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**LA THÈSE A ÉTÉ
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MULTIPURPOSE PLANNING FOR THE DEVELOPMENT, EXPLOITATION AND
CONTROL OF CONTINENTAL SHELF RESOURCES: THE CANADIAN SITUATION

by

Felix Annor Kwamena

A thesis submitted in partial fulfillment of the requirements
for the degree of

MASTER OF PLANNING

University of Ottawa

1979

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"Most things become exhausted with promiscuous use. This is not the case with the sea. It can be exhausted neither by fishing nor navigation, that is to say, in the two ways in which it can be used"?

Hugo Grotius 1609.

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Postscript

This thesis was written before the present Conservative Government made known their intention to hand over the ownership of offshore oil and gas to the coastal provinces. However, the principles and the planning process discussed are still applicable notwithstanding the proposed transfer from federal to provincial governments. What is being transferred is the ownership of offshore oil and gas and not the whole continental shelf. The federal government will therefore continue to be responsible for shipping, fisheries and pollution. Besides the ongoing Conference on the Law of the Sea and other international conferences are conducted at state level. Thus there will continue to be federal involvement in this area.

Furthermore, the transfer of ownership of offshore oil and gas to coastal provinces does not eliminate the fact that the development of the offshore resources will still require a meta-disciplinary and inter departmental approach. At present, the coastal provinces do not have one department that can deal with all aspects of offshore resources development, control and exploitation. The setting up of such bureaucracy does not seem likely in the present period of budget restrain and reduction in the expansion of government departments. Thus the responsibility for the development, exploitation and control will have to be carried out by several departments even at the provincial level.

CHAPTER I

Introduction: Multipurpose Planning for the Development and Control of Continental Shelf Resources

1. Introduction

During the past few years, there has been a growing interest in the development and control of offshore resources. This growing interest has been manifested in several forms: international conferences,¹ unilateral declaration of fisheries zones,² search for oil and gas,³ and research.⁴ Scientific and technological advances, a growing world population outpacing its food supply, diminishing world energy and mineral reserves of land based resources have also led to the current surge of interest in the exploitation and development of marine resources.

The extension of Canada's jurisdiction over marine fisheries to 200 nautical miles off the East and the West coasts on January 1, 1977 and off the Arctic Coast on March 1, 1977⁵ will undoubtedly be followed by a declaration of an "Exclusive Economic Zone" (EEZ) covering the same area in the very near future. It is being assumed that eventually, the international community will adopt the 200-mile fisheries zone as an exclusive economic zone. Over eighteen states have adopted a 200-mile exclusive economic zone since 1974. States like Argentina, Brazil and Liberia have even gone further to adopt the 200-mile zone as a territorial zone (see Table I - 1). For this reason, the 200-mile fisheries zone, the Exclusive Economic Zone, and

TABLE I - 1

200-Mile Offshore Jurisdictional Claims

<u>Zone</u>	<u>State</u>	<u>Effective date</u>	<u>Approximate Area</u>	
Economic	Bangladesh	September 15, 1974	22,400	square miles
	Burma	-	148,600	" "
	Comoros	June, 1976	72,100	" "
	Costa Rica	May 20, 1975	75,500	" "
	Cuba	February 26, 1977	105,800	" "
	Dominica Republic	-	78,400	" "
	France	-	-	-
	Guatamala	June 9, 1976	28,900	" "
	Haiti	-	46,800	" "
	India	January 16, 1977	587,600	" "
	Maldives	December 5, 1976	279,700	" "
	Mexico	June 5, 1976	831,500	" "
	Mozambique	August, 1976	163,900	" "
	Norway	-	-	-
	Pakistan	December 17, 1976	92,900	" "
	Portugal	-	517,400	" "
	Senegal	April, 1976	60,000	" "
	Sri Lanka	January 15, 1977	150,000	" "
Fishing	Angola	January 28, 1976	147,600	" "
	Belgium	January 1, 1977	800	" "
	Canada	January 1, 1977	857,000	" "
	Chile	April 11, 1953	667,300	" "
	Denmark	January 1, 1977	414,400	" "
	Federal Republic of Germany	January 1, 1977	10,400	" "
	France	January 1, 1977	32,200	" "
	Iceland	October 15, 1975	252,800	" "
	Ireland	January 1, 1977	110,900	" "
	Netherlands	January 1, 1977	24,700	" "

<u>Zone</u>	<u>State</u>	<u>Effective date</u>	<u>Approximate Area</u>	
Fishing (cont'd)	Nicaragua	April 8, 1965	46,600	square miles
	Norway	January 1, 1977	590,500	" "
	United Kingdom	January 1, 1977	274,800	" "
	U.S.A.	March 1, 1977	3,000,900	" "
	USSR	March 1, 1977	1,257,000	" "
Territorial Sea	Argentina	January 4, 1967	339,500	" "
	Benin	March 24, 1976	7,900	" "
	Brazil	March 25, 1970	924,000	" "
	Ecuador	November 11, 1966	338,000	" "
	El Salvador	September 7, 1950	26,800	" "
	Liberia	December 24, 1976	67,000	" "
	Panama	February 2, 1967	89,400	" "
	Peru	November 11, 1965	229,400	" "
	Sierra Leone	April 17, 1971	45,400	" "
	Somalia	September 10, 1972	228,300	" "
	Uruguay	December 3, 1969	34,800	" "

States having Draft or Enabling Legislation

Fishing	Japan	-	-
	Sweden	-	-
Economic Resource	South Africa	-	-
	Bahamas	-	-
	Papua New Guinea	-	-

N.B. 1. 48 countries have continental margins extending beyond 200-miles including:

Australia
Brazil
Canada

India
Japan
Mexico
New Zealand
Norway
United Kingdom
U.S.A.
USSR

2. Excluding the Antarctic Zone, the estimated total global area of potential 200-mile jurisdiction is about 35,173,300 square miles of sea.

Source: Based on Department of External Affairs "Jurisdictional Claims - Economic - Fishing - territorial", Canada and the Law of the Sea Resource Information, September 1977, p.33.

the Continental Shelf will be used synonymously in this thesis. The declaration of an Exclusive Economic Zone will confer "ownership" of the marine resources on the coastal state.⁶ Thus the Coastal state can regulate the development and exploitation of the marine resources.

The juxtaposition of different resources in the 200-mile zone: seabed, subsurface minerals, various marine plants and animals, the water body itself and the space above it; is likely to create conflict of uses. In Canada, this is complicated by the inexistence of a co-ordinated planning policy or set of strategies at the federal level. Furthermore, the lack of sufficient understanding of the underlying processes of marine ecosystem functioning suggests that the piecemeal and ad hoc approaches that have characterized the planning of the development of land based resources, cannot be used in the marine environment. It can therefore be argued that multipurpose (multiple uses) planning of continental shelf resources could be one of the major challenges that Canada will face in the next several decades.

The development of offshore resource planning policy in Canada is relatively speaking in its infancy. For this reason, care should be exercised now in the type of planning policies that are pursued so that developments that are undertaken do not pre-empt options for the future. This is important because departmental responsibility for the development

and control of offshore resources is fragmented.⁷ The creation of a separate Department of Fisheries and Oceans⁸ and the proposed creation of the Maritime Offshore Resources Board⁹ is likely to compound further, the fragmented departmental responsibilities. If an offshore resources planning framework is to be developed, then several questions will have to be answered. What position should Canada take at the Ongoing Law of the Sea Conference and other international meetings? What legislation should be enacted to regulate the development of continental shelf resources? What institutional arrangements should be established to plan the development of offshore resources? How can the Provinces effectively contribute to the formulation of offshore resources planning policies? The principles discussed in this thesis will thus contribute to the development of a multipurpose planning framework for the orderly development of Canada's offshore resources. To a large extent, the planning of offshore resources has been sectoral (e.g. fisheries, or shipping) and departmental. Whatever policy integration between line departments that has taken place has been incidental. This thesis will therefore examine not only interdepartmental integration (horizontal integration) but also the multipurpose development of all offshore resources. Avenues for an effective provincial, industry and public participation in offshore resources planning, will also be discussed.

2. Definitions

The term "continental shelf", "offshore", and "exclusive economic zone" have been variously defined as that gentle dipping part of the seabed extending out from the shoreline,¹⁰ those submarine areas adjacent to the coast that admits the exploitation of natural resources of the seabed and subsoil,¹¹ or the area beyond and adjacent to the territorial sea.¹² For the purpose of this study, the terms "continental shelf", "offshore", and exclusive economic zone", are used synonymously to represent:

"The water body, the air space over, the sea-bed and the subsoil of the submarine areas adjacent to the coast and extending to the edge of the continental margin that admit the exploitation and development of the natural resources present."

The definition of the continental shelf has created practical problems. The 1958 Geneva Convention defined the continental shelf on the basis of three main concepts: 200-metres, depth, adjacency and exploitability. While the 200-metre water depth has not in general been breached with respect to the exploitation of hydrocarbons; it has been for the harvest of crabs, lobsters, and black coral. The concept of exploitability in effect defines the outer limit of the continental shelf to the point where technology makes exploitation possible; thus modifying the other two concepts. It is for this reason that some writers have argued that the 1958 Geneva definition of the continental shelf is unworkable.¹³ To overcome this problem, the Third Law of the Sea

Conference has proposed a definition of the continental shelf based on the concepts of the continental margin and a distance of 200 nautical miles whichever is farthest. The continental margin consists of the geological continental shelf, the continental slope and the continental rise (see figure I).

The continental shelf of most states vary in width. By proposing a definition based on the concepts of the continental margin and the 200 nautical miles, every state will be able to exploit its offshore resources provided it has the technology. However, the definition that has been presented is even broader than the Law of the Sea Conference's definition. It is in effect a definition of the "Ocean Space", as it includes the air space above the continental margin, the land-water interface and the air-water interface. The argument being presented is that this definition will enable the offshore resources planner to consider all the resources of the "Ocean Space" when formulating development policies and will also enable him to resolve possible conflict of uses that may arise. Similarly, the term "natural resources" is used to represent:

"Minerals, other non-living things and the living organisms either mobile or sedentary."

These definitions are functional in the sense that together, they recognize the different uses that can occur in the continental shelf. The continental shelf is thus defined both in a spatial and functional context in this study.

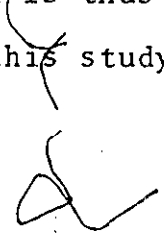
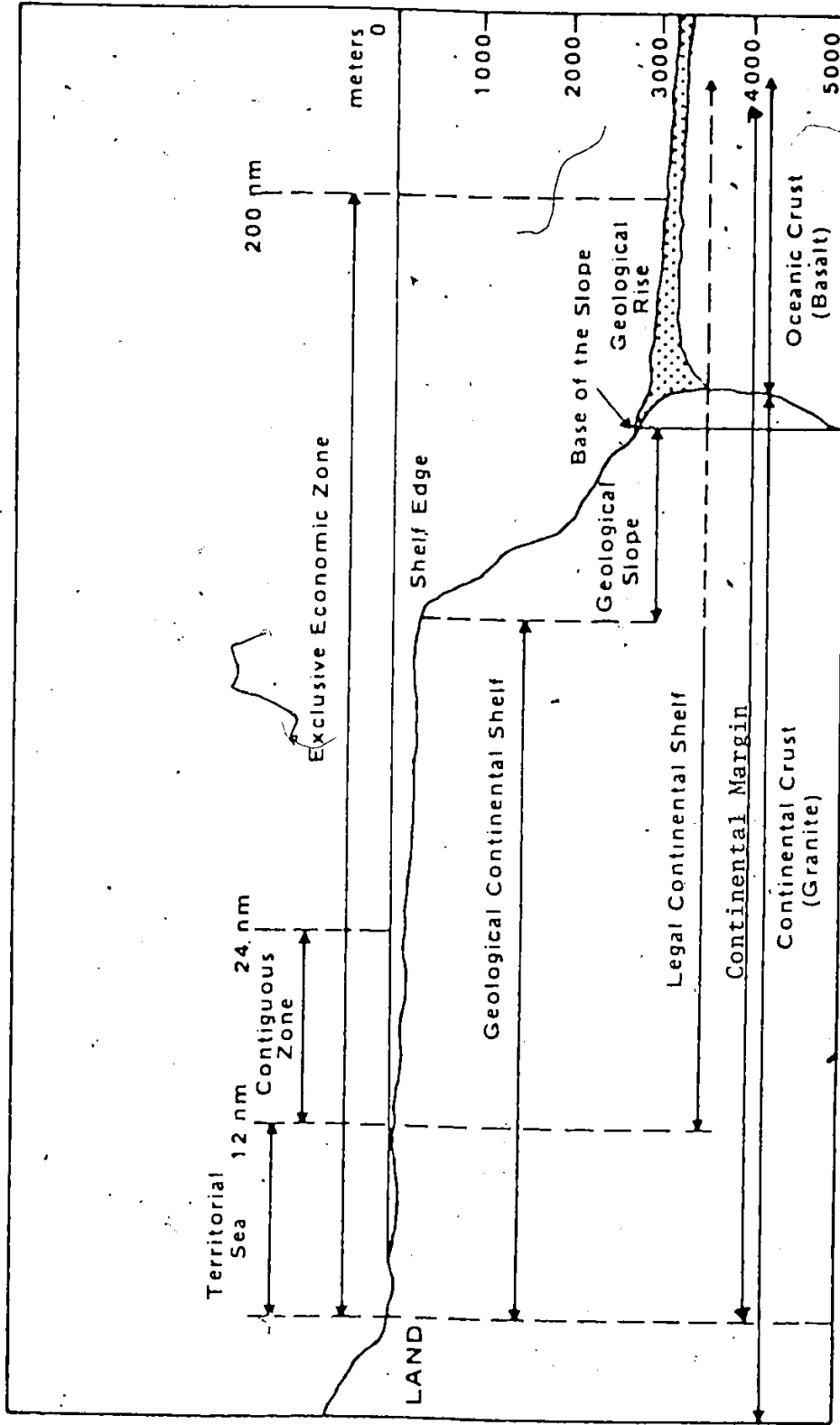


FIGURE I - 1

The Continental Margin and Zones of National Jurisdiction



Source: Based on Hodgson, R.D. and Smith, R.W. (1976)
 "The Informal Single Negotiating Text (Committee):
 A Geographical Perspective" Ocean Development and
 International Law - The Journal of Marine Affairs
 3, p. 254.

3. Objectives

The purpose of this thesis is to identify principles that will contribute to the developments of a multipurpose planning framework for the orderly development, exploitation and control of continental shelf resources. In so doing, three major objectives may be isolated which will constitute the discussion of the succeeding chapters.

The first objective is to review briefly some of the "relevant" articles of the international conventions and treaties; and the "relevant" sections of federal Acts. The aim is to define the legal framework and mandate of marine resources planning.

The second objective is to review the regulations under which the Department of Energy, Mines and Resources make offshore oil and gas rights available for development - this is a review of the licence, permit and lease administration. This review will then help in identifying "all" the Federal Departments that have or should have policy input in the planning of offshore resources development, exploitation and control. This review will also help in defining gaps that exist in the planning and co-ordinating functions of the Departments. The second objective will in effect deal with the institutional framework as it relates to the Federal Government. The reason to review the licence, permit and lease administration is that different aspects of offshore exploration, drilling and exploitation are

regulated by different Departments. The process therefore better illustrates the interaction among Federal Departments with responsibilities for marine resources planning. The fishing licensing and permits system will also be discussed for it shows an area of federal-provincial cooperation. The Federal Government has delegated its regulatory authority to the Provinces with respect to shell-fishing.

The third objective is to discuss alternative institutional planning arrangements that will facilitate an effective planning and managing process of multipurpose offshore resources development. Implicit in the objectives is the assumption that the Planning of the ocean space is essential. The potential for conflict of uses coupled with the fact that the process of marine ecosystem functioning is not very well understood suggest that the development and use of ocean space must be orderly. Thus planning may help to ensure that maximum benefit is derived from the exploitation of offshore resources. Although certain areas of the ocean space may not have to be developed, either because of conservation or economical reasons, these areas will have to be identified first, hence the need for planning.

4. Scope and Limitation

This thesis will focus on the development, exploitation and control of the continental shelf resources off the East and West coasts of Canada between latitudes 40° and 60° North -

the Atlantic and Pacific Coasts. The main reason for this restriction - which excludes the entire Arctic Coast - is that these offshore areas are relatively speaking, closer to most of the population centres where spin-off effects of offshore resources exploitation and development will be greatly felt. These same urban areas are also the source of much development pressure. In addition, the offshore areas off the East and West coasts are the location of the most intensive current uses of the marine environment: major fishing grounds, shipping, marine-oriented recreational activities, oil, gas and mineral exploration, naval exercises, and scientific research. Thus, the offshore areas selected for this study are potential areas where development conflicts are most likely to occur. There will be no direct discussion of on shore (coastal-zone) support facilities planning in this study. Experiences or "mistakes" made in other offshore areas serve to indicate potential problem areas of development. It is therefore important that offshore resources planning learn from the lessons of the past. However, it must be emphasized that this does not mean a wholesale importation of concepts, developed specifically for certain unique areas, from one part of the world to another, - or what is sometimes referred to as formula planning. Nevertheless, references will be made to United Kingdom's offshore development experiences, when appropriate, to help put Canadian approaches in perspective.

5. Methodology

The methodological approaches used in this thesis were documentary and analytical. The first part of the documentary phase was devoted to a critical examination of both international and domestic legislation: conventions, treaties, Acts and regulations that define the legal offshore resources planning framework. The second part involved a review of the institutional framework. This was done by reviewing the responsibilities of federal departments charged with the development and control of offshore resources; and the extent of their interaction or lack of interaction. The main source of information for this part was departmental publications, studies and reports.

To help gain a better "perspective" of federal offshore resources planning, the second part of the documentary phase was supplemented by "elite interviewing". Because of the fragmentation of jurisdiction, it was impossible to interview officials from the twenty-two departments and over one hundred agencies that have direct or indirect responsibility for offshore resources development and control. Thus elite interviewing provided the best means of obtaining information from representatives of the core departments, who are exposed to and informed of the issues relating to offshore resources development and control.¹⁴

Because of the juxtaposition of different resources within the ocean space, a potential conflict of development may arise. For effective planning, it is important that such conflict

of development be identified and resolved. Using the indices of the absolute values of the thirteen offshore resources activities/uses that have been identified, a conflict of uses matrix was developed in chapter V to identify the most conflictual uses.

6. Chapter Structure

Chapter II establishes the international and national legal framework for offshore resources planning. The key articles of the 1958 Geneva Convention and the Informal Composite Negotiating Text of the Third Law of the Sea Conference, which defines the international framework, are summarized and discussed. Similarly, the relevant sections of the Federal Acts that set out the broad policies of the Federal Government for the development and control of offshore resources are also paraphrased and discussed. Unlike the United Kingdom which has the Continental Shelf Act 1964, Canada does not have a Unified Offshore Development Act. The summary of the relevant Acts and Regulations is therefore an attempt to present what may be called Canada's "Offshore Resources Planning Act."

The responsibilities for marine resources development and control are assigned to several Departments. Chapter III examines the specific functions of these Departments, including the newly created Department of Fisheries and Oceans, by reviewing the administration of the licence, permit and lease process for the development and exploration of offshore areas. The role of the Maritime Offshore Resources Board is also discussed in Chapter III.

Chapter IV identifies a number of offshore uses/activities. An alternative form of classification of these uses is suggested as one of the possible methods of monitoring the changes in the level of uses. The protection of Canada's continental shelf resources and the role of technology in offshore resources exploitation and development is also discussed in Chapter IV. The availability of "appropriate" data in doing a research like this is often a problem. Chapter V looks at the problem of availability of data, and the conflicts arising from the multiple uses in the exclusive economic zone. A conflict of uses matrix is presented as one of the possible

methods of identifying potential points of conflict of offshore development. Because effective offshore resources planning will have to take both a short term and a long term view, priorities will have to be established. Chapter V also suggests an approach that can be used in identifying shifting priorities over a particular time period. The regional differences that occur in the uses on the East and the West coasts are also examined in Chapter V. Environmental issues, in particular pollution, is viewed as a consequence of the uses that occur in the exclusive economic zone. Chapter VI examines the pollution problem and the role of environmental impact studies in offshore resources planning.

Chapter VII draws together the conceptual and the theoretical principles of the preceding chapters and attempts to present an alternative institutional arrangements for the orderly planning of offshore resources. The first half of Chapter VIII deals with offshore-onshore planning "linkages", the impact of offshore resources development on coastal communities and presents suggestions for further areas of research. The second half summarizes the conclusions of the preceding chapters, the aims, objectives and the main principles of the entire thesis and discusses the general applicability of these principles to other countries.

F O O T N O T E S

1. The Third United Nations Conference on the Law of the Sea has convened several sessions since 1973. The first session was held in the summer of 1974 in Caracas, Venezuela and the latest was the seventh session in Geneva, March 1978.
2. Canada created a 200-mile fisheries zone off the East and West Coasts on January 1, 1977. Canada Gazette, November 1, 1976.
3. By September 1975, fourteen drilling wells have been sunk off the west coast, eleven in the Labrador Sea, forty on the Scotian shelf and forty-two on the Grand Banks. Dept. of Energy, Mines and Resources. Surveying Offshore Canada Lands. 1975, Ottawa, p. 13.
4. Most of the Canadian studies deal with scientific research (Buerkle 1975) (Stewart & Dickie 1971), (Gibbons & Voyer 1974); fisheries (Mitchell 1978), (Copes 1978) and enforcement of Maritime Jurisdiction (Tracy 1975) and hardly anything on planning (Johnson 1977).
5. Dept. of External Affairs Communique No. 116, November 2, 1976.
6. Johnson, B (1977) "Governing Canada's Economic Zone" Canadian Public Administration, 20, No. 1, p. 155.
7. There are over twenty Federal Departments whose policies in one way or another affect offshore resources development, exploitation and control. See Appendix "D".
8. The House of Commons of Canada Bill C-65, Third Session, Thirtieth Parliament, 26-27 Elizabeth II, 1977-78.

9. The Prime Minister and the Premiers of Nova Scotia, New Brunswick and Prince Edward Island signed a memorandum of understanding on February 1, 1977 which provides for the creation of an Offshore Resources Board to manage Canada's offshore mineral resources.
10. Dept. of Energy, Mines and Resources. Resources Under the Sea, Ottawa p. 3.
11. This definition is derived from Section 3(b) Canada Oil and Gas Production and Conservation Act 1972, Consolidation p. 3.
12. United Nations Third Conference on the Law of the Sea Informal Composite Negotiating Text A/Conf. 62/WP.10 15 July 1977. Part V Article 55. p. 41.
13. Hodgson, R.D. and Smith, R.W. (1978) "The Informal Single Negotiating Text (Committee II): A Geographical Perspective" Ocean Development and International Law The Journal of Marine Affairs 3,3 pp. 225-259.
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CHAPTER II

The Legal Framework for Offshore Resources Planning

1. Introduction

Any exercise in planning requires that a legal authority be invoked to back the intervention measures being taken. There are two main sources of such authority that can be exercised in offshore resources planning: international and domestic.

The purpose of this chapter is to present, paraphrase and comment upon relevant Articles of the 1958 Geneva Convention, the Informal Composite Negotiating Text of the Ongoing Law of the Sea Conference (Appendix A), and the relevant sections of the Federal Acts of Canada (Appendix B) that give legal authority to offshore planning measures.

2. International Framework for Offshore Resources Planning

2.1 1958 Geneva Convention

The 1958 Geneva Convention deals with the "Territorial Sea and the Contiguous Zone", the "High Seas", the "Fishing and Conservation of the Living Resources of the High Seas" and the "Continental Shelf". Under the territorial sea and contiguous zone convention, a coastal state has sovereignty over the territorial sea, the air space over the territorial sea, the seabed and subsoil. The territorial sea which is defined as a belt of sea adjacent to a coast includes roadsteads normally used for loading, unloading and anchoring of ships, if they have been indicated on

charts published by a coastal state. In delimiting the outer limit of the territorial sea, the outermost permanent harbour works which form an integral part of the harbour system may be regarded as part of the coast but offshore installations cannot.

Coastal and non coastal states have the right of innocent passage through the territorial sea, but coastal states have the responsibility of publicizing dangers to navigation within their territorial sea. Foreign ships exercising the right of innocent passage have to comply with regulations of coastal states provided such regulations are enacted in conformity with the 1958 Geneva Convention and other international law. While coastal states may charge for services rendered to foreign ships, charges cannot be levied for the use of the territorial sea as a passage. A coastal state may also exercise control over the high seas contiguous to its territorial sea with respect to customs, fiscal, immigration and sanitary regulations. The contiguous zone may not extend beyond twelve miles from the baseline from which the breadth of the territorial sea is measured. The Convention prohibits coastal states from arresting any person or conducting any investigation in connection with a crime committed on board a ship during its passage through the territorial sea if the consequences of the crime does not affect such a state.

The "High Seas" is defined in the Convention as all parts of the sea that are not included in the territorial waters

or the internal waters of a coastal state. The high seas are open to all states (coastal and non coastal) for navigation, fishing, laying of submarine cables and pipelines, and flying over. To ensure these freedoms and to protect the marine environment against pollution, states are obliged to draw up regulations to prevent their ships from discharging oil and from dumping radioactive wastes at sea.

In order to ensure "optimum sustainable yield" the convention on "fishing and conservation of the living resources of the high seas" obliges all states to adopt or co-operate with other states in adopting necessary measures for the conservation of the living resources of the high seas. Thus nationals of two or more states fishing the same stock in any area of the high sea could enter into negotiations to draw up agreement for the conservation of a living resource threatened with over exploitation. If the states cannot reach agreement within twelve months, the dispute can be submitted to a special five member commission for settlement in accordance with the provisions of the United Nations Charter.

The Convention on the continental shelf establishes the priority of uses of the continental shelf: laying and maintenance of submarine cables and pipelines, navigation, fishing, conservation and research. Thus it would appear that traditional uses of the continental shelf have priority over contemporary uses. All states are however, guaranteed the right to explore and

exploit the natural resources of the continental shelf.

The "Continental Shelf" is defined as the seabed and subsoil of the submarine areas adjacent to the Coast but "outside the territorial sea" to a depth of 200 metres or where the superjacent water admits the exploitation of the natural resources. The relevant Articles, to this thesis, of the 1958 Geneva Convention are summarized in Appendix A.I.

The 1958 Geneva Convention has been criticized for several reasons. However, the main criticism has been the limited authority it gives coastal states in developing and controlling their offshore natural resources. The 1958 Geneva Convention has made most of the natural resources a common property that in the end no state can effectively conserve and protect these resources. It was in attempt to correct the weaknesses of the 1958 Geneva Convention that the Third United Nations Conference on the Law of the Sea was convened. The next section discusses the proposals that have been made at the Law of the Sea Conference to overcome some of the weaknesses of the 1958 Geneva Convention.

2.2 The United Nations Third Conference on the Law of the Sea and the Informal Composite Negotiating Text (ICNT)

Technological advances, that have made possible the exploitation of offshore hydrocarbons, increasing threat to beaches from major oil spills and the desire by most coastal states to control their offshore resources are some of the

factors that have made it necessary the rewriting of the International Law of the Sea. The Third United Nations Conference on the Law of the Sea was therefore convened in the summer of 1974 in Caracas, Venezuela. After several sessions (formal and informal), the Informal Composite Negotiating Text (ICNT) was released at the end of the sixth session in New York. While this Text is not the final draft of the Convention, it reflects several broad agreements that have been reached up to date; and the final draft may not significantly differ from the present text. The Informal Composite Negotiating Text is discussed briefly to show some of the changes that may occur in international law with respect to the development and control of offshore resources.

With respect to offshore resources development and control, the Text proposes two broad jurisdictional areas: the "Exclusive Economic Zone" (EEZ), Part V, (ICNT) and the "Area" (Part XI). The Exclusive Economic Zone and its resources are the common heritage of mankind. The Exclusive Economic Zone is defined as an area beyond and adjacent to the territorial sea and extending to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured. Thus, while the breadth of the Exclusive Economic Zone is measured from the baseline, the territorial sea is not regarded as forming part of the Exclusive Economic Zone. The width of the territorial sea is twelve nautical miles

(Article 3, ICNT). A coastal state will have exclusive right to construct or to authorize and regulate the construction and operation of artificial islands, installations for the development of offshore resources, marine scientific research, or the enforcement of regulations for the preservation of the marine environment in the Exclusive Economic Zone (Article 60); and sovereign rights for the exploration, exploitation, conservation and management of the natural resources, both living and non-living, and other economic activities of the zone including production of energy from the water, currents and winds (Article 56). If Coastal States are to derive the maximum benefits from the exploitation of these resources, then their development will have to be effectively planned.

Taking into consideration the best scientific evidence available to them, coastal states are to ensure, through proper conservation and management measures, that the living resources (e.g. fisheries) of the Economic Zone are not endangered by over exploitation. The proposed Convention will also empower coastal states to determine the total allowable catch for the living resources and to co-operate with global, regional and subregional organizations to achieve conservation objectives. The Composite Text also contains provisions for the control of migratory species, e.g. tuna, mackerel, swordfish (Article 64), marine mammals (Article 65), anadromous stocks (Article 66) catadromous species (Article 67) and sedentary species (Article 68).

States in whose rivers anadromous stocks originate have the primary responsibility for such stocks and are obliged to ensure their conservation by establishing regulatory measures in all waters landwards of the outer limits of their Exclusive Economic Zone. The state of origin may also establish the total allowable catches for anadromous stocks in consultation with states fishing these stocks. Coastal states in whose waters catadromous species spend the greater part of their life cycle have the responsibility for the management of and the ingress and egress of such species. The Composite Text restricts the harvesting of catadromous species to waters where coastal states exercise sovereign rights. Where catadromous species are in the Exclusive Economic Zone, the general provisions of the Text with respect to fishing are to apply. In the exercise of their sovereign rights with respect to the exploration, exploitation, conservation and management of the living resources of the Exclusive Economic Zone, coastal states have the powers to board, inspect and arrest vessels as well as powers to institute judicial proceedings in the enforcement of their laws and regulation enacted pursuant to the Convention. Flag states of the vessels arrested are to be notified immediately of the actions taken. However, penalties for violation of fisheries regulations do not include imprisonment or corporal punishment.

The creation of the "Area" and the establishment of the "Authority", the "Economic Planning Commission", "Technical

"Commission" and the "Enterprise" are significant proposals that will help to overcome some of the weakness of the 1958 Geneva Convention. Apart from Coastal States Organs of the United Nations will be directly involved with the development of marine resources. The experience that may be gained by these United Nations bodies may play a significant role in the periodic review of International Law of the Sea. The resources of the Area are vested in mankind and no state can exercise sovereign rights over any part of the Area or its resources. The development activities in the Area are to be carried out on behalf of mankind by the "International Sea-Bed Authority" (The Authority). The principal function of the Authority is to regulate the production of minerals from the Area and the Enterprise will be the main organ through which the Authority will directly carry out the activities of the Area. There will be three principal organs of the Authority: the Assembly (Article 157-158), the Council (Articles 159-164), and the Secretariat (Articles 165-168). The Council is the executive organ of the Authority and will have powers to establish specific policies that the Authority will pursue.

The Council will be made up of an Economic Planning Commission, a Technical Commission and Rules and Regulations Commission. The Economic Planning Commission will be composed of eighteen experts appointed, based on geographical distribution, from such disciplines as mining and management of mineral resources activities, international trade and finance. Thus an interdis-

disciplinary approach will be adopted with respect to the planning of the Area. In consultation with other organs of the United Nations and other intergovernmental organizations, the Economic Planning Commission will review trends and factors affecting supply, demand and prices of raw materials produced from the Area and undertake studies that will enable it to make appropriate recommendations to the Council. The Technical Commission on the other hand, will be responsible for making recommendations to the Council with respect to scientific research and the transfer of technology. The Technical Commission will also be responsible for the preparation of environmental assessments of the activities in the Area.

Unlike the 1958 Geneva Convention, the Informal Composite Negotiating Text contains provisions for the protection and preservation of the marine environment (Part XII), marine scientific research, which emphasize closer global and regional co-operation, (Part XIII) and the development and transfer of marine technology (Part XIV). The key Articles of the Informal Composite Negotiating Text are summarized in Appendix A.II. On the whole, the provisions of the Composite Text have been designed to encourage the development and exploitation of offshore resources while at the same time, they conserve and protect these resources. From the objectives of this thesis, Article 162 of the Composite Text is seen as one of the important proposals that has been made in the attempt to revise the

International Law of the Sea. It is an implicit acknowledgement of the key role of planning in the orderly development and control of offshore resources. If Article 162 is adopted in the final text of the Convention, it may not only serve as a "model" for but may also encourage most coastal states to establish an offshore resources planning body.

3. Canada and the Third Law of the Sea Conference

Since 1970, Canada has played a leading role at international fora that have discussed the Law of the Sea. There are several reasons why Canada has assumed a leadership role at these international conferences. Canada has the second-longest coastline and the second-largest continental shelf in the world. The Continental Shelf comprises approximately two million square miles or forty per cent of Canada's land mass, and is exceeded only by that of the USSR.¹ A second major factor that explains Canada's position is that Canada is an important coastal fishing nation, with fish exports of over \$1 billion in 1978,² interested in preserving the living resources in its territorial and adjacent waters. Unlike the other major trading nations of the world, Canada does not have a mercantile fleet. For this reason, Canada tends to take a different approach from the other states to such questions as flag-state jurisdiction over vessels. Other factors also appear to have contributed to shaping a distinct Canadian approach to such issues as the

denuclearization of the seabed, international law on marine environmental protection and the "unrestricted" movement of naval ships. For example, Canada is not a super power (even though Canada plays an important role in NATO) nor is Canada a nuclear power; thus while Canada shares to some extent the preoccupations of global western naval strategy, it also understands the concerns of developing countries about their security interests as they relate to naval passage through waters close to their shores.

Canada regards the ocean as one giant ecosystem in which all uses are closely linked to one another; and for this reason, decisions taken on one issue are bound to affect other issues as well.³ Based on this theory, Canada argued when it was decided to convene a Third United Nations Law of the Sea Conference that:

"any approach to redeveloping the Law of the Sea must be comprehensive and must deal with the whole range of issues left unresolved or resolved imperfectly at the first conference."⁴

The Canadian delegation's active participation in the deliberations of the Law of the Sea Conferences has been manifested in several ways: co-sponsoring draft treaty articles, introducing resolutions, and serving or chairing committees or working groups.

One of the most interesting proposals Canada has made at the Law of the Sea Conference is the "custodianship zone"⁵ extending 200 miles or to the continental margin whichever is

farther offshore. Under such a proposal, a coastal state would assume, on behalf of the World Community, the primary responsibility for enforcing internationally established standards and regulations. That is a coastal state would be exercising effective jurisdiction over such things as resources, pollution and research in the economic zone.

The living resources of the sea, the resources of the continental shelf and the deep seabed, protection of the marine environment and marine scientific research are issues that have been of particular concern to Canada at the Law of the Sea Conference. Modern fishing vessels and gear are capable of exploiting most fishing stocks. This capability is leading to over-exploitation and possible extinction of several stocks of fish.

The 1958 Geneva Convention (on fishing and conservation of resources of the high sea) is primarily concerned with freedom of fishing outside territorial waters and conservation and does not address itself to the basic problems of proper management and equitable distribution of the living resources. The various bilateral and multilateral treaties (Appendix B.I) that have been signed to help deal with the kind of problems that have been created by Russian fishing trawlers (factories) have not been very effective. It is the desire to check the threat of over-exploitation and the absence of an international law to deal with the management of the living resources of the sea that prompted Canada to advocate the widest possible spatial extent

of coastal state control over the living resources of the sea. In view of this, Canada suggested a comprehensive functional approach to fisheries management whereby marine living resources would be grouped according to four categories: sedentary species, coastal species, anadromous species and wide-ranging species.⁶

Under the "species" approach a coastal state would maintain exclusive sovereign rights over sedentary species (as it is now under 1958 Convention on the continental shelf) which at time of harvest are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil. Coastal states would also have the exclusive right to manage and conserve and exercise preferential right over the harvest to the limit of their capability of coastal species which are free swimming and which are generally found over the continental shelf or nutrient rich areas. Regarding the management and harvesting of anadromous species, a coastal state would have rights throughout their migratory range. This means only the state of origin of the species can harvest such stock. Wide-ranging species were to be managed and harvested through international arrangements.

The proposal tabled by developing coastal states on the other hand, advocated an overall exclusive sovereign rights approach under which a coastal state would claim exclusive sovereign rights in both the management and the harvest of all species found within a defined zone off its coast. In the end,

Canada co-sponsored with the delegations of India, Kenya, Sri-Lanka, Senegal and Madagascar, a set of draft treaty articles (ICNT: Articles 55-67) which appear to be a compromise between the Canadian "species" concept and the developing states "exclusive sovereign rights" concept. The compromise proposal enables a coastal state to claim exclusive sovereign rights in the management and harvest of all living resources within 200 miles of their coasts and preferential rights in respect of marine resources up to the edge of the continental margin.

Canada claims jurisdiction over the mineral resources of the seabed out to the continental margin. The bases for Canada's claim are the 1958 Geneva Convention (Article 1, Convention on the continental shelf) and the 1969 decision of the International Court of Justice in the North Sea Continental Shelf cases, which affirmed that the continental shelf is a natural extension seaward of the submerged land mass and on state practice.⁷ Canada's continental shelf extends to great depths at considerable distances off the East Coast, approximately 400-600 miles off Newfoundland.⁸ It is for this reason that Canada has supported at the present conference, the retention of the "exploitability criterion" established by the 1958 Geneva Convention. However, the land-locked and geographically-disadvantaged countries at the Third Law of the Sea Conference have strongly opposed Canada's position on the continental shelf. These countries hoping to gain considerably from the benefits that might accrue from a large area of international jurisdiction

over the seabed have instead proposed a criterion of 200-meter isobath and a distance of forty miles as the continental shelf. The main concern of these countries is that, with such restriction, the International Seabed Authority that have been proposed, would be deprived of the more accessible resources and would be left with only the deep seabed resources which in all likelihood would be the last to develop. The exclusive economic zone concept would in effect limit a coastal state's rights to 200 nautical miles.

Canada has also played a very active part in international fora that have examined the problem of the marine environment and pollution.⁹ With over seven international conventions on the protection of the marine environment having been adopted, and other agreement having been reached under the auspices of the Inter-Governmental Maritime Consultative Organization (IMCO) the preliminary work seems already done to have enabled the Third Law of the Sea Conference to have agreed on an "umbrella" treaty. A majority of states at the Conference agree on the necessity of an all-embracing treaty to protect and preserve the marine environment. The main issue which seems to prevent total agreement is the question of the right of a coastal state to adopt measures stricter than the international standards to protect its marine environment. The developing coastal states subscribe to the economic zone concept which would confer full jurisdictional powers on the coastal state in respect of marine pollution.

The policy underlying the Canadian position with respect to the protection of the marine environment emphasizes prevention rather than clean-up measures. This is also the underlying policy of Canada's Arctic Water Pollution Prevention Act (RSC 1970 Chapter 2, 1st supplement) and the Canada Shipping Act (RSC 1970 c. S-9, Part XX Sections 727-761). Canada's position at the Conference has therefore been one which would empower coastal states to prescribe and enforce more stringent anti-pollution standards over and above internationally-agreed upon rules in their territorial waters and adjacent areas of jurisdiction.

Canada also supports measures designed to further scientific marine research, but makes an important distinction between "pure research" and "economic and military-oriented research". As the distinction between these two forms of research is not very clear, Canada has proposed that coastal states should have not only the right to control and disallow, where necessary, foreign research off their shores, but also the right to participate in research conducted in area adjacent to their coasts by foreign states, and access to data and samples collected, "prompt and full reporting of results and their effective dissemination."¹⁰

Canada's primary concern at the Conference has not only been restricted to offshore matters. The Canadian delegation has also tried to guard against the potential harmful effects of seabed production on the land-based mining industry, especially

nickel. Under the resource policy article of the ICNT (Article 150), a percentage split of forty land-based to sixty seabed, of the increase in the world nickel demand has been proposed. What this means is that for a period of seven years starting January 1, 1980, the increase in world nickel demand will be calculated. Seabed mines will produce sixty per cent of the increase in world demand and land-based mines, forty per cent in addition to their normal production. However Canada's support for this proposal has annoyed Canadian mining companies involved in seabed mining consortia.¹¹

The overall Canadian approach to the Third United Nations Law of the Sea Conference is not:

"A doctrinaire one based on preconceived notions of traditional international law, nor is it a radical or anarchistic approach careless of contributing further to the already chaotic state of the Law of the Sea."¹²

Thus Canada's approach has been to analyze the problem and to attempt to determine and adopt specific measures necessary to resolve the issues. It is this policy of "functionalism" which explains Canada's developed-developing country dichotomy at the Law of the Sea Conference.

4. National Framework for Offshore Resources Planning

Federal legislation relating to the development and control of the resources of the continental shelf may be classified into three categories: those relating to the traditional uses

of the sea, fishing and shipping (Appendix B I); those relating to mineral development (Appendix B II); and those relating to protection of the marine environment and pollution (Appendix C). The legislation dealing with the protection of the marine environment and pollution will be discussed in Chapter VI in relation to the Intergovernmental Maritime Consultative Organization (IMCO) Convention. Of the Acts relating to traditional uses, only those dealing with fisheries have been summarized for this thesis. The shipping legislation relates more to the control and not development of the mercantile fleet, and therefore represents a different planning approach. Besides, Canada is not a major shipping nation.

Most of the fisheries Acts have been enacted as a result of bilateral or multilateral agreements and the main concern of the states that signed these Agreements is the Conservation of the living resources of the sea. For this reason, the planning component of the fisheries legislation is more complex as it involves the co-operation of other states. Nevertheless, the fisheries legislation is an indication that regional and international co-operation is important to marine resource planning.

The coastal Fisheries Protection Act empowers the Department of Fisheries and the Environment to issue licence and permits to foreign fishing vessels to fish or harvest marine plants in Canadian waters. However, in order to control the operations of the foreign vessels, the fishery protection officer

is given broad powers under the Act: to board and search vessels, or arrest the master and the crew, or seize the vessel if he suspects on reasonable grounds that any Canadian regulation is being violated. The Act also imposes severe penalties on any person who commit an offence and upon conviction, the offender can be fined up to \$25,000 and/or be imprisoned for up to twenty years.

The Fisheries Development Act authorizes the Minister of Fisheries to undertake projects for the more efficient exploitation and development of the fisheries resources. In this respect, the Minister can enter into agreement with any province or undertake joint economic studies with the government of any province or its agency. However, the Minister of Fisheries in undertaking any project or economic study, must utilize the services and facilities of other Government Departments or their Agencies wherever possible. In order to ensure that this policy will be followed, the Fisheries Research Board Act gives the Fisheries Research Board the sole right to conduct and investigate all practical and economic problems concerned with marine (and fresh water) fisheries. The Board is also put in charge of all federal fisheries research stations in Canada.

Section three of the Northwest Atlantic Fisheries Convention Act authorizes the Government of Canada to make regulations to implement the Provisions of the International Convention for the North-West Atlantic Fisheries. Such regulations may include

measures for the conservation and protection of fish in the convention area and prohibiting and limiting the exploitation of any stocks of fish, processing, importation, sale or disposal of fish caught in the convention area by citizens or residents of Canada or Canadian fishing vessels. The Act also provides for seizure of fishing vessels contravening the regulation; powers and duties of protection officers, and penalties. Article VI(1) of the Schedule to the Act requires the Northwest Atlantic Fisheries Commission to investigate the life history and ecology of any species, collect statistical information relating to the trends of the fishery resources, study and appraise information concerning the methods for maintaining and increasing stocks of fish of the Northwest Atlantic Ocean. The Annex to the Act divides the Northwest Atlantic Ocean into five sub-areas and Contracting Governments are to establish and maintain a panel for each of the sub-areas to carry out the objectives of the Convention. Canada serves on the panel for sub-areas three, four and five and Newfoundland, the panel for sub-area two. Appendix B.I.6 below gives the boundaries of these sub-areas.

The Oil and Gas Production and Conservation Act authorizes the Governor in Council to establish oil and gas committee consisting of five members, three of whom shall be employees of the Public Service, for a term of three years. The Committee is under the direction of the Minister of Energy, Mines and Resources. Two members of the Committee may be persons with specialized or

technical knowledge of oil and gas. The oil and gas Committee has jurisdiction to inquire into, hear, and determine or issue an order with respect to exploration, exploitation and conservation of oil and gas matters which the government regulates. The Minister may, periodically, refer to the Committee for a report or recommendation on any question or matter arising under the Act or relating to the conservation, production, storage, processing or transportation of oil and gas in the offshore area of the East and the West Coasts of Canada. The Act also deals with the question of "waste" which is defined as the "inefficient or excessive use or dissipation of reservoir energy or the production of oil and gas in excess of available storage, transportation or marketing facilities." Any person who causes waste is guilty of an offence under the Act but can only be prosecuted with the consent of the Minister. The Chief Conservation Officer is authorized by the Act to stop all operations giving rise to waste. Persons aggrieved by an order of the Chief Conservation Officer, may appeal the order to the Oil and Gas Committee. The decision of the Oil and Gas Committee may be appealed at the Supreme Court of Canada on a question of law or jurisdiction, otherwise the decision is final.

There are two main regulations affecting the exploration, exploitation and development of the oil and gas resources of the continental shelf. These regulations are the Canada Oil and Gas Land Regulations and the Canada Oil and Gas Drilling and Production

Regulations, both of which are administered by the Department of Energy, Mines and Resources with respect to the continental shelf lands off the East and the West Coasts. The Canada Oil and Gas Land Regulations deal with the licence, permit and lease administration. Section four of the Regulations divides Canada lands into grid areas for administration purposes; while section five gives the latitude and longitude of the grid area boundaries. Sections twenty-four to thirty deal with the issuing of licences and the conditions that must be fulfilled. For example section twenty-five requires that a licence should not be issued to a minor or to a company not incorporated or licensed to carry out business in Canada or not incorporated in a Province of Canada. Sections Thirty-three to forty-one regulate the issuing of permits, while sections forty-five to sixty-three control the issuing of leases. Section 107 deals with the reporting of information by permit and lease holders and the releasing of such reported information by the Minister. Information concerning an exploratory well may be released two years after the completion, suspension or abandonment of that well - but information concerning a surface geological or photogeological survey, or seismic survey may be released either at the discretion of the Minister or two years after the cancellation, surrender or expiring of the permit of the area on which the work was done. Schedule A specifies the fees that must be paid for each type of licence. For example, the fee for an exploratory licence is twenty-five dollars, but an

exploratory permit is \$250. Schedule B is divided into two columns. Under column one is stated the duration of a permit and the area to which it applies and under column two, the corresponding guaranty deposits required. While the Canada Oil and Gas Land Regulations deal with the licence, permit and lease administration, the Canada Oil and Gas Drilling and Production Regulations deal more with the technical aspect of oil and gas drilling.

It is clear from Appendices B and C below that greater emphasis has been placed on prevention and control in the Canadian approaches to the development of the continental shelf resources. In order to be able to perform these functions, the principal federal departments have been given the powers that will enable them to exercise this control. Through a system of strict compliance with high standards and operational reporting, effective control is exercised over continental shelf operators. Canadian laws are development oriented, and in most cases, designed to encourage exploration and exploitation of offshore resources, but the laws do not charge any specific federal department with a planning responsibility. In fact, the word planning is not used in any of the Acts that have been reviewed. Any offshore resources planning that any of the federal departments and agencies undertakes is therefore implicit. Furthermore, the Acts do not require the departments to formally co-ordinate their "planning" policies. The policy structure (as designed by the Acts) is therefore one of vertical accountability, through the Minister to Cabinet.

5. Conclusion

"Unlike municipal law, international law is neither enacted through a law-making body nor enforced by a sovereign authority"¹³. It is this problem of enforcement that has prevented most states from deriving the maximum benefits from the good intentions of international law. The enforcement of international laws has not been very effective because the United Nations Organization does not have a law enforcement body. National honour and self interest have in general, induced states to comply with international law on their own volition. Besides voluntary compliance have often produced beneficial results to such states. Where the greatest problem of enforcement of international law has been is when offences have been committed in areas beyond national territories by persons, natural or judicial, of foreign states. The concept of "Exclusive Economic Zone", and the delegation of powers by the international community to coastal states and the acceptance of the duties of custodianship of continental shelf resources by coastal states on behalf of the international community that is contained in the Informal Composite Negotiating Text (ICNT) is one of the ways that may help to overcome this problem of enforcement of international law. Having discussed the legal framework for offshore resources planning and the possible changes that may be made to international law of the sea, the next chapter reviews the institutional framework and the agencies that operate within the legal framework.

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7. Ibid., p.12. See also Bouchez, L.J. (1969) "The North Sea Continental Shelf Case" Journal of Maritime Law and Commerce Vol.1, No.1, pp. 113-121.
8. Logan, R.M., Ibid. p. 24.
9. Canada has actively participated in the deliberations of the Inter-governmental Maritime Consultative Organization (IMCO): the 1954 International Convention for the prevention of Pollution of the Sea by Oil (amended in 1962, and 1969), the 1962 Convention on the Liability of Operators of Nuclear Ships; the 1969 Convention relating to Intervention on the High Seas in Cases of a pollution casualties; the 1969 Convention on Civil Liability for Oil Pollution Damage; the 1971 Convention on the Establishment of an International Fund for Compensation of Oil Pollution Damage; and 1973 International Convention for the Prevention of Pollution from Ships. Other International Conferences, attended by Canada, which have dealt with the Marine environment and Pollution are the 1972 Convention on the Dumping of Wastes at Sea, and the 1972 United Nations Conference on the Human Environment.

10. "The Law of the Sea in Historical Perspective" Teachers' Guide Canada and the Law of the Sea, p.20.
11. "Mining Issue could sink U.N. Sea Talks", The Financial Post, June 10, 1978, p.16.
12. Beesely, Alan J., ibid., p.33.
13. Tung, W.L. (1968) International Law in an Organizing World (New York: Thomas Crowell Co.), p.18.

CHAPTER III

Responsibilities and Functions of Federal Departments and Agencies for Continental Shelf Resources Development and Control

1. Introduction

In Chapter II, the international and national legal framework for offshore resources development and control was discussed. In this chapter, the specific functions of domestic institutions responsible for the development and control of continental shelf resources will be examined by reviewing the licensing systems for fishing and oil and gas. It is emphasized however that, in this chapter, only the domestic fishing licensing will be discussed. The general fishing operations, the government fisheries policy, and fishing in international waters will be discussed in Chapter IV.

The main objective of this chapter is to identify the various federal departments and agencies that have responsibilities for offshore resources development, exploitation and control. This identification will help in determining the nature of the interaction among these departments and the co-ordination of their planning policies. The review of the fishing and oil and gas licensing systems will also help to identify the similarities and the differences between the two approaches used by the Government.

Of all the potential development and exploitation of the resources of the continental shelf, oil and gas and fishing are likely to have the greatest multiplier effects. Since the creation of the 200-mile fisheries zone, Canadian fish exports have increased sharply.¹ Besides oil and gas which have been referred to as the "black gold" of the seventies will not only affect the country's

balance of payments position² when developed, but will also serve as catalyst in accelerating the development of other offshore resources. It has also been suggested that the prospect of exploration and development of offshore hydrocarbon resources has always been the "carrot" which has encouraged the growth of Canada's ocean industry.³ This can be explained by the fact that offshore oil and gas development does not only require large capital investment but it is also a high technology operation.

The policy-planning functions of the newly created Department of Fisheries and Oceans will be discussed in Chapter VII. For this reason, the agencies under the Department of Fisheries and Oceans will be treated together with the agencies under the Department of the Environment. That is no distinction will be made in this chapter between the Department of Fisheries and Oceans and the Department of the Environment. With the creation of the Department of Fisheries and Oceans, the Fisheries and Oceans Research Advisory Council has been established to replace the Fisheries Research Board. The Advisory Council is made up of twenty-four representatives appointed from the Science Community, the Public Service (mainly from the agencies with specialized interest in marine sciences), the Universities and educational institutions, the fisheries industries and industries that have specialized interests in marine sciences and the general public. The old Board had eighteen members appointed from among scientists and Public Servants. The expanded representation from

the Universities, industry and the general public may therefore help to ensure a diversity of perspectives on the new Advisory Council.

2. The Maritime Offshore Resources Board

One of the most contentious issues of Canadian offshore resources development is the question of competing Federal-Provincial claims to offshore resources. Under the British North American (BNA) Act, the provinces own the resources at the time of Confederation. Section 109 of the BNA Act states:

"All Lands, Mines, Minerals and Royalties belonging to the several Provinces of Canada... and all sums then due or payable for such Lands, Mines, Minerals or Royalties shall belong to the several provinces... in which the same are situate or arise, subject to any interest other than that of the Province in the same."⁴

The Constitution is therefore clear on the question of who owns the resources, what is not very clear is whether the provincial ownership of Lands, Mines, Minerals and Royalties extend to the submarine lands, adjacent to the coasts. The Federal Government believes it does not.

