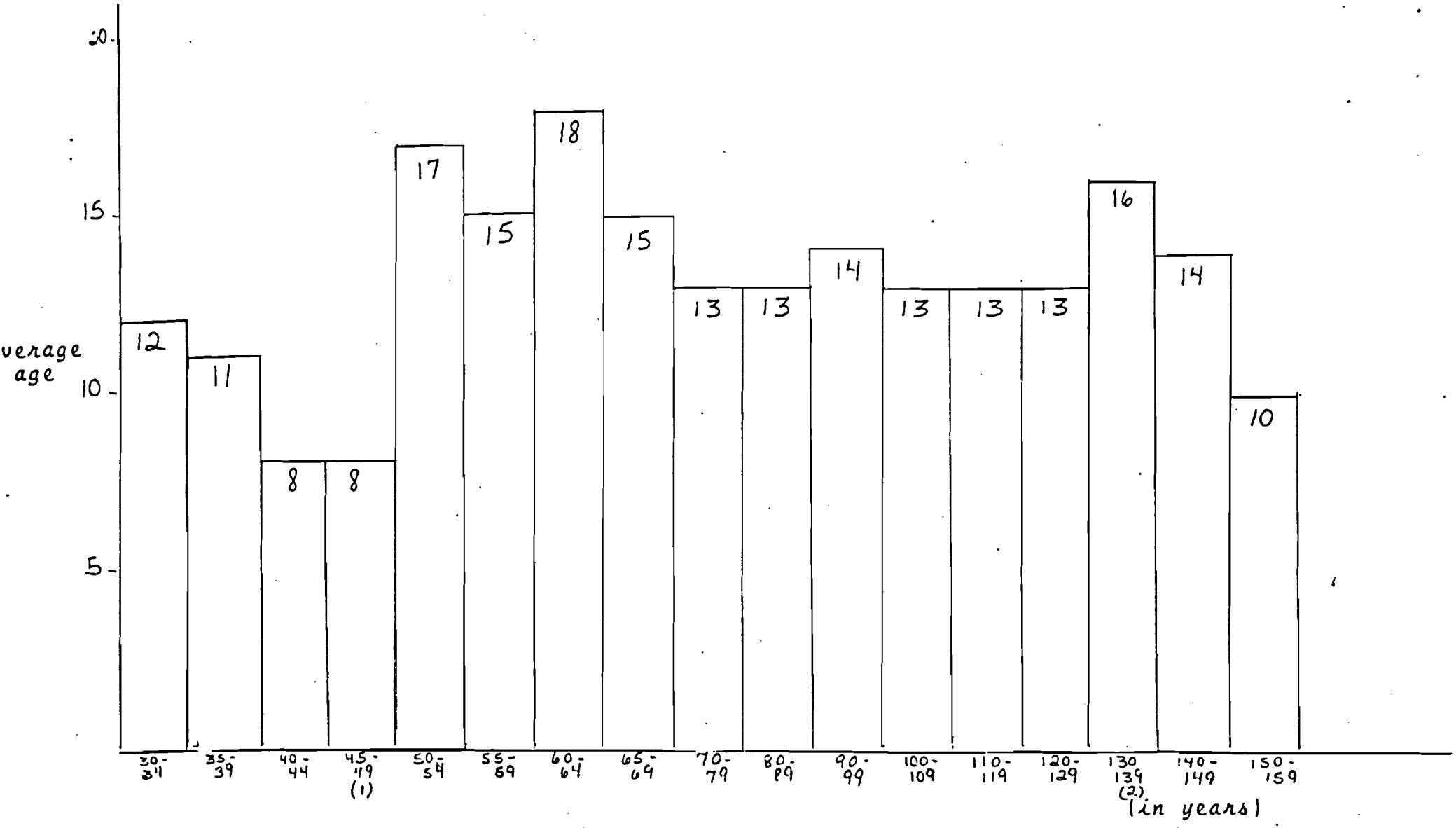
Districts de pêche maritime de la Nouvelle-Écosse



B.2

Table (2

AVERAGE AGE OF VESSELS BY OVERALL LENGTH



(I) average age excludes one vessel built in 1920
(2) average age excludes one vessel built in 1931