Newfoundland does not agree with the Federal Government and has asked the Supreme Court of Canada to rule on the jurisdiction of the continental shelf resources.⁵ The only Canadian test case is that of the Federal Government-Province of British Columbia dispute. In 1967, the Supreme Court ruled that the Federal Government

and not the Province of British Columbia has the right to explore and exploit the resources of the seabed and subsoil of the territorial waters and the continental shelf beyond.⁶ In its ruling, the Supreme Court emphasized the international rights and responsibilities conferred upon Canada by the 1958 Geneva Convention.

While Canada had resorted to the Courts to resolve the jurisdiction of ownership issue, Australia, another federal state, opted for a political solution. The Australian Commonwealth and the States agreed in November 1967, to enact a law which established a common mining code to govern the operation in offshore areas. Each state administers the code in the area allocated to it by the Agreement. The Agreement fixed a ten per cent royalty on petroleum produced at the wellhead and this ~~royalty~~ is divided in a ratio of forty per cent to sixty per cent between the Commonwealth and the States.⁷ There are two significant points to be noted about the Australian solution. First, the Agreement makes no distinction between the territorial sea and the continental shelf. Secondly, the Commonwealth retained the right of issuing permits and licences for exploration and exploitation. While the Australian approach leaves a number of legal questions unanswered, it is likely to prove more enduring than Canada's (as Newfoundland's recent action seems to indicate) and may serve as the model for the resolution of similar jurisdictional disputes at the international level.

Recognizing the importance of setting aside their jurisdictional differences in order to encourage offshore resources exploitation, the Prime Minister of Canada and the Premiers of Nova Scotia, New Brunswick and Prince Edward Island signed a memorandum of understanding on February 1, 1977 which provides for a co-operative framework for the exploitation, administration and management of offshore mineral resources on the coasts of the three Provinces.

The "Area" to be covered by the Agreement will be the seabed and subsoil from the ordinary low water mark on the coasts of Nova Scotia, New Brunswick and Prince Edward Island to the continental margin or to the limits of Canada's jurisdiction to explore and exploit the seabed and subsoil whichever may be farther. The "Area" is to be subdivided into two parts. The first Part will be landward of the Mineral Resources Administration Line (the "M.R.A. Line") which will be at least two miles seaward from the ordinary low water mark on the coasts of the three Provinces and will also be beyond any coal resources accessible by mining from land. The second Part will be seaward of the Mineral Resources Administration Line. The division of the Area among the three provinces will be done by reference to the Inter Provincial Lines of Demarcation agreed upon by Nova Scotia, New Brunswick and Prince Edward Island in 1964. The exact boundaries are however to be fixed by the Agreement.

The revenue to be derived directly from royalties, fees,

bonuses and rentals will be shared among Canada, Nova Scotia, New Brunswick and Prince Edward Island. The revenue will not however include for example export or commodity taxes which comes under federal jurisdiction. Section 91(2) of the BNA Act confers on the Federal Government the power to regulate trade and commerce. Under the Agreement, the Maritime Offshore Resources Board will distribute the revenue according to a ratio of twenty-five per cent Canada and Seventy-five per cent Province. Canada will receive twenty-five per cent of the revenue derived from the administration and management of the mineral resources in that part of the Area Seaward of the Mineral Resources Administration Line. Nova Scotia, New Brunswick and Prince Edward Island will each receive seventy-five per cent of the revenue derived from that Part of the Area Seaward of the Mineral Resources Administration Line attributed to them under the Agreement. Out of their seventy-five per cent share, each of the three provinces is to contribute a portion of the revenue to a regional revenue sharing pool to be provided for under the Agreement. In addition, Nova Scotia, New Brunswick and Prince Edward Island will each receive one hundred per cent of the revenue derived from the administration and management of the mineral resources in the respective section of that Part of the Area landward of the Mineral Resource Administration Line attributed to them. The Agreement also provides that Nova Scotia retains one hundred per cent of the revenues within a revenue sharing line to be fixed around Sable Island.

The Maritime Offshore Resources Board to be established under the Agreement will oversee the administration and management of mineral resources in that Part of the Area Seaward of the Mineral Resources Administration Line; and Landward of the Mineral Resource Administration Line at the option of each Province. The Board will also have the authority to issue rights in respect of mineral resources, set terms and conditions pursuant to which such rights will be issued; provide for the receipt and distribution of the revenue derived from the administration and management of the mineral resources; review the administration and management of the mineral resources including any policies, legislation and regulations; and make recommendations in respect of such matters to Canada and the Maritime Provinces. The Maritime Offshore Resources Board will also be able to commission economic, sociological and other related studies in respect of the exploration for and the exploitation of the mineral resources and the optimization of the regional benefits to be derived by the three Provinces. The Board will be composed of six members, three representing Canada and one from each of the three provinces. The salary of the administrative support staff and the cost management of the Board will be paid entirely by the Federal Government. However, the cost of the Board will be funded twenty-five per cent by Canada and seventy-five by Nova Scotia, New Brunswick and Prince Edward Island. A branch office of the administration and management body of the Board will be maintained in the Maritime Region. In order to give effect to the Agreement, Canada and

the three Maritime Provinces were to enact the necessary legislation to implement the Agreement and to draw up the required regulations. For a variety of reasons, and especially the decline in the expectation of a significant oil and gas find in commercial quantity, none of the activities planned has been undertaken.

Compared to the Australian States, it appears that the Maritime Provinces were able to strike a better political bargain in terms of the ratio of the revenue from royalties. One thing however is clear in the Canadian framework, the Federal Government did not transfer any of its jurisdiction to the provinces or the Board. Through a majority position on the Board, and the payment of the cost of administration and management, the Federal Government ensures its continued control of offshore mineral resources development. Another significant observation about the establishment of the Maritime Offshore Resources Board is that for the administration of offshore resources, the Federal Government intends to divide the continental shelf into two areas, a landward area and a seaward area of the Mineral Resources Administration Line. The Maritime Offshore Resources Board will not be the first public involvement in offshore hydrocarbon development. Petro-Canada, a federal Crown Corporation, has been actively involved in offshore oil and gas exploration for some time now.

3. Petro.Canada

Petro.Canada was established on July 30, 1975 as a Crown Corporation to fulfill three main objectives: to explore, exploit and develop hydrocarbon deposits; acquire petroleum and petroleum products from abroad to assure the continuity of supply for the needs of Canada; and to carry out research and development projects in relation to hydrocarbons and other fuels. The objectives and mandate of Petro.Canada are summarized in Appendix B.II.2, the Act creating Petro.Canada as a Crown Corporation. From the above objectives, it is clear that Petro.Canada was established to be a key element in the evolution and implementation of the national energy policy.

After only two years of operation, Petro.Canada was ranked tenth in Canada in the number of wells drilled in 1977 with a total exploration expenditure of over \$76 million. The corporation participated in thirteen of the twenty-seven wells drilled in Canada's frontier region and was the most active company funding exploration on the Scotian shelf. Regarding project development, Petro.Canada has taken a lead role in the Arctic project to investigate the feasibility of moving Arctic gas to southern markets using liquified natural gas (LNG) tankers. Other project development activities involvement include the polar gas group to look at the feasibility of moving Arctic gas south by pipeline, and conducting ice movement studies. The corporation has also undertaken extensive studies of factors related to heavy oils development, including exploration, enhanced recovery,

upgrading and transmission systems to permit full utilization of Canadian oil reserves. In order to fulfill its research mandate, Petro.Canada acquired the Canadian subsidiary of Atlantic Richfield Company thereby assuring the Canadian ownership of the basic patents and the continuation of research and development programme for the extraction of oil from the Alberta Oil Sands.⁸

The operations of Petro.Canada have not been confined only to Canada. The Crown Corporation has also initiated international joint ventures. Up to date, such involvement has consisted mainly in developing relationships with other national energy companies whose tasks are similar or complementary to Petro.Canada's, or where co-operation offers an opportunity for the Crown Corporation to advance its goals and mandate. For example, it has been reported that Petro.Canada (and Ranger Oil Canada Ltd) will sign multi-million-dollar contracts with China for the exploration of offshore Chinese oil.⁹

The Crown Corporation's activities have not only been restricted to business ventures; for the Corporation believes that:

"its role requires that it undertakes a thorough examination of alternative approaches to reaching energy goals for the country."¹⁰

Petro.Canada therefore provides advice to the Government to assist in the development of policies which will help realize

Canada's energy goals. The Corporation has argued, with respect to Canada's energy policy, that Government policies should continue to focus on the development of conventional light reserves in Western Canada because of the relative economic advantages of the light oils in relation to frontier prospects. This position is reflected in Petro.Canada's degree of involvement in offshore exploration. Compared to land based development, Petro.Canada is engaged more in land exploration than it is in offshore exploration.

As might be expected with all companies that do not want to take their time to mature, Petro.Canada has come under increasing criticisms since its establishment; it has been criticized for its preferential and pre-emptive rights,¹¹ for its special advantages,¹² for its take over ventures,¹³ and for its advance knowledge of budget details.¹⁴ To such criticisms, the president of Petro.Canada argues that the presence of Petro.Canada in the oil industry is a healthy one since it serves as a viable alternative to the private sector.¹⁵

The Government does not appear to take the criticism about the pre-emptive rights of Petro.Canada very serious. On December 20, 1977, the Government of Canada introduced The Canada Oil and Gas Act in the House of Commons. This Act, among other things, provides a preferential treatment for Petro.Canada in selecting Crown lands for exploration. Section forty-five of the Act states:

"... Petro.Canada has the right in priority to any other person,

- (a) during a period of one year commencing on August 3, 1977, to select, ... up to a maximum of twenty-five per cent of the lands that are crown reserve lands on that date; and
- (b) during a period of seven years commencing on August 3, 1977, to select, ... up to a maximum of twenty-five per cent of such Canada lands specified in the notice as become crown reserve lands after August 3, 1977."¹⁶

Furthermore, Petro.Canada may acquire up to a twenty-five per cent interest in a land, if the current tenure term of twelve years has expired, without significant oil and gas discoveries having been made, when such land become available for lease or permit renewal; depending on the percentage of Canadian equity in the company holding the lease or permit. By giving Petro.Canada such rights, the Government hopes to ensure a high degree of Canadian participation in the development of petroleum resources in the country. Recent developments in the petroleum industry, for example the Department of Energy - Imperial Oil Ltd confrontation, seem to justify the Government's decision to establish Petro.Canada. Now the Government has an effective leverage in dealing with the multinational oil companies.¹⁷

On the whole, Petro.Canada's role in the petroleum industry, like its British counterpart, British National Oil Corporation (BNOC) has been one of a catalyst. Petro.Canada has attempted to improve energy supply, to ensure the considera-

tion of potential alternatives, and to maintain a high degree of exploration, exploitation and development by stimulating new approaches and initiatives. Whether the huge investments that the corporation has made in playing this catalytic role is justified is another question. The answer to this question however does not fall within the scope of this thesis. Having discussed the functions of two federal agencies, the rest of this chapter will examine the licensing procedures for offshore resources development.

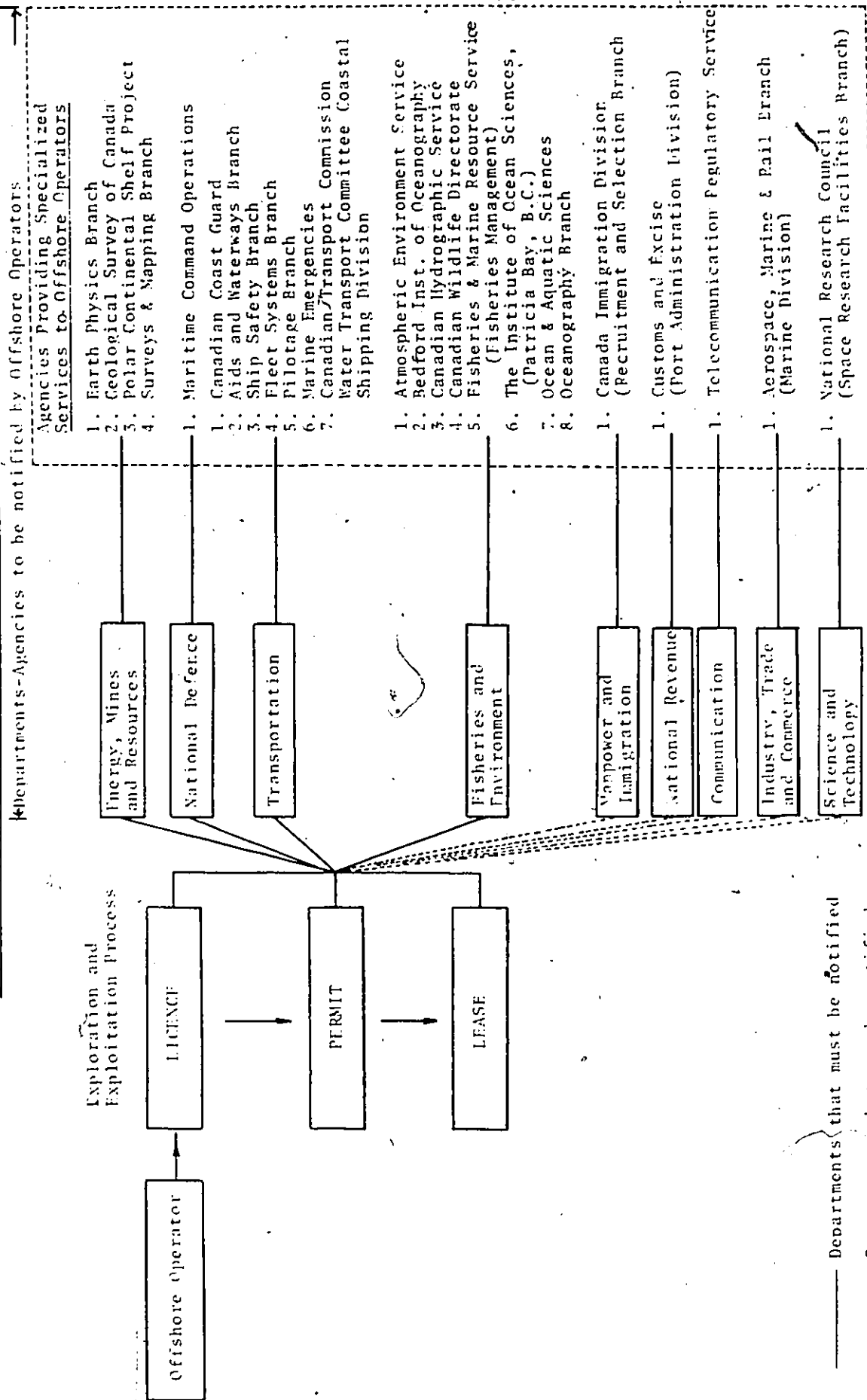
4. Offshore Mineral Resources Development: Licence, Permit and Lease Administration

There are three main authorization processes a prospective offshore operator has to go through under the Canada Oil and Gas Land Regulations. These are exploratory licence, exploration permit and exploitation lease. The Canada Oil and Gas Regulations with respect to the offshore areas off the East and the West Coasts are administered by the Department of Energy, Mines and Resources. Figure III.1 shows the exploration and exploitation process and the Federal Agencies that have to be contacted.

Before offshore exploratory work can be undertaken, an exploratory licence must first be obtained on payment of the prescribed fees. This exploratory licence is like a hunting licence and authorizes the holder to make geological and geophysical examinations, to carry out aerial mapping or to investigate the subsurface for the purpose of searching for oil

FIGURE 111.1

Offshore Oil and Gas Development Process



----- Departments that must be notified

----- Departments that may be notified

SOURCE: Based on Department of Energy, Mines and Resources, Offshore Exploration, Information and Procedures for Offshore Operators, 6th Issue, January 1977.

and gas in any unrestricted area of the offshore. The exploratory licence which expires on the thirty-first day of March following the date of its issue, is renewable on an annual basis. The next step in the process is the issuing of an exploratory permit. Only a permittee has the option of selecting oil and gas leases from a permit area. A permit is issued for a grid area or half a grid. A grid area south of latitude 70° North is delimited by lines of latitude ten minutes apart and lines of longitude fifteen minutes apart. Because of the convergence of meridians grid areas vary in size.¹⁸ Depending upon the location of the area, an exploratory permit is valid for three to six years,¹⁹ and can be renewed six times. A permittee is required to make a guaranty deposit at the time of an application for a permit to the full amount of the work requirement as a surety that the work will be carried out. Guaranty deposits are also required prior to each succeeding work period. Permit work requirements increase correspondingly with increase in expenditures necessary to effectively evaluate an area; from relatively inexpensive reconnaissance work, through detailed geophysical surveys, to high-cost exploratory drilling operations. For example, the deposit increases from five cents for each acre included in a permit for the first eighteen-month period of the original term to fifteen cents per acre for the next thirty-month period for permit acres below latitude 70° north. The deposit for the first renewal period is thirty cents per acre, this increases to fifty cents per acre for the sixth

renewal period.²⁰ Guaranty deposits are returned upon receipt of certified statements of expenditure and evidence that the appropriate work has been performed; otherwise, the deposits are forfeited.

The third requirement needed for the development of offshore hydrocarbons is an exploitation lease. A lessee is authorized to carry out exploratory work, to drill wells and to produce oil, gas or related hydrocarbons, or minerals. It is at the lease stage of the process that emphasis is placed on direct revenues mainly through royalties on production and annual rentals. A permittee may acquire leases covering up to half the area of a permit with the remaining reverting to the crown. An oil and gas lease is granted for a term of twenty-one years and can be renewed for successive terms of twenty-one years if the area is capable of commercial production.

There are certain Canadian participation conditions that have to be satisfied in granting a lease. An oil and gas lease is granted to a Canadian citizen over twenty-one years of age, or to a corporation incorporated in Canada, or a corporation with at least fifty per cent of its issued shares held by Canadian citizens, or a corporation with its shares listed on a recognized Canadian stock-exchange and that Canadians will have the opportunity in the financing and ownership of the corporation. The major advantage of the licence-permit-lease process is that it ensures continuous work throughout the Canadian offshore areas while at

the same time maintains control over all activities in the offshore areas through operational and reporting requirements. Appendix B II.1 summarizes the sections of the Oil and Gas Production and Conservation Act, Canada Oil and Gas Land Regulations and the Canada Oil and Gas Drilling and Production Regulations that are applicable to the development of hydrocarbons on the continental shelf lands off the East and the West Coasts.

The Department of Energy, Mines and Resources is not the only federal department directly involved in the development, exploitation and control of continental shelf resources. Tables III.1, III.2 and III.3 show the various Federal Departments and Agencies that must be notified of, or concerned with offshore operations, or that provide specialized information to offshore operators respectively. Apart from the Department of Energy, Mines and Resources, the Department of Fisheries and the Environment and the Department of Transport are also extensively involved in various aspects of offshore oil and gas operations.



TABLE III. 1

Federal Agencies to be notified of Proposed Offshore Operations off the East and the West Coasts

DEPARTMENT	AGENCY	DIVISION	RESPONSIBILITIES
Energy, Mines and Resources	Resources Management and Conservation Branch		1. Administers federal interests in mineral resources off Canada East and West Coasts. 2. Encourages the orderly development of offshore mineral resources. 3. Develops and provides policy recommendations and advice on offshore matters. 4. Provides representation and expertise on inter-department, federal-provincial and international offshore matters. 5. Exercises statutory authority and regulatory control over offshore operations. 6. Provides co-ordination and liaison among governmental and industrial agencies concerned with the utilization and protection of offshore areas. 7. Undertakes environmental assessment studies. 8. Provides information and advice on a variety of mineral resources and related matters to other governments, industry and academic organizations and the public.

DEPARTMENT

AGENCY

DIVISION

RESPONSIBILITIES

1. Mineral Rights Division

1. Issues exploration permits and production leases.
2. Makes available rights to mineral development.
3. Ensure holders of terminable grants comply with regulations.
4. Provides assistance on the disposition and administration of mineral rights, expenditures allowable for credit against permit or lease work obligations.

2. Resource Geology Division

1. Evaluates geological and geophysical information submitted by offshore operators.
 2. Assesses the mineral resource potential of offshore areas.
 3. Responsible for the handling and curation of lithologic and paleontologic materials from offshore wells.
 4. Responsible for the assembly and maintenance of a data bank of geological and geophysical information from the offshore.
3. Operations and Conservation Division
 1. Exercises regulatory control over all exploration, drilling, production, conservation, and other offshore oil and gas operations.

DEPARTMENT

AGENCY

DIVISION

RESPONSIBILITIES

Transport
Coast Guards Aids
and Water Ways

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Fisheries and Environmental
the Environment Protection
Service

2. Responsible for the analysis of operational hazards of proposed equipment and installations.
3. Examines the nature and economic potential of reservoirs.
4. Ensures the safety of personnel, the protection of the environment and the prevention of pollution and waste.
1. Issues Canadian Notice to Mariners about offshore operations.
2. Specifies the aids to navigation devices needed for proposed offshore programme.
3. Responsible for protecting navigation with respect to any structure, pipe, pile or buoy used in connection with the exploration for, or development of, resources located in or under the water.
4. Processes applications for approval or exemption under the Navigable Waters Protection Act.
5. Administers the Canada Shipping Act (RSC 1970 c. S-9) and regulations made pursuant to this Act.
1. Implements protection programmes to meet environmental quality objectives or resource protection requirements.

DEPARTMENT

AGENCY

DIVISION

RESPONSIBILITIES

National Defence Office of the
Maritime Commander

2. Co-ordinates the activities of other agencies within the Department relating to offshore operations.

1. Supplies relevant information to offshore operators on a "need-to-know basis".

2. Issues security clearance to employees of the operator or permittee.

3. The command discusses with operators such matters as under water defence cables, firing practices, exercises, naval operations and shipwreck positions.

SOURCE:

1. Department of Energy, Mines and Resources, Offshore Exploration. Information and Procedures for Offshore Operators, January 1977.
2. Government of Canada, Organization of the Government of Canada, 1976.

TABLE III. 2

Federal Agencies Concerned with Offshore Operations off the East and the West Coasts

DEPARTMENT	AGENCY	DIVISION	RESPONSIBILITIES
Fisheries and the Environment	Fisheries and Marine Services		1. Provides qualified fisheries observers for offshore operations like seismic survey which may involve the use of high explosives.
	Canadian Wildlife Directorate		1. Discharges federal responsibilities in regard to wildlife. 2. Provides information on location of migratory bird sanctuaries along the seacoasts.
	Canadian Hydrographic Services		1. Provides cable-laying information to offshore operators or permittees. 2. The Agency is to be consulted before any offshore operation is undertaken as operators may be liable for any damage caused to underground commercial cables.
National Revenue	Customs and Excise		1. Custom and Excise should be contacted if foreign vessels or equipment from abroad are to be used for offshore operations in Canadian waters.
		Port Administration Division	1. Administers the portion of the Canada Shipping Act dealing with the coasting trade.

DEPARTMENT

AGENCY

DIVISION

RESPONSIBILITIES

Energy, Mines
and Resources

Surveys and
Mapping Branch

2. Provides information, assistance and contacts for companies importing ships or specialized plant and equipment for offshore operations.

1. Develops the technical specifications for positional surveys required to locate offshore wells and related facilities.

2. Reviews survey plans for exploratory wells.

3. Approves plans of legal survey required for development wells.

1. Supports water borne commerce by ensuring the safe and efficient movement of marine traffic.

2. Provides services that promote the safety of life and property in the marine environment.

3. Supports the marine related activities of other Government departments.

4. Encourages and promotes research and development in marine transportation and ancillary services.

Aids and Water-
ways Branch

1. Controls floating and electronic aids to navigation.

2. Monitors and controls dredging and maintenance operations of national ship channels.

Transport

Canadian Coast
Guard

DEPARTMENT

AGENCY

DIVISION

RESPONSIBILITIES

Ship Safety Branch

1. Over all responsibility is to ensure the safety of life and property at sea and to protect the marine environment as far as ships are concerned.
2. Inspects and certifies vessels under Canada Shipping Act (RSC 1970 c. S-9).
3. Regulates the design, construction, maintenance and operation of air cushion vehicles.
4. Administers the registration of ships.
5. Controls and regulates oil pollution by ships, working practices and methods of stowing cargo.
6. Initiates action to inform low flying aircrafts of the presence of exploitation and exploitation vessels having a derrick extending more than 60 meters above the water.

Fleet Systems Branch

1. Supports shipping in icebond waters by providing ice-breaker and other support.
2. Undertakes marine search and rescue operations.

Pilotage Branch

1. Provides a safe and efficient pilotage service to national and international shipping.

DEPARTMENT

AGENCY

DIVISION

RESPONSIBILITIES

Marine Emergencies

1. Responsible for preparing marine emergencies contingency plans.
2. Responsible for the development, testing, acquisition and allocation of certain pollution clean up equipment.
3. Provides co-ordination and assistance when federal response is needed to combat a spill of oil or toxic materials into the marine environment.
4. Responsible for the placing of clean up equipment at strategic locations throughout the country and designates on-scene commanders for these locations.

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Canadian Transport
Commission

Water Transport
Committee

1. Ascertains whether a suitable Canadian flag vessel is or is not available to engage in offshore exploration work in Canadian waters.
2. Advises Headquarters operations customs on the availability of a suitable Canadian flag vessels for offshore exploration.

Communications
Telecommunication
Regulatory Service

1. Responsible for the development of technical standards.
2. Selects and co-ordinates radio frequencies.
3. Licenses all classes of radio stations except broadcasting.
4. Approves the application and licenses radio stations on board Canadian vessels or radio communications for offshore activities.

DEPARTMENT AGENCY DIVISION

Manpower and Immigration Canadian Immigration Division

RESPONSIBILITIES

1. Responsible for the entry of persons into Canada or Canadian waters and the employment of such persons.
2. Issues clearance to offshore operators who employ non Canadians for offshore operations.

Industry, Trade and Commerce Aerospace, Marine and Rail Branch

1. Encourages Canadian participation in the development, manufacture and supply of equipment and techniques for exploration and development of Canada's offshore resources.

2. Provides subsidies and financial assistance for ship building and research and development of marine equipment.

SOURCE: 1. Department of Energy, Mines and Resources, Offshore Exploration: Information and Procedures for Offshore Operators, January 1977.

2. Government of Canada, Organization of the Government of Canada, 1976.

TABLE III. 3

Federal Agencies that Provide Specialized Scientific Information to Offshore Operators off the East and the West Coasts

DEPARTMENT	AGENCY	DIVISION	RESPONSIBILITIES
Energy, Mines and Resources	Geological Survey of Canada		1. Carries out systematic geological and geophysical surveys in the sedimentary basins of Canada (including parts of offshore areas) and sub-surface studies of well cuttings and cores.
	Earth Physics Branch		1. Carries out offshore gravity surveys, heat flow surveys, crustal seismic surveys, earthquake seismology and airborne three-component magnetometer surveys.
	Surveys and Mapping Branch		1. Produces air photos covering all areas of Canada. 2. Publishes topographic maps, indexes, charts and atlases.
Fisheries and the Environment	Ocean and Aquatic Sciences		1. Provides information concerning bathymetry, tides, and physical oceanography.
			2. Supplies charts of Canadian coastal waters.
	Canadian Hydrographic Services		1. Provides information on hydrographic surveys.

DEPARTMENT

AGENCY

DIVISION

RESPONSIBILITIES

Oceanography
Branch

Bedford Institute
of Oceanography

2. Provides information concerning authorized chart dealers at major seaports.
1. Provides information on waves, tides, water levels and oceanographic data.
1. Conducts research and survey from the following sub-branches:
 - (i) The Atlantic Oceanographic Laboratory:
 - (a) carries research on chemical and physical oceanography.
 - (b) carries out hydrographic surveys off the East Coast of Canada.
 - (c) Responsible for the development of new oceanographic equipment.
 - (ii) Marine Ecology Laboratory:
 - (a) studies the biological Processes underlying fisheries production and
 - (b) their relationships to the physical environment.
 - (iii) Institute Facilities Group:
 - (a) Undertakes engineering services
 - (b) Conducts scientific research and survey on ships.

DEPARTMENT

AGENCY

BRANCH

RESPONSIBILITIES

The Institute of
Ocean Sciences

1. Carries hydrographic surveys off the West Coast.
2. Undertakes research on chemical and physical oceanography.
3. Studies the biological processes underlying fisheries production and their relationships with the environment.
4. Undertakes scientific research in the ice-covered waters of the high Arctic and the Beaufort Sea.

Fisheries Resource
Services

From three stations on the East Coast of Canada and two stations on the West Coast the Fisheries Services:

1. Carries out fisheries research and
2. Operates vessels which carries out regular cruises.

Atmospheric
Environment
Service

1. Provides information on meteorological and sea-ice data, climatology, weather forecasting and meteorological instruments.

SOURCE: 1. Department of Energy, Mines and Resources, Offshore Exploration: Information and Procedures for Offshore Operators, January 1977.

2. Government of Canada, Organization of the Government of Canada, 1976.

There are about eight agencies under the Department of Fisheries and the Environment that are directly involved. For example, where operators intend to use high explosives in seismic surveys. The Fisheries and Marine Services Branch has to be given ninety days notice, so that they can send qualified fisheries observers to the survey region. The Atmospheric Environment Service, on the other hand, can provide operators with information on meteorological and ice data (information which is essential in the ice-infested regions of the Atlantic Coast) climatology and weather forecasting. The Environment protection Service, which implements the protection programmes regarding environmental quality objectives and resources protection requirements of the Department, must be notified forty-five days before any offshore programme is undertaken.

The Department of Transport has a total of seven agencies directly dealing with offshore resources development. The Fleet systems Branch provides services to offshore operators in two important areas: ice-breaker support for shipping in icebound waters and marine search and rescue. The Marine Emergencies Agency has responsibility for drawing up contingency plans and for the development, testing and allocation of pollution clean up equipment. This Agency is also responsible for co-ordinating any federal response needed to combat an oil spill or toxic material in the marine environment. The Aids and Waterways Branch controls floating and electronic aids to navigation and monitors and controls dredging and maintenance operations of

national ship channels. The Aids and Waterways Branch also issues "Canadian notices to Mariners" which are copied into foreign publications and "Local notices to shipping". An operator must therefore notify the Aids and Waterways Branch at least forty-five days before the commencement of any offshore programme to enable these notices to be issued on time.

All offshore exploration programmes must be approved by the Department of National Defence before an operator can begin any work. Offshore operators on the Atlantic Coast may obtain security clearance from the Maritime Command, Halifax; while offshore operators on the West Coast can contact the Maritime Forces Pacific, Victoria. Representatives of offshore operators have to discuss operational details of their programmes with the staff officers of the Maritime Command regarding such matters as underwater defence cables, firing practices, exercises, and naval operations. The Maritime Command follows a policy of "need-to-know" in supplying the offshore operator with the relevant information.

Under the present regulations and procedures, each offshore application is approved by each Department on its own merits. There is no mechanism whereby the Resources Management and Conservation Branch of the Department of Energy, Mines and Resources is formally notified by the Aids and Waterways Branch of the Department of Transport or the Environmental Protection Service of the Department of Fisheries and the Environment that

an operator has satisfied their requirements and therefore can be issued with a permit or lease. This lack of formal feedback from line agencies before a licence, permit or lease is issued is a major weakness in the licence-permit-lease administration process and suggestions will be offered in Chapter VII which may help to improve the process. Having reviewed the licensing of a non living offshore resource, the next section examines the licensing of a living offshore resources which is administered both by the federal and the provincial governments.

5. Fishing Licensing

There are three types of domestic licensing system that apply to the East Coast offshore fishing. These are commercial (Atlantic) fishing licensing, shell fish fishing licensing and sports fishing licensing. Commercial fishing licensing is administered by the Department of Fisheries and the Environment, Shellfish fishing licensing is administered by the Provinces on behalf of the Federal Government and sports fishing licensing is administered by the Provinces. Besides the licensing system, there is also the permit system. The permit system of fisheries regulation is used to control the exploitation of specific species in specific areas. Since each application for a permit is reviewed on an individual basis and the fact that this system is not widely used, because general conservation measures discourage the issuing of permits for species that face the threat of over exploitation,

the permit system will not be discussed. Sports fishing licensing will also not be discussed partly because it is administered by the provinces and the direct role of the provinces in offshore multipurpose planning is outside the scope of this thesis. Another reason for not reviewing the sports fishing licensing system is that the sports fishing catch is not taken into consideration when determining the Total Allowable Catch (TAC) of the Atlantic Coast Groundfish Fisheries Management Plan.

5.1 Groundfish

The Atlantic Fishing Registration and Licensing Regulations (Appendix BI 3(i)) require that no one shall operate, command, be a crew member on board, assist in tending a fixed commercial unit or engage in commercial fishing unless he holds a fishing licence. A commercial fishing licence which is not transferable is issued only to a Canadian citizen, a landed immigrant (who has lived in Canada for at least five years) or an applicant who has served in the Canadian Forces. Commercial fishing vessels operating in Canadian waters have to be registered with the Fisheries and Marine service of the Department of Fisheries and the Environment. Vessels that are less than forty-five feet in length are issued with a registration plate which must be displayed on each side of the bow or on the deckhouse. Vessels over forty-five feet in length are assigned

registration numbers which are to be displayed on each side of the bow. Fishing licenses and registration certificates, which are to be renewed each year, expires on December 31 following the date of issue. A commercial fishing licence cost five dollars but the fee for vessel registration is based on the overall length of the vessel.

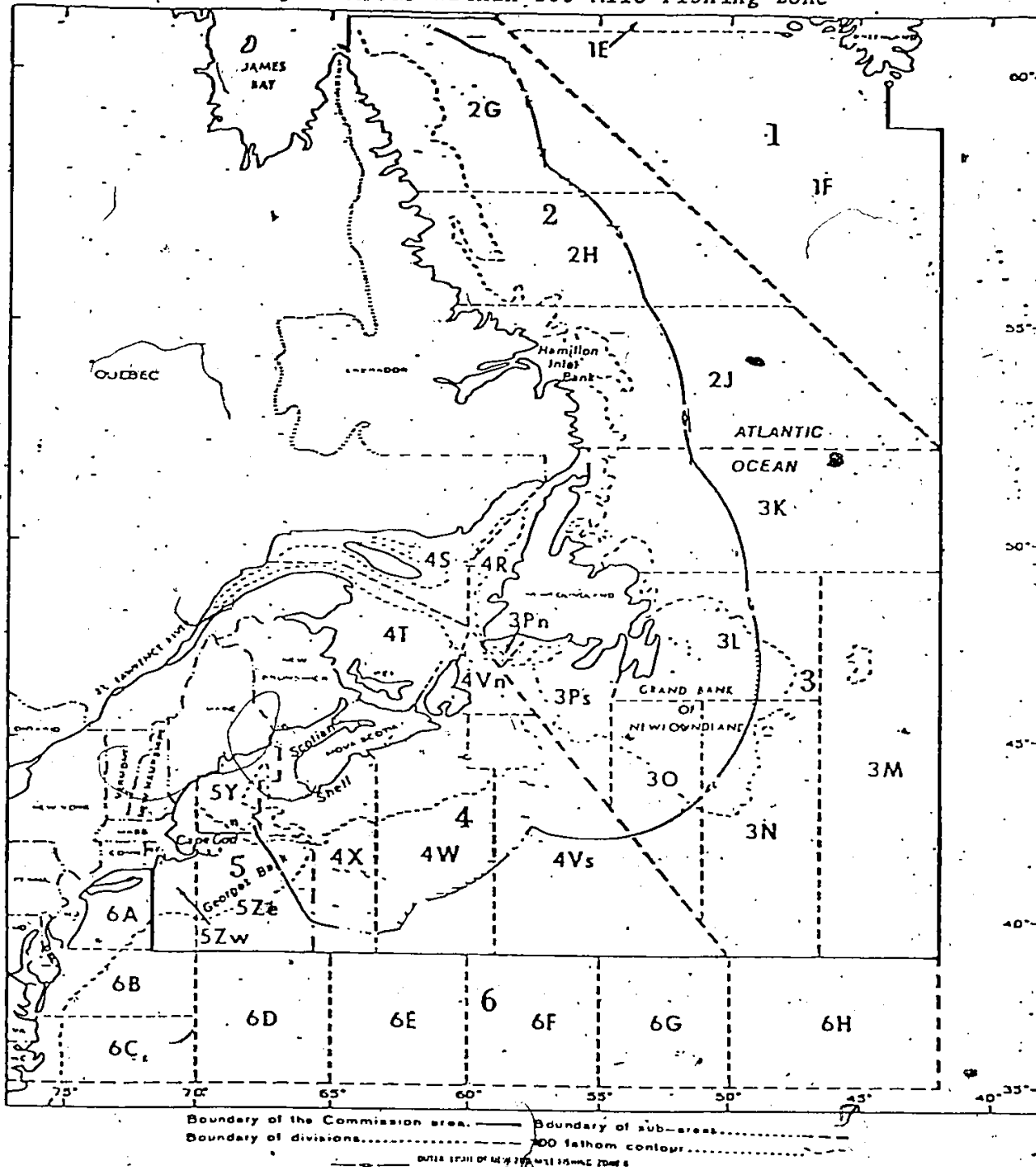
Each year, the Department of Fisheries and the Environment prepares a "Groundfish Fisheries Management Plan"²¹. It is on the basis of the Fisheries Management Plan that fishing quotas are determined. A fishing quota is defined as:

$$\text{Quota} = \frac{\text{Canadian allocation of TAC}}{\text{Total vessel size}}$$

Each year, the Total Allowable Catch (TAC) for each sub-area (Figure III.2) is set by the International Commission for the North West Atlantic Fisheries (ICNAF). Active fishing by Canadian vessels occurs in sub-areas two, three, and four. Some Canadian vessels also fish in sub-area five but the Total Allowable Catch here is negotiated with the United States. A proportion of the Total Allowable Catch for each sub-area is then assigned to foreign vessels. For example in the 1979 Groundfish Fisheries Management Plan, the Total Allowable Catch (TAC) for cod for sub-area 2GH is 20,000 tons; out of this total, 1000 tons were allocated to Canada. Of the Canadian allocation, 700 tons were earmarked for commercial vessels greater than 65 feet in length and 300 tons to inshore fishermen or vessels less than 65 feet in length. For sub-areas 2J and

FIGURE III.2

International Commission for the Northwest Atlantic
Fisheries Sub-Areas Within 200-Mile Fishing Zone -



SOURCE: Based on Department of Energy, Mines and Resources, Surveys and Mapping Branch, Revised Map 1975.

3KL, the Total Allowable Catch was fixed at 170,000 tons.

Out of this total, Canada had 130,000 tons and foreign vessels 40,000 tons. The Canadian quota was further subdivided into

30,000 tons for vessels over 65 feet and 100,000 tons to inshore fishermen.

The allocation process for sub-areas 3Ps, 3Pn, 4Rs, 4Vn (J-A), 4T and 4Vn (M-D) is however a little more complicated. The Total Allowable Catch (TAC) for these sub-areas is first divided between Canada and France. Then the Canadian allocation is further subdivided among the different vessel types and

gear. In 1979, the Total Allowable Catch (TAC) for sub-area 3Ps was fixed at 25,000 tons; 3,900 tons was allocated to France (St-Pierre-Miquelon). Of the Canadian share, vessels over 65 feet had 2,000 tons, vessels less than 65 feet in length were allocated 500 tons and fixed gear (e.g. traps, gillnets and longlines) had 18,600 tons.

5.2 Shellfish

Shellfish fishing licensing is administered by each province on behalf of the Department of Fisheries and the Environment. Nova Scotia shellfish licensing regulations

(Appendix B13(ii)) are being discussed below only as an example

of the shellfish licensing system. Shellfish is defined

in the Nova Scotia fishery Regulations to include "clams, mussels, oysters, scallops and other bivalve molluscs". It is

this definition that will be used in this discussion. The inland

and coastal waters of Nova Scotia have been divided into twenty shellfish areas. The fishery Regulations prohibits any person to fish for, take or possess shellfish from any of these shellfish areas except under, and in accordance with a shellfish licence. An application for shellfishing licence (or permit) may be made to a fishery officer who is authorized by the Minister of Fisheries to receive such application. However, before the Minister authorizes the issue of any licence, he may require the applicant to complete and file with him a statutory declaration containing such information as the Minister may demand. The fee for a shellfish fishing licence is one dollar but the registration fee for a vessel is based on its length. The fee for a scallop fishing vessel of less than 65 feet is five dollars; between 65 feet and 100 feet, fifteen dollars and over 100 feet twenty-five dollars.

The shellfish fishing Regulations also imposes strict time, size, method and equipment and area restrictions. The closed fishing season for oysters fishing in public oyster fishing areas or leased oyster fishing areas is December 12th to September 30th and May 1st to August 14th respectively. Oyster fishing on Sundays or between sunset and sunrise on any day of the week is also prohibited. Furthermore, the Regulations prohibits the fishing, retention or killing of any oyster which is less than three inches. Oyster fishing in public oyster fishing areas by mechanical devices or diving equipment is not allowed except the use of tongs or hand operated rakes. It is

the responsibility of the Minister of National Health and Welfare to determine whether the shellfish in an area is safe for any purpose. If the shellfish in an area is found to be unsafe because of the high degree of toxicity, then the Minister of Fisheries may by order in writing, close such area and prohibit the fishing, taking and possessing of shellfish from that area.

Thus unlike the offshore oil and gas licensing system, the fisheries licensing procedure operates in "isolation" without any direct input from any Federal Department. In the determination of contaminated shellfish areas and subsequent closure, one gets the impression, from the Regulations, that there is no consultation between the Department of National Health and Welfare and the Department of Fisheries and the Environment. Another important difference between the oil and gas licensing and fisheries licensing is that the Provinces are partly involved with fishing licensing while offshore oil and gas licensing is a federal prerogative. The basic principles underlying the fisheries licensing Regulations have not changed with the establishment of the 200-mile fisheries zone.²² However, there is a freeze now on the issue of new licences for groundfish fishing; only transfer of licences and the replacement of vessels up to twenty-five per cent of the original length is being allowed by the Department of Fisheries and the Environment. The whole licensing system is currently being reviewed by a Task Force.²³ One of the fundamental questions the Task Force may have to address is whether

Canada should have a "vessel licensing" system or a "fishermen licensing" system for the allocation of fish quotas.

There are two main problems with respect to the enforcement of licensing regulations. The first problem relates to the question of By-catch, because exceeding the normal allowable By-catch will undermine conservation measures. To ensure that licensees do not exceed their allocations, the Department of Fisheries and the Environment has restricted the permitted By-catch to ten per cent for vessels greater than 65 feet in length. The observer programme for fishing fleets, where observers are put on vessels, has so far proved successful (according to the Department) in ensuring that By-catch allowances are not exceeded. The second problem relates to uniformity of application of the Regulations. Because the Regulations are administered by the region or the province, there may be lack of uniformity in their administration. One way to minimize the regional difference is by ensuring that the administration of the licensing Regulations is closely monitored by the Head Office. Regular transfer of officers may also help to reduce the regional difference in the administration of the Regulations.

The amendments to Canada's Fisheries Act (RSC 1970 c.F-14) came into effect on September 1, 1977; eight months after the establishment of the 200-mile fisheries zone. These amendments appear to have been designed to give further protection to Canada's fisheries resources. For example, Section 69 of the Act

provides authority for regulations, respecting fisheries on the high seas to be applicable to registered vessels or aircraft that are subject to Canadian jurisdiction. This new provision will ensure that offences by means of aircraft are covered by regulations. Other important changes in the amended Fisheries Act relate to the protection of fish habitat and pollution prevention. Provisions of Section 31 prohibits any person from undertaking any work that will result in the harmful alteration, disruption or destruction of fish habitat. A habitat is defined broadly to include the spawning grounds and nursery, food supply and migration areas on which fish depend directly or indirectly to carry out their life process. Section 33 provides authority to deal more effectively with the pollution of fisheries waters. The deposit in fishery waters of either prejudicial or deleterious substances is strictly prohibited. Thus the fish habitat protection and the pollution control provisions are complementary; for the habitat provisions deal with harmful physical alteration, destruction or disruption of the habitat while the pollution control provisions deal with the impact of deleterious substances.

Under Section 34, the Minister of Fisheries may authorize the issue of a licence for the harvesting of marine plants in Canadian coastal waters for a period not exceeding one year. Conditions of harvesting: type of gear and equipment that must be used, the quantity of marine plants authorized to be harvested and the area within the coastal waters where the harvesting is to

be carried out, may be stated on the licence. These conditions are intended to ensure the effective control and enforcement of the regulations governing the exploitation of marine plants. The definition section of the Act has also been broadened. "Fish" is now defined to include the "eggs of fish" while "fishing" definition includes the "attempted catching of fish." The sections of the Fisheries Act that are of relevance to the objectives of this thesis have been summarized in Appendix B I.3.

6. Conclusion

The total number of Federal Departments that are or should be concerned with the exploration, exploitation and development of offshore resources have variously been estimated depending on the primary concern. Where the need for federal involvement has been in the area of technology assessment system, one principal and five supporting federal departments have been identified;²⁴ for marine science and technology, fourteen departments have been suggested as having significant responsibilities;²⁵ and for managing the 200-mile economic zone, six federal departments have been proposed.²⁶

Based on present and potential uses of the ocean space, twenty-two federal institutional actors have been identified in this thesis. These are departments that should be continuously involved in the multipurpose planning for the development,

exploitation and control of continental shelf resources. The federal departments and the Boards, Corporations and Divisions under them are listed in Appendix D. The interaction among these institutional actors with respect to the planning of offshore resources will be discussed in Chapter VII.

Appendix D gives some indication of the extent of the fragmentation of responsibilities within the federal organizational structure for offshore resources development and control. Under the twenty-two federal departments, there are about thirty Boards, Crown Corporations and establishments that directly or indirectly deal with some aspect of offshore resource development. At the policy support level, there are over eighty-one Branches and Divisions involved. Fragmentation of responsibility seems to be a characteristic of offshore resources development in general, for even under the British centralized system of government, there are over twelve government agencies that have responsibility for North Sea oil and gas development. The British Government agencies are listed in Table III.4. The overlap of responsibility for continental shelf resources development in Canada is not limited to the Public Service. There are over ten Parliamentary Standing Committees that oversee offshore resources development policies. How does this "duplication" of responsibilities influence offshore resources planning? An attempt will be made to answer this question in Chapter VII.

TABLE III. 4

United Kingdom: Government Departments and Agencies Responsible
for Britain's Continental Shelf Oil and Gas Development

1. Department of Commerce Northern Ireland
2. Department of Energy
3. Offshore Supplies Office (OSO) - Dept. of Energy
4. Department of the Environment
5. Department of Industry
6. Department of Trade
7. British National Oil Corporation (BNOC)
8. British Gas Corporation
9. Highlands and Islands Development Board
10. Development Corporation of Wales
11. National Ports Council
12. The Scottish Development Department
13. The Scottish Economic Planning Department
14. The Scottish Office

SOURCE: Skinner, Walter, North Sea and Europe Offshore Yearbook
and Buyers Guide 1977, London Financial Times Ltd. pp. 50-51.

F O O T N O T E S

1. "Fish exports up sharply in Year", The Globe and Mail, February 28, 1979, p. B5. With 1978 export of over \$1.1 billion Canada became the world's largest fish exporter.
2. It is reported that oil and gas royalties and corporation and petroleum revenue taxes from Britain's North Sea sector strengthened British balance of payments by US \$3.6 billion in 1977 alone. See The Financial Post, May 27, 1978, p. 13.
3. Nickerson, T. A Report by the Sector Task Force on the Canadian Ocean Industry, 1978, p.5.
4. "The British North America Act 1867, 30 & 31 Victoria, C.3 (U.K.) Section 109" Revised Statutes of Canada 1970 Appendices No.5, p.222.
5. "Heavy Drilling Likely off Labrador in 1979", The Globe and Mail, October 4, 1978 p. B6.
6. Warbrick, C. (1968) "Offshore Petroleum Exploitation in Federal Systems: Canadian and Australian Action", The International and Comparative Law Quarterly, Vol. 17, Part 2, pp.501-513..
7. Ibid.
8. Petro.Canada, 1977 Annual Report, p.3.
9. "Oil Play Off Means Big Opportunities", The Globe and Mail, January 16, 1979, p. B2. Mr. Jack Horner, Minister of Industry, Trade and Commerce, who led a delegation of about 20 Canadian businessmen to Peking said the contracts that Petro.Canada will sign will be over 10 years and would involve initial seismic and geophysical programmes, exploratory drilling, and commercial exploitation of petroleum prone regions in co-operation with China's state oil monopoly.
10. Petro-Canada, 1977 Annual Report, p.7.
11. Niering, Jr. F. (1978) "Petro-Canada's First Two Years", Petroleum Economist, Vol XLV No. 4, p.152.

12. "Gulf Canada President Criticizes Petrocan's Special Advantages" The Globe and Mail, November 1978, p. B3.
13. "Take Over Rumors Push Pacific Pete Higher", The Globe and Mail, September 28, 1978 p.B.16 Petro-Canada was accused of being one of handful of companies that could afford to buy Pacific and "not run afoul of the Foreign Investment Review Agency", because it is owned and financed by the Federal Government.
14. "Petrocan not Tipped off on Budget, Chretien Assures Common Critics" The Globe and Mail, November 18, 1978, p.11. The Leader of the Parliamentary Opposition was concerned that Thomas Shoyama, the Deputy Minister of the Department of Finance, who also sits on the Board of Directors of Petrocan might have influenced Government policy on behalf of the Crown Corporation.
15. "Plotting Petrocan's Path After Take Over", The Financial Post, December 9, 1978, p.5.
16. Third Session. Thirtieth Parliament, 26 Elizabeth II, 1977. The House of Commons of Canada Bill C-20 first reading. December 20, 1977. Section 45(1) p.49. See also Department of Energy, Mines and Resources, Statement of policy: Proposed petroleum and Natural Gas Act and New Canada Oil and Gas Land Regulations 1976.
17. "Petrocan to Negotiate for Venezuelan Oil: Move escalates confrontation with Imperial Over Exxon Stand", The Globe and Mail, March 14, 1979, p. B1. Petro-Canada has been ordered by the Minister of Energy, Mines and Resources to negotiate with its Venezuelan counterpart, Petroven, to purchase 100,000 barrels of crude oil purchased by Imperial Oil Limited for its eastern Canadian Refineries.
18. For example, the size of a grid area off the northern tip of Labrador is less than 64,000 acres but more than 95,000 acres south of Nova Scotia.
19. For a permit area located south of latitude 65° north, the permit is valid for three years from the date of issue, for a permit area between latitude 65° and 70°, the permit is valid for four years, and for a permit area north of latitude 70°, the permit is valid for six years. See Appendix BII(1) for details of the licence, permit and lease regulations.

20. For a summary of the details of the licence permit and lease administration, see Appendix B II(i).
21. Yearly Fisheries Management Plans have been prepared by the Department of Fisheries and the Environment since 1975. However, a complete plan has only been available since 1977. For details of the 1979 plan, see Department of Fisheries and the Environment Branch, 1979 Atlantic Coast Groundfish Fisheries Management Plan.
22. This is the impression gained, from the discussion with a senior official at the Resources Allocation Branch, Department of Fisheries and the Environment.
23. At the time of writing, the Task Force has not submitted its report.
24. Gibbons, M. and Voyer, R (1974) A Technology Assessment System: A Case Study of East Coast Offshore Petroleum Exploration, Science Council of Canada Background Study No. 30, Ottawa, p.72.
25. Stewart, R.W. and Dickie, L.M. (1971) Ad Mare: Canada Looks to the Sea, Background Study for the Science Council of Canada, Special Study No.16, Ottawa, p.110.
26. Johnson, B. (1977) "Governing Canada's Economic Zone" Canadian Public Administration, Vol 20, p.159..

CHAPTER IV

Major Activities/Uses of the Continental Shelf

1. Introduction

Because of the juxtaposition of different resources in the offshore area, many activities occur within the ocean space. Some such as fishing and shipping utilize only the water body. Others use only the air space (aircraft, helicopters); but a greater number (energy, recreation, military, and ports) use the air space, the waterbody, the seabed and the land-water interface. The purpose of this chapter is to identify and classify these offshore activities, examine the growth or decline of these activities and the role of technology in the exploitation and development of offshore resources.

2. Classification of Activities

Offshore resources planning will require the use of specific strategies in order to achieve policy objectives. Thus a classification of the multiple activities that occur in the offshore area, will help in the choice of the appropriate planning instruments or set of instruments to be used. Although every classification of activities involves a certain amount of arbitrariness,¹ yet the need to minimize potential offshore development conflicts makes the classification essential. It must be pointed out that the definition of a class does not necessarily

mean that the activities within a class are comparable; nor that each process exhibits the same traits.

The term "Offshore Activity" is used in this classification to mean:

"An operation that is designed to exploit or develop the living and non-living resources of the continental shelf; or an operation that utilizes the airspace, the water body, the seabed and subsoil or a combination of these media."

It is clear from this definition that at least part of the operations must not only take place within the ocean space but must also relate to the exploitation or development of the resources of the continental shelf. This distinction is critical because, while transAtlantic and transPacific commercial flights utilize the offshore air space they are not being considered as an offshore activity as they do not relate directly to the exploitation or development of the resources of the continental shelf. On the other hand, the use of satellite (remote sensing) to monitor ice movement or the migration of a shoal constitutes an offshore activity.

The use of this definition has two major significance. The first is that the definition acknowledges the fact that a particular offshore activity may not originate within the ocean space; for example, shipping. The second is that the ultimate recipients of the benefits that may be derived from the exploitation and development of offshore resources and the infrastructure for this development are located on the land. For planning

purposes, there is therefore an inseparable connection between the offshore region and the land. Despite this offshore-onshore relationship, offshore resources planning is not necessarily the same as onshore resources planning.

On the basis of the above definition, seven major offshore activity categories may be defined (see Table IV.1). These seven categories are further subdivided into a total of thirteen sub-categories. Seven of which are classified as strictly mobile activities, four as strictly fixed activities and two as both fixed and mobile activities (see Table IV.1).

1. Fishing

Canada has, potentially, some of the world's most productive fishing grounds.² However, Canada has not derived the maximum benefits from them. There are several reasons for this; a decline in Canada's share of the annual catch,³ Conflicting short term and long term policy objectives,⁴ over dependence of Atlantic Region on inshore groundfish fisheries,⁵ "confused and incomplete federal policy"⁶ and the allocation of more than three-quarters of the quota for non-traditional species within Canada's 200-mile zone to foreign freezer trawlers.⁷ Although the fisheries resource is now being plagued by complex problems, it offers enormous potential for exploitation and development. Besides, fisheries is one of the important renewable resources of the continental shelf. For these reasons at least,

TABLE IV - 1

Classification of offshore-Resources Uses/Activities

Uses/Activities Sectors

I. Fishing

1. Sports Fishing (M)
2. Commercial Fishing (M)
3. Shell Fishing (F)

II. Transportation

4. Commercial Shipping (M)
5. Search and Rescue (M)
6. Port Facilities (F)

III. Energy

7. Offshore gas and oil Exploration (F/M)
8. Petroleum Refinery (F)

IV. Recreation

9. Sailing and Boating (M)

V. Communication

10. Use of airspace by helicopters (M)
11. Cable communication (F)

VI. Defence

12. Military-Naval Operations (M)

VII. Research

13. Scientific Research (F/M)

F: Fixed

M: Mobile

the development of a multipurpose planning framework for offshore resources must ensure that priority and protection are given to renewable resources like fisheries.

Marine fishing may be sub-categorized into three: commercial, sports and shell. Shell fisheries: clams, oysters, scallops, lobsters, shrimps and crabs are found both on the East Coast and on the West Coast. Lobster fishing on the East Coast is concentrated along eastern New Brunswick, around Prince Edward Island and southern Nova Scotia. There is also some lobster fishing on the western and northern parts of Newfoundland. Oyster and clam fishing is concentrated around Prince Edward Island and scallop around southern Nova Scotia. On the West Coast, crab fishing is concentrated around the north east part of the Queen Charlotte Islands and off the southern mainland, while shrimp, oyster and clam fishing occur mainly around southern Vancouver Island.⁸

On both coasts, shell fishing occurs within the twelve mile territorial waters, that is within fishing zones one and two on the East Coast and fishing zone three on the West Coast. In 1970, the total shell fish landings was 84,355,000 pounds on the East Coast and 12,471,000 pounds on the Pacific Coast. By 1976, the shell fish landings had increased to 309,913,000 pounds on the East Coast and 19,856,000 on the West Coast (see Table IV-2), an increase of 267 per cent and 59 per cent respectively. Thus besides the East Coast having more varieties

TABLE IV - 2

Quantity of Shell Fish Landed in Thousands of Pounds

	<u>Atlantic Coast</u>	<u>Pacific Coast</u>	<u>Total</u>
1976	309,913	19,856	329,769
1975	100,061	13,706	113,767
1974	86,112	15,840	101,952
1973	87,108	15,980	103,088
1972	75,175	14,658	89,833
1971	88,475	11,659	100,134
1970	84,355	12,471	96,826

Source: Statistic Canada, Annual Fisheries Statics of Canada
Catalogue No. 24-201.

of shell fish, there are more shell fish landings on the East Coast than on the West Coast.

There appears to be an overall decline in sports fishing on the East Coast. A total of 140,900 sports fishing licences were issued in the 1973-74 year against 180,000 in 1969-70, a decline of 21 per cent. This overall decline on the East Coast does not reflect the subregional trends. For example, between 1969 and 1974, sports fishing declined by 3 per cent in Newfoundland 64 per cent in New Brunswick but increased by 20 per cent in Prince Edward Island and 5 per cent in Nova Scotia. Between 1969 and 1974, sports fishing licences on the West Coast increased by 14 per cent (see Table IV - 3). Sports fishing is also one of the offshore activities which takes place mainly within the twelve-mile territorial waters or within the "inshore" region.

Commercial fishing is both an inshore and offshore activity. The Canadian fishing fleet consists mostly of owner-operated small-crafts. Over 80 per cent of the vessels are under 25 gross tons (Table IV - 4) and operate within a day's voyage from home ports. About 160 trawlers, those over 150 gross tons, are capable of long-range operations.

The range of fishing operations on the East Coast extends from Cape Cod in the South to Hamilton Inlet in North. About 70 per cent of the groundfish catch is taken by intermediate and the large fishing vessels. The groundfish fisheries in the international waters from the West Coast of Greenland to South

TABLE IV - 3

Sports Fishing Licences by Area of Jurisdiction

Year	Area of Jurisdiction I					2	
	Newfoundland	P.E.I.	Nova Scotia	New Brunswick	Atlantic	B.C./Pacific	Total 1 & 2
1973-74	18,000	14,300	83,800	24,800	140,900	416,700	557,600
1972-73	17,900	11,200	72,400	21,300	122,800	368,800	491,600
1971-72	17,300	12,300	76,700	17,500	123,800	357,500	481,300
1970-71	17,800	12,000	76,400	71,000	177,200	376,200	553,400
1969-70	18,700	11,900	79,900	69,600	180,100	365,700	545,800 ¹

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Source: Statistics Canada Travel, Tourism and Outdoor Recreation: A Statistical Digest Annual

Catalogue No. 66-202

TABLE IV - 4

Number of Craft engaged in fishing

	Atlantic coast ¹						Pacific Coast ²						Total	Grand Total
	1	2	3	4	5	6	Total	1	2	3	4	5	6	
1976	2,217	301	159	38	162	15,742	18,619	2,144	413	189	64	23	4,556	26,008
1975	-	-	-	-	-	-	-	2,152	424	203	78	32	4,639	7,528**
1974	-	-	-	-	-	-	-	2,011	403	172	65	31	4,402	7,084**
1973	-	-	-	-	-	-	-	1,831	355	148	58	23	4,174	6,589**
1972	2,478	459	215	70	251	25,409	28,882	1,849	355	140	54	20	4,252	35,552
1971	2,345	383	221	80	271	28,402	31,702	1,870	347	142	52	15	4,272	38,400
1970	2,287	391	227	89	276	29,113	32,383	1,833	346	141	60	18	4,576	39,357
1969	2,186	371	239	95	261	29,254	32,406	1,805	341	127	61	20	4,827	39,587

1. 10-24.9 2. 25-49.9 3. 50-99.9 4. 100-149.9 5. 150 and over 6. under 10*

* In tons

** Excludes figures for Atlantic Coast.

Source: Statistics Canada, Fisheries Statistics of Canada - Catalogue No. 24-201.

of New England (See Figure IV.1) is regulated by the International Commission for the Northwest Atlantic Fisheries (ICNAF)⁹. The International Commission for the Northwest Atlantic Fisheries regulatory activities included fishing gear control, establishing closed areas and seasons, setting total allowable catches (TAC) and allocating shares (quotas) to member nations. Canada's share of the catch of all species caught in the northwest Atlantic, which ranked third after the United States and U.S.S.R., is about twenty percent. The operation of Canadian fleets is mostly concentrated in ICNAF sub-areas two, three and four; that is the waters from Labrador to the Scotian Shelf.

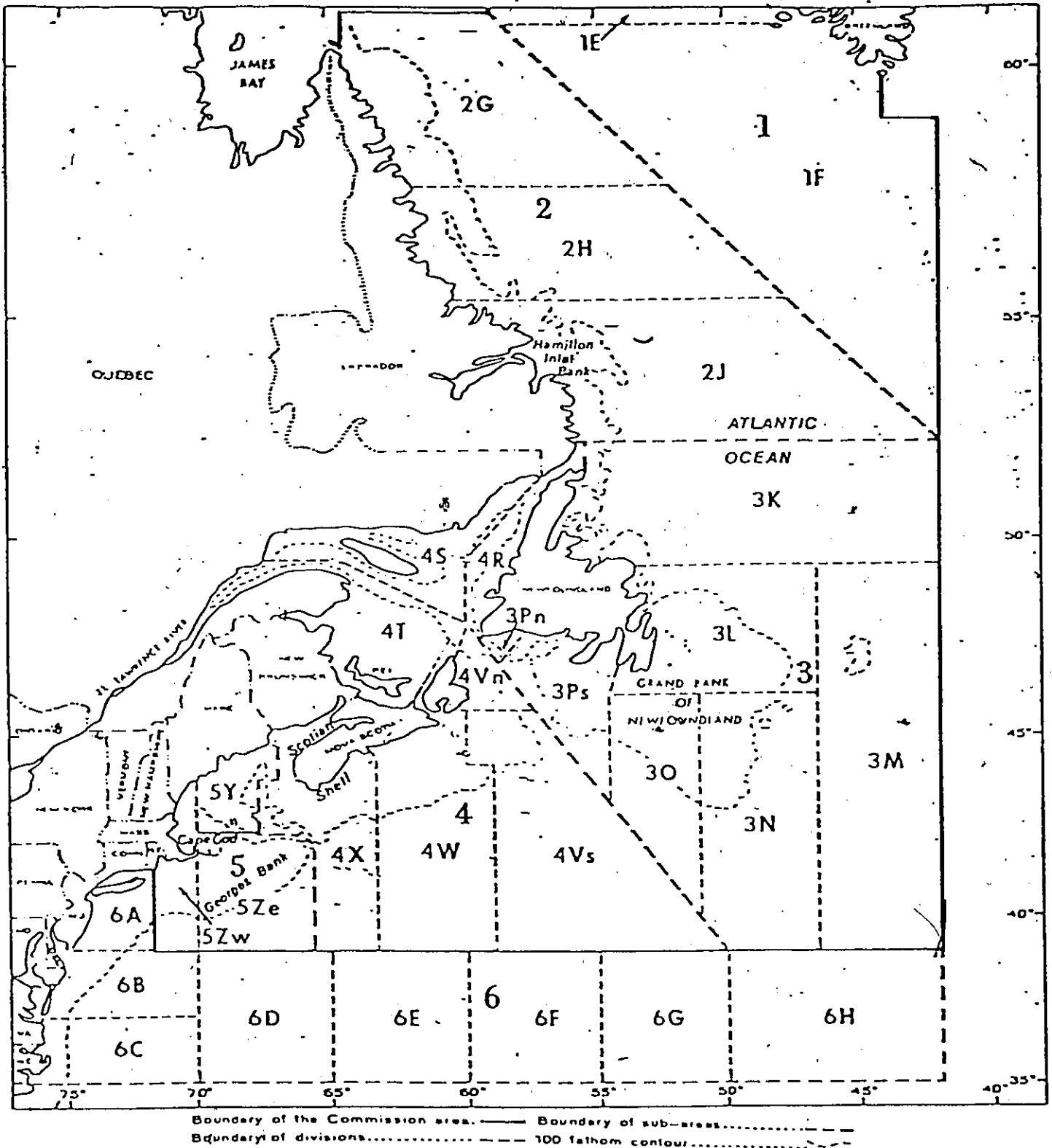
With the creation of a 200-mile fisheries zone, some parts of the ICNAF sub-areas now overlap with the fisheries zone.

Through regulations being developed under the Coastal Fisheries Protection Act and the Fisheries Act, Canada will be able to control foreign fishing activities in ICNAF sub-areas which are now part of Canada's extended fishing zone.¹⁰ Upon Canada's suggestion, a new body, the Northwest Atlantic Consultative Organization (NAFCO), which is a revised ICNAF, will now co-ordinate international effort in the conservation and regulation of Northwest Atlantic fisheries outside Canada's 200-mile fishing zone. The new body will also provide scientific technical consultation on fisheries management.

On the Pacific Coast, the important fishery is salmon. The salmon stock extend beyond the 200-mile zone where they are

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FIGURE IV - 1

International Commission for the Northwest Atlantic Fisheries Sub-Areas



Source: Based on Department of Energy, Mines and Resources, Surveys and Mapping Branch, Revised Map 1975.

at the mercy of foreign fishing fleets. In order to prevent the over-exploitation of the salmon fisheries, the International North Pacific Fisheries Convention (INPFC) was formed. However, unlike the ICNAF, not all the nations which exploit the salmon fisheries belong to INPFC. Only Canada, Japan and the United States of America are signatories to the Convention. In general, Canada's share of the salmon fisheries in the INPFC region is about 26 per cent compared to Japan's 38 per cent and the United States' 35 per cent.

Roe herring is becoming another important fishery stock on the Pacific Coast, because of the high demand for this stock in Japan. For example, it has been reported that as much as \$4,000 per ton was offered for the 1979 season, to British Columbia fishermen.¹¹ The problem with the herring fishery is that it faces over exploitation. Total landings are declining; 87,000 tons were caught in 1976 but only 70,000 tons in 1978. The greater number of boats engaged in fishing on the West Coast is under 25 gross tons. Only 23 vessels are capable of long range offshore operations (see Table IV- 4). Thus like the East Coast most fishing vessels on the West Coast operate in the inshore and within a day's voyage from the shore. In general, the federal fisheries policy is designed to give priority to inshore fishing.¹²

II. Transportation

Commercial shipping, Search and Rescue and Ports are three offshore activities that have been classified under the transportation sector. Ports and vessel movement are closely related because the location of the Ports (and the services they offer) determines the routes vessels will take across the continental shelf. This close relationship between ports and vessel movements will influence the designation of navigation freeways to avoid offshore installations and the designation of tanker routes to ensure that potential oil spills do not pose a threat to sensitive coastal areas.

There is an overall increase in the total tonnage of cargo handled on the Atlantic and the Pacific Coasts between 1970 and 1976. In 1970, about 23 million tons of cargo were handled at Atlantic ports compared with 30 millions tons on the Pacific Coast. By 1976, the tonnage of cargo had increased to 29 million and 41 million respectively (Table IV - 5). However, the increase has not been progressive over the period. Both Coasts handled their largest tonnage in 1975, 37 million on the Atlantic Coast and 43 million on the Pacific Coast.

Although there is an overall increase in the tonnage of cargo on both coasts the number of vessels calling at the ports has decreased between 1970 and 1976. The total vessel movement (arrivals and departures) in 1970 on the Atlantic

TABLE IV - 5

Tonnage of Cargo Handled by Port: to and from Foreign Countries

			1		2	
	Newfoundland	P.E.I.	Nova Scotia	New Brunswick	Atlantic	B.C./Pacific
						Total 1 & 2
1976	2,354,889	181,189	16,801,451	10,133,284	29,470,813	41,464,763
1975	6,781,850	66,105	16,807,546	10,225,520	33,881,021	38,860,942
1974	8,160,301	29,366	19,297,500	9,153,839	36,641,006	41,503,896
1973	3,907,431	61,050	21,622,270	11,572,297	37,163,648	43,530,854
1972	3,087,086	108,372	20,616,943	9,721,136	33,533,537	40,410,846
1971	2,949,834	104,975	15,771,196	7,789,548	26,615,553	38,711,420
1970	3,440,712	201,268	12,600,252	6,705,153	22,947,385	30,379,626
						102
						73,944,383
						65,326,973
						53,327,011

Source: Statistics Canada, Shipping Report Part II: International Seaborne Shipping by Port. Catalogue No. 54 - 203.

Coast was 11,075 and 17,957 on the Pacific. This decreased to 9,003 and 16,202 respectively in 1976. (see Table IV - 11). The year to year vessel movements have also fluctuated between 1970 and 1976. More vessels 11,166, called at the Atlantic ports in 1973 (which also coincides with the year the highest tonnage of cargo was recorded) but on the Pacific Coast, 1971 was the year more vessels (18,576) called between 1970 and 1976. The discrepancy between the increase in the total tonnage of cargo handled at the ports and the decrease in the number of vessels calling may be explained by the fact that larger vessels are calling at Canadian ports. In 1970, the total deadweight of the 17,957 vessels that berthed on the Pacific Coast was 61.5 million tons compared to 74 million tons for 16,000 vessels in 1976 (see Table IV - 16).

On the Atlantic Coast, there are sub-regional shifts in vessel movements and the total tonnage of cargo handled at the ports. For example, in 1976, 1,209 vessels departed from Newfoundland ports compared to 777 arrivals. The number of departures and arrivals does not include coastwise movement. About 1.4 million tons of cargo was loaded onto the 1,209 vessels that departed against the 954,000 tons unloaded from the 777 vessels that arrived. Prince Edward Island, Nova Scotia and New Brunswick all reported excess vessel arrivals over departures (see Tables IV - 13, IV - 15). However, Nova Scotia and New Brunswick unloaded more cargo than they loaded. (Tables IV - 6, IV - 9). These figures suggest that ports in Nova Scotia and

TABLE IV⁵ - 6

Tonnage of Cargo Handled by Provincial Ports: to and from Foreign Countries

N E W F O U N D L A N D			
	<u>Tons Loaded</u>	<u>Tons Unloaded</u>	<u>Total</u>
1976	1,400,604	954,285	2,354,889
1975	2,714,374	4,067,476	6,781,850
1974	3,414,880	4,745,421	8,160,301
1973	1,650,254	2,257,177	3,907,431
1972	1,537,190	1,549,896	3,087,086
1971	1,364,481	1,585,353	2,949,834
1970	1,741,131	1,699,581	3,440,712

TABLE IV - 7

P R I N C E E D W A R D I S L A N D

	<u>Tons Loaded</u>	<u>Tons Unloaded</u>	<u>Total</u>
1976	174,645	6,544	181,189
1975	54,057	12,048	66,105
1974	22,898	6,468	29,366
1973	35,563	26,087	61,650
1972	62,778	45,594	108,372
1971	60,056	44,919	104,975
1970	72,664	128,604	201,268

TABLE IV - 8

N O V A S C O T I A

	<u>Tons Loaded</u>	<u>Tons Unloaded</u>	<u>Total</u>
1976	7,506,065	9,295,386	16,801,451
1975	6,938,393	9,869,153	16,807,546
1974	8,888,893	10,408,607	19,297,500
1973	10,384,417	11,237,853	21,622,270
1972	10,128,214	10,488,729	20,616,943
1971	7,240,681	8,530,515	15,771,196
1970	6,466,747	6,133,505	12,600,252

TABLE IV - 9

N E W B R U N S W I C K

	<u>Tons Loaded</u>	<u>Tons Unloaded</u>	<u>Total</u>
1976	3,282,668	6,850,616	10,133,284
1975	2,937,593	7,287,927	10,225,520
1974	2,957,999	6,195,840	9,153,839
1973	3,838,418	7,733,879	11,572,297
1972	3,328,226	6,392,910	9,721,136
1971	2,578,072	5,211,476	7,789,548
1970	2,704,270	4,000,883	6,705,153

TABLE IV - 10

B R I T I S H C O L U M B I A

	<u>Tons Loaded</u>	<u>Tons Unloaded</u>	<u>Total</u>
1976	36,790,655	4,674,108	41,464,763
1975	34,422,703	4,438,239	38,860,942
1974	35,928,085	5,575,811	41,503,896
1973	38,492,084	5,038,770	43,530,854
1972	35,187,027	5,223,819	40,410,846
1971	33,642,360	5,069,060	38,711,420
1970	27,053,488	3,326,138	30,379,626

TABLE IV - 11

Vessel Arrival and Departure in International Seaborne Shipping

	1			2		Total 1 & 2
	<u>Newfoundland</u>	<u>P.E.I.</u>	<u>Nova Scotia</u>	<u>New Brunswick</u>	<u>Atlantic</u>	<u>BC/Pacific</u>
1976	1,986	153	3,536	3,328	9,003	16,202
1975	2,133	69	3,773	3,468	9,443	13,603
1974	2,344	51	4,180	3,562	10,137	14,967
1973	2,692	64	4,429	3,981	11,166	16,149
1972	2,654	119	3,513	4,660	10,946	17,797
1971	2,523	151	3,649	3,978	10,301	18,576
1970	2,390	177	3,871	4,637	11,075	17,957
						109
						28,743
						28,877
						29,032

Source: Statistics Canada, Shipping Report Part II International Seaborne Shipping by Port - Catalogue No. 54-203

TABLE IV - 12

Vessels Arrival and Departure in International Seaborne Shipping by Province

N E W F O U N D L A N D

	<u>Arrival</u>	<u>Departure</u>	<u>Total</u>	<u>Net Tonnage</u>
1976	777	1,209	1,986	6,166,257
1975	857	1,276	2,133	9,260,274
1974	927	1,417	2,344	9,230,777
1973	1,107	1,585	2,692	4,991,863
1972	1,141	1,513	2,654	4,813,061
1971	1,081	1,442	2,523	4,448,702
1970	1,092	1,298	2,390	4,834,719

TABLE IV - 13

P R I N C E E D W A R D . I S L A N D

	<u>Arrival</u>	<u>Departure</u>	<u>Total</u>	<u>Net Tonnage</u>
1976	80	73	153	337,049
1975	30	39	69	194,858
1974	23	28	51	198,903
1973	30	34	64	262,914
1972	64	55	119	340,450
1971	86	65	151	279,791
1970	96	81	177	364,925

TABLE IV - 14

N O V A · S C O T I A

	<u>Arrival</u>	<u>Departure</u>	<u>Total</u>	<u>Net Tonnage</u>
1976	1,905	1,631	3,536	22,824,732
1975	2,075	1,698	3,773	23,182,382
1974	2,284	1,896	4,180	24,160,033
1973	2,343	2,086	4,429	25,537,548
1972	1,780	1,733	3,513	23,574,549
1971	1,849	1,800	3,649	19,653,778
1970	1,930	1,941	3,871	17,092,947

TABLE IV - 15

N E W B R U N S W I C K

	<u>Arrival</u>	<u>Departure</u>	<u>Total</u>	<u>Net Tonnage</u>
1976	1,674	1,649	3,323	15,926,683
1975	1,751	1,717	3,468	14,377,075
1974	1,824	1,738	3,562	12,895,919
1973	2,054	1,927	3,981	14,210,667
1972	2,377	2,283	4,660	13,011,658
1971	1,999	1,979	3,978	9,435,200
1970	2,355	2,312	4,637	7,806,551

TABLE IV - 16

B R I T I S H C O L U M B I A

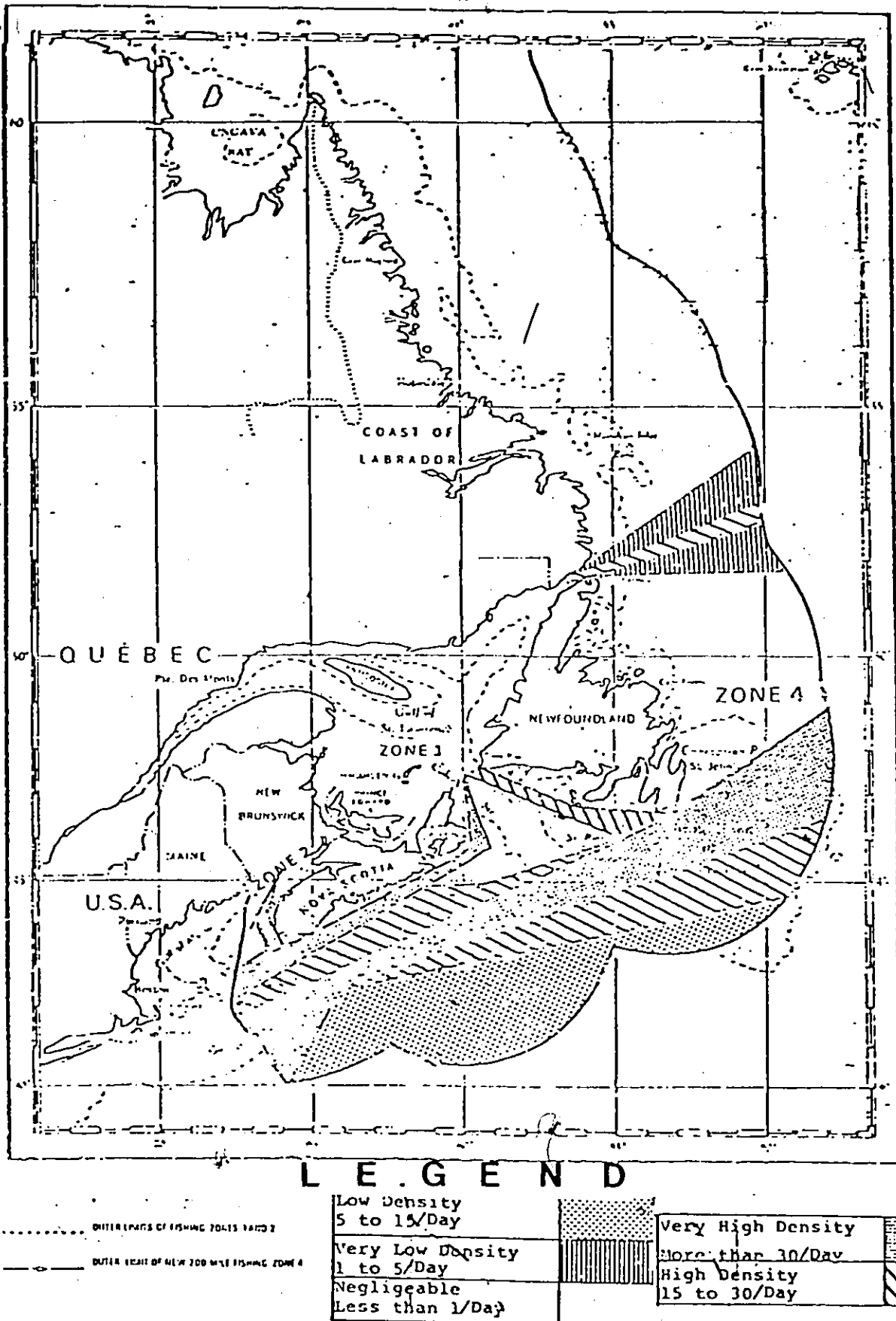
	<u>Arrival</u>	<u>Departure</u>	<u>Total</u>	<u>Net Tonnage</u>
1976	8,098	8,104	16,202	73,714,411
1975	6,780	6,823	13,603	59,719,617
1974	7,436	7,531	14,967	65,853,542
1973	8,058	8,091	16,149	68,507,623
1972	8,927	8,870	17,797	71,213,084
1971	9,302	9,274	18,576	69,629,227
1970	8,914	9,043	17,957	61,618,660

New Brunswick handled more incoming freight while the ports in Newfoundland and Prince Edward Island handled more outgoing cargo. This "specialization" of the ports may play a significant role in planning onshore infrastructures for offshore resources exploitation and development (e.g. the siting of storage depots for offshore oil and gas). The "specialization" of the ports also underlies the importance of looking at the East Coast, for offshore resource planning purposes at least, as one region and not as a number of provinces. Figures IV - 2, IV - 3 and IV - 4 show the most utilized shipping lanes on the East Coast within the 200-mile fishing zone. In general, the commercial shipping vessels utilize east-west lanes, both summer and winter.

In summer, there is a commercial shipping traffic, ranging between five to thirty vessel per day, through the strait of Belle Isle. The tanker lanes are in a south-north direction mostly on the southern Nova Scotia and Cape Breton Island; except for an east-west lane between Bonavista and Cape Rose, Newfoundland. It would therefore appear that the offshore areas of the southern coasts of Nova Scotia and Cape Breton Island is one of the potential areas where there is a high probability of collision between commercial vessels and tankers.

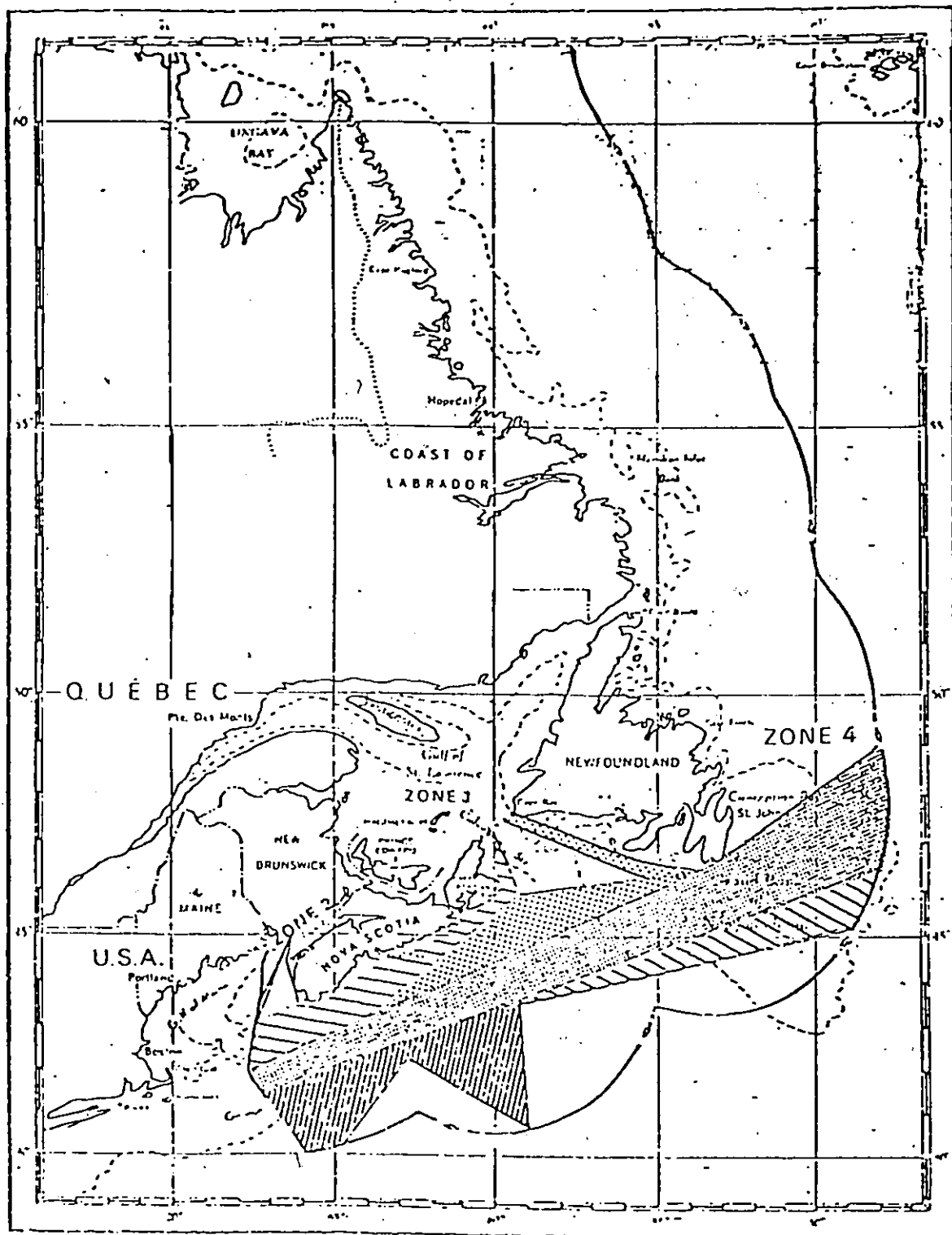
Not all the vessels in the 200-mile zone are bound for Canadian ports. A significant number transit Canadian fishing zones 4 and 5 on their way between the United States and Northern Europe or the Asian ports. The average transit vessel movements on the Atlantic offshore (fishing zone 4) is about 4.3 vessels per day between January and April and 3.9 for

Figure IV - 2
Offshore Ship Movements in Fishing Zone 4. Summer Season 1976



Source: Based on Whiteman, H.H. Coast Guard Task Force Report on the Application of Part XX of the Canadian Shipping Act in Fishing zone 4 and 5, unpublished April 1, 1978, p. 48.

FIGURE IV - 3
Offshore Ship Movements in Fishing Zone 4 - Winter Season 1976-77

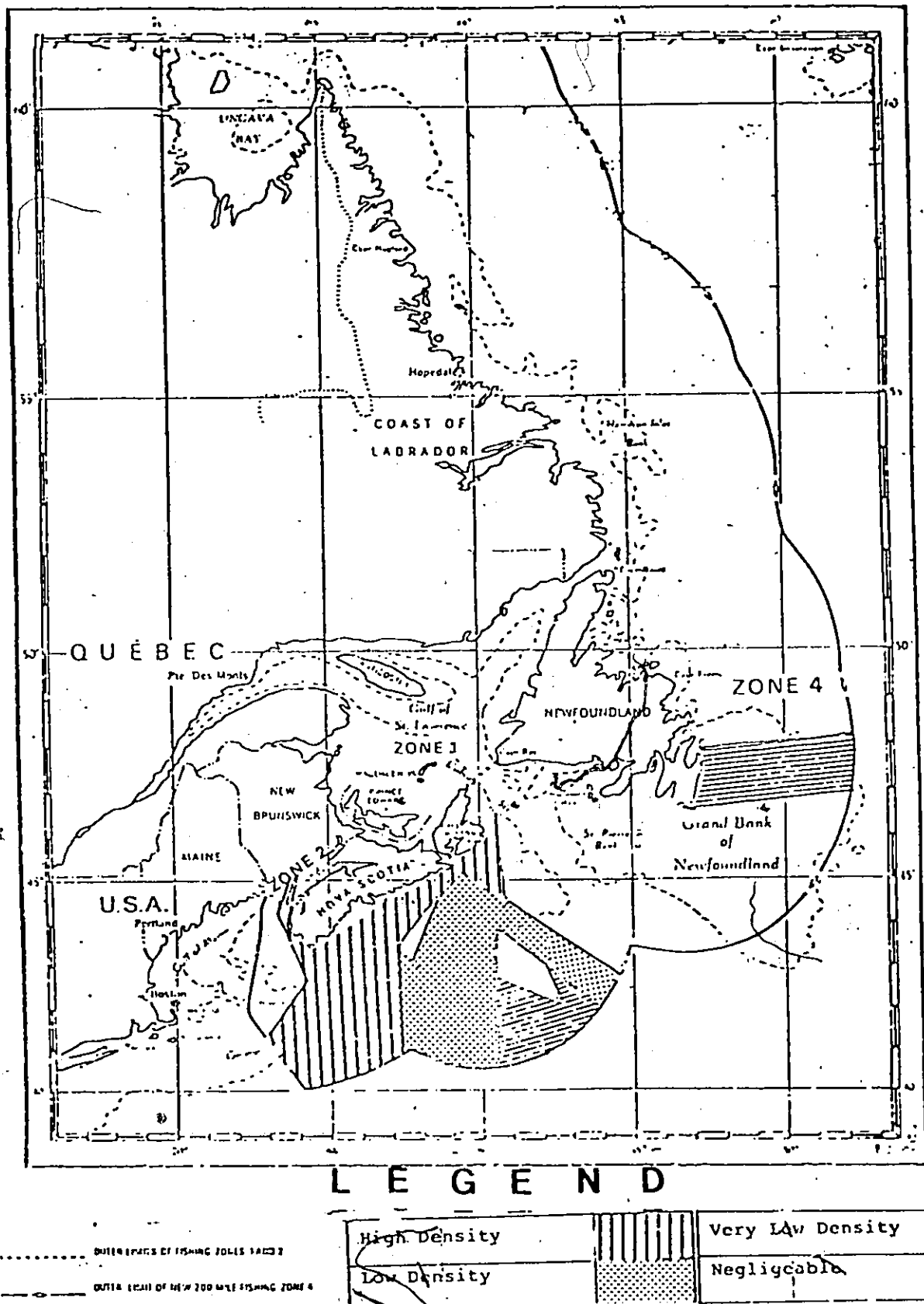


LEGEND

.....	INTERIM OF FISHING ZONES 1 AND 2	Low Density 5 to 15/Day		Very High Density More than 30/Day	
—	OUTER LIMIT OF NEW 200 MILE FISHING ZONE 4	Very Low Density 1 to 5/Day		High Density 15 to 30/Day	
		Negligible Less than 1/Day			

Source: Based on Whiteman, H.H. Coast Guard Task Force, Report on the Application of Part XX of the Canadian Shipping Act in Fishing Zone 4 and 5, Unpublished, April 1978, p. 49.

FIGURE IV - 4
Offshore Tanker Movements in Fishing Zone 4 All Year 1976-77



Source: Based on Whiteman H.H. Coast Guard Task Force, Report on the Application of Part XX of the Canadian Shipping Act in Fishing zones 4 and 5, Unpublished April 1, 1978, p.50.

the May-December period. There is a much heavier traffic within fishing zone '5. The average daily vessel movement is about thirty for Seattle bound vessels and two for vessels from Valdez,¹³ mainly oil tankers. In general, there is a greater volume of transit vessels on the West Coast than on the East Coast. This significant regional difference may require different planning policies with respect to vessel surveillance and pollution enforcement.

Unfortunately, Canadian commercial shipping vessels are not having their fair share in the increase in commercial shipping because of a decline in the operations of Canadian Merchant Marine. This decline is a deliberate government policy.¹⁴ The development of a large Canadian ocean-going merchant fleet would require very large subsidies, and for this reason, the federal government has not been willing to provide the necessary incentives to this industry. Another reason which may explain the government position is the fact that most of the countries which supply Canada's marine transportation are net importers of Canadian products. Thus, the financial loss to Canada from this invisible trade is recouped from export.

The Search and Rescue operations in the offshore are provided by the Department of National Defence (DND) and the Department of Transport, in particular the Coast Guard. The Department of National Defence provides aircraft which

are able to cover large areas in search and rescue operations. These aircraft are able to drop emergency supplies and trained rescue personnel at site of an incident.

The Canadian Coast Guard (CCG) Branch of the Department of Transport, provides marine craft of different sizes and configuration at several locations on the East and the West coasts. These marine search and rescue craft range from small, fast rescue boats employed in areas of high recreational boat activity (e.g. West Coast) to larger specially designed search and rescue cutters capable of operating in severe conditions (East Coast). A number of Government Departments and Agencies also provide assistance in search and rescue operations; Fisheries and the Environment, Energy, Mines and Resources and the Royal Canadian Mounted Police all play a significant role.

The incidents of air and marine search and rescue have been rising since 1970. There were a total of 552 air and 1562 marine incidents in 1970. The corresponding figures for 1977 were 1082 and 3727 respectively (see Table IV - 17). While there are, relatively speaking, about the same number of incidents of air search and rescue on both the East and the West coasts; there are about three times as many incidents of marine search and rescue on the West Coast (Table IV - 19) than there are on the East Coast (Table IV - 18). The greatest proportion of the marine incidents on the West Coast occur around the southern part of Vancouver Island. On the East Coast, about 80 per cent of the marine incidents occur around the southern and the eastern parts of Nova Scotia.¹⁵

TABLE IV - 17

Incidents of Search and Rescue

	A I R		M A R I N E		Total	Total 1 & 2
	Atlantic	Pacific	Atlantic	Pacific		
1977	569	513	897	2,830	3,727	4,809
1976	641	574	898	2,335	3,233	4,448
1975	669	556	624	1,916	2,540	3,765
1974	372	569	500	1,772	2,272	3,213
1973	394	324	557	1,579	2,136	2,854
1972	386	245	609	1,278	1,887	2,518
1971	340	252	523	1,152	1,675	2,267
1970	265	287	450	1,112	1,562	2,114

Source: Provided by Transport Canada: Coast Guard Search and Rescue Fleet Systems, December 1978.

TABLE IV - 18

East Coast: Incidents of Search and Rescue

	<u>Air</u>	<u>Marine</u>	<u>Total</u>
1977	569	897	1466
1976	641	898	1539
1975	669	624	1293
1974	372	500	872
1973	394	557	951
1972	386	609	995
1971	340	523	863
1970	265	450	715

Source: Provided by Transport Canada: Coast Guard Search and Rescue Fleet System, December 1978.

TABLE IV - 19

West Coast: Incidents of Search and Rescue

	<u>Air</u>	<u>Marine</u>	<u>Total</u>
1977	513	2,830	3,343
1976	574	2,335	2,909
1975	556	1,916	2,472
1974	569	1,772	2,341
1973	324	1,579	1,903
1972	245	1,278	1,523
1971	252	1,152	1,404
1970	287	1,112	1,399

Source: Provided by Transport Canada: Coast Guard - Search and Rescue Fleet System, December 1978.

III. Energy

Offshore energy activity has been sub-categorized into offshore gas and oil exploration and petroleum refinery. This sub-categorization is based on present and not potential uses within the energy sector. At present, there are no gas and oil exploitation on either coast, but this situation is likely to change especially in the Labrador offshore. With a significant oil and gas discovery; gas and oil pipelines will be another possible use of the continental shelf.

There has been no offshore exploratory drilling on the West Coast since May 1969. The last exploratory well drilled was Murrelet L-15 in the Hecate Strait. From June 1967, when the first exploratory well Promethous H-68 was drilled, to May 1969, a total of only fourteen wells were drilled on the West Coast continental shelf.¹⁶ The indications are that gas and oil exploitation is not likely to be a major offshore activity on the West Coast.

The first exploratory well that was drilled on the East Coast continental shelf was Cove D-52 in June 1966 on the Grand Banks. Since then, over 120 exploratory wells have been drilled.¹⁷ Offshore exploratory drilling activity has fluctuated over the years on the East Coast. In 1970, there were about 160 "drilling operations." A "drilling operation" in this thesis is defined as:

"One week of actual drilling activity in the offshore during which a drilling vessel is engaged in drilling a well, or is in the process of preparing to drill a well."

By 1977, there were only 43 drilling operations. Offshore drilling operations reached a climax in 1972 and since then, there has been a consistent decline (see Table IV - 20). Several factors account for this decline in drilling operations; tax incentives, availability of drilling rigs and corporate investments and programme planning. Because of the disappointing results in the drilling operations on the Scotian shelf and the Grand Banks, most companies have been unwilling to maintain offshore exploratory drilling at the 1972 level. Besides inflation has made offshore drilling operation a very expensive undertaking. An offshore well costs about \$10 millions. In order to reverse this declining trend, the federal Government introduced the "Super-depletion-allowance" incentive scheme. Under this scheme, drilling expenses for a well that cost more than \$5 million can be written off.¹⁸ The federal tax incentive scheme has certain advantages. For example, the scheme enables the government to map out the location of future oil and gas sources. The oil companies on the other hand are willing to drill the wells, even though they know that in most cases, they will be a write off, because in the process, they develop and improve their offshore technology which in the long run may pay off. The most successful well drilled on the East Coast up to date is the.

TABLE IV - 20

Drilling Operations on East Coast of Canada

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Total number of Drilling "Operations"	245	244	154	88	109	43
Total Weeks of Drilling	52	51	52	47	51	50
Average Number of Drilling "Operations" per Week	4.7	4.8	2.9	1.9	2.1	0.9

Source: OILWEEK, Calgary, Alberta: MacLean-Hunter Publication

Hopedale E-33, 65 miles northeast of Hopedale on the Labrador coast, by the Chevron group of Companies. The Hopedale discovery has created new interest and most of the oil companies have made plans to step up their offshore drilling operations, especially off the Labrador coast.¹⁹ The Labrador offshore is considered to be the most promising of the seven major potential discovery areas from the Baltimore Canyon to the northern end of Baffin Bay.²⁰ If this assessment is correct then the Labrador offshore may turn out to be the area of the most intensive offshore oil and gas operation on the East coast.

The location of refineries will be a major determinant of pipeline routes with the exploitation of offshore oil and gas. Pipeline routes will also depend on the capacity of the refineries and the availability of storage facilities. The capacity of refineries, rather than the tonnage of crude petroleum delivered to the refineries on the East and the West coasts appears to be an appropriate unit of analysis. However, for reasons that will be discussed in Chapter V, tonnage of crude petroleum is used in the analysis. Of the four provinces, on the East Coast, Prince Edward Island does not have an oil refinery as it is served by the refineries in Nova Scotia. The East and the West coasts have about the same number of refineries (see Appendix E). There is therefore no significant regional differences with respect to processing capacity. The volume of tanker traffic would appear to be the same.

The total tonnage of crude petroleum shipped to the East Coast in general doubled between 1970 and 1976. While shipment to Nova Scotia and New Brunswick followed the regional pattern, deliveries to Newfoundland declined after 1971. It may be inferred from table IV-21 that the refineries in Newfoundland have excess capacities, deliveries having peaked at about four million tons in 1974 compared to 454,000 in 1976, while those in Nova Scotia are running at full capacity. The shut down of the Come-by-Chance refinery in 1975 partly explains the reduction in the total tonnage of crude petroleum delivered to Newfoundland. If current plans to re-open the Come-by-Chance refinery prove to be successful;²¹ then this refinery may contribute significantly to the development of oil and gas resources off the Labrador coast. With regard to the West Coast, any conflict of uses within the energy sector is likely to stem from the generation of oil tanker traffic rather than from the development of oil and gas deposits on the continental shelf, since the potential for a significant oil and gas deposits does not appear very high.

IV. Recreation

Bodies of waters offer several types of potential for recreational activity; and for this reason, coastal waters will have an essential role to play.²² Pleasure boating constitutes an important recreational activity on both the East and the West Coasts. However, since the West Coast, relatively speaking,

TABLE IV - 21

Tons of Crude Petroleum Shipped to Provincial Refineries

	Newfoundland	P.E.I.	Nova Scotia	New Brunswick	Atlantic ¹	B.C./Pacific ²	Total 1 & 2
976	454,555	-	9,522,048	5,805,004	15,781,607	-	15,781,607*
975	3,742,439	-	9,490,058	6,232,263	19,464,760	215,013	19,679,773
974	4,039,606	-	9,207,941	5,082,829	18,330,376	1,476,514	19,806,890
973	600,769	-	10,222,308	6,921,009	17,744,086	264,201	18,008,287
972	615,430	-	8,871,637	5,324,360	14,811,427	-	14,811,427*
971	763,767	-	6,610,838	3,843,385	11,217,990	122,408	11,340,398 ¹²⁹
970	591,914	-	3,923,723	2,565,564	7,081,201	72,554	7,153,755

Source: Statistics Canada, Shipping Report Part II International Seaborne Shipping by Port
Catalogue No. 54 - 203.

* Excludes figures for Pacific Coast.

has a more conducive climate, there are twice as many boats as there are on the East Coast (see Table IV -22). It is likely this trend may continue. Besides there are a fair number of boats from New England and California that use Canadian coastal waters. Thus of the water-oriented activities, that take place within the Canadian coastal waters, pleasure boating may continue to be a major offshore activity. It might be noted however, that the bulk of this activity is restricted to the inshore zone.

V. Communication

During offshore oil and gas exploration and exploitation, men and supplies are flown regularly to and from offshore installations; an operation which relies heavily on the use of helicopters. With the discovery of significant offshore oil and gas deposits, the use of the air space over the continental shelf and landing facilities along the coast will likely increase. Furthermore, there may be a greater demand for helicopters, especially on the East Coast where the continental margin in some places extend beyond the 200-mile limit.

Already the total number of helicopter "flown hours" on the East Coast is very high and may continue to rise for some time to come. The flown hours have doubled between 1970 and 1976 on the East Coast, while that of the West Coast has remained about the same (see Table IV - 23). In anticipation of a potential market, some helicopter companies on the East Coast

TABLE IV - 22

Household Owning Boats* for Recreational Use

	Newfoundland	P.E.I.	Nova Scotia	New Brunswick	1		B.C./Pacific	Total 1 & 2
					Atlantic	2		
1976	31,000	-	~~35,000~~	24,000	90,000		176,000	266,000
1974	23,000	-	30,000	19,000	72,000		164,000	236,000
1971	20,000	-	25,000	13,000	58,000		127,000	185,000
TOTAL:	74,000	-	90,000	56,000	220,000		467,000	

- 131 -

Source: Statistics Canada, Travel, Tourism and Outdoor Recreation - A Statistical Digest Catalogue No. 66-202 Annual

* Boat is defined to include sailboats, rowboats, outboard boats and canoes.

TABLE IV - 23

Helicopters: Revenue Hours Flown

	1			2		Total 1 & 2
	Newfoundland	Labrador	Maritimes	Atlantic	B.C./Pacific	
1976	12,357	10,766	4,811	27,934	46,975	74,909
1975	15,262	8,686	3,389	27,337	41,859	69,196
1974	11,542	4,941	4,009	20,492	43,131	63,623
1973	9,610	2,014	884	12,508	41,957	54,465
1972	5,631	2,613	575	8,819	40,513	49,332
1971	5,603	4,226	978	10,807	47,886	58,693 ¹³²
1970	5,721	5,289	1,363	12,373	45,304	57,677

Source: Statistics Canada Aviation Statistics Centre Annual - Catalogue No. 51-004

have started preparing for the demand that an offshore oil and gas operations will generate.²³ The total number of helicopter flown hours on the West Coast between 1970 and 1976 have remained about the same. As the prospects for major oil and gas development on the West Coast does not appear bright and commercial fishing does not rely on helicopters, the use of helicopters on the West Coast offshore is likely to be restricted to pleasure flying, research, logging operations and air search and rescue.

Although there is a growing shift to satellite communication, sub-marine cable communication is not likely to be obsolete. It is therefore necessary for the offshore resources planner to be able to determine, in some way, the overall importance of submarine cables in relation to other uses of the continental shelf or if he is called upon to resolve a conflict of uses between a submarine cable and oil and gas drilling. The number of submarine cablegrams transmitted may therefore be used as an indirect measure of the importance of cable communication. There are two submarine cable lines joining the East Coast and London; while there are over 6,000 miles of submarine mile of cable between the West Coast and Australia that crosses the Continental Shelf.²⁴ An attempt was made to analyze the changes in the use of submarine cablegrams generated on both coasts, as this was considered to be a better unit of measurement for this kind of analysis. Unfortunately, the

data on submarine cablegram was grouped together with telegraph and cable statistics (Statistics Canada Catalogue No. 56-201). The Teleglobe Company and the Department of Communication could not provide this data for some reason.

VI. Defence

Canada plays an important role in Western defence, especially in the North Atlantic Treaty Organization (NATO). The Canadian Armed Forces, in order to be in a state of preparedness, must practice regularly. Both the Maritime Command and the Pacific Command use the offshore regularly to carry naval exercises, mock war operations, and joint NATO exercises. For security reasons, it was not possible to obtain any data from the Department of National Defence for an analysis of the military use of the offshore. However, if the recent military purchases²⁵ the federal government has announced are to be taken as indications, it would appear that the military use of the offshore would probably increase.

VII. Research

Current knowledge of marine processes and air-sea interaction is, relatively speaking, limited. The increasing importance being attached to the offshore resources as a result of the declaration of the 200-mile jurisdiction, may likely lead to increased ocean related research activities.²⁶ The unit of measurement selected to analyse offshore related research undertaken by the federal government is the budgetary estimates tabled in the House of Commons each year. The expenditure presented in Table IV-24 relates to fisheries management and research budget earmarked for major capital projects, grants and contributions. The fisheries management and research figures are used because the breakdown of the budget is "detailed" enough that it enable one to ascertain the offshore portion.

TABLE IV - 24
Fisheries Management and Research Budgetary Estimates in Thousands of Dollars.

For Fiscal Year ending 31 March,	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Fisheries Management and Research: Major Capital Projects, Grants and Contri- butions.	13,305	1,775	3,950	8,525	11,638	31,057	35,844	27,600	67,212	49,758
Total Fisheries and Marine Budget	74,552	74,665	73,465	109,234	111,202	163,864	208,223	261,016	276,474	305,480
Fisheries Management and Research as Percen- tage of Total Budget	17.9	2.4	5.4	7.8	10.5	19.0	17.2	10.6	24.3	16.3

Source: The "Blue Book" of the Government's Spending Estimates.