FIGURE II

Appendix C

Maritimes Regional Federal Fisheries Service

Six Major Branches

(A Brief Description)

Maritimes Regional Federal Fisheries Service

Six Major Branches

1. Area Managers

Six area managers are responsible for the day-to-day management of the fisheries in six areas, covering the entire Maritime Provinces. Their responsibilities include conservation and protection, plant, product and vessel inspection, vessel insurance, subsidy programs, fisheries improvement loans and industrial development. In addition, Area Managers are responsible for insuring input and participation by fishermen and processors in formulating government policy. They handle fishermen's requests for such services as licensing, regulations, subsidies and vessel insurance, and generally act as a representative of Fisheries Canada at the local level.

There are three Area Managers in Nova Scotia: 1) Cape Breton area; 2) Central Nova Scotia area; and 3) Southwestern Nova Scotia area.

2. Community Service Program

The Fishermen's Cpmmunity Service Program was organized to ensure the fullest possible involvement of

all people concerned--that is, fishermen, plant workers, business men and members of the interested public--in the decision-making process associated with fishery management and development. The program consists of an overall coordinator and 20 Community Service Officers located in key communities throughout the Maritimes. These officers operate as part of the Area Manager's team and are responsible for providing an advisory and information source to fishermen and their organizations. They work full-time on behalf of the fishermen, in order to quickly get answers to questions, hasten decisions and spur action. It is their job to make sure that fishermen are aware of and understand the various government programs, services, and policies which will affect them.

3) Field Services Branch

The Field Services Branch is the largest unit in the Maritimes Region, with the majority of the staff located in the field, operating under the direction of the Area Managers. The Branch is responsible for the development of policy with respect to conservation and protection; plant, product, and vessel inspection; fishing vessel insurance and subsidies; industrial development and community services. This is done in close cooperation with other branches.

4) Information Division

The Information Division is located at the Regional headquarters in Halifax. It is responsible for informing individuals, groups, and the general public about fisheries management policies, programs and activities in the Maritimes. All Fishermen's Information leaflets, Fact Sheets, press releases, newsletters, films and slide presentations are controlled and distributed through this office.

5) Small Craft Harbours Branch

This Branch is responsible for the general maintenance and upkeep of all marine facilities, and for any new works for improvements in the Maritimes Region. This includes the acquisition of property when required, and obtaining leases, licenses and permits of occupancy for various facilities. The Branch also administers the Tourist Wharf Program, the Marina Assistance Policy Program and others, such as Canada Works and Federal Labour Intensive Projects (FLIP).

6) Resource Branch

The Resource Branch is reponsible for providing the total biological and scientific initiative and support required for managing, protecting and expanding the freshwater and marine fish resources in the Maritimes Region.

Major program responsibilities include:

- Assessing stocks to provide advice on the state of the resources;
- Forecasting of fish stock abundance;
- Development and application of aquaculture techniques in salt and fresh water.
- Freshwater and marine fish habitat protection;
- Expanding stocks of economically valuable fish, shellfish, marine mammals, and marine plants;
- Operation of the St. Andrews Biological Station (St. Andrews, New Brunswick), the Ellerslie Biological Station (Ellerslie, Prince Edward Island), the Marine Plants Experimental Station (Miminegash, Prince Edward Island), the Shippegan Biological Substation and twelve fish hatcheries throughout the Maritimes Region.

7) Fisheries Development Branch

The branch works with the fishing industry, provincial and federal governments, and consumer organizations to provide research and development in fisheries technology.

More specifically, the Branch is responsible for:

- Developing and demonstrating new and improved fishing vessels, methods and gear;
- Generally advising and assisting the fishing industry on technological matters to make better use of both traditional and underutilized species.

Support Services Branch

This Branch provides the in-house managerial services required to support Canada's largest and most complex fisheries-management region. It is subdivided into groups responsible for administration, finance, computing, patrol and research ships, property management and information.