The Ministry of State for Science and Technology publishes annual reports on federal science activities. The 1978-79 report for example contained a special section on oceans. Unfortunately, the data reported in this report could not be used in constructing the conflict of uses matrix (discussed in Chapter V) because of the "over" aggregation of the expenditures. For this reason, it was not possible to tell which of the ocean related research was actually carried out in the offshore. In the 1977-78 fiscal year, a deep-diving complex was opened at the Defence and Civil Institute of Environmental Medicine, Toronto.²⁷ While this complex qualifies, under the objectives of this thesis, as an ocean related research facility, it was not designed to operate directly within the offshore and thus cannot be defined in this thesis as an "offshore research facility".

Fisheries research expenditure has fluctuated between 1970 and 1976. In 1970, about \$13 million was budgeted for offshore related research. This amount constituted about eighteen percent of the total budget for fisheries and marine operations. 1971 and 1972 were the difficult years for offshore research; about \$2 million and \$4 million were budgeted or two percent and five percent respectively, of the fisheries and marine budget (see Table IV - 24).

3. Choice of Variables

The variables that have been chosen to represent the activities/uses levels discussed above, are by no means exhaustive as many others may represent different components of an activity. The choice of variables was determined by three factors. The first was that the variable chosen must reflect the spatial use of the ocean space. The variable must also have published data (though this may not be public as in the case of Defence) and must in some way, reflect the particular activity level. However, the main criterion was that the variable must as far as possible, reflect the type of conflicts which it is likely to generate. For example, commercial fishing (sector 2) generates conflicts which relate to the number of fish caught but conflicts generated by commercial shipping (sector 4) relate to the number of movements of vessels within the continental shelf area. Commercial fishing (sector 2), commercial shipping (sector 4) and recreational sailing and boating (sector 9) uses also reflect another type of conflict. While admitting that the choosing of variables may involve a certain amount of arbitrariness, care was taken to ensure that the selection was tempered with a concern to choose the most representative variable for each sector. A complete listing of descriptive variables, their unit of measurement and their sources is presented in Appendix F.

4. An Alternative Classification

Multipurpose resources planning, in essence, requires the simultaneous consideration of the consequences of the policy decisions (or conflicts generated) with respect to all the continental shelf resources. For this reason, the above classification system is not very helpful as it is sectorized. Furthermore, the formulation of an appropriate planning policy is compounded by the fact that different property rights are involved when dealing with offshore resources. The lands, shipping vessels and recreational boats are "private" properties, usually allocated according to market forces (ability to purchase). The air space, the water body and the dependent species on the other hand are "common" properties;²⁸ which may be allocated through control mechanisms; permit, licence or lease system. There is therefore the need for an alternate classification system that will reflect the multipurposeness and the two types of property rights. Two types of classification system commonly found in the literature are basic-non basic²⁹ and commercial-non commercial.³⁰ The basic-non basic system of classification is an export oriented system and therefore not "appropriate" to multipurpose offshore resources planning. Harrison in analysing activities located in an urban-water interface proposed commercial (e.g. oil refinery) non-commercial (e.g. sports fishing) system of classification. Although the commercial-non commercial system of classification is location oriented, and thus can be used to examine spatial conflicts, it was constructed to be used

in analyzing the impact of regional economic structure in terms of conflict patterns arising between activities.³¹

In order that intervention policies that are formulated may deal with both private and common property resources of the continental shelf; in this analysis, the dichotomy between "fixed" and "mobile" activities is presented as an alternative to other possible classifications. A fixed activity is one which is spatially fixed when undertaking that particular activity. A fixed activity may be either directed to the exploitation or development of private property (e.g. oil refinery) or common property (e.g. shell fishery). A mobile activity is one which is not stationary when that particular operation is undertaken to exploit or develop an offshore resource. These mobile activities can likewise be directed to the exploitation and development of a private or a common property. For a list of the reclassified uses/activities discussed in this thesis, see table IV.1. (page 92).

5. Utility of the Alternative Classification

Many of the uses/activities of the continental shelf that have been defined are mobile. The potential for spatial conflicts within the total continental shelf area is therefore very high. For this reason, the dichotomy and set of definitions presented is of great importance to the development and control of the juxtaposed offshore resources. Besides the dichotomy

and set of definition are of importance to the remainder of this thesis. For example, the fixed-mobile dichotomy is used in analysing the distribution of uses/activities within the offshore resources planning zones discussed in Chapter VII. The dichotomy is also used in determining which set of activities should be closely monitored by analysing the changes in the indices which are used in ranking uses/activities over a period of time.

6. Protection of Canada's Continental Shelf Resources

The creation of a 200-mile fisheries zone has given Canada an opportunity to institute effective management policies for the protection, conservation, and exploitation of the nation's stocks of fish which had until now been an international common property resource. When the 200-mile fisheries zone eventually becomes an economic zone, Canada will be able to plan in an orderly fashion, the nation's total continental shelf resources. However, the potential benefits that may accrue from this orderly planning will to a large extent, depend on Canada's ability to protect the resources of the continental shelf and to enforce its laws and regulations.

Until the imposition of the 200-mile fisheries zone, most of the marine fish stocks inhabited waters which were at least partly international. In an attempt to protect the stocks in the international waters from over exploitation by distant

fishing nations, Canada signed a number of international fisheries conventions. For example, the International Commission for the Northwest Atlantic Fisheries (ICNAF) administered agreements among eighteen nations that fish in the Northwest Atlantic waters. However, because of national rivalries, divergent management objectives and lack of enforcement authority the effectiveness of ICNAF in regulating fishing and protecting excessive exploitation was severely limited.³²

Most of the significant fishery resources now lie within the 200-mile zone except for the Flemish Cap and segments of the Grand Banks (the Southern tip and an area lying east of St. John's). Thus, while the establishment of the 200-mile fisheries zone has solved the problem of international-national waters inhabited by marine fish stocks, the problem of protection of the fisheries from excessive exploitation still remains. The Government's policy of assigning development priority to inshore fisheries may be undermined if the Government cannot control excessive exploitation; since the more groundfish that are taken offshore the less that will migrate inshore. If Canada is to achieve its fisheries objectives, then the nation must be able to exercise effective jurisdiction over the 200-mile zone. The possibility of "pirate" oil and gas drilling operations or the defiance of Canada's jurisdictional claims by foreign states short of energy resources; the need to prevent wasteful practices in oil and gas development (section 13, Appendix BII.1); and the need to

regulate the activities of the legitimate licensed offshore oil and gas operators whose activities are the potential sources of marine pollution, are other reasons why surveillance of the 200-mile offshore zone is essential.

There are three main areas where effective jurisdiction will have to be exercised over the continental shelf: protection of national sovereignty, surveillance of resources related activities (e.g. fishing) and prevention of marine pollution. In order to discourage other foreign states from defying Canada's jurisdictional claim to the continental shelf resource, the Government will have to demonstrate to the world that it is capable of defending its territorial sovereignty. This will require the conspicuous presence and constant patrol of the offshore by Canada's military air craft and naval ships.

There are three principal federal Departments that have responsibility for the enforcement of Canada's Continental shelf jurisdiction. The Department of National Defence is responsible for protecting national sovereignty including the protection of the continental shelf resources. The Department of Fisheries and Oceans for the surveillance of fisheries, and the enforcement of fisheries regulations, supported by Department of National Defence. The Department of Transport (assisted by the Department of National Defence) is responsible for the prevention of marine pollution. Marine pollution will be discussed in Chapter VI.

The Department of National Defence is charged with two important responsibilities in the offshore: national defence and civil regulatory surveillance. Protection of ports from attack by mine laying and sweeping, protection of shipping-lanes, escorting supply vessels, and defending offshore installations are some of the national defence responsibilities. It has been suggested that offshore energy assets are vulnerable to overt, clandestine or covert attack,³³ especially in the wake of increased terrorist activities round the world. With commercial development of offshore hydrocarbons deposits, the Department of National Defence may have to defend offshore platforms from terrorist attack. The civil-regulatory tasks include fisheries surveillance, vessel pollution surveillance and air search and rescue.

Both surface vessels and aircraft are used in fisheries surveillance. The Department of Fisheries and the Environment vessels handle about sixty-eight percent of the work, Department of Transport, twelve percent, and the Canadian Armed Forces twenty percent.³⁴ Only surface vessel can arrest offending ships. The vessels from the three Departments carry fishing inspectors who inspect about one-third of the foreign vessels and one-sixth of the Canadian vessels in the 200-mile zone. Although the total offshore area that must be covered by the surface vessels is vast, the inspection is made possible, with the limited number of patrol vessels used in the exercise because fishing boats tend

to gather in a general area where the fish are and this enables the inspectors to board several vessels. Placing observers on foreign fishing vessels, to ensure that they comply with the regulations is another means of control the Department of Fisheries has been using since the establishment of the 200-mile zone. The salaries of the observers are paid by the foreign fishing vessels. The observers are taken on board the vessels when they come to port to collect their licence.³⁵ Air surveillance is carried out by the Canadian Forces. Squadron 880 based at Canadian Forces Base (CFB) Shearwater patrols the East Coast offshore. The 880 Squadron is assisted by 420 Squadron based at Halifax. The West Coast offshore is patrolled by the 33 Squadron.³⁶

Theoretically, it may be argued that there is no need to carry out a general surveillance over the offshore areas since sovereign rights over the continental shelf resources are "exclusive" and do not depend on occupation (effective or notional) or on any express proclamation (Article 2, Appendix A). Some writers have also argued that civil-regulatory tasks will seriously detract the Canadian Armed Forces from their ability to perform national defence tasks.³⁷ It has also been pointed out in the literature that the Armed Forces cannot impose Canadian regulations upon foreign ships if the crew of such ships are determined to resist without resorting to greater degree of violence than may be politically, diplomatically or

even practically appropriate for the realization of national objectives.³⁸ Notwithstanding such arguments, the multi-tasking of the Canadian Armed Forces for the policing of the offshore indirectly improves the forces skills and capability to perform national defence duties. The civil duties also help the members of the Canadian Armed Forces to build their moral by giving them confidence in their ability to defend the country.

The fisheries surveillance activities is another way to provide the servicemen with training exercises, and an opportunity for them to improve their equipment handling skills. The Armed Forces have facilities and equipment which can directly or indirectly contribute to the development of offshore resources. For example, military sonobuoys can, with some modifications be used for pollution purposes.³⁹ By making their defence research findings available to the oil and gas and the marine industries, the Armed Forces will be justifying the need for increases in their defence budget.

Although the Canadian Government hopes to achieve its maritime jurisdictional claims through international agreements, "coercive diplomacy" through a demonstrated national will to use military forces to protect national sovereignty when necessary will help Canada in bargaining for more favourable terms in international negotiations.

7. The Role of Technology in Offshore Resources
Exploitation and Development

Offshore resources exploitation and development are to a great degree, a function of technology. Actual and potential uses of the sea in practice determine the jurisdictional claim of the continental shelf. Since the uses of the Ocean Space have traditionally responded to technological change,⁴⁰ technology may be viewed as an indirect determinant of a nation's jurisdictional claim. Some of the offshore resources were not even known or considered possible ten years ago. For example, Irish Moss now used as a gelling agent in food processing is a five million dollars industry in the Maritimes but scientists did not even know the Irish Moss was edible (nor did they know of its life-cycle) until 1973.⁴¹

The application of technology to offshore resources development has ranged from the locating, catching and processing of fish to satellite communication. To improve the traditional method of locating the fish, that is depending on the eyesight of the vessel's captain, military and aerospace technology has successfully been applied to locate, identify and capture schools of Menhaden in the Gulf of Mexico:⁴² This involve using night vision equipment as light amplifiers for the phytoplankton on which Menhaden feed emit light when disturbed.

The role of remote sensing in offshore resources development is likely to increase. The United States' Earth Resources

Satellite (ERTS) which orbits the earth every ninety minutes is able to show changes in ocean temperature.⁴³ Knowledge of ocean temperature can be used to monitor the movement of schools of fish. The United States also has an Airborne Surveillance System (AOSS) which it is reported to be effective in detecting, monitoring, and assessing offshore oil discharges, as well as able to perform other tasks such as search and rescue, ice reconnaissance, and monitoring of foreign fishing fleets.⁴⁴ The Surveillance Satellite (SURSAT) equipped with sophisticated radar (SAR) that Canada plans to build,⁴⁵ will play a significant role in monitoring and policing the extended offshore jurisdiction. The East Coast is often covered with fog and cloud; and the SAR's ability to "see" through fog, cloud and darkness will enable round the clock surveillance of the 200-mile zone. Other significant features of the SURSAT which have been reported include ability to keep track of oil slicks, tankers carrying oil and liquefied natural gas, fishing boats, drilling rigs and icebergs. If the surveillance Satellite manages to perform all these tasks successfully then, some of the present pressures on the core departments charged with these responsibilities will be relieved.

The oil and gas sector has by far been the area that has seen the most extensive application of modern technology within the past thirty years. The first successful offshore well was sunk in eighteen feet of water, twelve miles off the coast of

Louisiana. The deepest reported offshore well is Getty's off the Congo in over 4300 feet of water.⁴⁶ The exploitation of the hydrocarbon resources in the iceberg infested East Coast - (especially in the "iceberg valley" off the Labrador Coast) presents a formidable technological challenge. The major difficulty in deepwater drilling that had to be resolved was how to keep the rig above the hole without moving to break the drill pipes. The technological breakthrough was achieved with the design of a "dynamically positioning" drilling ships and semi-submersibles that are able to move forwards, backwards and sideways. By utilizing this "dynamically positioning" technology, drilling vessels are able to stay "dead centre" by sending signals to the seafloor which are then bounced off acoustic pingers. Then through a system of computers, the information is fed to the propulsion units.⁴⁷ To help improve communication between offshore installations and the land, a portable earth station (Telesat) has been designed to provide telephone contact via satellite.⁴⁸ This earth station will be of special significance to oil and gas operation on the East Coast since most of the wells are at least 65 miles from coast.

The application of high technology to offshore resources development is very expensive. For example, the cost of drilling an offshore well on the East Coast, using a dynamically position vessel ranges between \$10 million and \$25 million.⁴⁹ Table IV - 25 shows the breakdown of the drilling costs. The equipment rental

TABLE IV - 25

Breakdown of Drilling Cost for a 16 Well
Platform in the East Coast Offshore

	Cost \$ thousands
<u>EQUIPMENT RENTAL</u>	
Rig	2,500
Miscellaneous Tools	450
Transportation, supplies and communications	1,650
<u>Subtotal</u>	4,600
<u>LABOUR</u>	
Rig Crew	900
Logging	150
Perforating	50
Stimulating	50
Deviation control	250
<u>Subtotal</u>	1,400
<u>CONSUMABLES</u>	
Fuel	550
Mud and chemicals	250
Water	50
Bits	450
Cement	350
Wellhead equipment	150
Tubular Goods	2,200
<u>Subtotal</u>	4,000
<u>T O T A L:</u>	<u>10,000</u>

SOURCE: Gibson, M. and Voyer, R. A Technology Assessment System: A Case study of East Coast Offshore Petroleum Exploration. Science Council of Canada Background Study No. 30, Ottawa, March 1974, p.103.

alone is one third the total cost. The recent federal-provincial consultative Task Force on the Ocean Industry argued in its report that even though the oil industry's investment in offshore technology in Canada was significant, it had been constrained by the uncertainty of the pace of offshore development and the uncertainty of the technologies needed to develop specific sites. Moreover, the ocean industry is not in a position to support technology development on the required scale. The Task Force therefore recommended, among other things, the elimination of duty payment for temporary importations, a full tax write-off of equipment in one year through one hundred percent capital cost allowance, the elimination of sales tax on equipment for offshore service operations and the increase in loss carrying forward time limit from five to ten years. Another important recommendation by the Task Force was for the establishment of a Canadian Ocean Technology Research Authority (COTRA) to support the development of technologies need for Ocean resources. Drawing an analogy between the Alberta Oil Sands Technology and Research Authority (AOSTRA), the Task Force suggested that the Canadian Ocean Technology Research Authority's (COTRA) funding should be in excess of \$100 million and be borne by the Federal Government. The return on this investment could come from future federal oil royalties and the industrial benefit to the ocean industry.⁵⁰

8. Conclusion

The development of ocean technology may not be limited to ensuring only a strong national content in offshore resources exploitation and development. Ocean technology can also be used as an instrument of Canadian foreign policy.⁵¹ Joint oil and gas exploration ventures; training of personnel; exchange programmes, especially at the University level; research establishment; feasibility studies; design and construction of ports and oil and gas storage facilities; and emergency help in dealing with oil spills and marine pollution problems are some of the potential area where Canada can channel its foreign aid especially to developing countries. Canada has clearly demonstrated its leadership ability through its initiatives at the Third Law of the Sea Conference and other international fora on marine pollution.

Besides, global and regional cooperation is strongly stressed in the Informal composite Negotiating Text (ICNT); which may be ratified without major changes. Thus all the necessary factors that will enable Canada to show the flag (behind ocean technology aid) are present. What is now needed is a clearly defined Ocean Science and technology policies as a component of offshore multipurpose planning framework that can be used as one of the important vehicles of Canada's foreign policy.

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CHAPTER V

Empirical Methodology

1. Introduction

Many points have been raised in the previous chapters - identifying and classifying offshore activities/uses, reviewing legal framework and institutional arrangements that constrain offshore resources exploitation, development and control. It has also been argued that the juxtaposition of different resources within the continental shelf may generate conflict of development. The following discussion is an attempt to identify some of the critical conflicts. The empirical methodology presented is intended as a means of isolating point of conflict and identifying shifts in priorities to the extent that the empirical analysis is made possible.

2. Data

Analysis is an indispensable part of planning. In multipurpose planning where complex inter-relationships, interdependencies and interactions among sectors compound the process of formulating options and decision-making, analysis becomes even more important. However, the data that are used in the analysis will influence the formulation and evaluation of planning options and strategies. Thus policy decisions are indirectly based on the available data. Several sources of data were found in doing the research for this thesis. But most could not be used in the analysis. Each Department or Agency sees the

offshore resources potential from its own perspective and collects the type of information it feels it needs for its own decision-making purposes. This may pose no problem for sectoral planning. Unfortunately, for multipurpose planning purposes the totality of the data could not directly be used. This explains why proxy variables have been used in the analysis. The Department of Industry, Trade and Commerce has been collecting information on Canadian ocean industries. However, the companies have been promised that such information will not be released to the public. The Department was thus unwilling to make available any data on Canadian ocean industries. Judging from Canada's commitment to the North Atlantic Treaty Organization (NATO) and recent Government policies to this effect, one would expect that the defence use of the offshore is likely to increase. In order to incorporate this expected increase in the military use of the offshore into the analysis, the Department of National Defence was contacted for aggregate data on naval exercises. But this information could not be made public (not even for a study of this nature) on security grounds.

Security and confidentiality are not the only reasons why "appropriate" data could not be obtained. In some instances, the information just did not exist. To help determine the relative importance of submarine communication, it was decided to use the number of cablegrams sent via submarine cable (e.g. Contact I or Contact II) between Montreal and London and

crossing the Atlantic continental shelf. Statistics Canada publishes an annual summary of telegraph and cable statistics (catalogue No. 56-201). However, they could not provide the proportion of the figures which constitute the "submarine cablegrams". The Department of Communication also could not provide this information. Based on the discussions with these two Federal Departments, it was concluded that such specific data has not been collected. Several other examples can be cited but the point being emphasized here is that one of the primary ~~problems~~ facing the offshore resources planner is the non-availability of "appropriate" data for multipurpose analysis.

The data required to calibrate the offshore activities/uses, would preferably be in units of ocean space (or total surface area) and in density of use because these would indicate directly the total area utilized by each activity and thus the possible point of development conflict. However, standard area units while being susceptible to direct comparison do not necessarily portray the nature of the conflict of the use. For example, a loaded supertanker (commercial shipping - sector 2) and artificial island (sector 7) may occupy an equal amount of total surface area, at a point in time; but the super tanker being a mobile activity is likely to conflict with more uses than the artificial island which is a fixed activity. Another standard unit that could have been used is the level of employment or the total number of persons engaged in each activity/use. The main

problem with the use of the employment data is that in certain sectors, a large proportion of the workers are not involved in direct offshore activities but rather in support roles. It was decided to use proxy variables in the analysis as the proxy variables reflect better the changes in the level of the activities/uses chosen.

3. Conflicts Between Offshore Resources Activities/Uses.

The co-existence of many activities within the continental shelf may give rise to conflicts. Analysis of these conflicts may suggest areas where initial intervention measures should be directed in the planning process. The classification of offshore activities/uses in Table IV - 1 is suggestive of the various conflicts that can arise between activities. Using the same arguments for the classification of the activities, a conflict of uses matrix can be constructed (Figure V - 1). Each activity in the matrix is regulated or controlled by at least one federal agency.

Thus implicit in the matrix is the process of interaction of the federal Departments. This point will be discussed further in Chapter VII. Row vectors represent those activities which generate conflicts and column vectors those which are the recipients of the conflicting actions. The terms "generation" and "reception" are not used to imply any judgement of "guilt" or "innocence" but to suggest direction.¹ The matrix which has

Conflicts Between Offshore Resources Activities

• Double Counting in (F) and (M) Totals

been constructed is intended to show only the conflict interaction between activities. It does not show the relative importance, size, type or nature of the conflict. The emphasis is being placed on the activities which conflict and not the nature of the conflict itself. Thus marine pollution is viewed as a consequence or by-product of specific uses. An (x) in a cell at an intersection of the same use indicates that one undertaker of that activity affect another. For example, when too many commercial fishermen have been licenced to fish for the same stock, or when too many boats converge on the same fishing ground thereby causing congestion.

In terms of the total number of conflicts generated, Commercial fishing (activity 2) Commercial Shipping (Activity 4) Offshore Exploration (Activity 7), Recreational Boating and Shell fishing (Activity 9,3), Search and Rescue (Activity 5) and Research (Activity 13) tend to be more conflictual. Port Facilities (Activity 6) and Petroleum Refinery (Activity 8) seems to be the object of no relevant conflicts, figure V - 1. Conceptually, it appears the incidence or receipt of adverse consequences from other activities is the same as the generators of conflicts.

4. Critical Conflicts

Formulating policies on scenario building alone without any empirical analysis can be dangerous especially for offshore resources, since it involves a high degree of "subjectivity".

The scenario may be "mixed" (complex) as more than one variable may account for the conflict situation. Policy-makers often face an open system of variables in a world in which all consequences cannot be surveyed. Moreover, policy-makers do not always have the resources or the time to collect all the information required. The offshore resources planner may therefore have to adopt a mixed-scanning² approach, in his analysis of an open system of variables, which will enable him to carry out a detailed study of some sectors and a "truncated" review of other sectors. A Pearson correlation matrix (using the indices of activities from 1970-1976) is suggested as one of the possible approaches for such a mixed-scanning. The correlation analysis may also be considered as a crude test of the conceptual results of Figure V - 1.

The Pearson correlation analysis is used here because in exploratory studies of this nature, it explains better the variables which are closely related to a given dependent variable than the use of a regression analysis for example.³ The correlation coefficient (r) has a range of -1.0 to 1.0. This makes it possible to tell whether the relationship is positive or negative. The planning significance of this positive-negative indication is that it will enable policy makers to decide whether to direct strategies to the dependent variable (generators of conflicts) or independent variables (recipients of conflicts) in

order to achieve a goal. For a negative correlation denotes an inverse relationship, that is as the independent variable becomes larger, the dependent variable becomes smaller; while a positive correlation means the independent and the dependent variables tend to increase or decrease together.⁴ Generators of conflicts and recipients of conflicts in a positive correlation for example, may require equal amount of resources in the resolution of a conflict. Besides, the sample size (7) does not make it possible to carry out any vigorous analysis or traditional hypothesis testing. The conflict of uses matrix is therefore to illustrate what can be done even with crude data. To determine the activities/uses that are "critically conflictual" a matrix was constructed using indices or relative values of the annual values of the variables presented in Appendix F. These annual values are shown in their absolute value form in Tables V - 1, V - 2 and V - 3.

In the absolute value form, it is difficult to compare changes in the variables chosen because it is impossible to tell how "total pounds of shell fish landed" compares with the "total number of arrivals and departures of commercial shipping" in any given year. For this reason, the absolute values are converted into relative values or indices. The level of each activity in 1972 is taken as a base (100) and every other value of that activity is expressed as a proportion of the 1972 figure. The resulting relative changes in uses, which is of prime interest,

TABLE V - 1
Absolute Values of Activity Levels 1970 - 1976

	1970	1971	1972	1973	1974	1975	1976
1. Sports Fishing	545,800	553,400	481,300	491,600	557,600	-	-
2. Commercial Fishing	39,357	38,400	35,552	-	-	-	26,008
3. Shell Fishing	90,826,000	100,134,000	89,833,000	103,088,000	101,952,000	113,767,000	329,769,000
4. Commercial Shipping	29,032	28,877	28,743	27,315	25,104	23,046	25,205
5. Search and Rescue	2,114	2,267	2,518	2,854	3,213	3,765	4,448
6. Port Facilities	53,327,011	65,326,973	73,944,383	80,694,502	78,144,902	72,741,963	70,935,576
7. Offshore Gas and Oil Exploration	-	-	245	244	154	88	109
8. Petroleum Refinery	7,153,755	11,340,398	14,811,427	18,008,287	19,806,890	19,679,773	15,781,607
9. Recreational Sailing and Boating	-	185,000	-	-	236,000	-	266,000
10. Use of Air Space	57,677	58,693	49,332	54,465	63,623	69,196	74,909
11. Cable Communication	-	-	-	-	-	-	-
12. Military	-	-	-	-	-	-	-
13. Research	13,305,000	1,775,000	3,950,000	8,525,000	11,638,000	31,057,000	35,844,000

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TABLE V - 2

East Coast: Absolute Values of Activity Levels 1970 - 1976

	1970	1971	1972	1973	1974	1975	1976
1. Sports Fishing	180,100	177,200	123,800	122,800	140,900	-	-
2. Commercial Fishing	32,383	31,702	28,882	-	-	-	18,519
3. Shell Fishing	84,355	88,475	75,175	87,108	86,112	100,061	309,913
4. Commercial Shipping	11,075	10,301	10,946	11,166	10,137	9,443	9,003
5. Search and Rescue	715	863	995	951	872	1,293	1,539
6. Port Facilities	22,147,385	26,615,553	33,533,537	37,163,648	36,641,006	33,881,021	29,470,813
7. Offshore Gas and Oil Exploration	-	-	245	244	154	88	109
8. Petroleum Refinery	7,081,201	11,217,990	14,811,427	17,744,086	18,330,376	19,464,760	15,781,607
9. Recreational Sailing and Boating	-	58,000	-	-	72,000	-	90,000
10. Use of Air Space	12,373	10,807	8,819	12,508	20,492	27,337	27,934
11. Cable Communication							

12. Military

13. Research

West Coast: Absolute Values of Activity Levels 1970 - 1976

	1970	1971	1972	1973	1974	1975	1976
1. Sports Fishing	365,200	376,200	357,500	368,800	416,700		
2. Commercial Fishing	6,974	6,698	6,670	6,589	7,084	7,528	7,389
3. Shell Fishing	12,471	11,659	14,658	15,980	15,840	13,706	19,856
4. Commercial Shipping	17,957	18,576	17,797	16,149	14,967	13,603	16,202
5. Search and Rescue	1,399	1,404	1,523	1,903	2,341	2,472	2,909
6. Port Facilities	30,379,626	38,711,420	40,410,846	43,530,854	41,503,896	38,860,942	41,464,763
7. Offshore Gas and Oil Exploration	-	-	-	-	-	-	-
8. Petroleum Refinery	72,554	122,408	-	264,201	1,476,514	215,013	-
9. Recreational Sailing and Boating	-	127,000	-	-	164,000	-	176,000
0. Use of Airspace	45,304	47,886	40,513	41,957	43,131	41,859	46,975
1. Cable Communication	-	-	-	-	-	-	-
2. Military	-	-	-	-	-	-	-
3. Research	-	-	-	-	-	-	-

then becomes comparable. The indices presented in Tables V -4, V - 5 and V - 6 are then used in running the Pearson correlation matrix. Because of the crudity of the data used and the complexity of offshore operations, a high cut off point of 0.5 has been chosen to indicate critical conflicts. For the purpose of this analysis, the East Coast continental shelf and the West Coast continental shelf are first treated as one planning region. Then each region is analyzed separately. This approach has been adopted because it is felt that it will enable the researcher to examine how serious the aggregation of data may distort significant regional differences.

Offshore activities/uses have been classified as fixed or mobile (Chapter IV). The proposition being forwarded then is that in general, mobile activities/uses will generate more conflicting situations than fixed activities. The fact that the predominant generators of conflict situations tended to be mobile activities (49) and fewer conflicts generated by fixed activities (31) Table V - 7 is an indication that the proposition has some validity. If this is accepted then this proposition has important planning significance. One would expect that the set of instruments or strategies designed to deal with mobile activities will be different from those of fixed activities. Commercial shipping, use of air space and search and rescue are the activities that generated most critical conflict situations. Recreational sailing and boating generated the least critical conflicts.

TABLE V - 4

Indices of Sectors 1970 - 1976 (1972 = 100)

	1970	1971	1972	1973	1974	1975	1976
Sports Fishing	113	115	100	102	116	-	-
Commercial Fishing	111	108	100	-	-	-	73
Shell Fishing	108	111	100	115	113	127	367
Commercial Fishing	100	100	100	95	87	80	88
Search and Rescue	84	90	100	113	128	149	177
Port Facilities	72	88	100	109	105	98	96
Offshore Gas and Oil Exploration	-	-	100	99	63	36	44
Petroleum Refinery	48	76	100	120	124	131	107
Recreational Sailing and Boating	-	100	-	-	128	-	144
Use of Air Space	117	119	100	110	129	140	152
Cable Communication	-	-	100	-	-	-	-
Military	-	-	100	-	-	-	-
Research	357	45	100	216	295	786	907

* Base Year = 1971

TABLE V - 5

East Coast: Indices of Sectors 1970 - 1976 (1972 = 100)

	1970	1971	1972	1973	1974	1975	1976
1. Sports Fishing	145	143	100	99	113	-	-
2. Commercial Fishing	112	110	100	-	-	-	-
3. Shell Fishing	112	118	100	116	114	133	412
4. Commercial Fishing	101	94	100	102	92	86	82
5. Search and Rescue	72	86	100	95	87	130	155
6. Port Facilities	68	79	100	110	109	101	88
7. Offshore Gas and Oil Exploration	-	-	100	99	63	40	44
8. Petroleum Refinery	48	76	100	128	123	131	106
9. Recreational Sailing and Boating	-	100	-	-	124	-	155
10. Use of Air Space	140	122	100	142	232	309	316
11. Cable Communication	-	-	100	-	-	-	-
12. Military	-	-	100	-	-	-	-
13. Research	-	-	100	-	-	-	-

* Base Year - 1971

TABLE V - 6

West Coast: Indices of Sectors 1970 - 1976 (1972 = 100)

	1970	1971	1972	1973	1974	1975	1976
1. Sports Fishing	102	105	100	103	117	-	-
2. Commercial Fishing	105	100	100	99	106	115	111
3. Shell Fishing	85	79	100	109	108	93	135
4. Commercial Shipping	101	104	100	91	84	76	91
5. Search and Rescue	91	92	100	125	154	162	191
6. Port Facilities	75	95	100	108	103	96	102
7. Offshore Gas and Oil Exploration	-	-	100	-	-	-	-
8. Petroleum Refinery*	59	100	-	216	1,206	175	-
9. Recreational Sailing and Boating*	-	100	-	-	129	-	138
10. Use of Air Space	112	118	100	104	107	103	116
11. Cable Communication	-	-	100	-	-	-	-
12. Military	-	-	100	-	-	-	-
13. Research	-	-	100	-	-	-	-

* Base Year - 1971

TABLE V - 7

Critical Conflicts Between Offshore Resources Activities/Uses

	1. Sports Fishing (N)	2. Commercial Fishing (N)	3. Shell Fishing (F)	4. Commercial Shipping (N)	5. Search and Rescue (N)	6. Port Facilities (F)	7. Offshore Gas and Oil Exploration (F/N)	8. Petroleum Refinery (F)	9. Recreational Sailing and Boating (N)	10. Use of Air Space (N)	11. Cable Communication (F)	12. Military (N)	13. Research (F/N)	Total Generated	By Fixed	By Mobile
1. Sports Fishing (N)	1													7	2	5
2. Commercial Fishing (N)	.203	1												4	2	2
3. Shell Fishing (F)	.688	.079	1											6	2	4
4. Commercial Shipping (N)	.714	.767	.340	1										9	3	6
5. Search and Rescue (N)	.866	.472	.786	.839	1									8	3	5
6. Port Facilities (F)	.139	.732	.039	.428	.428	1								6	3	3
7. Offshore Gas and Oil Exploration (F/N)	.055	.444	.068	.157	.157	.825	1							6	4	2
8. Petroleum Refinery (F)	.449	.857	.137	.659	.659	.907	.628	1						7	3	4
9. Recreational Sailing and Boating (N)	.022	.233	.484	.120	.312	.213	.083	.111	1					1	-	1
10. Use of Air Space (N)	.790	.281	.745	.717	.855	.005	.364	.321	.265	1				9	3	6
11. Cable Communication (F)	.181	.361	.222	.304	.264	.164	.545	.013	.221	.590	1			5	2	3
12. Military (N)	.181	.361	.222	.304	.264	.164	.545	.013	.221	.590	1			5	2	3
13. Research (F/N)	.930	.296	.738	.691	.882	.021	.157	.358	.014	.890	.375		1	7	2	5
Total Received	7	4	6	9	8	6	6	7	1	9	5		7	80		
From Fixed	2	2	2	3	3	3	4	3	-	3	2		2	31(39)**		
From Mobile	5	2	4	6	5	3	2	4	1	6	3		5	49(61)**		

**Double Counting in (F) and (N) Totals - **.(Figures in brackets are a percentage of Total Conflicts)

Although a greater number of critical conflicts were generated between activities on the East Coast offshore (81) than the West Coast (63) or the "combined region" (80) yet the ratio of two mobile activities to one fixed activity held in all the three cases. Potentially, the East Coast has better development prospects. On the East Coast, the activities that generated the largest number of conflicts were Offshore Gas and Oil Exploration (8), Petroleum Refinery (8), Use of Air Space (7) Sports Fishing (7) and Commercial Fishing (7). The activity that generated the least critical conflict was Recreational Sailing and Boating (Table V - 8). With respect to the West Coast, if allowance is made for the fact that the figures for Offshore Gas and Oil exploration (sector 7), Cable communication (sector 11), Military (sector 12) and Research (sector 13) were extrapolated from the computer run, then the activity which generated the most conflict was the Use of air Space (8). This was followed by Commercial Shipping (5) and Search and Rescue (5). Recreational Sailing and Boating generated the least critical conflict (Table V-9).

It should be pointed out that Pearson correlation analysis is "pseudo-scientific" and one should be careful in making any sweeping generalization from its results. It is only a summary measure of the strength of association between a pair of variables. Besides, the magnitude of the correlation coefficient (r) depends on the degree of general variability in the independent variable. Within a limited range of variation, there may be little or no relationship, but this may change over

TABLE V - 8
East Coast Critical Conflicts

	1. Sports Fishing (M)	2. Commercial Fishing (M)	3. Shell Fishing (F)	4. Commercial Shipping (M)	5. Search and Rescue (M)	6. Port Facilities (F)	7. Offshore Gas and Oil Exploration (F/M)	8. Petroleum Refinery (F)	9. Recreational Sailing and Boating (M)	10. Use of Air Space (M)	11. Cable Communication (F)	12. Military (M)	13. Research (F/M)*	Total Generated	By Fixed	By Mobile
1. Sports Fishing (M)	1	.679	-.658	.794	-.955	-.305	.180	-.621	-.112	-.859	.103	.103	.103	7	2	5
2. Commercial Fishing (M)	.679	1	-.395	.535	.585	-.701	-.416	-.851	-.045	-.753	.414	.414	.414	7	2	5
3. Shell Fishing (F)	-.657	-.395	1	-.720	.813	-.148	-.090	.113	.538	.645	-.227	-.227	-.227	6	1	5
4. Commercial Shipping (M)	.794	.535	-.720	1	-.823	-.044	.244	-.416	-.464	-.906	.349	.349	.349	6	1	5
5. Search and Rescue (M)	-.955	-.585	.813	-.823	1	.202	.150	.517	.329	.792	-.055	-.055	-.055	7	2	5
6. Port Facilities (F)	-.305	-.701	-.148	-.044	.202	1	.841	.916	.037	.202	.179	.179	.179	5	3	2
7. Offshore Gas and Oil Exploration (F/M)	-.180	-.416	-.090	-.244	.150	.841	1	.650	.058	-.104	.541	.541	.541	8	5	3
8. Petroleum Refinery (F)	-.621	-.851	.113	-.416	.517	.916	.650	1	.094	.542	-.009	-.009	-.009	8	3	5
9. Recreational Sailing and Boating (M)	-.112	-.045	.538	-.464	.329	.037	.058	.094	1	.188	.209	.209	.209	2	1	1
10. Use of Air Space (M)	-.859	-.753	.645	-.906	.792	.202	-.104	.542	.188	1	-.460	-.460	-.460	7	2	5
11. Cable Communication (F)	.103	.414	-.227	.349	.055	.179	.541	-.009	.209	-.460	1	1	1	6	3	3
12. Military (M)	.103	.414	-.227	.349	.055	.179	.541	-.009	.209	-.460	1	1	1	6	3	3
13. Research (F/M)*	.103	.414	-.227	.349	.055	.179	.541	-.009	.209	-.460	1	1	1	6	3	3
Total Received	7	7	6	6	7	5	8	8	2	7	6	6	6	81	31(38)**	50(62)*
From Fixed	2	2	1	1	2	3	5	3	1	2	3	3	3			
From Mobile	5	5	5	5	5	2	3	5	1	5	3	3	3			

* Double Counting in (F) and (M) Totals - (** Figures in brackets are a percentage of Total Conflicts)

TABLE V - 9

West Coast Critical Conflicts

	1. Sports Fishing (N)	2. Commercial Fishing (N)	3. Shell Fishing (F)	4. Commercial Shipping (N)	5. Search and Rescue (N)	6. Port Facilities (F)	7. Offshore Gas and Oil Exploration (F/N)	8. Petroleum Refinery (F)	9. Recreational Sailing and Boating (N)	10. Use of Air Space (N)	11. Cable Communication (F)	12. Military (N)	13. Research (F/N)	Total Generated	By Fixed	By Mobile
1. Sports Fishing (N)	1	-.838	-.442	.548	-.745	-.097	.211	.333	.022	-.081	.211	.211	.211	4	-	4
2. Commercial Fishing (N)	-.838	1	.344	-.698	.775	-.121	-.384	-.217	.011	.094	-.384	-.384	-.384	4	-	4
3. Shell Fishing (F)	-.442	.344	1	-.344	.786	.590	-.031	-.199	-.443	-.005	-.031	-.031	-.031	3	2	1
4. Commercial Shipping (N)	.548	-.698	-.344	1	-.764	.382	.331	-.512	.163	.419	.331	.331	.331	5	1	4
5. Search and Rescue (N)	-.745	.775	.786	-.344	1	.482	-.346	-.021	.292	.016	-.346	-.346	-.346	5	1	4
6. Port Facilities (F)	-.097	-.121	.590	-.382	.482	1	.124	.436	.383	-.312	.124	.124	.124	2	2	-
7. Offshore Gas and Oil Exploration (F/N)	.211	-.384	-.031	.331	-.346	.124	1	-.119	.230	-.550	1	1	1	7	3	4
8. Petroleum Refinery (F)	.333	-.217	-.199	-.512	-.021	.436	-.119	1	-.359	-.609	-.119	-.119	-.119	3	1	2
9. Recreational Sailing and Boating (N)	.022	.011	.443	.163	.292	.383	.230	.359	1	.344	.230	.230	.230	1	-	1
10. Use of Air Space (N)	-.081	.094	-.005	.419	.016	-.312	-.550	-.609	.344	1	-.550	-.550	-.550	8	4	4
11. Cable Communication (F)	.211	-.384	-.031	.331	-.346	.124	1	-.119	.230	.550	1	1	1	7	3	4
12. Military (N)	.211	-.384	-.031	.331	-.346	.124	1	-.119	.230	-.550	1	1	1	7	3	4
13. Research (F/N)	.211	-.384	-.031	.331	-.346	.124	1	-.119	.230	-.550	1	1	1	7	3	4
Total Received	4	4	3	5	5	2	7	3	1	8	7	7	7	63	23(37)**	40(63)**
From Fixed	-	-	2	1	1	2	3	1	-	4	3	3	3	-	-	-
From Mobile	4	4	1	4	4	-	4	2	1	4	4	4	4	-	-	-

* Double Counting in (F) and (N) Totals -

** Figures in brackets are a percentage of Total Conflicts)

the total range. However, extending the range of variability may not always be empirically feasible.

5. Planning Priorities

Manpower, investment, and other resources needed to develop, exploit and control Canadian continental shelf resources are in the long run limited. For this reason, priorities will have to be established from time to time. How can priorities be "objectively" established for offshore resources development? It is suggested that the indices presented in Tables V - 4, V - 5 and V - 6, provide a manipulative set of data which may be used to indicate the relative shift in priorities of offshore activities/uses.

In order to illustrate this point, the column values in 1970 and 1974 are ranked separately (sectors 1 - 13). The lists of rankings are presented in Tables V - 10, V - 11 and V - 12. In 1970 research, use of air space, and sports fishing activities ranked as the first three in terms of "priority" while search and rescue, port facilities and petroleum refinery occupied the last three positions. Research, use of air space and port facilities maintained their 1970 priority in 1974 but search and rescue moved to third position from seventh. Commercial shipping slipped to ninth position in 1974. Table V - 10. Changes in priorities on the East Coast was more dynamic. Sports fishing was the first priority and petroleum refinery the last priority in 1970. By 1974:

TABLE V - 10

Ranking of Indices of Offshore Resource Activities, 1970 and 1974 Relative to 1972 Values

ORDER (PRIORITY)	1970 ACTIVITY	1974 ACTIVITY	ORDER (PRIORITY)
1	Research	Research	1
2	Use of Air Space	Use of Air Space	2
3	Sports Fishing	Search and Rescue	3
4	Shell Fishing	Petroleum Refinery	4
5	Commercial Fishing	Sports Fishing	5
6	Commercial Shipping	Shell Fishing	6
7	Search and Rescue	Commercial Fishing	7
8	Port Facilities	Port Facilities	8
9	Petroleum Refinery	Commercial Shipping	9

TABLE V - 11

East Coast: Ranking of Indices of Offshore Resource Activities 1970 and 1974 Relative to 1972 Values

ORDER (PRIORITY)	1970 ACTIVITY	1974 ACTIVITY	ORDER (PRIORITY)
1	Sports Fishing	Use of Air Space	1
2	Use of Air Space	Recreational Sailing and Boating	2
3	Shell Fishing	Petroleum Refinery	3
4	Commercial Shipping	Shell Fishing	4
5	Search and Rescue	Sports Fishing	5
6	Port Facilities	Port Facilities	6
7	Petroleum Refinery	Commercial Shipping	7
8		Search and Rescue	8
		Offshore Gas and Oil Exploration	9

TABLE V - 12

West Coast: Ranking of Indices of Offshore Resource Activities, 1970 and 1974 Relative to 1972 Values

ORDER (PRIORITY)	1970 ACTIVITY	1974 ACTIVITY	ORDER (PRIORITY)
1	Use of Air Space	Petroleum Refinery	1
2	Commercial Fishing	Search and Rescue	2
3	Sports Fishing	Sports Fishing	3
4	Commercial Shipping	Shell Fishing	4
5	Search and Rescue	Use of Air Space	5
6	Shell Fishing	Commercial Fishing	6
7	Port Facilities	Port Facilities	7
8	Petroleum Refinery	Commercial Shipping	8

use of air space ranked first and offshore gas and oil exploration ranked last. The significant shifts on the East Coast between 1970 and 1974 were sports fishing, first in 1970 but moving to fifth in 1974 and petroleum refinery shifted upwards from seventh in 1970 to third position in 1974. Table V - 11,

Except for port facilities and sports fishing, all activities changed in their priority on the West Coast between 1970 and 1974. The use of air space plummeted the fastest - its first place in 1970 being taken by petroleum refinery in 1974. Commercial fishing and commercial shipping also showed a downward movement but shell fishing shifted upwards. Table V - 12. Thus the statement can be made that of the total number of activities ranked for each "region" at least two-thirds of them shifted in ranking. If these shifts did not occur by coincidence then the ranking of indices can be used as a primary indication of changing priorities of offshore activities/uses.

6. Conclusion

An attempt has been made to suggest ways of isolating the activities/uses that generate critical conflict situations and also of ranking planning priorities (activities/uses). This combination of conflict analysis and ranking of priorities can be used as an instrument of inter-departmental and/or intra-departmental policy integration. This principle will be developed further in Chapter VII. The underlying assumption

of the empirical methodology presented in this chapter is that all activities/uses of the offshore, including aesthetics can be defined (calibrated) quantitatively.⁵

It should be pointed out that there are problems associated with index analysis. Like the Dow-Jones index or the cost of living index, the "offshore resources index" indicates "current" trends. The consistency (or stability) of such trends over time is often hard to tell. Until it can be demonstrated that future trends can be represented by current trends, the offshore policy planner should be careful in using index analysis as a predictive tool; otherwise, planning priorities will be based on extrapolation of current trends which may not be consistent over time.

It has been suggested earlier that pollution is not an offshore activity but a consequence of development. The purpose of the next chapter is to review briefly some of the international and domestic arrangements that have been made to deal with marine pollution.

FOOTNOTES

1. Harrison, P. (1973). The Land Water Interface in an Urban Region: A Spatial and Temporal Analysis of the Mature and Significance of Conflicts Between Coastal Uses, (Seattle, Washington, University of Washington, Unpublished Ph.D. Dissertation) P. 108.
2. Etzioni, A. (1967) "Mixed-Scanning: A "Third" Approach to Decision-Making" Public Administration Review, 27, pp. 385-392.
3. Blalock, Jr. H.M. (1972) Social Statistics 2nd Edition, New York: McGraw-Hill Inc. p. 376. See Nie, M.H. (1970) et al SP SS, New York McGraw-Hill Inc. pp. 276-300.
4. Ibid., p. 381.
5. Hill, M. (1968) "A Goals-Achievement Matrix for Evaluating Alternative Plans" JAIP 34, 1, p. 19-29.

CHAPTER VI

The Marine Environment, Pollution and Offshore Resources Development

1. Introduction

The traditional authority that may be used to protect and preserve the marine environment is derived from two legal concepts of the Law of the Sea: the "freedom of the high sea" concept (which subjects ships to the exclusive jurisdiction of the flag state) and the "territorial sea" concept (which gives coastal states sovereignty over the territorial sea area).¹

Thus the coastal state and the flag state are empowered, under international law, to set and enforce rules and regulations relating to the preservation of the marine environment.

The problem of marine pollution is not only global, affected and caused by all countries, but it is also a many-sided and complex problem with interlocking economic, technological, political and legal considerations.²

Besides, the causes of marine pollution are many: atmospheric sources; land based activities - disposal of domestic and industrial waste through river discharges and ocean dumping; radioactive pollution; disposal of military materials; ship-borne pollution and pollution from mineral exploration.³ The fact that the problems of marine pollution transcend national boundaries and the fact that the causes are many partly explain why no effective measures have been established to deal with this international problem.

The purpose of this chapter is to discuss the international and domestic arrangements for protecting the marine environment. No assessment will be made of the effectiveness of these arrangements since such an assessment does not fall under the objectives of this thesis. The Canadian Arctic Waters Pollution Prevention Act which is regarded by most writers as one of the important examples in the non-traditional development of and an important Canadian contribution to the development of international law, will also be discussed.

2. International Arrangements

2.1 The Informal Composite Negotiating Text (ICNT)

Because the "freedom of high seas" and the territorial sea" provisions of the 1958 Geneva Convention are inadequate in controlling vessel-source pollution; the Informal Composite Negotiating Text, of the Third Law of the Sea Conference, contains important articles that provide coastal states with broad powers to enforce international environmental rules within the 200-mile economic zone and national standards over foreign vessels in the territorial seas and contiguous zones. Although the Informal Composite Negotiating Text may not be adopted entirely in its present form by the Conference, it is being assumed in this discussion that the basic principles it contains especially those relating to the marine environment, will not be altered drastically because of the considerable work that has gone into its drafting.

The pertinent marine protection Articles are under Part XII of the Text. For a summary of these Articles, see Appendix A. Under the provisions of the Composite Text flag states, port states and coastal states will be able to enforce the rules and regulations designed to protect and preserve the marine environment.

Flag states can establish laws and regulations for the prevention, reduction and control of pollution of the marine environment by vessels flying their flag or vessels of their registry. The enforcement measures a flag state is obliged to apply to vessels of its registry include the prevention from sailing of any of its vessels not in compliance with international rules; periodic inspection of their vessels; and ensuring that vessels of their registry carry on-board certificates of seaworthiness as required by international rules. A flag state is further obliged to conduct an immediate investigation of any violation of international regulations by its vessels and to institute proceedings without delay of any alleged violations of pollution prevention rules irrespective of where the violation occurred. In this regard, a flag state may seek the assistance of other states or competent international organizations who shall also be informed of the action taken and the outcome of the investigation (Article 218).

When a vessel is voluntarily within a port or at an off-shore terminal of a state, that port state may undertake

investigations and if the evidence of the case warrants may institute proceedings in respect of any discharge from that vessel outside the internal waters, territorial sea or the exclusive economic zone in violation of any international rules and standards. The records of any investigation carried out by a port state shall be transferred to a flag state or a coastal state if so requested (Article 219). This concept of port state jurisdiction is one of the significant additions to maritime international law since the adoption of the 1958 Geneva Convention.

Coastal States on the other hand, may establish and enforce national laws regulating ship traffic in their territorial sea. The authority vested in coastal states also include the right of physical inspection and the arrest of the polluting vessel. A coastal state is also empowered to request from a vessel navigating in the exclusive economic zone or the territorial sea information regarding the identification of the vessel and its port of registry, its last and next port of call and other relevant information; where there are grounds to believe that the vessel has violated applicable international rules and national laws and regulation established in conformity with such rules. Where there are clear grounds for believing that a vessel has committed a flagrant or gross violation of applicable international rules resulting in a discharge causing major pollution damage, or a threat of major damage to the coast line, or related interest of the coastal state, or any resources of its territorial sea or exclusive economic zone, that state may cause proceedings

to be taken against the vessel. However, such a vessel may not be detained if compliance with requirements for bonding or other appropriate financial security has been assured (Article 221).

An enforcement provision which is of particular significance to the regulation of vessel traffic on Canada's East Coast is the right of coastal states to establish and enforce non-discriminatory laws and regulations to preserve and protect the marine environment in ice-covered areas within the exclusive economic zone. A coastal state can use this provision when severe climatic conditions and the presence of ice-covering may create obstruction or exceptional hazards to navigation; or when the pollution of the marine environment could cause major harm or irreversible damage to the marine ecology (Article 235).

In addition to powers to deal with pollution from vessels, Part XII of the Composite Text also contains provisions dealing with pollution from land-based sources (Article 208), sea-bed activities (Article 209), ocean dumping (Article 211) and the atmosphere (Article 213). States will be obliged to establish national laws and regulations to prevent, reduce and control pollution of the marine environment from these sources. The Composite Text incorporates a provision which recognizes the importance and the advantage of global and regional co-operation. The global and regional approach to the preservation

and protection of the marine environment will be possible when states act together through competent international organizations, diplomatic conferences; or establish uniform rules and standards or formulate joint practices and procedures. This co-operation will have to take into account characteristic regional differences. The importance of environmental assessment in pollution prevention measures is also recognized. States are to endeavour to observe, measure, evaluate, analyze or keep under surveillance any activity which they permit or which they engage in so that they can determine the effects of these activities on the marine environment (Article 205). Unfortunately, environmental assessment studies, before the commencement of any major activity in the economic zone is not made mandatory; nor does the conference propose the establishment of an environmental assessment review agency. From the point of view of this thesis, this is seen as one of the major weakness of the Composite Text.

2.2. Inter-Governmental Maritime Consultative Organization (IMCO)

The United Nations Third Law of the Sea Conference has not been the only forum where international attempt has been made to preserve and protect the marine environment. The other important international forum has been the Inter-Governmental Maritime Consultative Organization (IMCO). The first convention of IMCO was adopted in 1954, (and amended in 1962, 1969 and 1973). The provisions of the 1954 convention was very restrictive because

they dealt specifically with the prevention of pollution of the sea by oil discharged from ships registered by or having the nationality of a contracting Government. Each contracting Government was responsible for adopting appropriate measures to ensure that requirements equivalent to those of the convention were applied to their ships. Article VIII (of the 1954 convention) required each contracting Government to provide adequate facilities for the reception of residues and oily mixtures that would remain for disposal from ships, at their ports for ships, at oil loading terminals for tankers, and at ship repair ports. All vessels were required to carry oil record books. The oil record books were to be completed for such operations as loading, transfer or discharge of cargo; ballasting of cargo tanks, or cleaning of tanker cargo tanks, and the disposal of residue from ships. Oil record books, which were to be made readily accessible at reasonable times and preserved for a period of two years after the date of last entry, were to be signed by officers in charge of the operations or by the master of the ship. Competent authorities of any of the territories of a contracting Government may inspect on-board any ship while within a port in that territory, the oil record book. The master of the ship may be asked to certify that the authorities have made a true copy of the entry of the oil record book. A contracting party may furnish the Government that has jurisdiction over a ship of its registry or nationality, written evidence of any contravention of the rules by a ship. If satisfied with the information communicated, the

Government having jurisdiction over the ship (flag state) shall institute proceedings against the owners or the master of the ship. The Government that reported the alleged contravention and the Inter-Governmental Maritime Consultative Organization (IMCO) are to be informed of the action taken against those who violated the rules.

Although the 1954 Convention (as amended) had the prime objective of protecting the marine environment, it contained several weaknesses (loopholes) that made it difficult to implement its provisions. For example, the exemption provision was broadly written that deliberate discharges could be argued to be unavoidable (Article IV). The onus of imposing penalties was left to the Government of the offending ship. Thus it can be argued that the speedy institution of proceedings may depend on the cordiality of the relationship between the Government making the report and the Government that has to institute the proceedings. The provisions applied only to oily pollutants from vessels.

In order to correct the limitations of the 1954 convention, the 1973 convention was adopted. The objective of the Convention is clearly indicated in the preamble:

"BEING CONSCIOUS of the need to preserve the human environment in general and the marine environment in particular,

RECOGNIZING that deliberate, negligent or accidental release of oil and other harmful substances from ships constitute a serious source of pollution, ...

DESIRING to achieve the complete elimination of international pollution of the marine

environment by oil and other harmful substances and the minimization of accidental discharge of such substances,

CONSIDERING that this object may best be achieved by establishing rules not limited to oil pollution having a universal purport, ..."⁴

Harmful substances are defined to include any substance which, if introduced into the sea is liable to create hazards to human health, living resources and marine life; or likely to damage amenities or interfere with other legitimate uses of the sea. The definition of a "ship" is also broadened to include submersibles, and fixed and floating platforms (Article 2). Thus, the definition of a pollutant (harmful substance) and operating vessel in the current convention are flexible enough to cover present and potential offshore resources development. The powers to deal with violations of the rules of the 1973 convention (unlike the 1954 convention) include sanctions. However, the sanctions are to be applied by each party to the convention (Article 4).

The 1973 convention contains provisions designed to promote technical co-operation among parties to the convention, the Inter-Governmental Consultative Organization, and other international organizations. The Executive Director of the United Nations Environment Programme is given the responsibility of co-ordinating this co-operation (with the assistance of the other parties); especially the co-ordination of the training of scientific and technical personnel, research, supply of equipment and facilities for reception of pollutants and

monitoring arrangements in order to prevent or mitigate pollution (Article 17). This provision is significant in several respects. It acknowledges the fact that many parties to the convention, especially the developing states, may not possess the necessary resources and capability to deal with the complex problem of marine pollution and extends assistance to such parties. By stressing the importance of co-ordination and co-operation, the Conference accepts that individualism is not the answer to any effective preventive measures against marine pollution.

Equally significant is the provision contained in the 1973 Convention which establishes a machinery to settle disputes arising as a result of the interpretation or the application of the articles of the Convention. If disputes between parties cannot be settled by negotiation, then any of the parties may request that the dispute be submitted to arbitration. The arbitration procedure is outlined in Protocol II to the Convention. Protocol I addresses the problem of reports of incidents involving the discharge of harmful substances. Each party to the Convention is obliged to establish the necessary facilities for the reception and processing of incidents of discharges. The administration of the ship that has polluted the marine environment, states that may be affected by the discharge and the Inter-Governmental Consultative Organization are to be furnished with complete details of any incident.

The relevant articles of the 1954 (as amended) and 1973 Conventions are summarized in Appendix C - 1.

The major test of the effectiveness of any international convention is its enforcement. Because international organizations do not have their own enforcement bodies, parties to the Convention are required to enforce these internationally agreed rules. The following section thus, discusses Canada's domestic arrangements for the protection of the marine environment.

3. Domestic Arrangements

3.1 Ocean Dumping

Canada's Ocean Dumping Control Act (SC 1974-75 C.55) defines ocean dumping as any deliberate disposal at sea of any substance from ships, aircraft, platforms or man-made structures except those incidental to normal operations. Substances listed in Schedule I to the Act that are prohibited from being dumped into Canadian seas include organohalogen compounds, mercury compounds, crude oil or other oil compounds, high-level radioactive matter and biological or chemical warfare substances. Restricted substances, listed in Schedule II, include lead compounds, zinc, copper or nickel compounds, cyanides and fluorides. Based on the prohibited and the restricted lists, deliberate disposal from the development of "energy-sector resources" and "mining-sector resources" may contravene the

present provisions of the Act. Apart from sand and gravel extraction, the development of the mining-sector resources within the 200-mile zone is, according to current estimates, not likely because of poor prospects.

Under the Ocean Dumping Act, the Minister of the Environment may grant a permit for substances to be dumped at sea. A permit for prohibited substances may be granted only if the substance is rendered harmless by the physical, chemical or biological process of the sea or the substance does not render normally edible marine organisms inedible. The Act also contains provisions empowering the Minister to permit the dumping of prohibited substances at sea if this is necessary to avert an emergency that poses unacceptable risk to human life. While this provision appears to be a loophole in the Act, in practice, the Minister may be restrained by social and political pressures from permitting the dumping of prohibited substances.

In issuing an ocean dumping permit, the Minister may specify that certain conditions be met. These conditions are based on such factors as the possible effect on other uses of the sea, location of the dumping site, depth and distance from the coast, spawning, nursery and fishing areas, and exploitable resources, seasonal variations of the site, and the availability of an adequate scientific basis for assessing the consequences of such dumping (Schedule III to the Ocean Dumping Act, Appendix C II. 1).

An applicant or a permit holder who is dissatisfied with the terms and conditions of his permit may file a notice of objection within thirty days on receipt of the conditions. The Minister shall appoint a three-man Board of Review (the chairman of which shall not be a public servant) to hear the objection. The Board shall entertain presentations from other interested groups. The Board of Review shall then submit its report to the Minister. To enforce the provisions of the Act inspectors and analysts may be appointed with powers to enter any place where substances that may be intended for ocean dumping may be loaded. The inspectors may also board and/or seize ships within any area of the sea where Canada exercises sovereignty. (See Appendix C II.1 for a summary of the Ocean Dumping Act). However, the greatest source of marine pollution at present does not appear to be from the dumping of prohibited or restricted substances but from vessel source pollution.

3.2 Vessel-Source Pollution

The increase in the number of disaster involving super tankers like Amoco Cadiz⁵ and Kurdistan⁶, two recent examples, have prompted coastal states to enact stricter legislation to control vessel source pollution with the extension of offshore jurisdiction. The main Canadian legislation for controlling vessel source pollution within the 200-mile zone is Part XX of the Canada Shipping Act; a legislation which was initially

enacted to control pollution within Canada's 12-mile zone.

Under Part XX of the Canada Shipping Act, the Government is authorized to make regulations prohibiting the discharge of pollutants from ships or establish compulsory traffic routes necessary for safe navigation. A master of a ship is obliged under the Act to report immediately to a pollution prevention officer the discharge or the danger of discharge of a pollutant. A pollution prevention officer or analyst may be appointed to enforce the provisions of the Act. To enable him perform his duties efficiently, the pollution prevention officer is given broad powers under the Act. For example, a pollution prevention officer has authority to require any ship to provide information concerning the condition of the ship, its machinery and equipment and the nature and quantity of its cargo so that he can determine whether the ship complies with regulations. He also has powers to board and to inspect any vessel within Canadian waters or a ship bound for a place in Canada. A pollution prevention officer may even order a ship to proceed out of Canadian waters or direct it to an alternative destination if he has reasonable grounds to believe that such an action would prevent the discharge of pollutants.

Another important provision of Part XX of the Shipping Act is the establishment of the "Marine Pollution Claims Fund" to reimburse persons suffering loss or damage as a result of a pollution incident, and the appointment of an Administrator for

the fund. The Administrator has powers to review all claims submitted as a result of a discharge of pollutants including claims from fishermen and to settle such claims. Fishermen can file claims for loss of income within two years of a discharge incident. The Maritime Pollution Claims Fund Administrator has authority to engage professional and technical advice and assistance outside the Public Service in the performance of his duties.

The Administrator may also forward the notice of a claim from a fisherman to the Minister of Transport for action. The Minister of Transport in consultation with the Minister of Environment and the Administrator, will then appoint assessors from outside the Public Service, to assess the alleged loss of income by the fisherman. The assessors have up to sixty days to submit their report. On receipt of a copy of the assessor's report, the Administrator may direct payment to be made to the claimant. Funding for the pollution claims is partly derived from a levy on imported oil into Canada and partly from oil shipped from one place to another in Canada. A maximum of fifteen cents per ton of a bulk cargo of oil may be levied. The Act also requires the owners of any ship that carries a pollutant or the owners of pollutants, to provide financial responsibility in the form of an insurance or indemnity bond. Any person or ship that violates the provisions of the Act or regulations made under the Act, is liable to a maximum fine of one hundred thousand dollars.

(For a summary of the main sections of Part XX of the Canada Shipping Act, see Appendix C.II.2).

The major limitation of the Part XX of the Canada Shipping Act relates to the Pollution prevention officers restricted powers to board and inspect only ships bound for a place in Canada⁷. Because of this limitation, a pollution prevention officer does not have powers to inspect through traffic such as supertankers from Valdez bound for the Western Coast of the United States. Another weakness of the Act relates to the procedure for the payment of clean up operations. The Maritime pollution claims fund does not specifically cover the payment for the cost of clean up operations. Section 736 of the Act requires the owners of a ship that carries a pollutant or the owners of the pollutants to provide evidence of financial responsibility in the form of an insurance or indemnity bond. However, in a recent case on the East Coast, involving the British tanker Kurdistan, the Government demanded that a pollution clean up deposit be made first before it authorized any salvage operation.⁸ During the time the Government and the ship owners negotiated the amount of the pollution deposit, all salvage operations were at a stand still. In a time of a major spill, there may not be enough time for the Government to negotiate the amount of the deposit. Probably if the Government adopts the recent maximum compensation for oil pollution caused by sea accidents set by the Inter-Governmental Consultative Organization⁹ as the required deposit, the unnecessary time spent in negotiation can be devoted to actual cleaning up.

4. The Arctic Waters Pollution Prevention Act

The inadequacy of international law in effectively preventing marine pollution,¹⁰ especially in sensitive ecological areas, has prompted coastal states like Canada to take unilateral action. It was to fulfill this need that Canada enacted the Arctic Waters Pollution Prevention Act. Although the provisions of this Act do not specifically apply to the study area of this thesis, it is being discussed here because it represents an important example in developing international environmental law by a non-traditional approach.¹¹ The Act applies to the "Arctic waters" and "adjacent mainland and islands" of the Canadian Arctic within the area enclosed by the sixtieth parallel of north latitude, the one hundred and forty-first longitude and a line measured seaward from the nearest Canadian line to a distance of one hundred nautical miles.¹²

The preamble to the Act explains why Canada enacted such an unprecedented legislation. While recognizing that the exploitation of the natural resources of the Arctic, and the transportation of these resources to world markets are of great significance to international trade and commerce and the economy of Canada; Parliament also recognized the urgent need to protect the welfare of the Eskimo and other inhabitants of the Canadian Arctic. There was also the need to preserve the peculiar ecological balance that exists in the water, ice and land areas. In order to achieve these objectives, a very broad definition of "waste" was adopted in the Act.

"Waste" was defined to include any substance which, if added, to any waters would degrade or alter the waters to an extent that is detrimental to their use by man or by any animal, fish or plant that is useful to man. This definition in effect covers all forms of pollutants.

The Act prohibits any person from depositing any form of waste or from carrying out any operation that will result in the deposit of waste in the Arctic waters, the main land and the islands. Any person who contravenes this section of the Act is obliged to report immediately to a pollution prevention officer. Section 6 of the Act imposes Civil liability for the deposit of waste upon persons exploring or exploiting any natural resources of the Canadian Arctic waters, lands or submarine areas. Civil liability can also be imposed upon the owners of any ship that navigates within the Arctic waters or the owners of the cargo of such a ship. This liability is "absolute and does not depend upon proof of fault or negligence" (Section 7).

An insurance or indemnity bond in a form that enables any person entitled to a claim to recover directly from the proceeds has to be provided by any person exploring or exploiting the natural resources of the Arctic waters, land or submarine areas, or who proposes to construct, alter, or extend any work or the owner of a ship that proposes to navigate in any of the shipping safety zone (section 8). There is a second requirement under the Act which operators have to satisfy. Undertakers of

any activity that is likely to result in the deposit of waste have to provide a copy of the plan and specifications of the work to the Governor-in-council who may make modifications as he deems necessary to prevent the deposit of waste or may even prohibit the proposed work completely.

Unlike Part XX of the Canada Shipping Act, the Arctic Waters Pollution Prevention Act is area specific in terms of control. The Governor-in-council may, by order designate (or amend) any area of the Arctic waters as a shipping safety control zone. He can also make regulations with respect to specific class of ships and prohibit any ship of that class that does not comply with the prescribed regulations from navigating within any shipping safety control zone.

The Act does not only provide for the appointment of pollution prevention officers but also arms such officers with very extensive powers. A pollution prevention officer's powers ranges from boarding any ship within a shipping safety control zone to ordering such a ship out of the zone or even seizing the ship and its cargo; but with the consent of the Governor-in-council. The owner or person in charge of or any person found in any area, place or premises, is required to give all reasonable assistance in his powers to enable a pollution prevention officer, to carry out his duties under the Act. Obstruction of a pollution prevention officer in the performance of his duties or the giving of false and misleading statements to a pollution

prevention officer, either in writing or verbally, is an offence under the Act. The penalty for violating the provisions of the Act is five thousand dollars for any person and twenty-five thousand dollars for a ship or owners of a ship.

The Arctic Shipping Pollution Prevention Regulations passed pursuant to the Arctic Waters Pollution Prevention Act prohibit non-Canadian ships that are registered in states not signatories to the Safety Convention, the International Convention on Load Lines 1966 or the International Load Line Convention 1930 from navigating in any arctic safety control zone unless they comply with the Regulations of the Canada Shipping Act. Ships of 300 gross tonnage or more can only navigate within arctic safety control zones if they have on board, radio telephone that can receive or transmit on specified frequencies.

The owner or master of a ship that proposes to navigate within any shipping safety control zone is required to obtain an Arctic Pollution Prevention Certificate. This Certificate is issued to a ship that complies with standards prescribed in the regulations for that class of ship. If there are essential changes in the conditions under which the Arctic Pollution Prevention Certificate was issued, the owner or the master of the ship is obliged to report such changes to a pollution prevention officer, otherwise the certificate is invalid if the ship navigates within any zone. The master of a ship or

the person in charge of a deck watch of a ship of at least 100 tons is required to hold a valid certificate or licence, acceptable to the Minister of Transport, that he is qualified to operate the navigational equipment the ship is fitted with or the radio telephone on board the ship. Tankers can navigate in a safety control zone only when they have the aid of a qualified ice navigator. (The main sections of the Arctic Waters Pollution Prevention Act and the Regulations are summarized in Appendix C II.3).

Preventive self defence is the main doctrine embodied in the Arctic Waters Pollution Prevention Act. Under this doctrine, Canada claims the right to exercise "limited" jurisdiction over foreign ships in the arctic waters contiguous to its coasts in order to protect its territorial interests. However, it is this "preventive principle" that was questioned by critics of the Act especially the United States. The United States questioned the legality of the Act under international law. In examining this question of international legality, Pharand concedes that Canada's anti-pollution legislation is a "unilateral measure pending adequate international Convention." However, Pharand argues that the concept of self protection had gained recognition by 1970 in both conventional and customary international law.¹³

The self protection principle enables a state to exercise its jurisdiction to protect vital state interests: security,

property and the integrity of governmental process. It was this principle which was invoked by coastal states to extend a zone of the high seas contiguous to their coasts as an Air Defence Identification Zone. (ADIZ). This same principle is also embodied in several law of the Sea Conventions.¹⁴

5. The Role of Environmental Impact Study (EIS) in Offshore Resources Planning

Because of the unique nature of the marine ecosystem and the fact that offshore resources development carries the potential for adverse environmental impact, it is essential that environmental impact study be undertaken before any offshore development activity is commissioned. An environmental impact study should therefore be a key component of any offshore resources planning framework. Unfortunately, the role of the environmental impact study does not appear to be given the importance it deserves in both the international and domestic legal framework (see Appendix B).

Section four of the Informal Composite Negotiating Text only requires states to assess the potential effects of activities under their jurisdiction or control those activities that "may cause substantial pollution or significant and harmful changes to the marine environment," and publish the results or make them available to competent international organizations. The provisions of the Text do not prohibit activities an environmental impact study may identify as being likely to cause

adverse effects to the environment. A state's responsibility ends after publishing the results of the impact study. The responsibility of the international organizations is even less clear as they do not constitute a review panel.

The role of the environmental impact study in offshore resources development within the domestic legal framework is almost non-existent. An environmental impact study at the federal level is mandated not by legislation but by Cabinet directive.¹⁵ Under the Cabinet directive, the Minister of the Environment, in co-operation with other Ministers, is to ensure that federal departments and agencies take into consideration environmental factors "throughout the planning and implementation of new projects, programs and activities"; or undertake environmental assessment for all projects that may have adverse effect on the environment before making commitments or decision, and "use the results of these assessments in planning, decision-making, and implementation."

Thus the environmental assessment processes that have been established is based on departmental/agency self assessment and it is the responsibility of the initiating department to ensure that the Cabinet directive is complied with. In the initial phase of a project or a programme planning, the initiating department screens for potential adverse environmental effects. If the nature and scope of the potential adverse effects that have been identified are not fully known then the

initiating department prepares a more detailed assessment, referred to as Initial Environmental Evaluation (IEE). If the development in question will generate significant environmental effects then the initiating department will request the Executive Chairman of the Federal Environmental Assessment Review Office to establish a panel to review the project. The review panel's responsibility includes, issuing guidelines for preparing the environmental impact study, reviewing the impact study that has been prepared and obtaining public response to the study. The panel then advises the Minister of the Environment. The Minister of the Environment and the Minister of the initiating department then decides on the action to be taken. Some of the important factors that must be considered in preparing an environmental impact study include physical, chemical, ecological, aesthetic and social; density, migration patterns, habits, spawning areas, and general sensitivity of fisheries; or a possible loss of oil or gas through exploration.¹⁶

Despite the machinery that has been established for environmental impact study and the specific guidelines that have been formulated, they cannot be used in offshore resources development. While federal departments and agencies have responsibility for the licensing, control, monitoring and surveillance of offshore resources development, the actual development is carried out by private companies and Crown Corporations (e.g. Petro-Canada). The Cabinet directive

requires environmental assessment for projects that are initiated by federal departments/agencies, or projects for which federal funds are solicited, or those projects involving federal property. Crown Corporations and regulatory agencies are invited but not directed to undertake environmental assessment. There are however, indications that the Federal Government realizes this weakness in the environmental control framework and is taking steps to remedy the situation. Companies drilling in the Baffin Island and Labrador areas are now required to carry out baseline environmental studies.¹⁷ It has also been reported that environmental studies will be undertaken for the proposed tidal power plant in the Bay of Fundy.¹⁸ In the United Kingdom, there are steps being taken to incorporate environmental impact analysis in the development control system under the planning Acts with respect to the North Sea Oil and Gas Developments.¹⁹

6. Conclusion

The thrust of Canada's legislative approach to the protection and preservation of the marine environment is preventive rather than remedial. It is in line with this approach that very broad powers have been given to pollution prevention officers and stringent standards and regulations established for vessels navigating in Canadian waters. While it may be prudent to nip the problem in the bud, there is an inherent weakness (danger) in the over reliance on the preventive approach - especially with respect to vessel source pollution or oil

pollution. Vessel source pollution is often accidental and very difficult to predict because of the high degree of human (factor) "error". The inquiry into the biggest oil spill in history, the Amoco Cadiz, concluded that the damage (to the coast of France) could have been prevented but for the "gross dereliction of duties" on the part of the captain of the super tanker.²⁰ The accident is in essence being blamed on human factors.

There have been two major tanker breakup on the East Coast in nine years but as the recent Kurdistan incident shows, the East Coast does not have the capability to handle a major disaster. For example, there is not a tug to keep a disabled supertanker like Amoco Cadiz from running aground on the East Coast²¹ even though supertankers of such sizes call at east coast ports. This lack of preparedness may be explained by the fact that probably the department with responsibility for such planning believes that the preventive measures that have been established are adequate to forestall any major disaster.

The threat of oil pollution on the West Coast is equally great especially with the increase in tanker traffic carrying Alaskan oil in the Strait of Juan de Fuca. Although the Canadian and the United States Coast Guards have initiated a voluntary traffic separation scheme under which incoming traffic use the south or the United States' side of the Strait and outbound traffic exits through the north or through the Canadian waters

of the Strait; several instances of non-compliance by foreign ships have been reported²² thus creating serious navigation hazards and increasing the threats of pollution. The traffic lanes in the Strait are a thousand yards wide and the separation zones 500 yards apart.

The real problem with the preservation and protection of the marine environment is not legal but practical. The world has become a "global village" largely due to the jet age and instant communication via satellite. This has led to a rapid growth in the number of national and transnational actors such as multinational oil and shipping companies and private environmental groups, on the international scene. The result is that marine environmental issues have been turned into global crises thus compounding the problem. The internationalization of marine environmental protection has led some writers to argue that the distinction between matters of domestic and international significance tends to blur and adopting purely national perspective or the failure to recognize the global nature of marine pollution will only impede an imaginative response to the problem.²³ Setting standards or designating traffic lanes is one thing and enforcing them is another. The question of enforcement has been discussed in Chapter IV and therefore, it is not necessary to repeat the arguments here. Nevertheless, it must be emphasized that the preventive approach will only succeed if it is backed by strong and total enforcement of the standards set and surveillance of the whole 200-mile zone.

The recent Sixth International Oil Spill Conference has suggested that for an effective administration of clean up operations, better selection of techniques and more precise assessment of environmental damage, states should plan far in advance.²⁴ However, the history of clean up operations around the world suggest that most often they are ineptly managed, and techniques are geared to assuaging public wrath rather than the environment. In order to achieve the objectives of the marine environmental legislation, Canada will have to complement its preventive approach with remedial planning measures. This will require a shift in emphasis with increased offshore resource development.

Furthermore, the intent of the marine environmental protection legislation will only be achieved if environmental assessment is made a prerequisite of all offshore resources development. Because an environmental assessment study is a time consuming process, the assessment will have to be undertaken in advance of any anticipated development and updated periodically. Since private companies will be less inclined to carry out such prior assessment, the Federal Government will have to assume this responsibility. The Inter-departmental Offshore Resources Planning Committee (IORPC) that is discussed in Chapter VII will be an ideal body to undertake this ongoing assessment.

FOOTNOTES

1. The 1958 Geneva Convention. For a summary of the relevant articles, see Appendix A.
2. Schacter, O. and Sewer, D. (1971) "Marine Pollution Problems and Remedies", American Journal of International Law, 65, pp 84-111.
3. Hardy, M. (1971) "International Control of Marine Pollution", Natural Resources Journal, 11, pp. 296-348.
4. Inter-Governmental Maritime Consultative Organization, International Convention for the Prevention of Pollution from Ships, 1973, p. 19.
5. "Brittany's Inky Tide" Newsweek, March 27, 1978 p. 71. See also "Brittany's Black Days" Newsweek, April 3, 1978 p. 44.
6. "Clean up of Kurdistan oil continues, officials say it may equal Arrow spill", The Globe and Mail, May 1, 1979 p. 12.
7. Whiteman, H.H. (1978) Report on the Application of Part XX of the Canada Shipping Act in fishing zones 4 and 5, Transport Canada: Coast Guard Report unpublished, April 1, p. 4.
8. "Demand for a pollution deposit is delaying salvage of Kurdistan" The Globe and Mail, March 21, 1979, p. 8. The Government demanded that \$50 million be deposited by the ship owners and insurers to pay for clean up should the salvage operation foul the beaches of Nova Scotia.
9. "Oil Spill compensation increased" The Globe and Mail April 25, 1979, p. 3. The Inter-Governmental Maritime Consultative Organization increased from \$38 million to \$57 million the maximum compensation for oil pollution caused by sea accident and this was adopted by the International Oil Pollution Compensation Fund.
10. Green, L.C. (1971) "International Law and Canada's Anti-Pollution Legislation" Oregon Law Review, 50, 3, pp. 462-490.

11. Beesley, J.A. (1972) "The Law of the Sea Conference: Factors behind Canada's Stance", International Perspective July/August p. 30.
12. The 100-nautical miles zone has since March 1, 1977 been extended to 200-nautical miles with the declaration of the 200-miles fisheries zone.
13. Pharand D. "Oil pollution control in the Arctic" in The Law of the Sea of the Arctic with Special Reference to Canada, Ottawa, University of Ottawa Press, 1973, pp. 205-252.
14. Ibid.
15. Federal Environmental Assessment Review Office, Federal Environmental Assessment and Review Process - Guide for Environmental Screening, Ottawa, 1978.
16. Environmental Assessment Panel, "Environmental Impact Assessment Guidelines - Oil and Gas Exploration and Production", Guidelines for Preparing Initial Environmental Evaluations, Ottawa, October 1976, pp. 2-18. Guidelines have been formulated for nine types of developments. Guidelines which may have some application to Offshore Resources planning are: Oil and Gas Exploration and Production, Hydroelectric and other Water Development Projects, Ports, Mining Developments and Industrial.
17. "Oil and Gas Rules Changed on Drilling", The Financial Post, November 26, 1977 p. 8. The baseline environmental studies are to be in three stages at a total estimated cost of \$125 million. The first initial studies was planned for the Lancaster Sound Area.
18. "Environmental Study for Fundy" The Financial Post, July 29, 1978, p. 11.
19. Scottish Development Department, North Sea Oil and Gas Developments: Environmental Impact Analysis Scottish Experience 1973-1975, April 1976, p. 5.
20. "'Gross Dereliction' in Amoco Cadiz Grounding - Captain is criticized in Giant Oil Spill", The Globe and Mail, March 9, 1979, p. 9.

21. "Disaster averted this time but residents still worry", The Globe and Mail, March 26, 1979, p. 9. See also "Handling of Kurdistan spill criticized", The Globe and Mail, April 5, 1979, p. 11.
22. Wang, E.K. (1977) "Brief for Thompson Inquiry on West Coast Oil Ports" in Department of External Affairs, Canada and the Law of the Sea, Resources Information, Ottawa 1978, pp. 138-158.
23. M'Gonigle, M. and Zacher, M.W. (1978) "International Problem of Marine Pollution" International Perspective, March/April pp. 8-12.
24. "Clean up are sometimes worse than oil spills, Scientists say", The Globe and Mail, April 16, 1979, p. 17.

CHAPTER VII

Integrated Offshore Resources Planning

1. Introduction

The discussions in the preceeding chapters have concentrated on the legal framework, the institutional framework, offshore activities/uses and the potential conflict of development. The threat of pollution and the general question of protection and preservation of the marine environment have also been discussed. Very little however has been said about offshore resources planning. This method of approach has been adopted on the assumption that an understanding of the existing mandate and the principle for planning and an appreciation of the interaction of the various forces and the mode of operation of the actors in the offshore area, are necessary before any meaningful modification to the present approach can be suggested. In other words, the first thing any offshore resource planner who has just been employed has to do is to familiarize himself with the instruments at his disposal and the general framework within which he has to operate.

Offshore resources planning can broadly be classified into two areas. These are "ocean space uses planning" (zoning) and "policy planning". The distinction between the two is however very slight; at least in practice. For the argument can be made that no effective policy can be formulated without a thorough understanding of the "restricted uses" zones.

The reverse argument also holds. That is - policies have to

relate to specific zones. This chapter will focus more on the policy aspect of offshore resources planning. This choice is based on the assumption that what is needed at this point in the development of offshore resources is a process that will make it possible for a more effective policy planning.

2. The Offshore Physical Environment

Bathymetric, oceanographic, meteorologic and coastal topographic factors have interacted to give each offshore region of Canada a set of unique characteristics. The coastline of the West Coast is rugged, mountainous and indented with deep fjords. The continental shelf is short with a very steep continental slope.¹ There are two main currents which influence the West Coast. The principal current is the Alaskan gyre or eddy which in winter, flows northward from about 45° latitude along the coast of Vancouver Island, past the Queen Charlotte Islands and into the Gulf of Alaska. In summer, the Alaskan gyre turns north at about 50° north latitude. The West Coast is in general influenced by the weak, variable and south flowing California current.² The West Coast offshore is also characterized by high wind speed and this often affects both currents. The mean temperature range is 41°F - 60°F. The tidal range can be as high as fifteen feet. Visibility along the Coast is often poor.

As a result, fog may pose serious navigational hazard. From the month of August, the maximum days of fog per month are about twenty

at the entrance of Juan de Fuca and fifteen days per month around Victoria in October. Visibility of a thousand feet or less is therefore not uncommon around this area.

The East Coast has a wider continental shelf which in certain areas, extends beyond the 200-mile zone. There are three main currents that affect the East Coast offshore region. The Gaspé current influencing the Gulf of St. Lawrence area; the northern edge of the Gulf Stream, influencing the southern coast of Nova Scotia; and the Labrador current affecting the offshore regions of Newfoundland and Labrador. The Labrador-Newfoundland offshore zone is under the influence of the Labrador current throughout the year. The inshore waters of the East Coast are colder and less saline in winter. In summer, inshore warming reverses the temperature gradient. Summer surface temperature ranges from 52-56°F inshore and 43°-45°F offshore.³ The waters of the offshore areas of southern Nova Scotia and southern Newfoundland, which is influenced by the northern Gulf Stream, is highly stratified. In summer, the surface waters is about 40°-80°F with low to moderate salinity. In winter, the temperature range is about 32-39°F with high salinity.

Ice is frequently a hazard to navigation on the East Coast. Ice usually forms first in the inshore areas, where the water is less saline, and the surface is less disturbed by waves. Three main ice distribution areas can be identified on the East Coast. The first is the Gulf of St. Lawrence area which receives

ice from the St. Lawrence River where it forms early and from the Arctic via the Labrador current and the strait of Belle Isle. The second area is the Labrador-Newfoundland shelf where ice is present for most part of the year. Local sea ice is joined by drifting floes and bergs from the seas and glaciers. There is ice covering in this region as late as June.⁴ The third region is the offshore areas of the southern Nova Scotia where there is very little ice in the winter, and whatever little ice that forms quickly melts or is broken up by the wave action and is carried out to sea. The tides on the East Coast are very high and can reach as high as fifty feet in the Bay of Fundy area. The high tides, high waves and strong offshore winds combine to make the East Coast one of the most difficult areas for oil and gas exploration. In terms of potential for commercial oil and gas discovery, the area from the Scotian shelf to the offshore areas of Labrador have the greatest prospects. This is also the most hazardous area of the East Coast.

This is a very simplified account of the physical environment of the East and West Coast offshore areas. The interrelationship between the various elements in the environment have not been discussed. For example, climatic and oceanographic elements interact to influence cod movement which in turn restricts ground fishery mainly to the summer months. About seventy-five percent of the landings are made in June, July and August. As the surface layer warms in the early summer, cod rise from the bottom to feed on the capelin they follow on its spawning

trip to the shallows. The cod will then be available over the narrow inshore zone. Cod spawning occurs in spring in the bottom waters (600 feet) where the water temperature is about 41°F, off the coast of Newfoundland. Throughout the summer, surface water attains a temperature which is suitable for cod following food supply inshore. However, if offshore winds prevail in early summer, then the warm surface water is driven out to sea and is replaced by upwelling cold bottom water unfavourable to cod. The cod will then be available in the offshore zone. An understanding of the migration routes of cod for example is essential for any restricted ocean space uses zoning. Since this chapter deals with offshore resources "policy planning" and not "ocean space uses planning", no detailed discussion of the physical environment or the interaction between the elements will be made.

3. Offshore Planning Zones

Taking into consideration the physical offshore characteristics, the unique nature of the marine ecosystem and the offshore activities/uses that have been identified in this study (see Table IV. 1); it is being suggested that three offshore planning zones can be delineated. The first is the "nearshore planning zone". This zone is defined as the zone from the high water mark to a distance of thirty nautical miles. This zone includes the territorial sea and the contiguous zone. The second

zone is the "midshore planning zone" which extends to a distance of fifty nautical miles from the end of the nearshore zone. The midshore planning zone thus largely coincides with the geological continental shelf. The third zone is the "offshore planning zone". This zone extends one hundred and twenty-miles from the end of the midshore zone. The offshore zone covers the total continental margin (see Figure I.1). It must be pointed out that the main criteria for the delimitation of the planning zone is the distribution of the identified activities/uses. The key to water-use zoning is to divide incompatible activities into groups which exhibit similar characteristics and which take place under similar circumstances.⁵ While all the identified offshore activities/uses do take place in the nearshore planning zone, not all occur in the midshore or offshore zones (see Table VII.1). Mobile activities are evenly distributed in all the three planning zones, but a greater proportion of the fixed activities (6) taking into account double counting, is in the nearshore zone. The distribution of the activities/uses in the planning zones seems reasonable for one would expect that mobile activities(e.g. shipping) cannot be restricted to any one of the zones.

The grouping of offshore activities/uses for the purpose of zoning entails several problems. Every offshore activity cannot and need not be segregated from every other activity. Zoning this way would create activity zones that are meaningless.

TABLE VII. 1
The Distribution of Uses/Activities Within the Offshore-Resources Planning Zones

	NEARSHORE	MIDSHORE	OFFSHORE
Sport Fishing (M)			
Commercial Fishing (M)	X	X	X
Shell Fishing (F)	X		
Commercial Shipping (M)	X	X	X
Search and Rescue (M)	X	X	X
Port Facilities (F)	X		
Offshore Gas and Oil Exploration (F/M)	X	X	X
Petroleum Refinery (F)	X		
Sailing and Boating (M)	X		
Use of Airspace by Helicopters (M)	X	X	X
Cable Communication (F)	X	X	X
Military (M)		X	X
Scientific Research (F/M)	X	X	X
TOTAL:	6	3	3
Fixed			
Mobile	6	3	3

Besides, the implementation of offshore activities/uses zones would create considerable legal, administrative, economic and technical difficulties. The technical difficulties of implementing offshore uses zoning stems from the problem of establishing (and enforcing) practical means of demarcation of the different activity zones. Buoys of different colours or shapes could be used to mark the boundary of the planning zones. This may be possible in the nearshore zone however, the use of coloured buoys in the whole offshore area may not be possible because of the unique physical environment: fog, limited visibility, strong winds, big waves and ice covering. If the technological advances that have been taking place in the field of remote sensing continues then, remote sensing may help provide some of the solutions to the problem of demarcating restricted offshore planning zones.

Apart from the Arctic Waters Pollution Prevention Act, Canada's domestic legislation for the development and control of offshore resources is not area specific. It may therefore be difficult to enforce restricted ocean space zoning. Restricted offshore zoning may even be illegal under international law and contrary to marine practice. Under Article 5 of the 1958 Geneva Convention, on the continental shelf:

"1. The exploration of the continental shelf and the exploitation of its natural resources must not result in any unjustifiable interference with navigation, fishing or the conservation of the living resources of the sea, nor result in any interference with

fundamental oceanographic research...

6. Neither the installations or devices, nor the safety zone around them may be established where interference may be caused to the use of recognized sea lanes essential to international navigation..."⁶

Zoning restricts certain uses from certain areas. However, since the traditional uses of the sea (e.g. navigation, fishing) must have priority over contemporary uses (e.g. recreation), restricted zoning may not be accepted by the international community. If restricted ocean space zoning may not be possible then the broad zones that is proposed may be one of the alternatives as it is not technically "area specific". The broad ocean space zoning also has the advantage of being enforceable under current domestic legislation.

4. Vertical-Sectoral Offshore Resources Co-ordinating Process

In discussing the institutional arrangements and the licensing, leasing and permit administration for offshore resources development in Chapter III, it was argued that under the present regulations, there is no central co-ordinating machinery for offshore resources development. Each department operates in "isolation". An application for offshore oil and gas license or fishing license is processed on its own 'merits' by the Department of Energy, Mines and Resources and the Department of Fisheries and Oceans respectively. There are no formal arrangements whereby comments from other line Departments

which may be affected by the activities of an offshore operator are solicited.⁷

With respect to offshore oil and gas licensing procedure in particular, the instrument of interdepartmental co-ordination is the offshore operator. The offshore operator is responsible to notify federal departments/agencies that have interest in offshore operations (see Figure III.1). Ironically, the offshore operator is the person least interested in the direct benefits of departmental co-ordination. Besides, departmental responsibilities for the development and control of offshore resources have been assigned sectorally. The Department of Energy, Mines and Resources has responsibility for oil and gas development (energy), the Department of Fisheries and Oceans is responsible for fisheries resources and the Department of Transport has responsibility for shipping. Similarly, within a department, separate Branches are in charge of different sectors. In the formulation of departmental policies and programmes, the input of the various branches have to be reconciled first. Thus the process is both vertical and sectoral.

Co-ordination of policy may take place at three different levels. National policy is ultimately set by Parliament. This may take the form of Acts of Parliament. The legislative framework that has been summarized in Appendices A, B and C reflect the broad national policy as they pertain to offshore resources development, pollution and the protection of the marine environment. Policy may also be co-ordinated at the Executive level;

and there is also departmental co-ordination. Since policy may originate at any of the three levels, co-ordination becomes very important, if overall national objectives are to be ensured. The usual practice appears to be that the supporting studies for government policies are carried out by the department. Besides, it is also being assumed that the greater proportion of offshore resources policies and policy studies are undertaken at the departmental level. It is the mechanics of departmental policy co-ordination that will now be discussed briefly.

After a department has formulated its policy, based on the studies and research, it is forwarded to the Cabinet through one of the central departments. There are four central departments within the Public Service that co-ordinate policies of the various line departments. These policy (central) departments are: Finance, Treasury Board, Privy Council⁸ and External Affairs.⁹ The Treasury Board for example, ensures that programmes of line departments are related to objectives and that "policy levers" are connected with the rest of the machine. After an initial co-ordination by the central department, policies are passed on to any of the four co-ordinating committees of the Cabinet (Priorities and Planning, Federal-Provincial Relations, Treasury Board, and Legislation and House Planning) depending on the nature of the policy for which Cabinet approval is sought and the agenda or work load of each Cabinet Committee. One of the advantages of

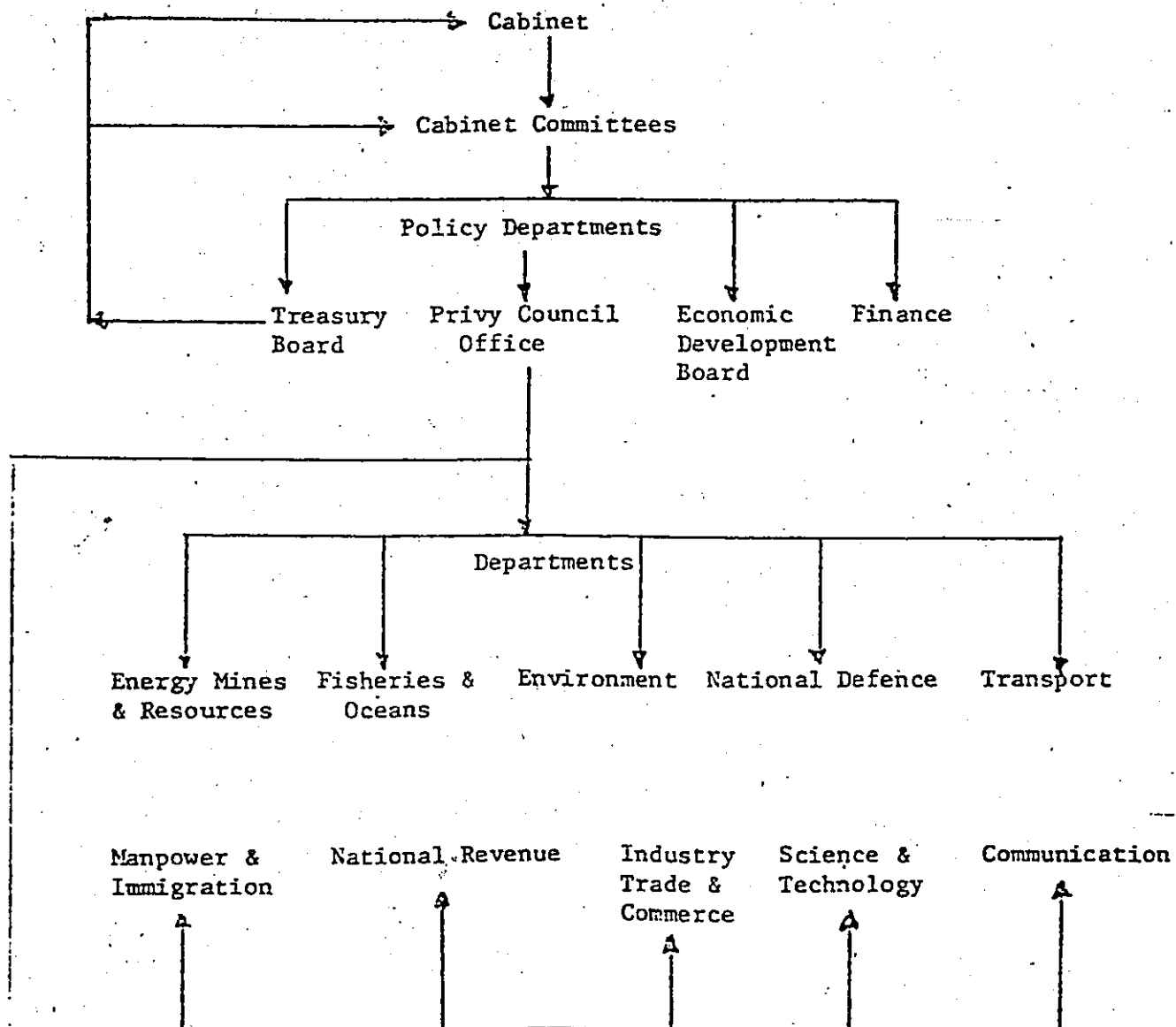
forwarding a policy recommendation to any one of the four Cabinet Committees is that it ensures immediate attention which it may not get if it can be discussed only by a particular Cabinet Committee. With jurisdictional fragmentation, designated Cabinet Committee may have increased volume of work and this may affect the work of the line departments under it. From a Cabinet Committee, the policy recommendation is referred to the full Cabinet for approval. The process an offshore resources policy will follow is shown in Figure VII.2.

There are advantages with vertical co-ordination. Vertical structure reduces interagency conflict, minimizes the cost of administrative negotiation and may mitigate "indecision".¹⁰ However, vertical co-ordination does not only make it difficult to deal with issue, like offshore resources, which cut horizontally across departments, but it is also unable to deal with persistent and intractable priority problems. Thus under a vertical co-ordinating system, offshore resources problems may not get the priority attention from the Cabinet because of competition from other line departments. As Departmental-Sectoral approach does not seem appropriate in dealing with complex multidimensional offshore resources planning, some other alternative must be explored.

There are several approaches that may be used to co-ordinate policies and programmes in a vertical system: Ministry of State;¹¹ Royal Commissions;¹² Public-Private Task Force;¹³ Cabinet-

FIGURE VII - 2

Vertical-Sectoral Co-ordinating Process for Offshore Resources



Commission Task Force, Committee of Senior Officials, and Interdepartmental Committees.¹⁴ The use of a Ministry of State to co-ordinate policies of line departments, has certain limitations. A Ministry of State is unable to monitor the total range of programmes without creating a very large bureaucracy something which is contrary to the basic concept of a Ministry of State. Furthermore, a Ministry of State also cannot successfully develop an integrated policy without the co-operation of the line departments managing the programmes affecting the Ministry's policy domain; nor can a Ministry be cognizant of all the problems and prospects of its policy field.

Inter-departmental Committees are a frequently used approach for policy co-ordination of line departments. However, they are often appointed on ad hoc basis with narrowly defined mandate. Although policies and programmes pursued by some departments drastically affect programmes of other departments, there are no rules to control these "side effects". Moreover, informal modes of consultation which may be adequate in defining areas of co-operation in older line departments tend to be ineffective in co-ordinating different approaches of several large departments which deal with rapidly changing situations.¹⁵ For this reason, an ad hoc interdepartmental committee system is not considered as the best approach in integrating offshore resources policies.

5. Policy Planning at the Federal Level

Under the Canadian governmental system, policy at the bureaucratic level is determined by Ministers and not by Officials.¹⁶ However, Jackson makes an important distinction between policy planning and policy determination by arguing that:

"It is one thing to assemble the resources to investigate a problem; to identify possible solutions cost the various strategies, examine the legislative requirements and suggest possible implications of the strategies for other policies or the actions of other governments; it is quite another to review the digested wisdom of such a process and to make a decision in favour or against particular courses of action."¹⁷

Thus policy planning at the bureaucratic level is the responsibility of the officials who must not only be well informed but must also be aware of programmes and activities going on in their departments. Policy planning groups are established in line departments to serve the Deputy Minister directly or they may be organized around an Assistant Deputy Minister whose primary responsibility is policy planning. Such policy planning groups are usually made up of a small number of officials. The size of the group helps to ensure that policies are not prematurely leaked.

The terms "policy" and "planning" have been used in this study so far without being defined. An attempt will now be made to define these terms. Policy has been defined as: "Plan of action, statement of aims and ideals, especially made by a

government, political party... art of government";¹⁸
"the setting of what we want to do and the broad means by
which we hope to do it";¹⁹ or "a high-level general statement
of preferences by a Cabinet or Prime Minister or an announced
intention to act in a certain way on matters of new policy
issue about which there is current political controversy."²⁰
Thus implicit in these definitions are the concepts of "objec-
tives" and "means". The term "policy" is used in this study
to mean:

"A plan of action by the federal government
containing the objectives to be achieved and
the means of achieving them."

regarding the exploitation, development and control of offshore
resources..

Four types of policy instruments can be identified:
an Act of Parliament or a statutory instrument made under the
Act (e.g. Regulations), a memorandum or a circular, departmental
practice in dealing with some particular type of issue, and
settlement of cases by a Minister or public authority.²¹
The Government is ultimately accountable to the people.
But the executive is immediately responsible to
Parliament for its actions and can only act legally under
statutory authority given by Parliament. Thus it may be argued
that an Act of Parliament is the highest legal policy instrument.

There are scores of definitions of "planning" and "type
of planning".²² However, since the objective here is not to

present a critic of "planning" or planning theory, a generic definition²³ will not be presented. The term planning will only be defined as it is meant to apply in this study. For the purpose of this study, the term planning is defined as:

"any continuous intervention measures directed to the development, exploitation and control of offshore resources"

Thus this definition may apply to both "policy planning" and "ocean Space uses planning". Implicit in the definition of planning presented is the notion that policies and programmes can be directed to bring about orderly development of offshore resources.

Based on this broad definition of planning, it may be argued that all the federal departments and agencies that have significant responsibility for offshore resources development and control, do have a planning mandate since their policies and programmes directly or indirectly do bring about changes. However, in none of the Acts that were reviewed was the term "planning" used; not even the Act of the newly created Department of Fisheries and Oceans. Section five of the Department of Fisheries and Oceans Act states:

"The duties, powers, and functions of the Minister of Fisheries and Oceans extend to and include all matters over which Parliament of Canada has jurisdiction, not by law assigned to any other department, board, or agency of the Government of Canada, relating to the sea coast and inland fisheries, fishing and recreational harbours, hydrography and marine sciences..."²⁴

The new Department of Fisheries and Oceans being another line department will not be able to effectively co-ordinate offshore resources policies as it is "stillborn". A critical examination of the provisions of the Department of Fisheries and Oceans Act and the Oceans Research Advisory Council Act shows that these federal bodies have in general a purely physical scientific mandate, and not a planning mandate.

6. Integrated Offshore Resources Planning

In Chapter III, it was argued that responsibility for offshore resources development and control was fragmented. However, fragmentation per se may not be the problem, but rather the lack of horizontal integration between the departments. This fragmentation may suggest that there is duplication, overlap, waste and inefficiency in the Public Service with respect to offshore resources development and control. As duplication tends to generate negative connotations, the Public Service is usually criticized as being wasteful. Rarely does the public see the fragmentation in terms of interdependency. However, Landau has suggested that for every system to function efficiently, duplication cannot be avoided. A commercial airliner, a computer and a space vehicle are very redundant systems, but it is this redundancy which ensures their reliability and adaptability.²⁵ A distinction must be made therefore between inefficient redundancy and a redundancy that is not only constructive but

also reinforces the roles of other units (departments/agencies). Redundancy that can work to increase both the reliability and adaptability of offshore resources planning process.

Because of the unique nature of the marine ecosystem, an adaptable planning process has to be employed. A process that is based upon the concepts of redundancy, overlap and duplication may provide the needed reliability and flexibility since they will serve as safety gauges that will help to warn or identify in advance any adverse impact of policies or programmes. Figure VII.3 represents such a planning process.

A planning process may be defined as:

"A series of connected and identifiable relationship (cyclic) that involve goal formulation and identification of objectives, examination of possible courses of action and evaluation of these courses, implementation and a periodic review of the plan adopted."

There are several steps or phases in a planning process depending on the level of detail.²⁶ However, the planning process:

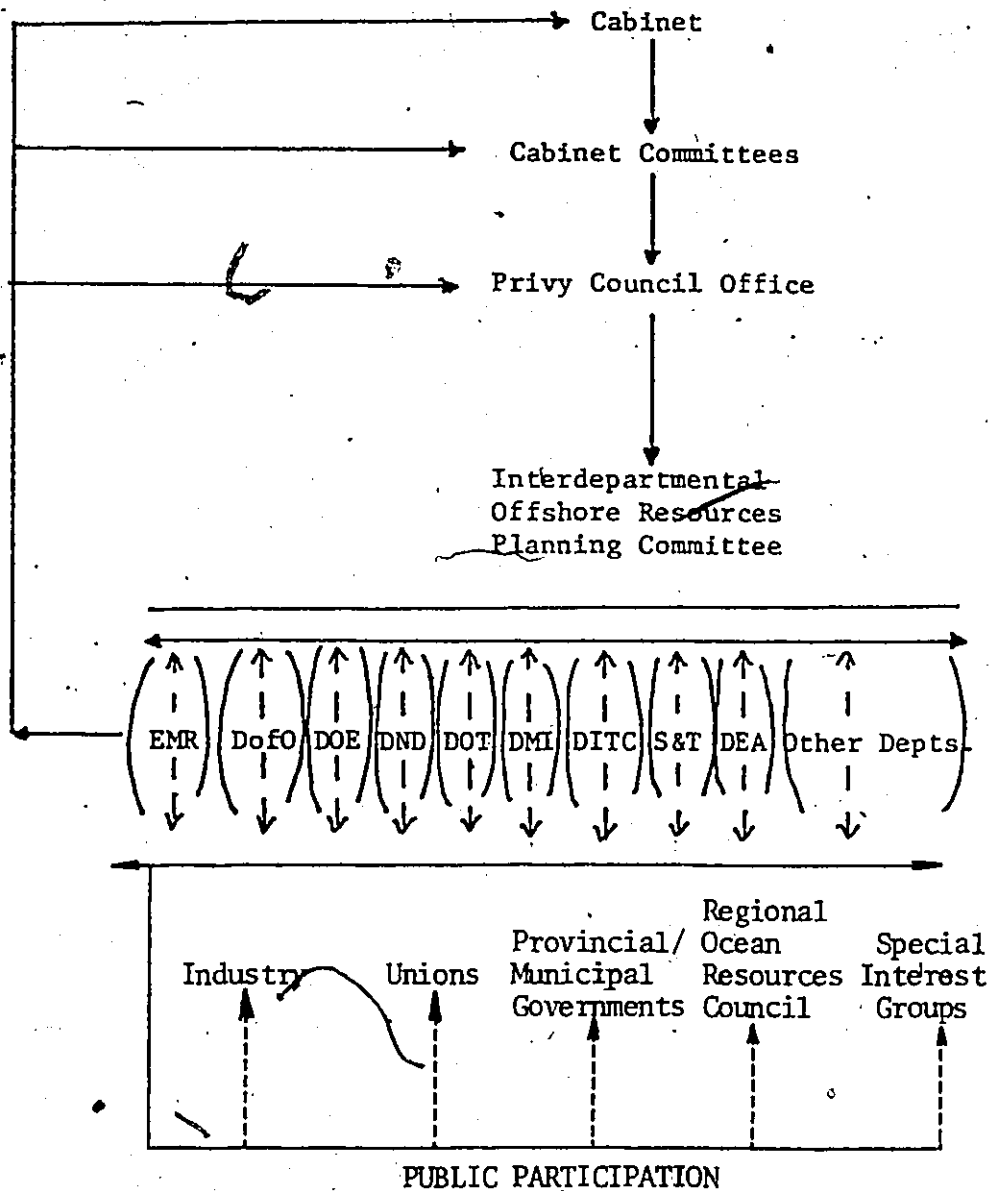
"need not be a description of how planning is done; preferably, it should be an indication, a conceptual framework for rational action through which substantive decision may be reached."²⁷

Some writers have also suggested that any decision-making process must not only reveal the "inter-connections" but must also have at least three important facets: "the departmental process" (intradepartmental integration), "the Committee process" (inter-departmental integration) and "the Council process" (policy

determination).²⁸ The simplified Integrated Planning Process for offshore resources (Figure VII.3) that has been suggested thus provides a basic framework for identifying the stages of action, the likely actors and their inter-relatedness.