Program Planning and Coordination Branch

This Branch consists of small, highly specialized group of economists and enalysts who provide the professional basis for the development policies designed to improve the viability of the fishing industry. The Branch is involved in policy formulation of the Maritime fishery, general economic assessment in the establishment of publicly financed fishery facilities, and interdepartmental and intergovernmental liaison concerning international commissions, joint ventures, bilateral agreements and statistics.

Advisory Committees

To administer the fisheries properly, fishery managers need advice from those most closely involved. The concept of advisory committees was developed in an effort to have fishermen, processors and government involved in the management decision for certain fisheries.

These committees mainly advise on matters related to government policy by formulating operating guidelines. Such guidelines include conditions on new entrants, replacement of vessels, quotas, and management plans. The committees usually recommend guidelines, rather than deal with specific cases.

Appendix D

Federal Policy Objectives for Fishery Management and Development

In formulating strategies for fishery management and development, the goals of Canadian society identified by such agencies as the Economic Council and the Science Council of Canada provide a starting point.

In operational terms for the fisheries these goals may be restated thus:

1. Maximization of food production from fishery resources to the extent that this is consistent with efficient use of society's other resources.
2. Compatibility of fishery-resource use with enhancement of the harvestable productivity, and preservation of the ecological balance, of the aquatic environment.
3. Allocation of access to fishery resources in accordance with optimal (best) use, and assurance of equity of access and security of tenure for resource users.
4. Growth in the fishery economy in terms of real output per capita.
5. Optimization and optimal distribution of returns to social resources (labour, capital and the natural resource) from the fisheries.
6. Minimization of instability in net returns to resources.
7. Economic viability of (fishing and fish processing and distributing) enterprises in the commercial fisheries.
8. Prior recognition of and adequate provision for the economic and social impact of industrial change.
9. Minimization of individual and community dependence on paternalistic industry and government.
10. Protection of national security and sovereignty.

No priority ordering should be read into this list. The goals interact in some instances. One may further or limit the realization of another. If we are to realize goals embracing environmental harmony, material well-being and cultural opportunity, tradeoffs and compromises are inevitable. If we look back at the fifth goal in this list, for instance, we see that it will involve a trade-off between higher returns to a few and lower returns to the many. The need to retain a minimum employment level in areas chronically afflicted by unemployment or underemployment sets one of the boundaries within which the trade-off must be made.

From the preceding rather general statement of goals, a set of precise objectives has been drawn up, as follows:

Resource Use and Allocation

1. Establishment of an effective management regime for the natural resources.

   This is the prerequisite to everything else. To the extent that existing institutions and mechanisms cannot achieve this end, they must be restructured or, if necessary, replaced.

2. Safeguarding of the base for productive fisheries, within the complex of demands on the aquatic system, e.g. through resource-use management on a total-ecosystem basis and through resource enhancement or redevelopment.

   This requirement is particularly relevant for anadromous species like the salmons, whose natural habitat can be readily manipulated.

However, enhancement and redevelopment can be considered in relation to demersal and pelagic resources because of the impact (for good as well as ill) of human activity on the marine environment.

3. Incorporation in resource-management models, not only of biological and environmental, but also of major social and economic components of the system.

4. Basing total allowable catches (TAC's) and annual catch quotas on economic and social requirements (including the requirement for stability), rather than on the biological-yield capability of a fish stock or stocks.

   Where a resource is exploited internationally, it may be necessary to choose between:

   a) optimizing returns in the domestic fishery, e.g. by an appropriate reduction in foreign-fleet operations;

   b) optimizing economic and social benefits for the region affected or the nation as a whole, e.g. through leasing to other countries the right to exploit certain stocks, if this were proved desirable.

5. An equitable distribution of access to resource use among geographic areas and groups, e.g. vessel and gear types.

   The distribution of benefits from the several stages of the fisheries and related industries is involved here and the objective is constrained by the existence of a minimum level of employment acceptable regionally or sub-regionally.

Economic Development

6. Optimal production capacity, application of technology, craft mix and length of operating season in the fishing fleets.