It has been suggested in the literature that it is possible to take a set of unreliable units and be able to build an "organization" that is more reliable and productive than any of its parts.²⁹ It has also been suggested that the existence of many government institutions and agencies is not necessarily chaotic,³⁰ nor will the multiplicity of roles and fragmentation of jurisdiction necessarily constitute an obstacle to an ineffective offshore resources planning. If this argument is accepted then, it is suggested that the Inter-departmental Offshore Resources Planning Committee (IORPC) will be a more efficient and more effective planning body even though some of its component units may not be. The underlying principle of this process is that any effective and orderly offshore resources planning must depend on the integration and utilisation of the services, programmes and expertise of the various agencies.

SIMPLIFIED INTEGRATED PLANNING PROCESS FOR OFFSHORE RESOURCES



In the integrated planning process, emphasis has been placed on the Offshore Resource Planning Committee because it is at this phase of the process where ideas will be subjected to rigid analysis. By its very nature, the 200-mile offshore zone demands a multidisciplinary and dynamic approach to its development and control. The functional differentiation and specialization within the planning committee will enable it to deal with the complex and ever changing problems of the offshore zone because of the Committee's access to a diversified pool of knowledge and expertise. Very often, members of an interdepartmental (interdisciplinary) committee are brought together because of their divergent interest (or view points). With the Offshore Resources Planning Committee, the composition of the Committee is on the basis of a common interest (responsibility for or interest in the development of the offshore).

This meta-disciplinary approach to planning enables the introduction of innovative ideas and new techniques into the planning process.³¹ Furthermore, the diversity and the commonality within the Committee will ensure professional accountability. These are significant departures from the traditional interdepartmental committees. Another significant differentiation from the traditional committee system is the permanency of the resources planning committee; after all, planning is an ongoing process. Policies and programmes have to be monitored, reevaluated and modified to meet changing situations.

The size of the Planning Committee may make some departments more active in the planning process than others. Besides large groups tend to become error prone and cumbersome in adapting to rapidly changing conditions.³² While this may be generally true, it is believed that changing priorities within line departments coupled with the dynamic nature of offshore resources development will tend to mitigate these tendencies. The rate of exploitation of offshore resources will, in general, be subjected to the supply and demand forces of the world market and national conservation measures. World trade, it must be pointed out, is characterized by periodic boom and bust. The responsibility for seeing to it that policies and programmes initiated at the Planning Committee are carried out will be that of the originating department. All departments will therefore carry out their equal share of the resources planning committee's work. The process is also flexible enough that sub-committees can be formed to carry out detailed work. This will provide opportunities for other staff members of a line department not directly involved with policy planning to participate in the work of the committee.

The integrated planning process facilitates both horizontal and vertical integration; or inter and intra departmental integration. Inherent in the planning process therefore, is a mechanism for checks and balances as well as a constant feedback or relay process. The feedback process will operate

during the reconciliation of divergent views and programmes. Policy recommendations are forwarded to a Cabinet Committee through the Privy Council. From the Cabinet Committee it is then sent to the full Cabinet for approval. Since the "bolts" and "nuts" would have been already tightened at the planning committee level, what is necessary is a review to ensure that the policy recommendation is consistent with overall government objectives. Thus the integrated planning process satisfies Rowan's criteria for effective policy making; namely, vertical linkage with a control agency (Privy Council) and horizontal linkage with line departments. The integrated planning process may also be referred to as a picket-fence policy making.³³ Thus by utilizing existing resources within the Public Service and without creating another huge bureaucracy, the integrated planning process will provide an effective and dynamic planning process for the development of offshore resources.

7. Public Participation in Offshore Resources Planning

What may be a major criticism of the integrated planning process is the lack of outside professional input. The Offshore Resources Committee by its composition, has within it all the expertise it needs to function. It may therefore appear unnecessary for the planning committee to contract out projects. However, there are occasions in the planning process when an independent opinion is necessary in order to provide a different

perspective. Another concern is the possibility of a "bureaucratic cover up" by the members of the committee or "back-scratching". If this happens, then it is likely that objectivity within the committee will be compromised. While this argument is valid, it is suggested that public participation has been built into the process and if the public act as a watchdog, such a danger can be diminished.

The argument can be made that a single department can provide a better system of public participation because the public will be dealing with only one agency. Thus there will be a less tendency for confusion. However, an interdepartmental body has the advantage of providing greater access points and exposure. Besides, the integrated offshore resources planning process does not eliminate existing public-departmental communication channels. Those who normally deal with line departments can continue to do so and the representatives from these departments will then relay the public concern to the Resources Planning Committee. It should also be pointed out that in the case of offshore development, the "general public" is in fact made up of very articulate and well organized interest groups such as environmentalists, multi-national oil and gas companies, fishermen and unions. What may hinder an effective public participation is the lack of regional offices for some departments like Energy, Mines and Resources, External Affairs, and Science and Technology (see Appendix D). One of

the important functions that the proposed Regional Ocean Resources Councils³⁴ can perform will be to represent regional concerns to the Resources Planning Committee.

"Public Participation" is a concept not very well understood.³⁵ The term "public" is even hard to define.³⁶ By public, do we mean "everyone in society as individuals" or the "vociferous members of pressure groups"? A survey of the literature shows a lack of consensus about the concept; even though all the writers agree on the need for public participation in the planning process. While writers like Arnstein have argued that there are gradations of citizen participation, she equates citizen participation with citizen power to induce reform;³⁷ others have made a distinction between "public participation" and public involvement".³⁸ The confusion surrounding the concept of public participation may partly be explained by the fact that in practice, public participation takes place under different circumstances. Besides there are various methods and techniques that can be used to involve the public in the planning process. However, no one method is ideal under all circumstances, thus it may be necessary to modify some of the methods to specific needs and circumstances.³⁹

Public participation may be defined as:

"The involvement of citizens and citizen groups to affect decision-making at all stages of the planning process, towards the fulfillment of agreed-upon goals."⁴⁰

Thus, for meaningful public participation, both the individual citizen and citizen groups must be involved in the planning process. However, the position taken in this thesis is that at this point in time, citizen groups will be involved to a far greater degree in the offshore resources planning process, than individual citizens, because citizen groups will be able to command the necessary resources in studying the complex issues and in articulating their views to the decision-makers. Moreover, citizen groups tend to concern themselves with broader national issues in general, while the individual citizen tends to react to or get involved in the planning process when programmes affect him "directly".

It should be clear that it is a most difficult task to provide effective public participation considering the multiplicity of government agencies involved in offshore resources planning. The process presented in figure VII.3 still provides the individual citizen with the "traditional" channels for making his views known to the federal decision-makers. By opening up more channels of communication through the individual departments, the suggested process further facilitates greater public participation or involvement in the determination of policies at the cabinet and the legislative stages or the formulation of policies at the interdepartmental Offshore Resources Planning Committee and the Privy Council stages.

8. Conclusion

It was argued earlier on, that parliament determines national offshores policy. Parliament can, through its Standing Committees, provide an integrated perspective⁴¹ on offshore resources planning. Under the present system, there are about twelve Parliamentary Standing Committees that deal with some aspect of offshore resources development and control (see Appendix D). The integrated planning process may be completed with the establishment of a parliamentary offshore resources planning standing committee. Such a parliamentary standing committee should have the chairmen of the twelve Standing Committees, as members.

Policy-making is synergistic,⁴² the total output will therefore be greater than the sum of the inputs. Despite this advantage, it must be pointed out that any process of interaction produces conflicts (which will also be magnified), and the integrated planning process will not be an exception. The conflict may be compounded by the fact that each department will try to protect its original "policy space". This may tend to militate against the integrated planning process. However, groups (interdepartmental committees) tend to be more risk-oriented than individuals (line departments).⁴³ If this argument is accepted, then the Offshore Resources Planning Committee will (collectively) be able to deal with whatever challenges that they will face.

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See also:
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37. Arnstein, S.W. (1969) "A Ladder of Citizen Participation" JAIP, 35, pp. 216-224. Arnstein sees "Informing", "Consultation" and "Placation" as tokenism. To her "Partnership", "Delegated Power" and "Citizen control" are the only true forms of citizen participation.

38. Wright, J.R. et al., (1976)-p. 200. "Public Participation" is concerned with the process that involves citizens in decision-making with respect to factors affecting their future environment. "Public Environment" on the other hand is defined as "the means of broadening the political power base".
39. Ibid., p. 201.
40. Wright, J.R. (1972) The Democratization of the Regional Planning Process (Waterloo, University of Waterloo, Unpublished Ph.D. thesis, p. 196) quoted in Wright J.R., Braithwaite, W.M. and Forster, R.R. (1976) "Towards a 'Community Specific Standard' for Urban Recreational Open Space" Plan Canada, 16, pp. 198-207.
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CHAPTER VIII

C O N C L U S I O N

1. Introduction

Three objectives were outlined in the introduction to this thesis. First, to review the international and national legislation which will define the scope of any offshore planning process; secondly, to examine the institutional framework for offshore resources development and control; and thirdly, to suggest an alternative planning process for East and West Coasts continental shelf resources. In carrying out these objectives, the major activities/uses of the offshore were identified and the potential conflict of development between the uses was examined. Canada's participation in the ongoing United Nations Law of the Sea Conference was also discussed. The position was taken that pollution is a consequence of the uses. International and domestic arrangements for the protection and preservation of the marine environment were also examined.

2. Possible Areas of Further Research

The focus of this study was on offshore planning. The other side of the coin is onshore (coastal) planning. There is a natural connection between the two. Onshore planning should therefore be seen as the first phase of onshore-offshore planning process. Apart from the natural connection, there are artificial or man-made connections (linkages) between the offshore and the onshore. Some of these linkages are oil and gas pipelines,

refineries, tanker terminals and tanker storage, farms, fishing harbour, supply bases, administrative headquarters and manufacturing activities and housing, purposely located on the coastal or land-water interface region to support offshore resources development.

Very often, coastal communities do not want the offshore-onshore linkages to be located in their area because of adverse environmental effects. Federal land holdings in coastal regions can be used as sites to locate these facilities. The planning of the federal land holdings to control offshore resources development is seen as a potential area of further research. What is being suggested here is the planning of offshore-onshore resources development parks. There is also the question of onshore multiplier effects of offshore resources development. The multiplier impacts may be caused by increased purchases from local industry and business or by the relocation of ocean industries in coastal communities. Impact process at the local community levels is however not very well understood. Besides there has been very little research into the type of onshore infrastructure planning that must be undertaken by local communities (partly because of the lack of data at the community level) in anticipation of offshore resources development.

Another potential research area will be a comparative study between Canadian and United Kingdom (North Sea), Canadian and Australian, Canadian and Mexican or Venezuelan offshore

resource planning. Such a comparative study will help identify similarities and differences between the different approaches and this will contribute to the development of an overall offshore planning framework.

3. The Question of Applicability

The Canadian Continental Shelf is unique in many ways. Severe climate, ice-infested waters, productive fishery grounds, and a shelf of variable width. Besides, the resources of the shelf are subjected to several jurisdictions, national bilateral and multilateral agreements. Would the same planning process be recommended for states like Australia, United States or Nigeria (with federal political systems) or to the United Kingdom (central government system)? The answer is no. There is no formula approach to planning. A wholesale application of the process is therefore strongly discouraged. Every offshore area should be carefully studied and the appropriate process recommended. The greatest utility of this study lies in the research expertise gained. It is the expertise which is transferable. Faced with a similar situation, the experience gained in carrying out this study can be used.

However, the basic principles that have been discussed may be applicable to other situations. The classification of the offshore activities/uses into fixed and mobile can be used in determining the appropriate planning instruments that should

be used to achieve a particular set of objectives. The conflict of uses matrix (with further refinement) can be used as an initial screening method in determining potential uses that are likely to conflict. It is essential that every group or actor in the offshore zone be aware of what the other actor is doing. It is recommended that the offshore actors be brought together to discuss their common interests throughout the development process. The lines of communication should always be opened. Several principles of policy planning were discussed. Irrespective of the political system, these principles should have general application.

4. Conclusion

It has been stated that planning is an activity which contributes to the establishment of objectives for the future and the attainment of these policies over time. It has been stated that there is an important distinction between policy planning and policy determination. It has also been stated that by its very nature, offshore resources planning demands a multidisciplinary and interdepartmental approach. And finally, it has been stated that an understanding of the process at work, a familiarity with the legislation, a knowledge about the offshore actors and their mode of operation are important prerequisite to any discussion of offshore resources planning process. It is hoped that the methodological approach used in this thesis has made it possible to identify and discuss the critical areas of offshore resources planning and that the principles discussed and the planning process suggested will contribute to the development of an offshore planning framework.

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A P P E N D I X "A"

International Framework for Offshore Resources Planning

APPENDIX "A"

INTERNATIONAL FRAMEWORK FOR OFFSHORE RESOURCES PLANNING

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
I. 1958 Geneva Convention:			
Convention on the Territorial Sea and the Contiguous Zone	I Territorial Sea	1	The territorial sea is a belt of sea adjacent to the coast of a state over which the state can extend its sovereignty
		2	The sovereignty of a coastal state extends to the air space over the territorial sea and to the sea-bed and subsoil.
		3	The low water line along the coast marked on official large-scale charts is the normal baseline for measuring the breadth of the territorial sea.
		4	Where the coast line is deeply indented or where there is a fringe of islands along the coasts the method of straight baseline joining appropriate points may be used in drawing the baseline from which the breadth of the territorial sea is measured. Where there is a long period of usage, economic interests peculiar to the region may be considered in determining the baselines.
		12	Except by reason of historic title or other special circumstances, the extend of the territorial sea of two states with opposite or adjacent coasts is the equidistant median line from the nearest points on the baseline.

Convention

Part

Article

Summary

13

A straight line across the mouth of the river between points on the low-tide line of its banks shall be the baseline where a river flows directly into the sea.

14

Ships of both coastal and non-coastal states have the right of innocent passage through the territorial sea. Passage is defined in this article as "navigation through...for the purpose either of traversing that sea without entering internal waters, or of proceeding to internal waters, or of making for the high seas from internal waters." The passage is no longer innocent if foreign fishing vessels do not observe laws of the coastal states preventing fishing in the territorial sea. Submarines may navigate on the surface of the territorial sea provided they show their flag.

15

It is the responsibility of the coastal state to notify of any dangers to navigation within the territorial sea. A coastal state must not hamper innocent passage through the territorial sea.

17

In exercising the right of innocent passage foreign ships shall comply with the laws and regulations enacted by a coastal state as well as the rules of international law especially those laws and regulations relating to transport and navigation.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		18	While charges may be levied for specific services rendered by a coastal state, no charges may be levied upon foreign ships by reason of their passage through the territorial sea.
	II Contiguous Zone	24	A coastal state shall exercise, in the zone of the high seas contiguous to its territorial sea, the right to prevent infringement of its customs, fiscal, immigration or sanitary regulations and to punish for such infringements. The contiguous zone may not extend beyond twelve miles from the baseline from which the breadth of the territorial sea is measured.
Convention on the High Seas		1	Defines the "high seas" as all parts of the sea that are not included in the territorial sea or in the internal waters of a state.
		2	The high seas are open to all nations and both coastal and non-coastal states can exercise the freedom of navigation, fishing, laying of submarine cables and pipelines and flying over.
		10	Every state shall take measures for ships under its flag to ensure safety at sea with regard to the use of signals, maintenance of communications and prevention of collisions.
		23	This article authorizes the hot pursuit of a foreign ship when competent authorities of the coastal state have good reason to believe that a ship has violated the laws

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		23 (Cont'd)	and regulations of that state. The right of hot pursuit ceases as soon as the ship pursued enters the territorial sea of its own country or of a third state.
		24	Every state shall draw up regulations to prevent pollution of the seas by the discharge of oil from ships or pipelines or resulting from the exploitation and exploration of the sea-bed and subsoil.
		25	Taking into consideration standards and regulations formulated by competent international organizations, every coastal state shall take measures to prevent pollution of the seas from the dumping of radio active wastes. States shall also cooperate with competent international organizations in taking measures for the prevention of pollution of the seas, air space above the sea from radio active materials or other harmful agents.
		26	Subject to its right to take reasonable measures for the exploration of the continental shelf and its natural resources, all states are entitled to lay submarine cables and pipelines on the bed of the high seas without any impediment from the coastal state.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
Convention on Fishing and conservation of the living resources of the high seas		1	Subject to treaty obligations and to the interests and rights of coastal states, every state has the right for its nationals to engage in fishing on the high seas. However, states have a duty to adopt, or to cooperate with other states in adopting measures necessary for the conservation of the living resources of the high seas for their nationals.
		2	This article defines conservation of the living resources of the high seas as "the aggregate of the measures rendering possible the optimum sustainable yield from those resources so as to secure a maximum supply of food and other marine products." Conservation programmes should be formulated with a view to securing in the <u>first place</u> a supply of food for human consumption.
		4	States engaged in fishing the same stock or stocks of fish or other living marine resources in any area of the high seas shall negotiate at the request of any of the states, with a view to prescribing by agreement for the nationals the necessary measures for the conservation of the living resources affected. If no agreement is reached within twelve months any of the parties may submit the dispute to a special commission for settlement.
		6	A coastal state has an inherent interest in the maintenance of the productivity of the living resources in any area of the high sea adjacent to its territorial sea and is therefore entitled to take part on an equal footing in any system of

Convention

Part

Article

Summary

6
(cont'd)

research and regulation for the purpose of conservation of the living resources of the high seas in that area even though its nationals may not carry on fishing there.

7

A state may adopt unilateral measures of conservation appropriate to any stock of fish or other marine resources in any area of the high seas adjacent to its territorial sea if negotiation to that effect with other states do not lead to an agreement within six months. The unilateral measures adopted shall apply to other states only if, there is a need for urgent application of conservation measures in the light of the existing knowledge of the fishery, the measures adopted are based on appropriate scientific findings, the measures do not discriminate "in form" or "in fact" against foreign fishermen. The unilateral measures taken shall remain in place pending settlement by the special commission.

9

A special commission of five members may be appointed to settle disputes submitted by any of the parties in a fishing dispute. Members of the commission shall be named by agreement between the states in dispute or shall be appointed by the Secretary-General of the United Nations, in consultation with the states in dispute, the president of the International Court of Justice and the Director-General of the Food and Agriculture Organization of the United Nations, from well qualified persons specializing in legal, administrative or

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		9 (cont'd)	scientific questions relating to fisheries depending upon the nature of the dispute to be settled. A state party to the dispute has a right to name one of its nationals to the special commission with the right to participate on the same footing as other members of the commission but without the right to vote or take part in writing the commission's decisions.
Convention on the Continental Shelf		1	Defines the Continental Shelf in terms of the sea-bed and sub-soil of the submarine areas adjacent to but outside the area of the territorial sea to a depth of 200 metres or beyond, or to where the depth of the superjacent water admits exploitation of the natural resources.
		2	The rights of exploration and exploitation of natural resources that a coastal state can exercise over the continental shelf is exclusive and does not depend on occupation (effective or notional) or express proclamation. What constitute natural resources is defined as the mineral, other non-living resources of the sea-bed and subsoil and living organisms.
		3	The rights of the coastal state over the continental shelf do not extend to the air space over the waters or to the superjacent waters of the high seas.

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Summary

4

In the exploration of the continental shelf and the exploitation of its natural resources, a coastal state may not (in exercising its rights) impede the laying or maintenance of submarine cables or pipelines.

5

The exploration of the continental shelf and the exploitation of its natural resources must not interfere with navigation, fishing, conservation of the living resources of the sea or oceanographic and other scientific research. Safety zone extending to a distance of 500 metres may be established around installations and devices necessary for the exploration and exploitation of natural resources of the continental shelf. However, these safety zones may not interfere with the use of recognized sea lanes essential to international navigation.

6

This article deals with the question of determining the boundaries of the continental shelf adjacent to the territories of two or more states whose coasts are opposite each other. The principle of "equidistant-median line" from the baselines is offered as a means of determining boundary lines. The delimiting boundary lines should be defined with reference to fixed permanent identifiable points on the land.

7

The coastal state has the right to exploit the subsoil by means of tunneling irrespective of the depth of the water above the subsoil.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
II. United Nations Third Conference on The Law of the Sea; Informal composite Negotiating Text. (A/Conf. 62/WP. 10 15 July 1977).	II. Territorial Sea and contiguous zone.	11	In delimiting the territorial sea, the outer most permanent harbour works which form an integral part of the harbour system are regarded as forming part of the coast, but offshore installations and artificial islands are not considered as permanent harbour works.
		19	The passage of a foreign ship shall be considered to be prejudicial to the peace, good order or security of the coastal state if the foreign ship engages in any of the following activities in the territorial sea: any threat or use of force against the sovereignty, territorial integrity and political independence of the coastal state; any exercise or practice of weapons, any act aimed at collecting information to the prejudice of, or any act of propaganda aimed at the defence or security of the coastal state, launching, landing or taking on board any aircraft or military device, embarking or disembarking of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary regulations; any act of wilful or serious pollution, any fishing, carrying out of research and survey, or any act aimed at interfering with any systems of communication, facilities or installations of the coastal state.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		22	Taking into consideration the recommendations of competent international organizations; channels customarily used for international navigation, special characteristics of particular ships and channels and the density of traffic and having regard to the safety of navigation; a coastal state may require foreign ships to use sea lanes and traffic separation schemes as it may designate or prescribe for the regulation of the passage of ships.
	V. Exclusive Economic Zone	55	The exclusive economic zone is an area beyond and adjacent to the territorial sea.
		56	Sovereignty rights for the exploration and exploitation, conservation and management of the natural resources (living or non-living) of the sea-bed, subsoil and the superjacent waters; production of energy from the water currents and winds; the establishment and use of artificial islands, installations and structures; marine scientific research; and the preservation of the marine environment are some of the rights, jurisdiction and duties of a coastal state in the exclusive economic zone.
		57	The exclusive economic zone shall not extend beyond 200 nautical miles from the baseline from which the breadth of the territorial sea is measured.
		58	Both coastal and land-locked states shall enjoy the freedoms of navigation, overflight and laying

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(cont'd)

of submarine cables and pipelines in the exclusive economic zone. However, in enjoying these freedoms, the laws and the regulations of a coastal state established in accordance with the provisions of the convention shall be respected.

59

Conflicts arising between the interests of the coastal state and other states within the exclusive economic zone is to be resolved on the basis of equity and in the interest of the international community.

60

Exclusive right to construct and to authorize and regulate the construction, operation and use of artificial islands, installation and structures for the exploration, exploitation, conservation and management of the natural resources and to establish safety zones is conferred on the coastal state.

61

In order to ensure that the living resources of the exclusive economic zone are not endangered by over-exploitation, the coastal state has the authority to determine the allowable catch of the living resources taking into consideration the best scientific information available to it.

62

The coastal state shall promote the objective of optimum utilization of the living resources in the exclusive economic zone but where a coastal state does not have the capacity to harvest the entire allowable catch, it shall give other

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62
(Cont'd)

states access to the surplus of the allowable catch through agreements or other arrangements. Foreign nationals fishing in the exclusive economic zone shall comply with the conservation measures and other regulations of the coastal state which may include: licensing of fishermen, fishing vessels and equipment; fixing quotas of catch, determining the species which may be caught, regulating seasons and areas of fishing, the types, sizes and amount of gear and the numbers, sizes and types of fishing vessels that may be used; fixing the age and sizes of fish and other species that may be caught; placing of observers or trainees on board fishing vessels; landing of all or part of the catch by fishing vessels in the ports of the coastal state; terms and conditions relating to joint ventures and other co-operative arrangements; enforcement procedures and requirements for training personnel and transfer of fisheries technology.

63

Where the same or associated stocks of species occur within the exclusive economic zone of two or more states, or within the exclusive economic zone and in an area beyond and adjacent to the zone, these states shall agree upon measures necessary to co-ordinate and ensure the conservation and development of such stocks either directly or through an appropriate subregional or regional organizations.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		64	The coastal and other states whose nationals fish in the region for highly migratory species shall cooperate directly or through subregional or regional organizations to ensure the conservation and optimum utilization of such species in the region, both within and beyond the exclusive economic zone.
		66	The state of origin of anadromous stocks has a primary interest in and responsibility for such stocks and shall ensure their conservation by establishing appropriate regulatory measures for fishing in all waters landward of the outer limits of its exclusive economic zone but where the anadromous stocks migrate into or through the waters landward of the outer limits of the exclusive economic zone of a state other than the state of origin, such state shall co-operate with the state of origin with regard to the conservation and management of such stocks. Enforcement of regulations for anadromous stocks beyond the exclusive economic zone shall be by agreement between the state of origin and other states concerned.
		67	A coastal state in whose water catadromous species spend the greater part of their life cycle shall have responsibility for the management for those species and shall also ensure the ingress and egress of migrating fish; but where the harvesting of catadromous species occurs in the exclusive economic zone or where the catadromous species migrate through the waters of another state or

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		67 (cont'd)	states then, the conservation and management of these species shall be regulated by agreement between the states.
		73	In the exercise of its sovereign rights to explore, exploit, conserve and manage the living resources in the exclusive economic zone, a coastal state may take such measures as boarding, inspection, arrest and judicial proceedings as may be necessary to ensure compliance with its laws and regulations. However, a coastal states' penalties for violations of fisheries regulations in the exclusive economic zone may not include imprisonment or any other form of corporal punishment.
		74	The principle of "median or equidistance line" shall be used to delimit the exclusive economic zone between adjacent or opposite states.
VI. Continental Shelf		76	The continental shelf of a coastal state is defined to include not only the sea-bed and the subsoil of the submarine areas to the edge of the continental margin; but includes also the new concept of the 200 nautical miles from the baseline where the outer edge of the continental margin does not extend to that distance.
		81	The power to authorize and regulate drilling on the continental shelf for all purposes is the exclusive right of the coastal state.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		82	The coastal state shall make payments or contribution in kind to the authority, which shall distribute the payments on the basis of equitable sharing criteria and the special needs of developing countries, for the exploitation of the non-living resources of the continental shelf beyond the 200 nautical miles. These payments or contributions are to be made after the first five years of production at the site. The rate of payment shall be one percent of the value or volume for the sixth year, increasing by one per cent annually until the tenth year after which the rate shall remain at five per cent.
VII. High Seas:		86	The provisions of the high seas
Section 1 -			apply to all areas of the sea that
General			are not included in the exclusive economic zone, the territorial sea, the internal waters of the state, or the archipelagic waters.
		88	The high seas shall be reserved for peaceful purposes.
		108	All states shall co-operate in the suppression of illicit traffic in narcotic drugs and psychotropic substances by ships on the high seas.
		109	All states shall co-operate in the suppression of unauthorized broadcasting from the high seas and any person engaged in unauthorized broadcasting from the high seas may be prosecuted before the court of the flag state

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		109 (cont'd)	of the vessel, the place of registry of the installation, the state of which the person is a national, any place where the transmission can be received or any state where authorized radio communication is suffering interference.
	Section 2 - Management and Conservation of the living resources of the high seas.	118	States shall co-operate with each other in the management and conservation of living resources of the high seas. Measures necessary for the conservation of the living resources shall be adopted by states whose nationals exploit identical resources or different resources in the same area of the high seas and shall co-operate to establish subregional or regional fisheries organizations.
		119	In determining the allowable catch and establishing other conservation measures, states shall take into consideration available scientific information, fishing statistics and other data relevant to the conservation of fish stocks.
	XI. The Area Section I - General	133	Activities of the Area shall mean all activities of exploration for and exploitation of the resources of the Area. Resources in the Area are defined as minerals; liquid or gaseous substances such as petroleum, gas, condensate, helium, nitrogen, carbon dioxide, water, steam, hot water, sulphur, salts extracted in liquid form in solution; concretions of phosphorites and other minerals on the surface of the sea-bed; solid minerals of the ocean floor and ore-bearing salt and brine.
		136	The Area and its resources are the common heritage of mankind.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
Section 2 - Principles governing the Area		137	All rights in the resources of the Area are vested in mankind as a whole and no state shall claim or exercise sovereignty over any part of the Area or its resources nor shall any state or person (natural or judicial) appropriate any part.
		139	States parties shall have the responsibility to ensure that activities in the Area, whether undertaken by states parties, state enterprises or persons are carried out in conformity with the provisions of the convention.
		140	Taking into consideration the interests and needs of the developing countries and irrespective of the geographical locations of states, coastal or landlocked, the activities in the Area shall be carried out for the benefit of mankind as a whole.
		141	The Area shall be used exclusively for peaceful purposes by all states without discrimination or prejudice.
		142	Where resource deposits in the Area lie across limits of national jurisdiction, such resources shall be exploited in consultation with the coastal state with a view to avoiding infringement of the rights of such coastal states.
Section 3 - Conduct of Activities in the Area		143	Marine scientific research in the Area shall be carried out exclusively for peaceful purposes and for the benefit of mankind as a whole through international

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		143 (cont'd)	cooperation by the states parties and shall also ensure the effective dissemination of the results of research and analysis.
		144	The Authority and states parties shall cooperate in promoting the transfer of technology and scientific knowledge relating to activities in the Area through the transfer of technology to the Enterprise and developing countries and through the opening of opportunities to personnel from the Enterprise and from developing countries for training in marine science and technology and their full participation in the activities of the Area.
		145	Necessary measures shall be taken in order to ensure effective protection and conservation of the natural resources of the Area; protection of damage to the flora and fauna; and prevention of pollution, contamination and other hazards to the marine environment, and of interference of the ecological balance of the marine environment. Particular attention shall also be paid to consequences of such activities as drilling, dredging, excavation, disposal of waste, construction, operation and maintenance of installations and pipelines.
		146	Necessary measures shall be taken in order to ensure effective protection of human life in the Area.

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Summary

147

Activities in the Area shall be carried out with reasonable regard for other activities in the marine environment.

Section 4 -
Development of
Resources in
the Area

150

Activities in the Area shall be carried out in such a manner as to promote healthy development of the world economy and balanced growth of international trade; to promote international cooperation for the over all development of all countries; to ensure orderly and safe development and rational management of the resources of the Area; and to prevent the monopolization of the exploration and exploitation of the resources of the Area.

151

Activities in the Area shall be carried out by the Authority on behalf of mankind and in association with states parties, state entities or persons (natural or judicial) which possess the nationality of states parties or are effectively controlled by them or their nationals when sponsored by such states. The Authority shall have the right to take measures necessary to ensure the compliance and performance of its control and regulatory functions, and to conduct marine scientific research concerning the Area and its resources.

152

A general and systematic review of the manner in which the international regime of the Area has operated is to be undertaken every five years by the Assembly.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		153	A conference shall be convened by the Assembly to review the provisions governing the system of exploration for and exploitation of the resources of the Area and to amend these provisions if necessary, twenty years from the entry into force of the convention.
	Section 5 - The Authority	154	All states parties are members of the International Sea-Bed Authority.
		155	States parties are to organize, control and administer the activities and resources of the Area through the Authority.
		156	There are four main organs of the Authority: an Assembly, a council, a secretariat and the Enterprise. These principal organs shall exercise the powers and functions conferred on the Authority.
		157	The Assembly which shall, meet in regular yearly sessions, consist of all members of the Authority. Two-thirds of the majority of the members present and voting shall decide on all substantial questions.
		158	The Assembly being the supreme organ of the Authority shall have the power to establish general policies. Besides, the Assembly shall have powers and functions to elect members of the council, the Secretary-General; select the eleven members to serve on the Sea-Bed Disputes Chamber and to approve the budget of the Authority.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		159	The council shall consist of 36 members of the Authority elected by the Assembly.
		160	The council is the executive organ of the Authority with powers to establish the specific policies to be pursued by the Authority. The council shall also establish subsidiary organs, adopt rules of procedure, issue directives to the Enterprise and exercise control over its activities, supervise and co-ordinate activities, enter into agreement with the United Nations or other intergovernmental organizations on behalf of the Authority, and make recommendations to the Assembly.
		161	The established organized organs of the council shall be (a) an Economic Planning Commission, (b) a Technical Commission, and (c) a Rules and Regulations Commission. Each Commission shall function at the seat of the Authority.
		162	The Economic Planning Commission shall be composed of 18 experts with appropriate qualifications and experience relevant to mining and the management of mineral resources activities and international trade and finance. The Commission shall among other things make recommendations to the Council and review the trends of, and factors affecting supply, demand and prices of raw materials which may be obtained from the Area.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		163	Members of the Technical Commission shall be appointed from among experts with qualifications and experience in economics, the management of mineral resources, ocean and marine engineering and mining and mineral processing technology and practices, operation of related marine installation, equipment and devices, ocean and environmental sciences and maritime safety, accounting and actuarial techniques. The Commission shall make recommendations to the council regarding scientific research and transfer of technology; prepare assessments of the environmental implications of activities in the Area; and disapprove areas for exploitation where evidence indicates the risk of irreparable damage to a unique environment.
		164	Members of the Rules and Regulations Commission shall have appropriate qualifications in legal matters especially relating to ocean mining and other marine matters. The Commission shall prepare special studies and reports; formulate and submit to the council the rules, regulations and procedures and keep same under review or recommend amendments from time to time to council.
		165	The Secretariat shall comprise a Secretary-General (who shall also be the chief administrative officer of the Authority) and such staff as the Authority may require.

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Summary

168

The Secretary-General shall on matters within the competence of the Authority, make suitable arrangements for consultation and co-operation with non-governmental organizations recognized by the Economic and Social Council of the United Nations with the approval of the council.

169

The Enterprise shall be the organ of the Authority which shall directly carry out activities in the Area, in accordance with the general policies established by the Assembly, subject to the directives and control of the council.

Section 6 -
Settlement of
disputes

187

The Sea-Bed Disputes Chamber of the Law of the Sea Tribunal shall have jurisdiction with respect to disputes between states parties concerning the interpretation or application of this convention with respect to activities in the area; regarding the interpretation or application of a contract between a state party and a national of another state party; or between nationals of different state parties; or concerning the alleged violations by a state party relating to activities in the Area.

190

The Sea-Bed Disputes Chamber of the Law of the Sea Tribunal shall give advisory opinions when requested to do so by the Assembly, the council or any of its organs; and such requests shall be treated as a matter of urgency.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
XII.	Protection and Preservation of the marine environment:	193	States have the obligation to protect and preserve the marine environment.
	Section 1 - General	194	States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with the states obligation to protect and preserve the marine environment.
		195	States shall take all necessary measures to prevent, reduce, and control pollution of the marine environment with the most practical means at their disposal either individually or jointly.
		196	States shall act in such a way that they do not directly or indirectly transfer damage or hazards from one area to another or transform one type of pollution into another when they take measures to prevent, reduce or control pollution of the marine environment.
		197	States shall take necessary measures to prevent, reduce and control pollution of the marine environment resulting from the use of technologies to a particular part of the environment.
	Section 2 - Global and regional co-operation	198	States shall co-operate on a global or regional basis, directly or through competent international organizations in formulating and elaborating international rules, standards and procedures for the protection and preservation of

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		198 (cont'd)	the marine environment, taking into consideration regional characteristics.
		199	A state which becomes aware of cases in which the marine environment is in imminent danger of being damaged or has been damaged by pollution shall immediately notify other states it deems likely to be affected by such damages, as well as competent, global and regional, international organizations.
		200	States shall jointly promote and develop contingency plans for responding to pollution incidents in the marine environment.
		201	States shall co-operate directly or through competent international organizations, global or regional, to promote studies, undertake programmes of scientific research and to encourage the exchange of information and data acquired about pollution of the marine environment.
		202	On the basis of the information and data gathered, states shall co-operate, directly or through competent international organizations to establish appropriate scientific criteria for the formulation and elaboration of rules, standards and procedures for the prevention of pollution of the marine environment.

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Section 3 -
Technical
Assistance

203

States shall directly or through competent international or regional organizations, promote programmes of scientific educational, technical or other assistance to developing countries to protect and preserve their marine environment and to prevent, reduce and control the marine environment; to minimize the effects of major incidents which may cause serious pollution in the marine environment; and to provide assistance in preparing environmental assessments.

204

Developing states shall, for the purposes of the prevention of pollution of the marine environment or the minimization of its effects, be granted preference in the allocation of appropriate funds and technical assistance facilities of international organizations, and the utilization of their specialized services.

Section 4 -
Monitoring and
Environmental
Assessment

205

States shall, individually and collectively and as far as practicable, endeavour to observe, measure, evaluate and analyse, by recognized methods, the risks of effects of pollution of the marine environment.

206

States shall publish reports of the results obtained relating to risks or effects of pollution of the marine environment or make such reports available to other states and competent international organizations.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		207	When states expect planned activities to cause substantial pollution of, or major damage to the marine environment, they shall assess the potential effects of such activities and communicate them to other states and competent international organizations.
Section 5 - International rules and national legis- lation to prevent reduce and control pollution of the marine environment		208	States shall establish national laws and regulations to prevent, reduce, and control pollution of the marine environment from land-based sources including rivers, estuaries, pipelines, taking into consideration internationally agreed rules, standards and recommended practices and procedures.
		209	Coastal states shall establish national laws and regulations to prevent, reduce and control pollution of the marine environment as a result of sea-bed activities, or from artificial islands, installations and structures under their jurisdiction; and shall also endeavour to harmonize their national policies at the appropriate regional level.
		210	States shall establish national laws and regulations to prevent, reduce and control pollution of the marine environment from activities relating to the exploitation of the Area undertaken by vessels, installations, structures and other devices flying their flag or of their registry.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		211	States shall establish national laws and regulations to prevent, reduce and control pollution of the marine environment from dumping. Dumping, within the territorial sea and the exclusive economic zone or unto the continental shelf shall not be carried without the express prior approval of the coastal state, which has the right to permit, regulate and control such dumping after due consultation with other states which by reason of their geographical situation may be adversely affected.
		212	States shall, through competent international organizations or general diplomatic conferences, establish international rules and standards for the prevention, reduction and control of pollution of the marine environment from vessels. Coastal states may also, in the exercise of their sovereignty within their territorial sea or jurisdiction over their economic zones, establish laws and regulations for the prevention, reduction and control of pollution from vessels in conformity to generally accepted international rules and standards.
		213	States shall, within air space under their sovereignty or with regard to vessels or aircraft flying their flag or of their registry, establish national laws and regulations to prevent, reduce and control pollution of the marine environment from or through the atmosphere taking into account internationally agreed rules, standards and recommended practices and procedures.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
	Section 6 - Enforcement	214	States shall enforce their established laws and regulations and also adopt the necessary legislative, administrative and other measures to implement applicable international rules and standards established through competent international organizations or diplomatic conferences for the protection and preservation of the marine environment from land-based sources of marine pollution.
		215	States shall enforce their established laws and regulation and also adopt the necessary legislative, administrative and other measures to implement applicable international rules and standards established through competent international organizations or diplomatic conferences for the protection and preservation of the marine environment from pollution arising from sea-bed activities and artificial islands, installations and structures under their jurisdiction.
		216	Enforcement of international rules, standards and recommended practices and procedures established to prevent, reduce and control pollution of the marine environment from activities concerning exploration and exploitation of the Area, shall be governed by the provision of the present convention.
		217	Laws and regulations adopted in accordance with the present convention and applicable international rules and standards established through competent

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		217 (cont'd)	international organizations or diplomatic conference for the prevention, reduction and control of pollution of the environment from dumping shall be enforced by the coastal state with regard to dumping within its territorial sea or its exclusive economic zone or its continental shelf; by the flag state with regard to vessels and aircraft registered in its territory or flying its flag; and by any state with regard to acts of loading of wastes or other matter occurring within its territory or at its off-shore terminals.
		218	Flag states shall provide for the effective enforcement of such rules, standards, laws and regulations established for the prevention, reduction and control of pollution of the marine environment by vessels flying their flag or vessels of their registry; establish appropriate measures to ensure that such vessels are prohibited from sailing until they can proceed to sea in compliance of the regulations; ensure that their vessels are periodically inspected in order to verify that vessels have the required certificates on board; and investigate any violation alleged to have been committed by their vessels.
		219	When a vessel is voluntarily within a port or at an off-shore terminal of a state, that state may undertake investigations and cause proceedings to be taken if the evidence of the case warranted,

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(cont'd)

in respect of any discharge from that vessel in violation of applicable international rules and standards, outside the internal waters, territorial sea or exclusive economic zone of that state. Any proceedings initiated by the port state on the basis of an investigation may be suspended at the request of a coastal state when the violation has occurred within the internal waters, territorial sea or exclusive economic zone of that state.

220

States shall take administrative measures to prevent a vessel from sailing, except to the nearest appropriate repair yard, if such a vessel is within their ports or at their offshore terminals, is found to be in violation of applicable international rules and standards relating to sea worthiness.

221

Where there are clear grounds for believing that a vessel sailing through the exclusive economic zone or the territorial sea has violated applicable international rules and standards or national laws and regulations with respect to the prevention, reduction, and control of pollution from vessels, resulting in discharge causing major damage or threat of major damage to the coastline or related interests of the coastal state, or to any resources of its territorial sea or exclusive economic zone; the coastal state may, subject to the provisions of the present convention, cause proceedings to be taken in accordance with its laws.

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Summary

222

A state shall have the right to take measures beyond the limits of the territorial sea to protect its coastlines or related interests, including fishing, from grave and imminent danger from pollution or threat of pollution following a maritime casualty in accordance with international law.

223

States shall, within air space under their sovereignty or with regard to vessels or aircraft flying their flag or of their registry, enforce their laws and regulation established in accordance with the provisions of the present convention and shall adopt the necessary legislative, administrative and other measures to implement applicable international rules and standards to prevent, reduce and control pollution of the marine environment from or through the atmosphere, in conformity with relevant international rules and standards concerning the safety of air navigation.

Section 7 -
Safeguards

224

States shall take necessary measures to facilitate the hearing of witnesses and the admission of evidence submitted by authorities of another state, or by competent international organization and shall facilitate the attendance at such proceedings of official representatives of the competent international organization of the flag state, or any state affected by pollution arising out of any violation. The official representatives attending such proceedings shall enjoy such rights and duties as may be provided under national legislation or applicable international law.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		225	The powers of enforcement against foreign vessel may only be exercised by officials or by warships or military aircraft or other ships or aircraft clearly marked and identifiable as being on government service.
		226	States shall not endanger the safety of navigation or cause any hazard to a vessel, or bring the vessel to an unsafe port or anchorage, or cause an unreasonable risk to the marine environment when exercising their powers of enforcement against foreign vessels.
		227	When investigating violations of applicable laws and regulations or international rules and standards for the preservation of the marine environment, states shall not delay a foreign vessel longer than it is necessary for the purposes of the investigation.
		228	States shall not discriminate in form or in fact against vessels of any state when exercising their rights or carrying out their duties under the provisions of the convention.
		229	Proceedings to impose penalties in respect of any violation of applicable laws and regulations or international rules and standards relating to the prevention, reduction and control of pollution from vessels committed by a foreign vessel beyond the territorial sea of the state instituting proceedings shall be suspended upon the taking

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		229 (cont'd)	of proceedings to impose penalties under corresponding charges by the flag state within six months of the first institution of proceedings, unless those proceedings relate to a case of major damage to the coastal state or the flag state in question has repeatedly disregarded its obligations to enforce effectively the applicable international rules and standards in respect of violations committed by its vessels. Proceedings to impose penalties on foreign vessels shall not be instituted after the expiry of a period of three years from the date on which the violation was committed.
		230	Nothing in the present convention shall affect the institution of civil proceedings in respect of any claim for loss of damage resulting from pollution of the marine environment.
		231	Only monetary penalties may be imposed with respect to violations of national laws and regulations, or applicable international rules and standards, for the prevention, reduction and control of pollution from vessels committed by foreign vessels beyond the internal waters.
		232	States shall promptly notify the flag state and any other state concerned of any enforcement measures taken against foreign vessels with respect to national laws and regulations, or applicable international rules and standards, and shall submit to the flag state all official reports concerning such measures.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		233	States shall be liable for damage or loss attributable to them arising from enforcement measures taken, when such measures were unlawful or exceed those reasonably required in the light of available information; and shall provide for recourse in their courts for actions in respect of such damage or loss.
Section 8 - Ice-covered areas		235	Coastal states shall have the right to establish and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where severe climatic conditions and the presence of ice covering such areas for most of the year create obstruction or exceptional hazards to navigation, and pollution of the marine environment, could cause major harm to or irreversible disturbance of the ecological balance.
Section 9 - Responsibility and Liability		236	States shall be responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment; co-operate in the development of international law relating to criteria and procedures for the determination of liability, the assessment of damage, the payment of compensation and the settlement of related disputes, and ensure that recourse is available in accordance with their legal system for prompt and adequate compensation or relief in respect of damage caused by pollution of the environment by

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		236 (cont'd)	persons under their jurisdiction. States shall be liable in accordance with international law for damage attributable to them resulting from violations of these obligations.
	Section 10 - Sovereign Immunity	237	The provisions of the present convention regarding pollution of the marine environment shall not apply to any warship, naval auxiliary, other vessels or aircraft owned and operated by a state and used only on government non-commercial service, but states shall adopt appropriate measures to ensure that such vessels or aircraft act in a manner consistent with the present convention.
	Section 11 - Obligations under other conventions on the protection and preservation of the marine environment	238	The provisions of the protection and preservation of the marine environment part of the convention shall be without prejudice to specific obligations assumed by states under special conventions and agreements concluded previously which relate to the protection and preservation of the marine environment, however these specific obligations should be applied in a manner consistent with the general principles and objectives of the present convention.
	XIII - Marine Scientific Research: Section 1 - General	239	States and competent international organizations, irrespective of their geographical location, have the right to conduct marine scientific research subject to the rights and duties of other states.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		240	States and competent international organizations shall promote and facilitate the development, and conduct of marine scientific research.
		241	Marine scientific research activities shall be conducted exclusively for peaceful purposes, with appropriate scientific methods and means; comply with all relevant regulations including those for the protection and preservation of the marine environment; and shall not unjustifiably interfere with other legitimate uses of the sea compatible with the present convention.
		242	Marine scientific research activities shall not form the legal basis for any claim to any part of the marine environment or its resources.
Section 2 - Global and Regional Co-operation		243	States and competent international organizations shall, in accordance with the principle of respect for sovereignty and on the basis of mutual benefit, promote international co-operation in marine scientific research for peaceful purposes.
		244	States and competent international organizations shall co-operate with one another, through the conclusion of bilateral, regional and multilateral agreements, to create favourable conditions for the conduct of marine scientific research in the marine environment and to integrate the efforts of scientists in studying the essence of and the interrelations between phenomena and process occurring in the marine environment.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		245	States and competent international organizations shall make available information on proposed major programmes and their objectives as well as knowledge resulting from marine scientific research by publication and dissemination through appropriate channels; and actively promote the flow of scientific data and information and the transfer of knowledge to developing states.
Section 3 - Conduct and Promotion of Marine Scientific Research		246	Marine scientific research activities shall be conducted only with the express consent of and under the conditions set forth by the coastal state, which has the exclusive right to regulate, authorize and conduct marine scientific research in their territorial sea.
		247	Coastal states, have the right to regulate, authorize and conduct marine scientific research in their exclusive economic zone and on their continental shelf in accordance with the relevant provisions of the present convention; shall grant their consent for marine scientific research projects by other states or competent international organizations; and may withhold their consent if the project is of direct significance for the exploration and exploitation of natural resources, whether living or non-living, involves drilling continental shelf, the use of explosive or the introduction of harmful substances into the marine environment, and involves the construction, operation or use of artificial islands, installations and structures.

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A coastal state which is a member of a regional or global organization or has a bilateral agreement with such an organization, and in whose exclusive economic zone or on whose continental shelf the organization wants to carry out a marine scientific research project, shall be deemed to have authorized the project to be carried out, upon notification to the duly authorized officials of the coastal state by the organization, if that state approved the project when the decision was made by the organization for the undertaking of the project or is willing to participate in it.

249

States and competent international organizations which intend to undertake marine scientific research in the exclusive economic zone or on the continental shelf of a coastal state shall provide that state with a full description of the nature and objectives of the research, method and means to be used, the precise geographical area in which the activities are to be conducted, the expected date of first appearance and final departures of the research vessels, and the extent to which it is considered that the coastal state should be able to participate or be represented in the research project, within six months of the expected starting date.

Convention

Part

Article

Summary

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States and competent international organizations when undertaking marine scientific research in the exclusive economic zone or on the continental shelf of a coastal state shall, without payment of any remuneration to the scientists of the coastal state and without obligation to contribute towards the costs of the research project, ensure the rights of the coastal state to participate or be represented in the research project; provide the coastal state with preliminary reports as soon as practicable and with the final results and conclusion after the conclusion of the research, assist the coastal state in assessing the data, samples and results, and remove the scientific installations or equipment once the research is completed.

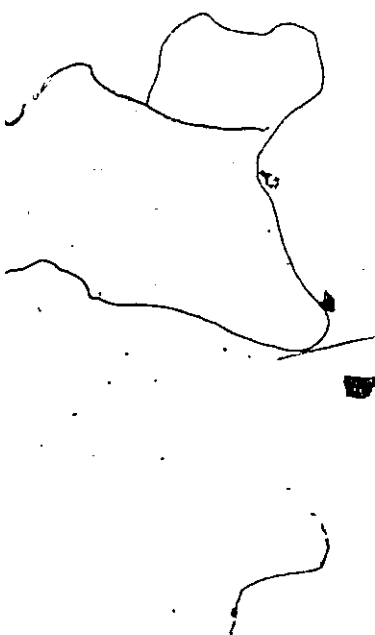
252

States shall seek to promote through competent international organizations the establishment of general criteria and guidelines to assist states in ascertaining the nature and implications of marine scientific research.

254

The coastal state shall have the right to require the cessation of any research activities in progress within its exclusive economic zone or on its continental shelf if the research project is not being conducted in accordance with the information initially communicated to the coastal state regarding the nature, objectives, method, means or geographical areas of the project.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		255	States and competent international organizations conducting marine scientific research in the exclusive economic zone or on the continental shelf of a coastal state shall take into account the interests and rights of neighbouring land-locked countries and other geographically disadvantaged states; and qualified experts of such land-locked and geographically disadvantaged states shall be given the opportunity to participate in proposed research projects.
		256	In a spirit of international co-operation to promote and facilitate marine scientific research activities, coastal states shall adopt reasonable and uniformly applied rules, regulations and administrative procedures applicable to states and competent international organizations desiring to carry out research activities in the exclusive economic zone or on the continental shelf.
		257	States and competent international organizations, irrespective of their geographical location, shall have the right to conduct marine scientific research in the Area.
		258	States and competent international organizations, irrespective of their geographical location, shall have the right to conduct marine scientific research in the water column beyond the limits of the exclusive economic zone.

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
 Section 4 - Legal status of scientific research instal- lations and equipment in the marine environ- ment		260	Installations or equipments used for scientific research in the marine environment shall not have the status of islands or possess their own territorial sea, and their presence shall not affect the delimitation of the territorial sea, exclusive economic zone and continental shelf of the coastal state.
		261	Safety zones of a reasonable width not exceeding a distance of 500 metres may be created around scientific research installations, and all states shall ensure that such safety zones are respected by their vessels.
		262.	The deployment and use of scientific research installation or equipment shall not constitute an obstacle to established international shipping routes.
		263	Installations or equipments used for scientific research in the marine environment shall bear identification markings indicating the state of registry or the international organization to which they belong and shall have adequate internationally agreed warnings to ensure safety at sea and the safety of air navigation in accordance with the established principles of competent international organizations.
		264	States and competent international organizations shall be responsible for ensuring that marine scientific research, whether undertaken by them or on their

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
		264 (Cont'd)	behalf, is conducted in accordance with the present convention; be responsible and liable for the measures they undertake in contravention of the present convention; and shall provide compensation for damage resulting from such measures.
	Part XIV - Development and transfer of Marine Technology: Section 1 - General	267	States, directly or through appropriate organizations, shall co-operate within their capabilities to promote actively the development and transfer of marine science and marine technology on fair and reasonable terms and conditions; shall promote the development of the marine scientific and technological capacity of developing states, with regard to the exploration, exploitation, conservation and management of marine resources, the preservation of the marine environment, marine scientific research and other uses of the marine environment; and shall endeavour to foster favourable economic and legal conditions for the transfer of marine technology for the benefit of all parties concerned on an equitable basis.
		268	States shall have proper regard for all legitimate interests including the rights and duties of holders, suppliers and recipients of marine technology in promoting co-operation.
		269	States, directly or through competent international organizations, shall promote, inter alia, the acquisition, evaluation and dissemination of marine technological knowledge and facilitate access to such information and data; and

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Summary

269
(cont'd)

the development of the necessary technological infrastructure to facilitate the transfer of marine technology.

270

States shall endeavour to establish programmes of technical co-operation for the effective transfer of all kinds of marine technology to states which may need and request technical assistance; hold conferences, seminars and symposia on scientific and technological subjects, in particular, on policies and methods for the transfer of marine technology; promote the exchange of scientists, technologists and other experts; and undertake projects, promote joint ventures and other forms of bilateral and multilateral co-operation in order to achieve stated objectives.

Section 2 -
International
Co-operation

273

States shall endeavour to ensure that competent international organizations co-ordinate their activities in the field of transfer of marine technology, including any regional or global programmes taking into account the interests and needs of developing states.

274

States shall co-operate actively with competent international organizations and the Authority, to encourage and facilitate the transfer to developing states, their nationals and the Enterprise of skills and technology with regard to the exploration of the Area, the exploitation of its resources and other related activities.

7

<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
	Section 3 - Regional Marine Scientific and Techno- logical Centres	276	States shall, in co-operation with the competent international organizations, the Authority and national marine scientific and technological institutions, promote the establishment, especially in developing states, of regional marine scientific and technological research centers in order to stimulate and advance the conduct of marine scientific research by developing states and foster the transfer of technology; and all states of the region shall duly co-operate with the regional centers in order to ensure the effective achievement of their objectives.
		277	The functions of such regional centres shall include, inter alia: training and educational programmes at all levels on various aspects of marine scientific and technological research, particularly marine biology, conservation and management of living resources, oceanography, hydrography, engineering sea geological exploration, mining and desalination technologies; management studies; study programmes related to the protection and preservation of the marine environment, the prevention, reduction and control of pollution; organization of regional conferences seminars and symposia; acquisition and processing of marine scientific and technological data and information; publicizing national policies with regard to the transfer of technology and systematic comparative study of those policies; and compilation and systematization of information on the marketing of technology and on contracts and other arrangements concerning patents.

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<u>Convention</u>	<u>Part</u>	<u>Article</u>	<u>Summary</u>
	XV - Settlement of disputes Section 1	279	The states parties shall settle any disputes between them relating to the interpretation or applica- tion of the present convention in accordance with the rules of international law, and shall seek a solution by a peaceful means of their own choice.

Source: Summary compiled by the author from 1958 Geneva Convention
and United Nations Third Conference on the Law of the Sea
Informal Composite Negotiating Text (A/Conf. 62/W.P.10
15 July 1977).

A P P E N D I X "B"

National Framework for Offshore Resources Planning

A P P E N D I X B

NATIONAL FRAMEWORK FOR OFFSHORE RESOURCES PLANNING

I. Federal legislation applicable to fisheries management.

DEPARTMENT	ACT/REGULATIONS/ SCHEDULE	SECTION/ ARTICLE	SUMMARY
Fisheries and Oceans	Territorial sea and fishing zones Act (SC 1970 C.45 (1st Supplement))	3(1)	The territorial sea of Canada comprises those areas of the sea and inlets having as baselines low water marks stated by the Governor in Council and extending seaward to a distance of twelve nautical miles from the nearest baseline.
		4(1)	The fishing zones of Canada comprise such areas of the sea adjacent to the coast of Canada.
		4(2)	The laws of fishing and exploration of the living resources of the sea apply both to the fishing zones and the territorial sea of Canada.
		5(4)	Where the territorial sea of Canada would conflict with the territorial sea or fishing zones of another country, or would be unreasonably close to the coast of another country, then a new list of geographical coordinates would be substituted in determining the outer limit of the territorial sea.
		6	The Minister of Energy, Mines and Resources may cause charts to be issued delineating the territorial sea and fishing zones of Canada.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
Fisheries and Oceans	2. Coastal Fisheries Protection Act (RSC 1970 C.C-21)	2	Defines: (i) "Canadian fisheries Waters" as all waters in the fishing zones, in the territorial sea and the internal waters of Canada. (ii) "Fish" to include shellfish, crustaceans and marine animals. (iii) "Fishing" to mean fishing for or catching or killing fish by any method and (iv) "Fishing vessel" to include any ship or boat or other description of vessels used in or equipped for fishing or processing fish or transporting fish from fishing grounds and also includes any vessel used or equipped for taking, processing or transporting <u>marine plants</u>.
		3(1)	No unauthorized foreign fishing vessel shall enter canadian fisheries waters.
		(2)	No person on board, or a member or employee of a foreign fishing vessel shall fish or prepare to fish, unload, land or tranship any fish, or supplies; or take or prepare to take marine plants in canadian fisheries waters without authority.
		(3)	No person on board a canadian fishing vessel shall bring into canadian fisheries waters fish received from a foreign fishing vessel unless authorized to do so by regulations.
		4	The Government shall issue regulations to authorize the issuing of licence, permits or otherwise to foreign fishing

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		4 (cont'd)	vessels to enter canadian fisheries waters to fish or take marine plants.
		5	A fishery protection officer or an officer of the Royal Canadian Mounted Police may go on board any fishing vessel found in canadian fisheries waters and stay on board as long as it remains in canadian fisheries waters; bring the fishing vessel into port and search its cargo and examine the master or any member of the crew on oath about the cargo and the voyage.
		6	If a fishery protection officer or an officer of the Royal Canadian Mounted Police suspects on reasonable grounds that an offence has been committed, he may seize the fishing vessel, and goods on board the fishing vessel (fish, tackle, rigging, apparel, furniture, store and cargo); arrest without warrant any person whom he, on reasonable grounds suspects of having committed an offence.
		6(3)	The fishing vessel and goods seized shall be retained in the custody of the protection officer making the seizure or shall be delivered into the custody of such person as the Minister of Fisheries may direct.
		6(5)	Where a person is convicted for any offence committed under this Act, the judge may further impose that any fishing vessel seized, and/or goods on board if sold, shall be forfeited.
		7	Any master in command of a fishing vessel, who enters canadian fisheries waters without legal excuse; or while on board

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		7 (cont'd)	a fishing vessel refuses to answer on oath questions put to him by the fishery protection officer; after a signal from a government vessel throws over board or staves or destroys any part of the vessel's cargo, outfit or equipment; or resists or wilfully obstructs a protection officer in the execution of his duty, shall be guilty of an offence.
		8(1)	Any person who commits an offence by entering into and fishing in canadian waters shall be liable upon conviction to a fine not exceeding \$25,000 and/or to a term of imprisonment not exceeding 20 years.
		8(2)	Any person who commits an offence by entering canadian fisheries waters without legal excuse, or refuses to answer question or resists or wilfully obstructs a protection officer, shall be liable upon conviction to a fine not exceeding \$10,000 and/or to a term of imprisonment not exceeding one year.
Fisheries and Oceans	3. Fisheries Act (RSC 1970 c.F.-14).	2	Definition: "Canadian fisheries waters" means all waters in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters. "Close time" means a specified period during which fish to which it applies may not be fished. "Fish" includes shellfish, crustaceans, marine animals and

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		2 (cont'd)	the eggs, spawn, spat and . . juvenile stages of fish, shellfish, crustaceans and marine animals. "Fishery" includes the area, locality, place or station in or on which a pound, seine, net, weir or other fishing appliance is used, set, placed, or located, and the area, tract or stretch of water in or from which fish may be taken; "Fishing" means fishing for, catching or attempting to catch fish by any method; "Fishing vessel" means any vessel used, outfitted or designed for the purpose of catching, processing or transporting fish.
		3	Nothing in this Act shall be taken to authorize the granting of fishery leases or conferring an exclusive right to fish in property not belonging to Canada.
		4	The provisions of this Act does not preclude the granting by the Minister of written permission to obtain fish and fish spawn for the purposes of stocking or artificial breeding or for scientific purposes.
		5(1)	Fishery officers may be appointed in the manner authorized by law. The powers and duties of the fishery officer shall be as defined by this Act and any other Act of parliament.

DEPARTMENT

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SUMMARY

5(2)

The Minister may appoint proper persons to act as fishery guardians who shall hold office at the pleasure of the Minister, and who shall have for the purposes of this Act and regulations, the powers of a police constable.

7

The Minister may, in his absolute discretion, issue or authorize to be issued, leases and licences for fisheries or fishing. However, leases or licences for a term of nine years or more shall be issued only at the discretion of the Governor General in council.

8

Except where licence fees are prescribed in this Act, the Governor in council may from time to time prescribe the fees that shall be charged for fishery licences.

9

The Minister may cancel any lease or licence issued under the authority of this Act, if he has ascertained that the operations under such licence were not conducted in conformity with its provisions.

12

Salmonid fry, parr, or smolt shall not at any time be fished for, caught or killed.

13

The use of nets, weirs or other apparatus of similar nature for the capture of salmon shall be confined to tidal waters except where otherwise provided by regulations.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		14	Except in Newfoundland, all stationary nets or other stationary appliances for the capture of salmon, shall be placed at distances of not less than two hundred and fifty yards apart, without intermediate fishing nets or appliance of any kind being set or used.
		16	No salmon shall be fished for, caught or killed except by angling with hook and line, within two hundred yards of the mouth of any tributary of any creek or stream which salmon frequent to spawn in the provinces of Nova Scotia, New Brunswick, Prince Edward Island and Quebec.
		17	The owner or manager of every lobster factory or canning establishment shall submit to the fishery officer for the district on a ~~date~~ fixed by and on a form provided by the Minister information including the number of lobster traps used in connection with his factory or canning establishment and the number of cases of lobsters and the weights packed during the last legal lobster fishing season.
		18	No one shall maintain a pound or enclosure in which lobsters, legally caught during the open season, shall be retained for sale during the close season except under a licence from the Minister. Lobsters from such a licensed pound shall not be sold except under a certificate from a fishery officer or a fishery guardian.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		19	No one, without lawful excuse, shall fish for, buy, sell, or have in his possession any fish or portion of any fish, at a place where at that time, fishing for such fish is prohibited by law.
		21	No one shall fish for, take, catch or kill fish in any water, or along any beach or within any fishery described in any lease or licence; or place, use, draw or set any fishing gear or apparatus except by permission of the holder of such lease or licence:
		22	Seines, nets or other fishing apparatus shall not be set or used in such a manner or in such places as to obstruct the navigation of boats and vessels. No boats or vessels shall destroy seines, nets or other fishing apparatus lawfully set..
		23	Every person using skates, posts, buoys or other materials placed for fishing purposes in any water, shall remove the same within forty-eight hours after ceasing to use them, and in all cases at the end of the fishing season.
		26	No one shall hunt or kill fish or marine animals of any kind, other than porpoises, whales, walrusæ sea lions and hair seals by means of rockets, explosive materials, explosive projectiles or shells.
		27	No one shall erect, use or maintain in any of the waters of Canada, whether subject to any

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		27 (cont'd)	exclusive right of fishery or not, any net, weir or other device which unduly obstructs the passage of fish, and the Minister or any fishery officer may order the removal of any net, weir or other device that, in the opinion of the Minister or any fishery officer, unduly obstructs the passage of fish.
		28	Every water intake, ditch, channel or canal in Canada constructed or adapted for conducting water from any canadian fisheries waters for irrigation, manufacturing, power generation, domestic or other purposes, shall be provided at its entrance of intake with a fish guard, screen, covering or netting so fixed as to prevent the passage of fish from any canadian fisheries waters into such water intake, if the Minister deems it to be in the public interest.
		30	No person shall destroy fish by any means other than fishing except authorized by the Minister or under regulations made by the Governor in council under this Act.
		31	No person shall undertake any work that results in the harmful alteration, disruption or destruction of fish habitat - including spawning grounds and nursery, rearing, food supply and migration areas on which fish depends directly or indirectly in order to carry out their life process.

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SUMMARY

33(1) No one shall throw over board ballast, coal ashes, stones or other prejudicial or deleterious substances in any river, harbour, roadstead or in any water where fishing is carried on.

33(2) "Deleterious substance" means any substance that, if added to any water, or any water that contains a substance in such quantity or concentration or that has been so treated, processed or changed by heat or other means from its natural state, that it would degrade or alter or form part of a process of degradation, or alteration of the quality of that water in such a way that it is rendered harmful to fish or fish habitat or to the use by man or fish that frequent such waters.

34(1) Except in accordance with the condition of a licence, issued by the Minister, no person shall harvest marine plants in the coastal waters of Canada in contravention of any regulations.

34(2) The Minister may, on receipt of an application, issue a licence to the applicant for the harvesting of marine plants in the coastal waters of Canada for a term not exceeding one year. The licence may state such conditions as the nature of gear and equipment to be used in harvesting, the quantity of marine plants authorized to be harvested, and the area within the coastal waters where the harvesting is to be carried out.

DEPARTMENT

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SUMMARY

34(3)

The Governor in council may make regulations prohibiting the harvesting of marine plants in any area of the coastal waters for a specified period, or requiring persons issued with licences to maintain books and records that may be necessary for the enforcement of this Act and regulations.

34(4)

For the purpose of this section, "coastal waters of Canada" means all waters in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada not within geographical limits of any province. "Harvest" includes cut, take, dredge or rake. "Marine plant" includes all benthic and detached algae, marine flowering plants, brown algae, red algae, green algae and phytoplankton.

35

Any fishery officer may search or break open and search any building, vehicle, vessel or place except a permanent dwelling place, if he has reasonable grounds to believe that fish taken in contravention of this Act or regulations is concealed.

36

Any fishery officer, fishery guardian or peace officer may arrest without warrant a person whom he on reasonable grounds, believes to have committed an offence against this Act or regulations or whom he finds committing or preparing to commit an offence against this Act or regulations.

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38

Everyone who resists or obstructs any fishery officer or fishery guardian in the execution of his duty is guilty of an offence punishable on indictments to a term not exceeding two years imprisonment, or on summary conviction to a term not exceeding six months imprisonment or a fine of one hundred dollars.

39

In the discharge of his duties, any fishery officer, fishery guardian or any person authorized by him may enter upon and pass through or over private property without being liable for trespass.

40

Disputes between persons regarding fishing limits, claims to fishery stations or the use of nets and other fishing apparatus shall be settled by the local fishery officer.

41

Fishery officers may determine the distance between each fishing apparatus and shall remove any fishing apparatus that the owner neglects or refuses to remove. Such owner is liable for a violation of this Act and the cost of removing the apparatus.

42

The Minister or a duly authorized fishery officer has power to define the boundaries of tidal waters and estuaries and what is the mouth of any river or stream.

44

The Minister may authorize any river to be set aside for natural or artificial propagation of fish.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		45	Special licences and leases for any term of years may be granted to any person who wishes to plant or form oyster beds in bays, inlets, harbours, creeks, or rivers or between any of the islands on the coasts of Canada. The holder of any such lease of licence has the exclusive right to the oysters produced or found on the beds within the limits of his lease or licence.
		46	The Governor in council may, authorize the government of any province to grant leases of such areas of the sea coast, bays, inlets, harbours, creeks, rivers and estuaries of a province for the cultivation and production of oysters. Persons granted such leases have the exclusive right to the oysters produced or found within the limits of their leases.
		47	Every Canadian may use vacant public property which is by law common and accessory to public rights of fishery and navigation for the purpose of landing, salting, curing and drying fish, and may cut wood on such property for such purposes. A leased or licensed property shall not be deemed as vacant.
		48	The owner or manager of every fish curing or canning establishment or fresh fish business and the captain or owner of every fishing vessel or the owner of every fishing boat, fishing trap, weir or other fishing material in Canada, shall at the request of the Minister, furnish particulars relating to all fish caught,

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		48 (cont'd)	bought, packed or canned, the number of fishermen employed and their nationality, number of shore workers and number and value of fishing vessels.
		50	Every owner or manager of a lobster factory or canning establishment who neglects to send by the appointed date, a sworn statement showing the number of fishermen, employed and the lobster traps used, the number of persons employed in the establishment and the number of cases of lobsters packed during the legal lobster fishing season, is liable to a fine not exceeding four hundred dollars and costs.
		51	Every person is guilty of an offence and liable to a fine not exceeding two thousand dollars and costs who knowingly brings into Canada any fish caught in the sea beyond canadian fisheries waters, with any vessel that uses an "otter" or trawl.
		56	Anybody who wilfully destroys any place set aside under the authority of the Minister for the propagation of fish without the written permission from a fishery officer is liable to a penalty not exceeding two hundred dollars and costs and/or in default of payment, to imprisonment for a term not exceeding twelve months.
		58	A fishery officer may seize any fishing vessel, vehicle, fishery gear, or any fishing equipment or fish where the fishery officer on reasonable grounds, believes

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		58 (cont'd)	such fishing vessel, gear and other equipment has been used to commit an offence against this Act and the regulations.
		61	Except otherwise provided, in this Act, every person who contravenes any provision of this Act or the regulations is guilty of an offence and liable on summary conviction to a fine not exceeding five thousand dollars and/or to a term of imprisonment not exceeding twelve months.
		63	Any fishery officer or fishery guardian who violates this Act or any regulations, or who aids, abets, or connives at any violation of this Act or any regulations, is liable upon summary conviction to a fine not exceeding five thousand dollars and costs or six months imprisonment.
		64	Any proceedings in respect of an offence under this Act may be instituted at any time within two years after the time when the offence was committed.
		68	Persons aggrieved by any conviction for any offence under this Act may appeal by petition to the Minister, who may remit penalties and restore forfeitures under this Act, or may appeal under the provisions of the criminal code.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		69	The provisions of this Act and the regulations that apply to any canadian fisheries waters in relation to any fishing vessel or aircraft on or over the high seas that is subject to the jurisdiction of Canada, shall be deemed to extend and apply to the high seas.
Fisheries and Oceans	(i) Atlantic Fishing Registration and licensing regulations (Made under the Fisheries Act, PC 1976-601, as amended August 8, 1978).	2	Regulations respecting the registration of commercial fishing vessels and the licensing of commercial fishermen on the Atlantic coast of Canada. Interpretation: "Auxiliary vessel" means a vessel used in conjunction with a registered commercial fishing vessel or registered fixed commercial fishing unit in setting or recovering fishing gear. "Commercial fishing" means fishing for or catching fish or harvesting marine plants, all or any portion of which are sold, offered for sale, traded, or bartered; "Commercial fishing vessel" means any fishing vessel, the catch or any portion of the catch which is sold, offered for sale, traded or bartered; or that is used in processing fish; or that is used in transporting unprocessed fish; "Fish" includes shell fish, crustaceans and marine animals.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		2 (cont'd)	"Fixed commercial fishing unit" means a salmon trap net, mackerel trap net, seafish trap net or herring weir that is used in commercial fishing which is fixed. "Licence" means a commercial fishing licence issued under the authority of the Minister of Fisheries and Oceans of Canada. "Marine Plants" includes all benthic and detached algae, marine flowering plants, brown algae, red algae, green algae and phytoplankton. "Over all length" means the horizontal distance measured between perpendiculars erected at the extreme ends of the outside of the main hull of a vessel. "Validation tab" means a tab affixed, in any one year, to a commercial fishing vessel registration plate, to indicate that the registration plate is valid for that year.
		3	Only persons holding a licence and using a registered commercial fishing vessel, can operate along the Atlantic coast of Canada.
		4	No person shall operate an unregistered fixed commercial fishing unit in the provinces of Nova Scotia, New Brunswick and Prince Edward Island.
		5	The Fisheries and Marine Services Branch of the Department shall register and issue a certificate to any commercial fishing vessel or fixed commercial fishing unit if the owner applies for and pays

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		5 (cont'd)	the prescribed fee. If the overall length of the vessel is less than forty-five feet, it shall be assigned a registration plate, but if it is over forty-five feet, it shall be assigned a registration number.
		6	Every licence and registration certificate that is issued in respect of a vessel or to a person shall be carried on board the vessel or by the person and shall be produced for examination if demanded by a fishery officer or a fishery guardian. Every licence and registration certificate expires after December 31 following the date of issue.
		7	No person shall operate a registered commercial fishing vessel which does not have on each side of the bow, the registration number assigned to the vessel which is at least forty-five feet in length or on each side of the bow or the deckhouse the registration plate issued to a vessel which is less than forty-five feet in length.
		8	The assigned registration number readily visible at all times, shall be painted on a tag or float attached to the gear of a fixed commercial unit registered under these regulations.
		9	Only persons holding a licence shall operate, be in command of or be a crew member on board any commercial fishing vessel, assist in tending a fixed commercial fishing unit or engage in commercial fishing in Newfoundland.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		9 (cont'd)	A licence shall be issued to a Canadian citizen, or persons who have served in the Canadian Forces, or a landed immigrant who has resided in Canada for at least five years.
		10(1)	No person shall engage in fishing in a limited fishery by means of a vessel unless a limited fishery licence has been issued to that person.
		10(2)	Limited fisheries shall include: lobster fisheries, snow crab or queen crab fisheries, herring fisheries using nets other than gills nets, scallop fisheries, Atlantic salmon fisheries, blue fin tuna, sports fisheries; groundfish fisheries (using vessels over 45 feet in length in the province of Newfoundland and vessels of any length in the provinces of Nova Scotia, New Brunswick and Prince Edward Island), shrimp fisheries and mackerel fisheries.
		10(3)	The holder of a limited fishery licence shall not transfer such a licence to another person.
		10(4)	A limited fishery licence may contain conditions as to the area in which and the time when fishing may be carried out, the species of fish and the quantities that may be taken, and the nature and size of the gear and equipment that may be used in fishing.
		10(5)	The holder of a limited fishery licence shall fish only in accordance with the conditions set in his licence.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		10(6)	A limited fisheries licence expires when the vessel is sold, when the controlling interests in the vessel is sold (if the vessel is owned by more than one person), or when the controlling interest in the company is sold.
		11	Where a commercial fishing vessel or fixed commercial fishing unit is sold or otherwise disposed of, the registration plates and registration number issued in respect of the vessel or unit shall remain with the vessel or unit. The owner of a lost or disposed of vessel or unit shall inform the Regional Director-General within sixty days of the loss or disposal of the vessel or unit.
		12	The Minister of Fisheries and Oceans may, in addition to any penalty imposed by the courts for a violation by any person of these regulations, suspend or cancel any licence or registration certificate issued or refuse to issue a licence or registration certificate to that person or in respect of vessel owned by that person.

SCHEDULE

1. Commercial fishing licence \$5.00
2. Commercial fishing vessel
Registration Certificate:
 - a) Vessels 45 feet or less 5.00
in length
 - b) Vessels between 45 feet \$10.00
and 65 feet

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		2. c) Vessels between 65 feet (cont'd) and 100 feet	\$15.00
		d) Vessels over 100 feet:	\$25.00
		3. Registration plates and validation tabs	No fee
		4. Fixed commercial fishing unit registration certi- ficate	\$5.00
		5. Limited fishery licence:	
		a) Vessels 45 feet or less	\$5.00
		b) Vessels between 45 feet and 65 feet	\$10.00
		c) Vessels between 65 feet and 100 feet	\$15.00
		d) Vessel over 100 feet	\$25.00
		e) Vessels using mackerel gill nets	\$ 1.00

Fisheries
and Oceans

(ii) Nova Scotia
fishery regula-
tions (made under
The Fisheries Act,
P.C. 1970-302 as
amended October 4, 1978)

2

Interpretations:

"Angling" means fishing by means
of a hook and line held in the
hand or attached to a rod held
in the hand but does not include
fishing by means of a set line or
a line fastened to a boat;

"Artificial fly" means a simple or
double hook, dressed with silk,
tinsel, wool, fur or combination
of these, commonly used in making
artificial fly that has a spinning
device or a weight that causes
the fly to sink.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
			"Bag net" means a net that is attached to stakes, the bag of which floats with the current or tide and is capable of catching fish without enmeshing them.
			"Box net" means a net that is made and set in the form of a box, has a trap into which fish are guided by a leader and is capable of catching fish without enmeshing them;
			"Clam" includes solf-shell or long-neck, squirt clam, bar clam and quahang.
			"Cleansing" means the process by which shellfish are assisted to rid themselves of sewage and other bacteria either by the artificial sterilization of water or by relaying them in pure water areas approved by the Minister.
			"Drag line", "shut-off seine" means a net that float at the top, is weighted at the bottom and is dragged along the seashore to impound fish.
			"Extension measure" means the distance between the extreme angles of a single mesh measured inside and between the knots of such a mesh after the twine has been in water.
			"fly fishing" means angling by the use of an artificial fly that is attached to a line or a leader that is attached to a line.
			"Gill-net", "drift-net" means a net that is used to catch fish by enmeshing them without enclosing an area of water.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		2	"Groundfish net" means a gill-net used for the purpose of catching cod, haddock, hake or pollock. "Herring weir" means a fixed trap-net that is composed of one or more compartments each of which is constructed of at least fifty stakes attached to the soil and held together with one or more sets of ribbands and surrounded by brush, twine or wire netting into which fish are guided by fixed leaders. "Hydraulic device" means a fishing device used for the harvesting of shellfish by which shellfish are lifted from the bottom of the water by the use of water under pressure. "Jigging" means fishing by the use of a hook manipulated so as to pierce and hook a fish in any part of its body except the mouth. "Licence" or "permit" means a licence or permit issued under the authority of the Minister for purposes stated in that licence or permit. "One day" means a period beginning two hours before sunrise and ending two hours after sunset. "Open season" "open time" in respect of any fish, means a period specified in or under these regulations during which that fish may be caught or taken. "Picking" in respect of oysters means the taking of oysters by hand without tools.

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2
(cont'd)

"Plan" means a plan on deposit with the Fisheries and Marine Service Branch of the Department of Fisheries and Oceans.

"Public oyster-fishing area" means any oyster-bearing area that is not under lease or closed to the public.

"Pure water areas" means waters approved for the taking of shellfish by the Environmental Protection Service of the Department of the Environment.

"Purse seine" means a net that floats at the top, is weighted at the bottom and mounted with rings through which runs a line, which is cast from a boat so as to enclose an area of water and is capable of being closed at the bottom to form a purse or bag.

"Relaying" means the relocating of shellfish for purification.

"Replanting" means relocating oysters to improve their growth condition or accessibility.

"Shellfish" includes clams, mussels, oysters, scallops and other bivalve molluscs.

"Spent salmon", "slink salmon" means salmon that are in poor condition and that are returning to sea after spawning.

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2
(cont'd)

"Sport fish" includes salmon, trout, and black bass.

"Trap net" means a net that is set so as to enclose an area of water into which fish are guided through an opening by a leader.

"Trout" includes char, speckled or brook trout, grey trout or togue, brown trout or loch leven trout, rainbow trout and ouananiche or landlocked salmon.

"Vessel" includes any ship, boat, or a floating craft, whether or not that craft is used in fishing.

"Waters" in respect of any specified area of the coast includes waters contiguous to that area.

"Weir" means, a trap-net that is constructed of brush, and twine or wire netting.

3

These regulations apply to the seacoast and inland fisheries of and all persons in the province of Nova Scotia.

4

An application for a fishery licence or permit shall be made to an authorized fishery officer. The Minister of Fisheries may require an applicant to file a statutory declaration containing such information as the Minister may specify. A fishery licence

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		4 (cont'd)	or permit expires on the thirty-first day of December following the date of issue.
	3	5	No fish shall be shipped or offered for shipment, during the closed season for any fish, if a certificate issued by a fishery officer or statutory declaration is not attached to it.
		6	The use of gill-net or trap-net, an artificial light or flame, set-line or trawl, spear, dynamite or explosive for fishing in non-tidal waters is prohibited under these regulations.
		10(1)	Angling with more than one fishing line or with a fishing line having more than three separate hooks is prohibited.
		10(2)	Any person who catches any sport fish by hooking it in any part of the body other than the mouth shall immediately return it alive to the water.
		10(3)	Angling in non-tidal waters that are frequented by any sport fish during the closed season for that sport fish is prohibited.
		10(4)	No person shall angle for any sport fish during that part of the day beginning two hours after sunset and ending two hours before sunrise.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		10(5)	Fishing with an artificial fly that has more than two hooks is against the regulations.
		11	Every gill-net, trap-net, pound-net, box net or weir, operated under a licence, shall have attached to it, a tag on which the name and the licence number of the licensee is clearly marked. Ground fish net shall be set on the bottom of the water in at least six fathoms or more in depth at normal low tide.
		12	No person shall operate a seine of any kind except under a licence.
		13	Trap-net or pound-net shall be operated only under licence.
		14	No person shall set or operate a weir except under licence or construct a weir within one thousand feet of another weir that is being operated under licence.
		15	No person shall fish for any species of fish or in any waters specified in these regulations. If any person catches any fish contrary to the Act, or these regulations, he shall immediately return that fish to the waters from which it was caught.
		20	Salmon fishing is restricted to holders of salmon fishing licence. Gill-net, drift-net or trap-net with a web which contains monofilament in single or multiple strands shall not be used for salmon fishing.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		22(1)	Except as specified in sub-section (3) and (4) below, shell fishing is prohibited within four hundred feet of the twenty shellfish areas declared by the Minister of National Health and Welfare to be contaminated areas.
		22(2)	Shellfish areas include all inland and coastal waters.
		22(3)	The Minister may authorize shellfish intended to be used as bait to be taken from any of the waters declared as contaminated.
		22(4)	Shellfish may be taken from contaminated waters for the purpose of cleansing with the written permission of the Minister.
		23	The minimum length of clams that can be fished for is two inches. No person shall fish for clams except with hand tools or with a hydraulic or mechanical device approved by the Minister.
		24	No person shall fish for, catch or kill oysters in a public oyster-fishing area except under a licence or use any other device other than tongs, or rakes operated by hand without mechanical assistance.
		25	Vessels fishing for scallops in the territorial waters of Canada shall be registered with the Minister as scallop fishing vessels and must have on board the certificate of registration.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
Fisheries and Oceans	4. North Pacific Fisheries Convention } Act (RSC 1970 C.F-16)	2	Defines "convention area" as all waters, other than territorial waters, of the North Pacific Ocean including the adjacent seas.
		4	The Government may make regulations for carrying out and giving effect to the provisions of the convention including regulations prohibiting or limiting the exploitation of any stocks in any part of the convention area by citizens or residents of Canada or Canadian fishing vessels; the loading, processing, transportation or possession of any stocks of fish in or from any part of the convention area; the landing, importation, sale or other means of disposal of fish caught in any convention area; respecting the operation of fishing vessels and the use of fishing gear; providing for the issue, suspension and cancellation of licences and prescribing their terms, conditions and forms and fixing the fees for the issue of licences; for the seizure, forfeiture and disposition of fishing vessels; prescribing the powers and duties of persons engaged in the administration or enforcement of this Act; and prescribing the penalties that may be imposed either on summary conviction or conviction on indictment for violation of any of the regulations.
		5	A protection officer may board a fishing vessel of Canada or of the United States or of Japan or belonging to or operated by a citizen, national or resident of any of these countries and inspect its equipment, books, and documents and/or question the persons on board in accordance with the provisions of the convention.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		6(1)	A protection officer may in accordance with the provisions of the convention, arrest or seize a fishing vessel or persons on board if there is reasonable grounds for him to believe that the vessel was or persons were engaged in operations in violation of the provisions of the convention.
		6(2)	The protection officer shall immediately notify the Minister of Fisheries of any seizure or arrest and keep in custody the vessel or person pending delivery to the authorized officials of the country to which such person or vessel belongs in accordance with the provisions of the convention and the directions of the Minister.
	International Convention for the High Seas Fisheries of the North Pacific Ocean - Canada Japan and the United States of America - May 9, 1952 Tokyo		To serve the common interests of mankind and of the contracting parties, and to ensure the maximum sustained productivity of the fishery resources of the North Pacific Ocean: Canada, Japan and the United States of America agreed to establish an international commission to promote and co-ordinate the scientific studies necessary to ascertain the conservation measures required to secure the maximum sustained productivity of fisheries.
		1(1)	The area to which this convention applies is referred to as "Convention area" and includes all waters, other than territorial

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		1(1) cont'd)	waters, of the North Pacific Ocean which for the purposes of this convention also include the adjacent seas.
		1(2)	The term "fishing vessel" shall mean any vessel engaged in catching fish, processing, transporting fish loaded on the high seas or any vessel certified for such activities.
		II.	1. In order to realize the objectives of this convention, the contracting parties shall establish and maintain the International North Pacific Fisheries Commission which shall be composed of three national sections each consisting of not more than four members appointed by the government of the respective contracting parties. Each national section shall have one vote and all resolutions recommendations and other decisions of the Commission shall be made only by a unanimous vote of the three national sections. 2. The Commission shall meet at least once a year and at such other times as may be requested by a majority of the national sections. 3. Each contracting party may establish an advisory committee for its national section. This committee shall be composed of persons well informed concerning North Pacific fishery problems.

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4. The Commission may hold public hearings. Besides each national section may also hold public hearings within its own country.

III.

The functions of the Commission shall include:

1. Studying for the purpose of determining annually whether stocks of fish, specified in the Annex below, shall qualify for abstention; or
2. Studying at the request of any contracting party any stock of fish of the convention area for the purpose of determining whether such stock shall qualify for abstention; or
3. Recommending necessary joint conservation measures as a result of a study.
4. In the performance of its functions, the Commission shall utilize the technical and scientific services of, and information from, official agencies and their political sub-divisions or the services of, and information from any public or private institutions or organization or private individual of the contracting parties.

IV.

The Commission in making its recommendations, shall be guided by the spirit and intent of this convention and also by such consideration as the equal applicability of conservation measures.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		VI.	If the nationals or fishing vessels of any country which is not party to this convention appear to affect adversely the operations of the Commission or the carrying out of the objectives of the convention, then any of the contracting parties shall call the matter to the attention of the other contracting parties with a view to taking steps towards obviating such adverse effects.
		VIII.	Contracting parties agree to keep, as far as practicable, all records requested by the Commission and to furnish compilations of such records and other information.
		IX(1)	Contracting parties agree that where there should be an abstention from the exploitation of a stock of fish, the national and fishing vessels of contracting parties shall be prohibited from engaging in the exploitation, loading, processing, possessing or transporting of such stock of fish in the convention area.
		IX(2)	Each contracting party agrees to enact and enforce necessary laws and regulations, with regard to its nationals and fishing vessels with appropriate penalties against violations and to transmit to the Commission a report on any action taken with respect to any violation.

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X

Contracting parties agree to co-operate with each other in taking appropriate and effective measures in carrying out the provisions of this convention.

A N N E X

Japan agrees to abstain from fishing, and Canada and the United States of America agree to continue to carry out necessary conservation measures with regard to the stocks of fish in the respective waters named below:

- (a) Halibut (*hippoglossys stenolepis*).

Subject Halibut are those originating along the coast of North America; off the coasts of Canada and the United States of America.

- (b) Herring (*clupea pallasii*).

Herring of North American origin off the coasts of Canada and the United States of America but excluding the Bering Sea and the waters of the North Pacific Ocean West of the meridian passing through the extremity of the Alaskan peninsula.

- (c) Salmon (*oncorhynchus gorbuscha*, *oncorhynchus keta*, *oncorhynchus kisutch*, *oncorhynchus nerka*, *oncorhynchus tshawytscha*)

Salmon originating in the rivers of Canada and the United States of America and off the coasts of Canada and the United States of America.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
Fisheries and Oceans	5. Northern Pacific Halibut Convention Act (RSC 1970 c. F-17).	2	"Convention" means the convention between Canada and the United States of America for the preservation of the halibut fishery of the Northern Pacific Ocean and Bering Sea.
			"Convention waters" means the territorial waters and the high seas off the western coasts of Canada and the United States and the southern and western coasts of Alaska.
		4	The Government shall make regulations for carrying out and giving effect to the provisions of the Convention.
		5(1)	A protection officer may seize any fishing vessel (and the goods on board) belonging to or operated by a citizen, national or resident of Canada or the United States, if he suspects on reasonable grounds that an offence had been committed in the convention waters.
		5(2)	A protection officer may arrest without warrant any citizen, national or resident of Canada or United States whom he, on reasonable grounds, suspects of having committed an offence in the convention waters.
		5(3)	The fishing vessel and goods seized shall be retained in the custody of the protection officer making the seizure or shall be delivered into the custody of such person as the Minister of Fisheries may direct.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		5(5)	The convicting court or judge may in addition to any other penalty imposed order that any fishing vessel and/or goods on board the fishing vessel seized, be forfeited to Canada.
		7	Every person is guilty of an offence if he fishes, catches or attempts to catch halibut in the convention waters; or lands or attempts to land at any port or place within Canada any halibut caught in the convention waters; or knowingly has in his possession any halibut caught in contravention of the convention.
		8	Every owner or master of a fishing vessel that enters any port or place in Canada is guilty of an offence if during a voyage, the fishing vessel was used in fishing for halibut or had on board any halibut caught in the convention waters.
		9	Any person found guilty of an offence against this Act shall be liable upon summary conviction to a fine not less than \$100 or not more than \$1000 and/or to imprisonment for a term not exceeding one year.
	<u>Schedule</u>	I.	The nationals, inhabitants, fishing vessels and boats of Canada and the United States of America are prohibited from fishing for halibut (hippoglossus) in the convention waters.
	Convention between Canada and the United States of America for the preservation of the halibut fishery of the Northern Pacific Ocean and Bering Sea - Ottawa March 2, 1953		

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
			"Convention waters" is defined as the territorial waters and the high seas off the western coasts of Canada and of the United States of America, including the southern and the western coasts of Alaska.
		II(1)	Every national, inhabitant, vessel or boat of Canada or the United States of America engaged in fishing in the convention waters in violation of any regulation adopted pursuant to this convention may be seized by authorized officers of either contracting party and detained.
		II(2)	Each contracting party shall be responsible for the proper observance of this convention or any regulations adopted as a result of this convention.
		III.	In order to develop the stocks of halibut of the convention waters to levels that will permit the maximum sustained yield from fishery and to maintain the stocks at such levels, the International Pacific Halibut Commission with the approval of the Government of Canada and the United States of America and after investigation, shall divide the convention waters into areas; establish open or closed seasons for such areas; limit the size of the fish and the quantity of the catch to be taken from each area for each season; fix the size and character of halibut fishing appliances to be used in any area; make regulations for the licensing and departure of vessels and for the collection of statistics of the

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		III (cont'd)	catch of halibut; and close such portions of areas as the Commission finds to be populated by small, immature halibut and designate such areas as nursery grounds.
		IV	The contracting parties agree to enact and enforce such legislation as may be necessary to implement the provisions of this convention and the regulations that may be adopted under this convention.
Fisheries and Oceans	6. Northwest Atlantic Fisheries Convention Act (RSC 1970 C.F-18)	2	"Convention" means the International Convention for the Northwest Atlantic Fisheries. "Convention area" refers to the waters defined in Article 1 below.
		3	The Government of Canada may make regulations for carrying out and giving effect to the provisions of the convention. Such regulations may include measures for the conservation and protection of fish in the convention area; prohibiting and limiting the exploitation of any stocks of fish, loading, processing, transporting and possession of any stocks of fish and the landing, importation, sale or disposal of fish caught in the convention area by citizens, or residents of Canada or Canadian fishing vessels; the operation of fishing vessels and the use of fishing gear; the issue, suspension and cancellation of licences; the seizure, forfeiture and disposition of fishing vessels, equipment and

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3
(cont'd)

fishing gear; prescribing the powers and duties of protection officers; and prescribing the penalties that may be imposed on summary conviction or conviction or indictment for violation of any regulation.

Schedule

International
Convention for
the Northwest
Atlantic Fisheries
Washington, February
8, 1949.

Signatories:

Canada, Denmark,
France, Iceland,
Italy, United Kingdom
and the Government of
Newfoundland, Norway,
Portugal, Spain,
United Kingdom of
Great Britain and
Northern Ireland
and the United States
of America.

- I. The Convention area shall be "all waters, except territorial waters bounded by a line beginning at a point on the coast of Rhode Island in 71° 40' west longitude; then due south to 39° 00' north latitude; thence due east to 42° 00' west longitude; thence due north to 59° 00' north latitude; thence due west to 44° 00' west longitude; thence due north to the coast of Greenland; thence along the west coast of Greenland to 78° 10' north latitude; thence southward to a point in 75° 00' north

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I.
(cont'd)

latitude and 73° 30' west longitude; thence along a rhumb line to a point in 69° 00' north latitude and 59° 00' west longitude; thence due south to 61° 00' north latitude; thence due west to 63° 40' west longitude; thence due south to the coast of Labrador; thence in southerly direction along the coast of Labrador to the southern terminus of the boundary with Quebec; thence in a westerly direction along the coast of Quebec, and in an easterly and southerly direction along the coasts of New Brunswick, Nova Scotia and Cape Breton Island to Cabot Strait; thence along the coasts of Cape Breton Island, Nova Scotia, New Brunswick, Maine, New Hampshire, Massachusetts, and Rhode Island to the point of beginning."

I(3)

The convention area is divided into five sub-areas; the boundaries of sub-areas are indicated in the Annex below.

II(1)

The contracting governments shall establish and maintain a Commission - The International Commission for the Northwest Atlantic Fisheries for the purposes of this convention.

(2)

Each contracting government may appoint three commissioners and a number of experts or advisors to assist its commissioners.

(5)

The Commission shall hold regular annual meetings either at its seat or a place in North America.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		(7)	Each contracting government shall have one vote and the decisions of the Commission shall be by two-thirds majority of the votes of all contracting governments.
		III.	The Commission shall appoint an Executive Secretary who shall have full power and authority over the staff and shall perform such functions as the Commission shall prescribe.
		IV.	The contracting governments shall establish and maintain a panel for each of the sub-areas to carry out the objectives of this convention. Each panel may adopt, and amend the rules of procedure and by-laws for the conduct of its meetings and for the exercise of its functions and duties.
		V.	Each contracting government may set up an advisory committee composed of fishermen, vessel owners and other persons well informed about the problems of the fisheries of the Northwest Atlantic Ocean. The commissioners of each contracting government may hold public hearings within the countries they represent.
		VI(1)	The Commission shall be responsible for obtaining scientific information necessary for maintaining those stocks of fish which support international fisheries in the convention area. The Commission may also make such investigations as it finds necessary into the abundance, life history and ecology

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VI(1) of any species of aquatic life;
(cont'd) collect and analyze statistical information relating to the current conditions and trends of the fishery resources; study and appraise information concerning the methods for maintaining and increasing stocks of fish; hold or arrange such hearings as may be useful or essential in connection with the development of complete factual information necessary to carry out the provisions of this convention; conduct fishing operation for the purpose of scientific investigation; and publish and disseminate reports of its findings and statistical scientific and other information relating to the fisheries of the Northwest Atlantic Ocean either in collaboration with agencies of the contracting governments or other public or private agencies and organizations.

(2) Upon the unanimous recommendation of each panel affected, the Commission may alter the boundaries of the sub-areas defined in the Annex.

(3) Contracting governments shall furnish to the Commission statistical information it may request.

VII. Each panel shall be responsible for keeping under review the fisheries of its sub-area and the scientific and other information; make recommendations to the Commission for joint action; make recommendations to the Commission for studies and investigations necessary to the development of factual information relating to a sub-area; and make

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VII. (cont'd) recommendations to the Commission for the alteration of the boundaries of the sub-areas.

VIII. The Commission may, on the recommendations of one or more panels and on the basis of scientific investigations, adopt any or all of the following measures: establish open and closed seasons; close to fishing such portions of sub-areas found to be a spawning area or to be populated by small immature fish; establish size limits for species; prescribe fishing gear and appliances; and prescribe an over-all catch limit for any species of fish.

IX. The Commission may invite the attention of any or all contracting governments to any matters which relate to the objectives and purposes of this convention.

X. The Commission shall establish and maintain working arrangements with other public international organizations which have related objectives, particularly the Food and Agriculture Organization of the United Nations and the International Council for the Exploration of the Sea, to ensure effective collaboration and co-ordination with respect to their work or the avoidance of duplication of scientific investigation.

XI. Each contracting government shall pay the expenses of the commissioners experts and advisers.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		XII.	Contracting governments agree to take such action as may be necessary to make effective the provisions of this convention and to implement any proposals recommended by the Commission.
		XIII.	Contracting governments agree to invite the attention of any government not a party to this convention, to any matter relating to the fishing activities in the convention area of the nationals or vessels of that government which appear to affect adversely the operations of the Commission or the carrying out of the objectives of this convention.

A N N E X

1. The convention area shall be sub-divided as follows:

Sub-area 1. That portion of the convention area which lies to the north and east of a rhumb line from a point 75° 00' north latitude and 73° 30' west longitude to a point in 69° 00' north latitude and 59° 00' west longitude; and to the north and east of rhumb line from a point in 61° 00' north latitude and 59° 00' west longitude to a point in 52° 15' north latitude and 42° 00' west longitude.

Sub-area 2 - That portion of the convention area lying to the south and west of sub-area 1 and to the north of the parallel of 52° 15' north latitude.

Sub-area 3 - That portion of the convention area lying south of the parallel of 52° 15' north latitude;

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY

and the east of a line extending due north from Cape Bauld on the north coast of Newfoundland to 52° 15' north latitude; to the north of the parallel of 39° 00' north latitude; and to the east and north of a rhumb line extending in a northwesterly direction which passes through a point in 43° 30' north latitude, 55° 00' west longitude, in the direction of a point in 47° 50' north latitude, 60° 00' west longitude, until it intersects a straight line connecting Capa Ray, on the coast of Newfoundland, with Cape North on Cape Breton Island; thence in a northerly direction along said line to Cape Ray.

Sub-area 4 - That portion of the convention Area lying to the west of the sub-area 3, and to the east of a line beginning at the terminus of the international boundary between the United States of America and Canada in Grand Manan Channel, at a point in 44° 46' 35.34" north latitude, 66° 54' 11.23" west longitude; thence due west to the meridian of 67° 40' west longitude, thence due south to the parallel of 42° 20' north latitude; thence due east to a point in 66° 00' west longitude; thence along a rhumb line in a southeasterly direction to a point in 42° 00' north latitude, 65° 40' west longitude; thence due south to the parallel of 39° 00' north latitude.

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Sub-area 5 - That portion of the convention area lying west of the western boundary of sub-area 4.

2. Panel representation for each sub-area shall be as follows:

Sub-area 1 - Denmark, France, Italy, Norway, Portugal, Spain, United Kingdom.

Sub-area 2 - Denmark, France, Italy, Newfoundland.

Sub-area 3 - Canada, Denmark, France, Italy, Newfoundland, Portugal, Spain, United Kingdom.

Sub-area 4 - Canada, France, Italy, Newfoundland, Portugal, Spain, United States.

Sub-area 5 - Canada, United States

Fisheries
and Oceans

7. Pacific Salmon
Fisheries Con-
vention Act
(RSC 1970 C.F.-19).

2

"Convention" means the convention between Canada and the United States of America for the protection, preservation, and extension of the sockeye salmon fisheries in the Fraser River system.

4

The Governor-in council may make regulations for carrying out and giving effect to the Provisions of the convention and the orders and regulations adopted by the Commission.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		5	Any person who violates a regulation made under this Act is guilty of an offence and is liable upon summary conviction to a fine not exceeding \$1000 and/or to imprisonment for a term not exceeding one year.
		6 & 8 (1)	A protection officer may, anywhere in the convention waters, seize any fishing vessel belonging to or operated by a citizen, national or resident of Canada or the United States and/or goods aboard if he suspects on reasonable grounds that an offence has been committed against this Act.
		(2)	A protection officer may, anywhere in the convention waters, arrest without warrant any citizen, national or resident of Canada and the United States if he, on reasonable grounds, suspects that an offence has been committed against this Act.
		(3)	A protection officer shall retain the fishing vessel and goods seized in his custody or shall deliver into the custody of such person as the Minister of Fisheries and Oceans may direct in the case of Canada or shall deliver the person, vessel or goods to an authorized official of the United States to be dealt with in accordance with the law of the United States.
		7	Where a person is convicted of an offence against this Act, the convicting court or judge may, in addition to any other penalty imposed, order that the fishing

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		7 (cont'd)	vessel and/or the goods aboard be forfeited to Canada.
	<u>Schedule</u>		
	Convention between Canada and the United States of America for the protection, preser- vation and extension of the sockeye salmon fisheries in the Fraser River system - Washington, May 26, 1930. Note: The Con- vention was amended by the protocol dated December 28, 1956; and provisions extended to apply to pink salmon.	I.	The provisions of this convention and the orders and regulations issued under the authority of this convention shall apply to the territorial waters and the high seas westward from the western coast of Canada and the United States of America and from a direct line drawn from Bonilla Point, Vancouver Island, to the lighthouse on Tatoosh Island, Washington - which line marks the entrance to Juan de Fuca Strait - and embraced between 480 and 490 north latitude; excluding however all the waters of Barklay Sound, eastward of a straight line drawn from Amphitrite Point to Cape Beale and all the waters of Nitinat Lake and its entrance; and the Fraser River and its tributary streams and lakes. The high contracting parties agree to establish such buoys and marks for the purpose of this convention as may be recommended by the International Pacific Salmon Fisheries Commission.
		II.	The contracting parties agree to establish a commission to be known as the International Pacific Salmon Fisheries Commission, consisting of six members; three to be appointed by Canada and three by the United States.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		III.	The Commission shall make a thorough investigation into the natural history of the Fraser River sockeye salmon, into hatchery methods, spawning ground conditions and other related matters.
		IV.	The Commission is empowered to limit or prohibit taking sockeye salmon in any of the convention waters.
		V.	In order to secure a proper escapement of sockeye salmon during the spring or Chinook salmon fishing season, the Commission may prescribe the size of the meshes in all fishing gear and appliances that may be operated during this season in any of the convention waters.
		VI.	At least two of the commissioners of each contracting party shall vote affirmatively in order to give authority to any action taken by the Commission.
		VIII.	Each contracting party shall be responsible for the enforcement of the order and regulations adopted by the Commission and also shall acquire and place at the disposition of the Commission, any land within its territory required for the construction and maintenance of hatcheries, rearing ponds and other such facilities.
		IX.	Every national or inhabitant, vessel or boat of Canada or the United States of America that engages in sockeye salmon fishing on the high seas covered by this

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		IX. (cont'd)	convention, in violation of an order or regulations adopted by the Commission under the authority of this convention, may be seized and detained by the duly authorized officers of either contracting Party.
		X.	The High Contracting parties agree to enact and enforce such legislation as may be necessary to make effective the provisions of this convention and the orders and regulations adopted by the Commission with appropriate penalties for violations.
Fisheries and Oceans	8. Fisheries Development Act (RSC 1970 C.F.-21)	2	Defines "fishery resources" to include fish, molluscs, crustaceans, marine mammals and marine plants.
		3(1)	The Minister of Fisheries may undertake projects for the more efficient exploitation of fishery resources and for the exploration for and development of new fishery resources and fishery; for the introduction and demonstration to fishermen of new types of fishing vessels, fishing equipment and new fishing techniques; and for the development of new fishery products and for the improvement of handling, processing and distribution of fishery products.
		3(2)	The Minister may enter into an agreement with any province regarding the payment of joint projects with the government of the province or any of its agency.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		3(4)	In order to assist the formulation and assessment of fisheries development projects, the Minister may undertake economic studies alone or jointly with the government of any province or its agency or with any university, educational institution or person and may co-ordinate such studies with similar undertaking in Canada.
		4	The Minister of Fisheries and Oceans, in carrying out any project or economic study, shall make use, whenever possible, of the services and facilities of other departments of the Government of Canada or any of its agencies.
		7	The Minister of Fisheries and Oceans, in carrying out the purposes and provisions of this Act, shall establish and appoint such advisory committees and members as he deems necessary.
Fisheries and Oceans	9. Fisheries Research Board Act (RSC 1970 C.F-24).	4	The Board shall consist of a chairman and not more than eighteen other members. The majority of the members of the Board excluding the chairman, shall be scientists and the remaining members shall be representatives of the Department of Fisheries and Oceans and the fishing industry.
		5(4)	The Chairman is the chief executive officer of the Board and has supervision over and direction of the work of the Board and of the persons appointed for the purpose of carrying out the work of the Board.

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The Fisheries Research Board
"has charge of all federal fishery
research stations in Canada, and
has the conduct and control of
investigation of practical and
economic problems connected with
marine and fresh water fisheries,
flora and fauna and such other
work as may be assigned to it by
the Minister."