7. Optimal efficiency in port markets.

   The issue here is that of the sensitivity of dockside (ex vessel) prices to price movements in product markets. To the extent that port markets perform imperfectly in this respect, reorganization may be desirable. Some options would be a) separating the profit centre in catching from that in the other divisions of integrated catching/processing/marketing enterprises or b) establishing vertical integration forward from the primary-industry base, e.g. through a producers' cooperative organization.

8. Full realization of economies of location and scale in the fish-processing sector.

   This implies spatial reorganization, with due regard for resource availability, the role of feeder plants in raw-material assembly and the presence of transportation nodes.

9. Elimination or minimization of wastage at all stages of production, e.g. discards at sea and spoilage in handling.

10. An optimal mix of the products derived from fish landings, in terms of returns to the industry and the regional economy.

    Elimination of the structural and other rigidities that prevent

disposition of landings in accordance with most profitable end use is implied here, e.g. as between freezing and curing in the case of cod, and as between animal meal and human food use in the case of herring.

11. Optimization of product quality, product diversification and value added in fish processing.

This implies maximum efficiency in responding to demand in domestic and export markets.

12. Maximization of the competitive position of the fish trade in international product markets.

Issues relating to the desirability and feasibility of vertical integration forward into export markets, as well as to national vs. foreign ownership and/or control are raised here. Among other things, a choice is involved between a) extending Canadian ownership in selected sectors of the fisheries and b) developing the primary and/or secondary sectors, at least in part, through joint-ownership arrangements with interests abroad.

13. An optimal combination of public and private investment for development of the fisheries.

14. Maximum practicable efficiency in intelligence services for the fishing industry and the fish trade.

Predictive or forecasting capability, with reference to resource and environmental conditions, and mechanisms for the "early warning" of market fluctuations require fundamental re-assessment and improvement.

20. The development in fishing communities of an internal momentum for economic and social growth and toward the fullest possible degree of self-determination.

Industrial restructuring or rationalization must be planned and implemented so as to encourage this.

Source: Policy for Canada's Commercial Fisheries, Department of the Environment, Ottawa, 1976.

Social/Cultural Development

15. Minimization of the socially and culturally disruptive impact of industrial and trade reconstruction.

    Providing that achievement of other developmental objectives is not thereby stultified, the implementation of programs of industrial restructuring or rationalization must be phased in accordance with this objective.

16. Assurance of a cadre of skilled labour for the fisheries and of the attractiveness of fishing as a full-time occupation.

17. Assurance of acceptable employment opportunity for those displaced as a result of industrial restructuring.

18. An adequate level of compensation for losses accruing from industrial restructuring.

    Such compensation must also meet the criteria a) that it not be a disincentive to recruitment into other employment and b) that it be capable of being eventually phased out.

19. Maximum efficiency in the design and implementation of developmental programs.

    Planning for development must take account, for example, of the impact of alternative structures on relative wage rates as between fisheries and other industries and ensure that, after restructuring has been completed, the equity of income distribution in the communities affected and in society generally is better than it was before.

Notes

[1]Canada. Fisheries and Marine Service. Policy for Canada's Commercial Fisheries. Ottawa: Dept. of the Environment, 1976.

[2]Nova Scotia. Dept. of Fisheries. Sea, Salt, and Sweat. Halifax: Nova Scotia Communications, 1977, p. 5.

[3]Nova Scotia. The Province of Nova Scotia. Halifax: Nova Scotia Communications, 1978, p. 19.

[4]Nova Scotia. Dept. of Fisheries. Nova Scotia Fisheries Landings, Landed Values and Market Values by Major Species. Halifax: Nova Scotia Communications, 1979.

[5]Nova Scotia, Dept. of Development. Fisheries Industry Profile and Impact Study. Halifax, 1973, p. 7.

[6]Ibid., p. 8.

[7]Ibid., p. 9.

[8]Ibid., p. 9.

[9]These vessels were built under the Fishery Vessel Construction Assistance Program, administered previously by the Dept. of Fisheries and Forestry, and later by the Fisheries Service of the Dept. of the Environment (now Fisheries and Oceans, Canada). The larger vessels built under the Vessel Construction Assistance Program administered by the Dept. of Industry, Trade and Commerce are not included in these figures.

[10]Nova Scotia. Dept. of Fisheries. Distribution, Size and Age Characteristics of the Nova Scotia Commercial Fishing Fleet. October, 1978.

[11]For instance, in March 1977, the second largest fish company in Nova Scotia (Nickersons), acquired ownership control of the largest company (National Sea Products). Nickerson now controls at least 40 out of 77 trawlers over 150 tons in the Maritimes and Quebec, about 30% of groundfish processing capacity and over 40% of the total processing capacity in the Maritimes. Nickerson also has 13 scallop draggers and 3 herring seiners, annual sales in excess of $200 million, and operates three shipyards.

[12]Macdonald, R.D.S. "Inshore Fishing Interests on the Atlantic Coast." Marine Policy, Volume 3, No. 3, July, 1979, p. 174.

[13]Canada. Fisheries and Oceans Canada, Maritimes Region. 1979 Fisherman's Information. Halifax, Nova Scotia, 1979, p. 2.

[14]Ibid.,p. 4.

[15]Canada. Environment Canada. Policy for Canada's Commercial Fisheries. Ottawa, 1976, p. 5.

[16]Canada. Fisheries and Oceans Canada. Toward an Atlantic Coast Commercial Fisheries Licensing System. Ottawa, 1979.

[17]Nova Scotia. Dept. of Fisheries. Joint Provincial Fisheries Development Proposal. Halifax, 1977.

[18]Ibid., p. 2.

[19]Nova Scotia. Voluntary Planning Fisheries Sector. 200 Mile Limit Study. Halifax, June 1979. Unpublished.

[20]Nova Scotia. Dept. of Fisheries. A Discussion Paper on the Proposed Nova Scotia Fisheries Policy. November, 1979, p. 4.

[21]Nova Scotia, Dept. of Fisheries. A Discussion Paper on the Proposed Nova Scotia Fisheries Policy. Halifax, 1979, p. 11.

[22]Ibid., p. 18.

[23]Canada. Dept. of the Environment, Fisheries and Marine Service. Policy for Canada's Commercial Fisheries. Ottawa, 1976.

[24]Nova Scotia. Dept. of Fisheries. A Discussion Paper on the Proposed Nova Scotia Fisheries Policy. Halifax, 1979.

[25]Ibid., p. 17.

[26]Ibid., p. 18.

[27]Nova Scotia. Nova Scotia Fish Packers Association. Freezing At Sea - A Canadian Opportunity. Dartmouth, 1979, p. 2.

[28]Ibid., p. 7.

[29]Nova Scotia. Dept. of Fisheries. A Discussion Paper on the Proposed Nova Scotia Fisheries Policy. Halifax, 1979, p. 19.

[30]Canada. Dept. of Fisheries and Oceans. Toward An Atlantic Coast Commercial Fisheries Licensing System. Ottawa, 1979, p. 91.

[31]Ibid., p. 92.

[32]Canadian Fishing Report. More Freezer Trawlers For Newfoundland. Volume 2, No. 3, March 1980, p. 1.

[33]Canada. Dept. of Fisheries and Oceans. Toward an Atlantic Coast Commercial Fisheries Licensing System. Ottawa, 1979, p. 72.

[34]Nova Scotia. Dept. of Development. Programs and Services for Business Development in Nova Scotia. Halifax, 1979, p. 32.

[35]Ibid., p. 45.

[36]Nova Scotia. Voluntary Planning. Fisheries Sector 200 Mile Limit Study. Halifax, 1979, p. 24.

[37]Ibid., p. 25.

[38]Nova Scotia. Dept. of Fisheries. Costs and Earnings of Selected Fishing Enterprises. Ottawa, 1978, p. 22.

[39]Holmsen. Andreas A. Economics of Small Groundfish Trawlers in Iceland, Norway, and Southern New England. NSGD-RIU-T-77001. Kingston, RI: University of Rhode Island Marine Advisory Service, 1977. 29 p.

[40]Geuroult, E.R. "An Approach to the Design of New Types of Fishing Vessels", in Fishing Boats of the World. Third edition, Janalof Traung, Fishing News (Books) Ltd. FAO, 1967.

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