3

II. FEDERAL LEGISLATION AND REGULATIONS GOVERNING CONTINENTAL SHELF OIL AND GAS DEVELOPMENT

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
1) Energy, Mines and Resources and	1. Oil and Gas Production and Conservation Act (RSC 1970 C.O-4, as amended).	2	(b) Chief Conservation Officer" means an officer designated by the Minister of Energy, Mines and Resources for an area and its natural resources for which the Department has administrative responsibility.
2) Indian Affairs and Northern Development			

"Committee" refers to the oil and gas committee established pursuant to section 4.

"Lease" means an oil and gas lease issued pursuant to regulations made in accordance with the Territorial Lands Act and the Public Lands Grants Act.

"Permit" means an exploratory oil and gas permit issued in accordance with the Territorial Lands Act and the Public Lands Grants Act.

"Pipeline" means any pipe or any system or arrangement of pipes by which oil, gas or water incidental to the drilling for or production of oil or gas is conveyed from any wellhead, or where it is produced or stored, processed or treated and includes offshore installations or vessels, tanks and flow controlling or measuring equipment; but does not include any pipe or any system or arrangements of pipes that constitutes a distribution system for the distribution of gas to ultimate consumers.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		2 (cont'd)	"Well" refers to any opening in the ground that is made by drilling or boring for the production of oil and gas or for the purpose of searching for or obtaining oil or gas.
		3	This Act applies in respect of oil and gas in any of the following areas, except in areas within the geographical limits of or where the administration of the area has been transferred by law to any of the ten provinces: (a) The Yukon Territory or the North-West Territories; (b) The Submarine areas adjacent to the coasts of Canada to a water depth of two hundred meters or beyond that limit to where the depth of the superjacent waters admits the exploitation of the natural resources of the seabed and subsoil; and (c) Any lands which Her Majesty has the right to dispose of or exploit the minerals of such lands.
		4	The Governor in Council may establish a committee to be known as the Oil and Gas Committee which shall consist of five members, three of whom may be employees of the Public Service; members of the Committee will hold office for a term of three years. The Committee shall be under the direction of the Minister of Indian Affairs and Northern Development in respect of the areas for which the Minister has administrative responsibility; and the Minister of Energy, Mines and Resources in respect of areas for which the Minister has administrative responsibility.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		5(1)	The Governor in Council shall appoint at least two persons with specialized, expert or technical knowledge of oil and gas as members of the oil and gas committee.
		(2)	Persons employed in any division branch or bureau of the Department of Indian Affairs and Northern Development, or the Department of Energy, Mines and Resources that is designated by the order of the Minister concerned as the division, branch or bureau charged with the day-to-day administration and management of oil and gas resources for the Department are not eligible to be members of the committee but such officers may be designated to act as secretaries to the committee.
		(3)	The Minister may provide the necessary staff for the proper conduct of the affairs of the committee; and professional and technical assistance for temporary periods or for specific work as the committee may request. Such assistance shall be provided from the public service of Canada except otherwise approved by the Treasury Board.
		6	No member of the committee shall have a pecuniary interest of any description, directly or indirectly in any property in oil or gas to which this Act applies or shares in any company engaged in any phase of oil and gas industry in Canada in an amount in excess of five per cent of the issued shares; and no member who owns any shares of a company engaged in

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		6 (cont'd)	any phase of the oil or gas industry in Canada, shall vote when a question affecting such a company is being considered by the Committee.
		8	The oil and gas committee has full jurisdiction to inquire into, hear and determine, make any order or give any direction that the Committee is charged with the duty to hold an inquiry or is authorized to make or give pursuant to this Act. The finding or determination of the committee upon any question of fact within its jurisdiction is binding or conclusive.
		10	The Minister may at any time refer to the committee for a report or recommendation any question, matter or thing arising under this Act or relating to the conservation, production, storage processing or transportation of oil or gas.
		11	Any order made by the committee may for the purpose of enforcement, be made an order of the Federal Court of Canada; and the usual practice and procedure of that court in such matters may be followed or the secretary or an officer of the committee may file in the Registry of the Federal Court a certified copy of the order.
		12	The Governor in council may make regulations respecting the exploration and drilling for and the production and conservation, processing and transportation of

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		12 (cont'd)	oil and gas; the licensing, drilling, spacing, locating, completing, producing, equipping suspending and abandoning of wells; regulating and controlling of the rate at which oil, gas and water may be produced from any well, pool or field; the reporting of information and data obtained in the course of exploration for, the drilling for and the production of oil and gas and the keeping of records and measurements of all oil, gas and water produced; concerning the safety and the inspection of all operations conducted in connection with the exploration for, the drilling for and the production of oil and gas and prescribing the measures to be taken to ensure the safety of such operations; and prescribing the measures necessary to prevent pollution of air, land or water as a result of the exploration and drilling for or the production, storage, transportation, distribution measurement, processing or handling of any oil and gas or any substance obtained from or associated with oil and gas.
		13(1)	Any person who produces waste is guilty of an offence under this Act but can be prosecuted for such an offence only with the consent of the Minister.
		(2)	"Waste" is defined to include the inefficient or excessive use or dissipation of reservoir energy; the locating, spacing or drilling of a well within a field or pool without regard to sound engineering and economic principles; the inefficient storage of oil or gas above ground or underground; the production of oil or gas in

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		13(2) (cont'd)	excess of available storage, transportation or marketing facilities; and the escaping or storing of gas that could be economically recovered and processed or economically injected into an underground reservoir.
		14	Where the Chief conservation officer, on reasonable and probable grounds is of the opinion that waste is being produced, may order that all operations giving rise to such waste cease until that waste is stopped. Such an order may be issued after an investigation has been held at which interested persons are given the opportunity to make presentation.
		15	The Chief conservation officer in giving an order for an operation giving rise to a waste to be stopped, may direct persons to enter upon the land, premises or place where the operations are being carried out and may authorize such persons to take over the management and control of such operations.
		16	Any person aggrieved by an order made by the Chief conservation officer may appeal to the oil and gas committee.
		20	<u>DEFINITIONS:</u> "Pooled spacing unit" means the area that is subject to a pooling agreement or a pooling order;

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		20 (cont'd)	"Pooling agreement" means an agreement to pool the interests of owners in a spacing unit and to provide for the operation or the drilling and operation of a well; "Royalty interest" means any interest in or the right to receive a portion of any oil or gas produced from a field or pool or part of a field and pool but does not include working interest or the interest of any person whose sole interest is as a purchaser of oil and gas; "Royalty owner" means a person including Her Majesty in the right of Canada, who owns a royalty interest; "Spacing unit" means the area allocated to a well for the purpose of drilling for or producing oil and gas; "Tract participation" means the share of production from a unitized zone that is allocated to a unit tract under agreement or unitization order or the share of production from a pooled spacing unit that is allocated to a pooled tract under a pooling agreement or pooling order; "Unit agreement" means an agreement to unitize the interests of owners in a pool or part of a pool exceeding the area of a spacing unit; "Unit area" means the area that is subject to a unit agreement;

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		20 (cont'd)	"Unit operating agreement" means an agreement, providing for the management and operation of a unit area and a unitized zone that is entered into by working interest owners who are parties to a unit agreement with respect to that unit area and unitized zone, and includes a unit operating agreement as varied by a unitization order; "Unit operation" means those operations conducted pursuant to a unit agreement or a unitization order; "Unit operator" means a person designated as unit operator under a unit operating agreement; "Unit tract" means the portion of a unit area that is defined as a tract in a unit agreement. "Unit zone" means a geological formation that is within a unit area and subject to a unit agreement; "Working interest" means a right in whole or part, to produce and dispose of oil or gas from a pool or part of a pool, whether such right is held as an incident of ownership of an estate in fee simple in the oil or gas or under a lease, agreement or other instrument, if the right is chargeable with and the holder is obligated to pay or bear, either in cash or out of production, all or portion of the costs in connection with the drilling for, recovery and disposal of oil or gas.

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Where one or more working interest owners have leases or separately owned working interests within a spacing unit, the working interest owners and the royalty owners who own all of the interests in the spacing unit may pool their working interests and royalty interests in the spacing unit for the purpose of drilling for and/or producing oil and gas if a copy of the pooling agreement and amendments is filed with the Chief conservation officer. The Minister may enter into such a pooling agreement on behalf of Her Majesty.

22

In the absence of a pooling agreement, a working interest owner in a spacing unit may submit an application, to the oil and gas committee through the Minister for a pooling order which shall when granted, provide: for the drilling and operation of a well on the spacing unit; for the appointment of a working interest owner as operator to be responsible for the drilling, operation or abandoning of the well; for the allocation to each pooled tract of its share of the oil and gas from the pooled spacing unit; for the payment of all costs incurred in the drilling and abandoning of the well; for the sale of any oil or gas; and for a penalty for a working interest owner who does not pay the portion of the cost attributable to him.

24

The Oil and gas committee shall hear any application to vary, amend or terminate and may vary or amend a pooling order made by the owners of twenty-five percent, calculated

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		24 (cont'd)	on an acreage basis, of the working interests in the pooled spacing unit.
		25	No person shall produce any oil or gas within a spacing unit in which there are two or more leases or two or more separately owned working interests, unless a pooling agreement has been entered into.
		26	One or more working interest owners in a pool or part of a pool exceeding the area of a spacing unit, together with the royalty owners, may enter into a unit agreement and operate their interests pursuant to the terms of the unit and amendments thereto; a copy of the agreement should be filed with the Chief conservation officer.
		27	The Chief conservation officer, where in his opinion, a unit operation of a pool would prevent waste, may apply to the oil and gas committee for an order requiring the working interest owners in the pool to enter into a unit agreement or unit operating agreement.
		28	One or more working interest owners who are parties to a unit agreement and a unit operating agreement and own in the aggregate sixty-five percent or more of the working interests in a unit area, may apply for a unitization order with respect to the agreement.

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		29(1)	An application for a unitization order shall contain: a plan showing the unit area; one copy each of the unit agreement and the unit operating agreement; a statement of the nature of the operations to be carried out; a statement for each proposing unit, the names and addresses of the working interest owners and the royalty owners in that tract; and the tracts that are entitled to be qualified as unit tracts under the provisions of the unit agreement.
		(2)	The unit agreement shall include a description of the unit area and the unit tracts included in the agreement; an allocation to each unit tract of a share of the production from the unitized zone not required, consumed, or lost in the unit operation; and a provision specifying the manner in which and the circumstances under which the unit operation shall terminate.
		(3)	The unit operating agreement shall make provisions for the allocation or transfer to the unit, and any adjustment among the working interest owners of the investment in wells and equipment within the unit area; for the charging of the cost and expenses of the unit operation to the working interest owners; for the supervision of the unit operation by the working interest owners through an <u>operating committee</u> composed of their duly authorized representatives and for the appointment of a unit operator; and for the determination of the percentage value of the vote of each working interest owner and

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		(3) (cont'd)	the method of voting upon any motion before the operating committee and the percentage value of the vote required to carry the motion.
		38	Except as otherwise provided in this Act, every decision or order of the Oil and gas committee is final and conclusive.
		39	The committee may on its own motion or at the request of the Minister, state a case, in writing, for the opinion of the Federal Court of Canada, upon any question that in the opinion of the committee is a question of law or of the jurisdiction of the committee.
		40	The Governor in council may at any time, in his discretion, either upon petition of any interested person, or on his own motion, vary or rescind any decision or order of the committee.
		41	A decision or order of the oil and gas committee can be appealed at the Supreme Court of Canada on a question of law or jurisdiction.
		42	The conservation engineers necessary for the administration and enforcement of this Act shall be appointed under the Public Service Employment Act.
		43	A conservation engineer may at any reasonable time, enter and inspect any place, premises or structure used in connection with

DEPARTMENT	ACT/REGULATIONS SCHEDULE	SECTION/ ARTICLE	SUMMARY
		43 (cont'd)	the exploration and exploitation of oil and gas; require the production and inspection of any books, records, documents, licences and permits and take samples or particulars and carry out any reasonable tests or examination.
		46	No person shall obstruct or hinder or make a false or misleading statement, orally or in writing, to a conservation engineer carrying out his duties and functions under this Act or the regulations.
		47	Where a conservation engineer, on reasonable and probable grounds, is of the opinion that an operation is in contravention of any safety regulation made pursuant to this Act and that continuation of the operation is likely to result in serious bodily injury, may order that such an operation cease or be continued only in accordance with the terms of the order posted at the scene of the operation.
		48	A person is guilty of an offence who knowingly makes any false entry or statement, and destroys, mutilates or falsifies any report or other document, required by this Act or the regulations or by any order made pursuant to this Act or the regulations.
		49	Every person who, or whose employee or agent, is guilty of an offence under this Act is liable on summary conviction to a fine not exceeding one thousand dollars and/or to imprisonment not exceeding six months.

DEPARTMENT

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Where a person is guilty of an offence under this Act, the Court may, in addition to imposing any penalty, order that person to comply with the provisions of the Act, regulations or order.

REGULATIONS RESPECTING THE ADMINISTRATION AND DISPOSITION OF OIL
AND GAS BELONGING TO HER MAJESTY IN RIGHT OF CANADA UNDER ALL
LANDS FORMING PART OF CANADA BUT NOT WITHIN ANY PROVINCE

DEPARTMENT	REGULATION	SECTION	SUMMARY
(1) Energy, Mines and Resources	(i) Canada Oil and Gas Land Regulations (SOR/61 253;	2	"Canada lands" means territorial lands as defined in the Territorial Lands Act, and public lands as defined in the Public Lands Grants Act and includes mines, minerals, easements, servitude and all other interests in real property; and includes land under water.
(2) Indian Affairs and Northern Development	The Canada Gazette Part II Vol.95 NO.12, June 28, 1961).		"Commercial exploration" means the period commencing on the day on which the Minister, having considered the economic conditions, decides that a market exists commensurate to the productive capacity of the well. "Commercial quantity" means the output of oil and gas from a well that in the opinion of the Chief of the resources division, would warrant the drilling of another well in the same area. "Development well" means a drilled well, the location of which is related to producible wells, that will produce from the same pool as the producible wells. "Exploratory well" means any well that is not a development well. "Exploratory work" includes test drilling, aerial mapping, surveying geological, geophysical and geo- chemical examinations and investi- gations relating to the subsurface geology.

DEPARTMENT	REGULATION	SECTION	SUMMARY
		2	"Gas" means all natural gases and all hydrocarbons not defined as oil. "Lessee" means a person holding an oil and gas lease. "Licence" means an exploratory licence. "Licensee" means a person holding a licence. "Oil" means crude petroleum oil and other related hydrocarbons, regardless of gravity that are produced at a well head in liquid form by ordinary production methods. "Permit" means an exploratory permit. "Permittee" means a person holding a permit. "Well" means any opening in the ground, that is not a seismic shot hole or a structure test hole and that is made by drilling, boring or any other method for the purpose of obtaining oil and gas, or for the injection of any fluid into an underground reservoir.
		4	For the purpose of these regulations, Canada Lands shall be divided into grid areas.
		5(1)	A grid area, the whole or greater part of which lies south of latitude 70°, shall be bounded on the east and west side by successive meridians of

DEPARTMENT	REGULATION	SECTION	SUMMARY
		5(1) (cont'd)	longitude of the series 50°00'00", 50°15'00", 50°30'00", and on the north and south sides by straight lines joining the points of intersection of the east and west boundaries with successive parallels of latitude of the series 40°00'00", 40°10'00", 40°20'00" which may be extended.
		(2)	A grid area, the whole of which lies north of latitude 70°, shall be bounded on the east and west by successive meridians of longitude of the series 50°00'00", 50°30'00", 51°00'00", and on the north and south sides by straight lines joining the points of intersection of the east and west boundaries with successive parallels of latitude of the series 70°00'00", 70°10'00", 70°20'00", the series may be extended as required.
		(3)	Every grid area shall be referred to by the latitude and longitude of the northeast corner of that grid area.
		10	For the purposes of these regulations only a Dominion Land surveyor shall make a legal survey of Canada Lands.
		11(3)	Every plan of a legal survey made pursuant to these regulations shall, where relevant, show the position, direction and length of the boundaries of grid areas and division; the position of existing wells; the nature and position of any monument used to mark or placed as a reference; and any road allowance, surveyed road, railway, pipeline, high voltage power lines, dwellings, industrial plants, air fields and existing or proposed flight ways.

DEPARTMENT	REGULATION	SECTION	SUMMARY

24

The chief of the Conservation Division or the oil conservation engineer may, upon application, issue a licence. Every application for a licence shall be accompanied by the fee specified in Schedule A. Every licence expires on the thirty-first day of March following the date of issue.

25

A licence shall not be issued to a person who is less than twenty-one years of age; or a company that is not incorporated or licensed to do business in Canada or not incorporated in a province of Canada.

26

A licensee may, for the purpose of searching for oil or gas, enter upon and use the surface of any Canada lands in order to make geological and geophysical examinations, carry out aerial mapping; or investigate the subsurface.

27

No licensee shall drill on any Canada lands a hole deeper than one thousand feet, except with the written consent of the permittee or the chief of the Resources Division.

30

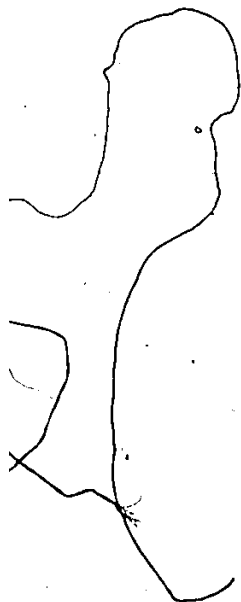
Where the Minister is satisfied that exploratory work will be carried out, may upon application, issue an exploratory permit for Canada lands.

33

Every permit shall be issued for a grid area or one-half of a grid area.

35

A permittee has the exclusive option to obtain an oil and gas lease for the Canada lands described in his exploratory permit.



DEPARTMENT REGULATION SECTION

SUMMARY.

- 36 Where the whole or greater part of a permit area is located south of latitude 65°, the permit is valid for three years from the date of issue; where the whole or greater part of a permit area is located between latitude 65° and latitude 70°, the permit is valid for four years; and where a permit area is located north of latitude 70° or where the whole or greater part of a permit area is, in the opinion of the Chief of the Resources Division, covered by seacoast waters, the permit is valid for six years from the date of issue.
- 38 The Chief shall, upon application, renew a permit for one year; and a permit may not be renewed more than six times.
- 41 Every permittee shall deposit with the Chief, before the commencement of a period, money or bonds of a value equal to the deposit required as stated in Schedule B.
- 45(1) Every permittee shall, within ninety days after the end of a period, submit to the chief, a statement in triplicate of the expenditures made for exploratory work done on the permit area or group of permit areas.
- (3) Every statement of expenditure shall be verified by a statutory declaration and shall include the items of expenditures; the number of the permit areas on which the work was done; the number of the permit areas upon which the expenditure is to be applied; the specific purpose for which each item of expenditure was made; and three copies of all reports, photographs, maps and data.

DEPARTMENT	REGULATION	SECTION	SUMMARY
		49	A permittee may apply to the Chief of Resources Division to group permit areas.
		52	Every licensee, permittee, or lessee shall, at least fifteen days prior to commencing exploratory work, send a written notice, in duplicate, in a form approved by the Chief, to the oil conservation engineer, stating the date on which he expects to commence the work and to complete the work; the purpose and nature of the work; approximate acreage of the area on which the work is to be done, together with a map showing the boundaries of the area; the equipment he intends to use; the name of the person in charge of the work; and the number of persons to be employed.
		55	Upon application to the Minister, a permittee shall be granted an oil and gas lease. The Minister shall be satisfied that such permittee is a Canadian citizen over twenty-one years of age, and that he will be the beneficial owner of the interest to be granted, or a corporation incorporated in Canada, a company with at least fifty percent of the issued shares listed on a recognized Canadian stock exchange or owned by Canadian citizens.
		58	The Minister may grant an oil and gas lease or call tenders for the purchase of an oil and gas lease for Canada lands.
		59	A lessee who is a holder of a licence may carry out exploratory work and drill wells in Canada lands included in his lease; or produce any oil, gas or related hydrocarbons from the Canada lands included in his lease.

DEPARTMENT	REGULATION	SECTION	SUMMARY
		60	A lease shall be composed of quadrilateral blocks of sections not larger than five sections by three sections or four sections by four sections; or six sections by three sections where leases are granted for not more than two-fifths of the number of sections in the permit area held by the applicant.
		62	Every oil and gas lease shall be granted for a term of twenty-one years.
		63	An oil and gas lease shall be renewed for successive terms of twenty-one years if the area under the oil and gas lease is capable of producing oil and gas and the lessee has complied with the terms of the oil and gas lease and with the provision of the regulations in force at the date on which the oil and gas lease was granted.
		66	The Chief of the Resources Division may at any time order that a well within a permit area contains oil and gas in commercial quantity; and
		67	A permittee shall, within one year from the date of the mailing to him of such an order, apply for an oil and gas lease; or
		68	A permittee, may within ninety days from the date of mailing the order, serve on the Minister a notice of objection setting out the reason for the objection. Upon receipt of the notice of objection, the Minister shall consider the order and rescind, confirm or vary the order and shall notify the permittee of his decision by registered mail.

DEPARTMENT REGULATION SECTION

SUMMARY

71

Where Canada lands have been held under a permit or an oil and gas lease, and such a permit or lease has expired, been cancelled or been surrendered, the Minister shall publish in the Canada Gazette, a notice of expiration, cancellation or surrender of that permit or oil and gas lease.

72

No transfer of interest in a permit or oil and gas lease shall take place until the transfer is registered in accordance with the Regulations.

78

A lessee may at any time, surrender the whole or part of his oil and gas lease, but no lessee shall surrender a part smaller than one section except where the lease granted is smaller than one section.

79

A lessee shall pay for the first year of the oil and gas lease a rental of fifty cents for each acre of land under lease and a rental of one dollar for each acre for each year after the first year of the oil and gas lease.

80

Where, after the first year of an oil and gas lease, commercial exploitation has not begun but oil or gas has been found in commercial quantity, the Minister may order the reduction of the rental payable under that oil and gas lease.

85

The rental payable for any year shall be reduced by the amount of the royalty paid under that oil and gas lease during the preceding year.

DEPARTMENT	REGULATION	SECTION	SUMMARY

86(1)(a) A permittee or lessee shall pay for each month, prior to the end of the first five years of commercial exploitation, or prior to the end of the first thirty-six months, in aggregate, during which oil or gas is produced, which ever first occurs, a royalty of five percent of the market value at the well head of all oil and gas obtained during that month from the permit or lease area, where the permit or lease area is located north of latitude 70°; or the whole or greater part of the permit or lease area is covered by sea coast waters;

(b) for each month prior to the end of the first three years of commercial exploitation, a royalty of five per cent of the market value at the well head of oil and gas obtained during that month from the permit or lease area, where the whole or greater part of the permit or lease area is located south of latitude 70° and is not included in paragraph (a) above; and

(c) for each month following the period for which a royalty is payable pursuant to paragraph (a) or (b), a royalty of ten per cent of the market value at the well head of all oil or gas obtained during that month from the permit or lease area.

(2) The royalty shall be paid on or before the twenty-fifth day of the month next following the month for which the royalty is payable.

88

Where in the opinion of the Governor in council, a reduction in the royalty would enable a lessee to continue producing oil and gas for a longer period, the Governor in council may reduce the royalty by such amount and for such period as he consider advisable.

DEPARTMENT	REGULATION	SECTION	SUMMARY
		89	The Minister may at any time, except during the three years next following the issue of a lease, order the lessee to commence and continue the drilling of a well to the satisfaction of the Minister within ninety days from the date of the order.
		91	For the purpose of a drilling ordered by the Minister, a lessee may upon giving written notice, ~~grant~~ areas that are within a circle of twenty-four miles; and that cover an area of not more than two hundred and fifty thousand acres.
		94	Where a lessee is producing oil or gas in commercial quantity, the Chief of the Resources Division may order the lessee to drill further wells on the lease area and to continue producing oil and gas so long as that area continues to yield oil or gas in commercial quantity.
		107(1)	Except as provided in this section, the information furnished under these Regulations; shall not be released.
		(3)	Information submitted by a permittee or lessee concerning a development well may be released thirty days after the completion, suspension or abandonment of that well.
		(4)	Information concerning an explorator well may be released two years after the completion, suspension or abandonment of that well.
		(5)	Information concerning a surface geological or photogeological survey and factual information obtained from a magnetometer, gravity, seismic or

DEPARTMENT	REGULATION	SECTION	SUMMARY

(5)
(Cont'd)

other survey may, at the discretion of the Minister, be released two years after the cancellation, surrender or expiry of the permit of the area on which the work was done, or all oil and gas leases on which the work was done; or two years after the cancellation, surrender or expiry of the oil and gas lease of the area on which the work was done.

(6)

Information submitted by a licensee, permittee or lessee may, at the discretion of the Minister, be released at any time with the consent of the licensee, permittee or lessee.

(7)

General topographical information, legal surveys and elevations of well locations, the current depth of wells and the current status of well may be released at any time.

108

The Minister, or a person authorized by him, may at any time, enter upon a permit area or lease area and inspect all wells, technical records, plants and equipment; take samples and particulars; and carry out tests or examinations not detrimental to the operations of the permittee or lessee for determining the production of oil and gas. The permittee or lessee shall give the Minister or his authorized representative, such assistance as may be necessary.

Schedule A:
Fees

1.	Exploratory licence	\$ 25.00
2.	Exploratory permit	250.00
3.	Oil and gas lease	10.00
4.	Transfer of permit	25.00
5.	Transfer of lease	10.00

DEPARTMENT	REGULATION	SECTION	SUMMARY	
	Schedule B:	1	Column I Period	Column II Deposits
	Deposits			
			The first eighteen-month period of original term in the case of a permit located south of latitude 65° or between 65° and 70°.	Five cents for each acre to be included in the permit.
		2	The first thirty-six month period of the original term in the case of a permit located north of latitude 70°.	Five cents for each acre to be included in the permit.
		3	The second eighteen-month period of the original term in the case of a permit located south of latitude 65°.	Fifteen cents for each acre included in the permit.
		4	The thirty-month period of the original term next following the first eighteen-month period of the original term in the case of a permit located between latitude 65° and 70° north.	Ffiteen cents for each acre included in the permit.
		5	The second thirty-six-month period of the original term in the case of a permit located north of latitude 70°.	Twenty-five cents for each acre included in the permit.
		6	The first renewal period.	Thirty cents for each acre included in the permit.
		7	The second renewal period.	Forty cents for each acre included in the permit.

DEPARTMENT	REGULATION/ SCHEDULE	SECTION/ ARTICLE	SUMMARY	
	Schedule B:	8	The third renewal period	Fifty cents for each acre included in the permit.
	Deposits			
	(cont'd)	9	The fourth renewal period.	Fifty cents for each acre included in the permit.
		10	The fifth renewal period.	Fifty cents for each acre included in the permit.
		11.	The sixth renewal period.	Fifty cents for each acre included in the permit.
		12	The period of an extension granted where a permit has been renewed six times.	Ten cents for each acre included in the permit.

REGULATIONS RESPECTING THE DRILLING AND PRODUCTION OF OIL
AND GAS BELONGING TO HER MAJESTY IN RIGHT OF CANADA UNDER
ALL LANDS FORMING PART OF CANADA BUT NOT WITHIN ANY PROVINCE

DEPARTMENT	REGULATION	SECTION	SUMMARY
(1) Energy, Mines and Resources	(ii) Canada Oil and Gas drilling and production regulations	2.	"Barrel" means thirty-five gallons
(2) Indian Affairs and Northern Development	(SOR/61 253, The Canada Gazette, Part II Vol. 95 No. 12, June 28, 1961).		"Blowout" means the unintentional and uncontrolled escape of oil and gas from a drilling well when high formation pressure is encountered.
			"Field" means the general surface area or areas underlain or appearing to be underlain by one or more pools or the sub surface regions verti- cally beneath the surface area or areas.
			"Gas-oil ratio" means the number of cubic feet of gas produced per barrel of oil.
			"Gas-well" means a well that produces natural gas not associated or blended with oil at the time of production; or that produces more than thirty thousand cubic feet of natural gas to each barrel of oil from the same producing horizon; or a well from which the gas produ- cing stratum has been successfully segregated from the oil and the gas is produced separately; or a well that is classified as a gas well by the Minister for any reason.
			"Oil well" means any well capable of producing oil and not being a gas well as defined above.

DEPARTMENT	REGULATION	SECTION	SUMMARY

2
(cont'd)

"Pipe line" means any pipe or any system or arrangement of pipes wholly within Canada lands whereby oil or gas is conveyed from any wellhead or other place at which it is produced, to any other place, or from any place where it is stored, processed or treated, to any other place, and includes all property of any kind used for the purpose of, or in connection with, or incidental to, the operation of a pipeline in the gathering, transporting, handling and delivery of oil or gas, and includes tanks, surface reservoirs, pumps, racks, storage and loading facilities, compressors pressure measuring and controlling equipment and fixtures, flow controlling and measuring equipment and fixtures, but does not include any pipe or any system or arrangement of pipes which constitutes a distribution system for the distribution of gas to ultimate consumers.

"Pool" means a natural underground reservoir containing or appearing to contain an accumulation of oil and/or gas separated or appearing to be separated from any other accumulations.

"Waste" includes the inefficient, excessive or improper use of dissipation of reservoir energy; the locating, spacing, drilling, equipping, operating or producing of any well in a manner that results in reducing the quantity of oil or gas ultimately recoverable from any pool; the inefficient storing of oil or gas, whether on the surface or underground; the producing of oil or gas in excess of transportation or marketing facilities

DEPARTMENT	REGULATION	SECTION	SUMMARY
		2 (cont'd)	or of reasonable market demand; and the locating, drilling, equipping, operating or producing a well in a manner that causes unnecessary or excessive surface loss or destruction of oil or gas. ✓ "Zone" means any stratum or strata designated by the Minister as a zone either generally or in respect to any designated area, or any specified well.
		3	These Regulations apply to all wells and all operations carried out for the purpose of searching for, producing or transporting oil or gas on Canada lands that are under the control, management and administration of the Minister.
		4	No person shall drill a well or undertake a program of structure test hole drilling unless he has given notice of his intention to begin such operations to and obtained the approval of the oil conservation engineer.
		6(1)	Surface casing satisfactory to the oil conservation engineer shall be used in wells and shall be placed to the depth required by him.
		(6)	The pump and plug method of cementing shall be used and the cement shall be allowed to set for not less than twenty-four hours and shall be pressure tested in accordance with good oil-field practice before the cement plug is drilled.

DEPARTMENT	REGULATION	SECTION	SUMMARY
		7	In proven areas, the use of blowout preventers is obligatory and they shall be used in accordance with established good practice; however, in unproven area all drilling wells shall be equipped with minimum blowout-control equipment. Controls for the blowout preventers shall be located at a point not less than two feet outside the substructure..
		8(1)	Before drilling, proper and adequate slush pits shall be constructed for the reception of mud so that such mud may be available if and when the hole is plugged. Natural gas encountered in any section of cable tool drilled hole may not be permitted to blow while drilling proceeds, but shall be shut off either by mudding or by the running of a string casing.
		(2)	The casing program adopted for cable tool drilled wells shall be planned so as to protect any potential oil and gas bearing horizon penetrated during drilling from infiltration of injurious waters from other horizons and to prevent the migration of oil or gas from one horizon to another.
		9	The licensee, permittee, or lessee shall when a well being drilled is approaching a formation from which production of oil or gas, may be expected core and adequately test such formation. Any coring and testing must be reasonable and proper and not detrimental to the operations being performed..

DEPARTMENT	REGULATION	SECTION	SUMMARY

10(1)

Each licensee, permittee or lessee shall cause to be taken, preserved and maintained a series of samples at interval depths of ten feet of the various formations in drilling a well or structure test hole, and the samples shall be washed, dried, preserved in bags accurately labelled with the name of the well, interval, depth, date of samples and shall be forwarded prepaid to the oil conservation engineer.

(5)

No core shall be destroyed or taken out of Canada, except such portions that are reasonably necessary for analytical purposes, without the consent of the oil conservation engineer.

11

The licensee, permittee or lessee shall make, when directed by the oil conservation engineer, tests at intervals not exceeding five hundred feet from the top to the bottom of the well for the purpose of ascertaining to what extent, if any, the well deviates from the vertical and shall submit a report of the same and the daily drilling reports at the end of the week.

12

The permittee, or lessee shall cause to be taken one electric log and one other type of electric log, radio-activity log, sonic log, or other approved log so that the information provided by the two logs shall be sufficient for determining the contacts between horizons or zones penetrated and the porosity and fluid saturation of all potential reservoir horizons. Three copies of each log shall be sent within thirty days of the date the logs were taken to the oil conservation engineer.

DEPARTMENT	REGULATION	SECTION	SUMMARY
		13	The licensee, permittee or lessee shall maintain daily report of drilling operations when drilling is in progress and send a copy of such report at the end of each week to the oil conservation engineer. Such daily report shall include the depth at the beginning and at the end of the day, formation penetrated, any change in casing, particulars of cementing, and information on other operations such as fishing, shooting, perforating, acidizing, surveying, whipstocking or abandonment.
		14	Where the licensee, permittee or lessee encounters in significant quantities, oil or gas in a well outside a designated pool or field, he shall notify the oil conservation engineer, by the most expeditious method, the character, extent and quantity, and shall take and preserve samples for a reasonable time in an amount of not less than one quart of oil or water.
		15	Before abandoning a well drilled under these Regulations and before removing any part of the casing, the licensee, permittee or lessee shall notify the oil conservation engineer in writing of his intention to do so and shall obtain written or oral approval from the oil conservation engineer.
		17	A report in triplicate on a form approved by the Chief of the Resources Division shall be forwarded to the oil conservation engineer within thirty days of the abandonment of a well or the suspension of drilling of a well.

DEPARTMENT	REGULATION	SECTION	SUMMARY
		22	Every development well shall be drilled within a target area or in such a manner as will permit the well to be drilled into a target area before being completed.
		23	Whenever a stratum penetrated in a well or structure test hole is capable of producing gas, the licensee permittee or lessee shall take all reasonable precautions and confine such gas to its original stratum until such time when such gas can be produced and utilized without waste.
		25	Every licensee, permittee or lessee shall take all precautions to prevent waste to the satisfaction of the Minister.
		27	No equipment, casing or tubing used in drilling or production shall be used unless it is in good general condition and complies in all respect with the Regulations.
		28	Where it appears to the oil conservation engineer that any equipment, casing or tubing used in drilling or production is inadequate, defective or hazardous, he may require the replacement or reconditioning of the equipment, casing or tubing or may require that operations be discontinued until the required action is taken.
		30	The licensee, permittee or lessee shall take reasonable measures at all times to the satisfaction of the oil conservation engineer to prevent or to remedy the injurious access of water, gas or oil into a formation.

DEPARTMENT	REGULATION	SECTION	SUMMARY
		34(1)	No oil shall be stored in an unprotected excavation or in storage receptacles that are inadequate or likely to cause waste or loss.
		(7)	No flammable product or waste produce of any kind from any oil or gas well shall be permitted to run into any lake, stream or other body of water.
		35	A well producing gas shall be equipped with a gas meter of a type approved by the oil conservation engineer and no gas shall be produced at a well unless it is metered.
		38(1)	Before production, a gas well shall be tested by the back-pressure method.
		(8)	Open-flow and back-pressure tests on gas wells may be witnessed or observed by the oil conservation engineer who shall be given reasonable notice, by the permittee or lessee, of the well on which the tests are to be performed.
		39-	The licensee, permittee or lessee shall not allow a well to be shot with nitroglycerine or similar type of explosive until the oil conservation engineer has been notified.
		40	The maximum gas-oil ratio for a well or pool shall be determined by the Minister and no oil well shall be permitted to produce gas in excess of the maximum ratio.

DEPARTMENT REGULATION SECTION

SUMMARY

48

The Minister may at his discretion fix and regulate the production and allowables from all wells or pools in order to effect economic production and the conservation of oil and gas.

54

A licensee, permittee, lessee or his agent shall report to the oil conservation engineer immediately by telegraph, telephone or radio and confirm by letter any well flowing out of control, all fires that occur at oil or gas wells or any breaks or leaks in tanks or pipe lines from which any serious loss of oil or gas has occurred.

56(1)

A person who operates a drilling rig shall take all necessary and reasonable measures to enforce the safety Regulations and to ensure that they are observed by each and every employee, and a toolpusher or a driller shall take all reasonable measures to enforce the requirements of all such regulations as are applicable to the work over which he has supervision and to ensure that the same are observed by workmen under his charge and direction.

(2)

An owner or any employee shall take all reasonable measures to carry out his duties in accordance with such rules as are applicable to the work in which he is engaged.

58

Where a licensee, permittee or lessee or his agent is drilling a well; he shall install, maintain and use at all times necessary control equipment and shall keep sufficient drilling fluid of proper density at all times to minimize the possibility of the well blowing out of control.

DEPARTMENT	REGULATIONS	SECTION	SUMMARY
		71	Properly fitting goggles of a type suitable for the purpose for which they are being used shall be provided by the employer and by the workman at all times when engaged in the mixing of chemicals, welding operations, chipping or grinding of metal or cleaning by use of compressed air.
		84(1)	No person shall smoke on any rig, derrick or any derrick house and within seventy-five feet of any drilling rig, well or any equipment used for the storage, measurement, separation or processing of any oil and gas.
		94	Every driller employed on a gas or oil well drilling rig shall be the holder of a certificate of competency in First-Aid in good standing, and every employer shall provide and maintain at every drilling rig a suitable First-Aid kit of a recognized standard and a carrying stretcher.
		96	Except as otherwise provided by the Explosives Act, explosives shall be stored in properly constructed magazines at a distance not less than five hundred feet from any place where any drilling or production operation is carried out.
		100	Where a licensee, permittee or lessee violates any provision of these Regulations, the Minister may give written notice to the licensee, permittee or lessee and unless the violation is remedied within ninety days, the Minister may cancel the licence, permit or lease.

THE ACT CREATING PETRO-CANADA AS A CROWN CORPORATION

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY
Petro-Canada (Crown Corporation)	2. Petro-Canada Act (S.C. 1974-75-76 C.61)	7(1)	Petro-Canada, a Crown Corporation, was established with the authority "<u>to explore for hydrocarbon deposits, to negotiate for and acquire petroleum and petroleum products from abroad to assure a continuity of supply for the needs of Canada, to develop and exploit deposits of hydrocarbons within and without Canada, in the interest of Canada, to carry out research and development projects in relation to hydrocarbons and other fuels and to engage in exploration for and the production, distribution, refining and marketing of fuels.</u>" Petro-Canada may do such things as it deems expedient for or conducive to the furtherance of its objectives. These may include acquiring the assets, business, property and contracts of persons carrying out business the corporation is authorized to do; acquire patents, patent rights, copyrights, trade marks, licences and concessions for the purposes of the corporation; enter into partnership for sharing of profits, union of interests, cooperation joint ventures, and reciprocal concession with any person engaged in any of the business the corporation is authorized to do; acquire and hold shares, debentures or other securities of other companies with similar objectives; and enter into any arrangements with any government or authority with similar objectives.

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY
		7(2)	In exercising its powers, Petro-Canada shall comply with policy directions given in writing by the Cabinet.
		22(1)	Cabinet may authorize the Minister of Finance to advance to Petro-Canada, out of the consolidated revenue fund, capital advances by way of purchase of preferred shares.
		25	The Government may sell to Petro-Canada, at a fair and reasonable price, the whole or part of the capital stock of Panarctic Oils Ltd..

SOURCE: Summary compiled by the Author from Territorial Sea and Fishing Zones Act (Sc 1970 C. 45 (1st Supplement)); Coastal Fisheries Protection Act (RSC 1970 c. C-21); Fisheries Act (RSC 1970 c. F-14); Atlantic Fishing Registration and Licensing Regulations (Made under The Fisheries Act, Pc 1976-601, as amended August 8, 1978), Nova Scotia Fishery Regulations (made under the Fisheries Act, PC 1970-302 as amended October 4, 1978); North Pacific Fisheries Convention Act (RSC 1970 c. F-16), International Convention for the High Seas Fisheries of the North Pacific Ocean - Canada, Japan and the United States of America May 9, 1952 Tokyo; Northern Pacific Halibut Fisheries Convention Act (RSC 1970 c. F.17), Convention Between Canada and the United States of America for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea - Ottawa March 2, 1953; Northwest Atlantic Fisheries Convention Act (RSC 1970 c. F-18), International Convention for the Northwest Atlantic Fisheries - Washington, February 8, 1949; Pacific Salmon Fisheries Convention Act (RSC 1970 c. F-19), Convention Between Canada and the United States of America for the Protection, Preservation and Extension of the Sockeye Salmon Fisheries in the Fraser River System - Washington, May 26, 1930 - As amended by Protocol December 28, 1956; Fisheries Development Act (RSC 1970 c. F-21); Fisheries Research Board Act (RSC 1970 c. F-24); Oil and Gas Production and Conservation Act (RSC 1970 c. O-4 as amended), Canada Oil and Gas Land Regulations (SOR/61 253, The Canada Gazette Part II Vol. 95 No. 12, June 28, 1961), Canada Oil and Gas Drilling and Production Regulations (SOR/61 253, The Canada Gazette Part II Vol. 95, No. 12 June 28, 1961); and Petro-Canada Act (SC 1974-75-76 c. 61).

APPENDIX "C"

Marine Pollution Control Framework

APPENDIX "C"

MARINE POLLUTION CONTROL FRAMEWORK

I. International Arrangements.

ORGANIZATION	CONVENTION	ARTICLE	SUMMARY
Inter-Governmental Maritime Consultative Organization (IMCO)	1. International Convention for the Prevention of Pollution of the Sea by Oil, 1954; amended in 1962 and in 1969.	I. <u>Definitions:</u>	"Discharge" in relation to oil or oily mixture means any discharge or escape. "Instantaneous rate of discharge of oil content" means the rate of discharge of oil in litres per hour at any instant divided by the speed of the ship in knots. "Nearest land" means from the baseline from which the territorial sea of the state is established in accordance with the Geneva Convention on the territorial sea and the contiguous zone, 1958. "Oil" means crude oil, fuel oil, heavy diesel oil and lubricating oil. "Oil mixture means a mixture with any oil content. "Ship" means any sea-going vessel of any type, including floating craft, whether self- propelled or towed by another vessel, making a sea voyage. "Tanker" means a ship in which the greater part of the cargo space is constructed or adapted for the carriage of bulk liquid or oil cargoes.

ORGANIZATION	CONVENTION	ARTICLE	SUMMARY
		II.	This Convention applies to ships registered in any of the territories of a contracting government and to unregistered ships having the nationality of a contracting party except: tankers under 150 tons and other ships under 500 tons, ships engaged in whaling operations, ships navigating the Great Lakes of North America and naval ships.
		III.	Subject to the provisions of Articles IV, the discharge from a ship or a tanker is prohibited except when the vessel is en route or the instantaneous rate of discharge does not exceed 60 litres per mile.
		IV.	The provisions of Article III do not apply to discharge of oil or oily mixture from a ship for the purpose of securing the safety of a ship, preventing damage to a ship or cargo, saving life at sea, or preventing or minimizing leakage.
		VI.	The penalties that may be imposed by contracting governments in respect of the unlawful discharges from a ship of oil or oily mixture outside the territorial sea of that state, shall be adequate in severity to discourage such an unlawful discharge. The actual penalties imposed for each infringement shall be reported to the Inter-Governmental Maritime Consultative Organization (IMCO) by the contracting government.
		VII.	This convention requires that ships be so fitted as to prevent the escape of oil into bilges. Carrying water ballasts in oil fuel tanks is also to be avoided.

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ORGANIZATION	CONVENTION	ARTICLE	SUMMARY
		VIII.	Each contracting government shall ensure that adequate reception facilities are provided at ports, oil loading terminals, and ship repair ports for residues and oily mixtures that would remain for disposal from ships, or tankers if the bulk of the water is separated from the mixture.
		IX.	All ships which are governed by the provisions of this convention, shall have on board an oil record book, which shall be completed for any of the following operations: loading, transfer or discharge of oil cargo; ballasting or cleaning of cargo tanks with respect to tankers; and ballasting or cleaning of bunker fuel tanks or disposal of residue with respect to other ships. Competent authorities of any of the territories of a contracting government may inspect on board any ship, while within a port in that territory, the entry in the oil record book.
		X.	Any contracting government may furnish the government of a ship which has contravened the provisions of the convention, the particulars of the alleged contravention. Upon receiving such particulars, the government shall investigate the matter and if necessary, institute proceedings.
		XII.	The text of laws, decrees, orders, and regulations giving effect to this convention are to be sent to the United Nations and the Inter-Governmental Maritime Consultative Organization by each contracting government.

ORGANIZATION	CONVENTION	ARTICLE	SUMMARY
		XIII.	Disputes between contracting government relating to the interpretation or application of the convention, shall be referred to the International Court of Justice for decision if they cannot be settled by negotiation.
Inter-Governmental Maritime Consultative Organization (IMCO)	2. International Convention for the prevention of pollution from ships, 1973; and protocol relating to intervention on the high seas in cases of marine pollution by substances other than oil.	2.	<u>Definitions:</u> "Harmful substances" means any substance which is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea. "Discharge" means any release from a ship and include any escape, disposal, spilling, leaking, pumping emitting or emptying. "Ship" means a vessel of any type operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms.
		3.	This convention applies to ships flying the flag of a party to the convention and ships which operate under the authority of a party to the convention but not entitled to fly the flag of such a party. However, the provisions of this convention do not apply to any warship, naval auxiliary or other ships operated by a state and used for government non-commercial service.

ORGANIZATION	CONVENTION	ARTICLE	SUMMARY
		4	Any violation of the provisions of this convention is prohibited; but when violations occur, the party shall either cause proceedings to be taken in accordance with its laws or furnish to the administration of the ship the relevant information and evidence of the violation. A party may also institute sanctions with respect to violations.
		5	Ships required to hold a certificate in accordance with the provisions of these regulations, shall be subject to inspection by duly authorized officers while in the ports or off-shore terminals under the jurisdiction of a party. The party carrying out the inspection shall take necessary steps to ensure that ships that proceed to sea do not present an unreasonable threat to the marine environment.
		6	Parties to the convention shall co-operate in the detection of violations and the enforcement of the provisions of this convention by using all appropriate means of detection and environmental monitoring.
		8	Each party to the convention shall issue instructions to its maritime inspection vessels and aircrafts to report any incident of violation. Each party shall also make necessary arrangements to receive and process all reports on incidents in accordance with the provisions of protocol 1 below.
		9	Upon coming into force, this convention supersedes the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended.

ORGANIZATION	CONVENTION	ARTICLE	SUMMARY
		10	Any dispute between two or more parties to the convention concerning the interpretation or application of this convention, shall be submitted upon request of any of them to arbitration as set out in protocol II below if settlement by negotiation is not possible.
		11	The parties to the convention are to communicate to the Inter-Governmental Maritime Consultative Organization: the text of laws, orders, decrees and regulations and other instruments which have been promulgated on the various matters within the scope of the present convention; a list of non-governmental agencies that are authorized to act on their behalf in matters relating to the design, construction and equipment of ships carrying harmful substances in accordance with the provisions of the Regulations; a sufficient number of specimens of their certificate issued; a list of reception facilities and their location, capacity, available facilities and other characteristics; official reports or summaries of official reports showing the results of the application of the provisions of the convention; and annual statistical report of penalties actually imposed for infringement of the convention. The Organization shall then notify and circulate to all parties of any information communicated to it.
		12	The Government of a state under whose authority a ship is operating shall conduct an investigation of any casualty occurring to any of its ships if such a casualty has caused a major effect to the marine

ORGANIZATION	CONVENTION	ARTICLE	SUMMARY
		12 (cont'd)	environment; and shall communicate the findings of such an investigation to the Organization, if the party thinks the information may assist in determining possible changes to the present convention.
		17	In consultation with the Inter-Governmental Maritime Consultative Organization and other international bodies, and with the assistance and co-ordination of the Executive Director of the United Nations Environment Programme, parties to this convention shall promote: the training of scientific and technical personnel; the supply of necessary equipment and facilities for reception and monitoring; measures and arrangements to prevent or mitigate pollution of the marine environment by ships; and research to further the aims and purposes of this convention.
	<u>PROTOCOL I</u> Provisions concerning reports on incidents involving harmful substances (in accordance with Article 8 of the Convention).	I.	The Master of a ship involved in an incident or the person having charge of the ship, shall as soon as possible, report the particulars of such incident in accordance with the provisions of this protocol. In the event such a ship is abandoned or the report from the ship is incomplete or unobtainable, the owner, charterer, manager or operator of the ship or their agents, shall report the incident.
		II.	Each report shall be made by radio whenever possible or by the fastest channels available at the time.

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III. The report shall be made whenever an incident involves: a discharge not permitted under this convention; discharge for the purpose of securing the safety of a ship or saving life, at sea or resulting from damage to the ship or equipment - thus discharge permitted under the convention; discharge of harmful substance for the purpose of combating a specific pollution incident or for the purpose of legitimate scientific research into pollution abatement or control; or the probability of any of the discharge mentioned above.

IV.(1) Each report shall contain in general the identity of the ship; the time and date of the occurrence of the incident; the geographic position of the ship when the incident occurred; the wind and sea conditions prevailing at the time of the incident; and relevant details respecting the condition of the ship.

(2) Each report shall contain in particular: a clear indication or description of the harmful substances involved and the correct technical names if possible; estimate of the quantities, concentration and condition of the harmful substances discharged or likely to be discharged into the sea; a description of the packaging and identifying marks; and if possible, the names of the consignor, consignee or manufacturer.

V. Persons required to send a report under the provision of this protocol shall supplement the initial report with information concerning further developments and shall also comply with requests from affected states for additional information concerning the incident.

ORGANIZATION	CONVENTION	ARTICLE	SUMMARY
	<u>PROTOCOL II.</u>		
	Arbitration in accordance with Article 10 of the Convention)	I.	Arbitration procedure shall be in accordance with the rules set out in this protocol except otherwise decided by the parties to the dispute.
		II.	Upon a request by one of the parties to the convention, an arbitration tribunal shall be established. The requesting party shall inform the Secretary-General of the Inter-Governmental Maritime Consultative Organization of the request for establishing a tribunal, the names of the parties to the dispute, and the Articles of the Convention or Regulations over which there is a disagreement concerning their interpretation or application.
		III.	The tribunal shall consist of three members, each party nominating one arbitrator and the third who is also to be the Chairman to be nominated by the first two.
		IV.	If, after sixty days of nominating the second arbitrator, the Chairman of the tribunal has not been nominated, the Secretary-General of the Organization shall within sixty days, select a chairman from a list of qualified persons previously drawn up by the council of the Organization.
		V.	The tribunal may hear and determine counter-claims arising directly out of the subject matter of the dispute.
		VI.	Each party is responsible for the remuneration of its arbitrator but the remuneration of the chairman and all expenses incurred by the arbitration shall be borne equally by the parties.

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VII. Any party to the convention which may be affected by the decision of the tribunal may join in the arbitration procedure with the consent of the tribunal.

VIII. Any arbitration tribunal may decide its own rules of procedure.

IX. Decisions of the tribunal with respect to its procedure, place of meeting and matters laid before it shall be by majority vote of its members. Abstention by any member shall not prevent the tribunal from reaching a decision. The chairman shall cast the deciding vote in case of a tie.

X. The award of the tribunal, which shall be final and cannot be appealed shall be accompanied by a statement of the reasons. The tribunal which shall also communicate its decision to the Secretary-General of the Organization, has up to eight months to arrive at a decision.

II. NATIONAL ARRANGEMENTS

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY
Fisheries and Oceans	Ocean Dumping Control Act (SC.1974-75 C.55).	2(1)	"Dumping" is defined as any deliberate disposal from ships, aircraft, platforms or other man-made structures at sea of any substance except a disposal that is incidental to or derived from the normal operations of a ship, an aircraft or equipment or a discharge that is incidental to or derived from the exploitation and associated with processing of seabed mineral resources.
		4(1)	No person shall dump except when granted a permit by the Minister of the Environment.
		5(1)	No ship or aircraft shall be loaded in Canada for the purpose of dumping any substance except granted a permit.
		5(2)	No master of a Canadian ship and no pilot in command of a Canadian aircraft, shall allow the loading on such ship or aircraft, while outside Canada, for the purpose of dumping any substance without a permit from the Minister of the Environment.
		6	No person shall dispose of any substance at sea by placing it on ice in the territorial sea, internal waters, any fishing zone, arctic waters of Canada or any area of the sea adjacent to these areas.
		7	No person shall dispose of any ship, aircraft, platform or man-made structures at sea except in accordance with the terms and conditions of a permit.

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		8	Dumping may be carried out at sea without permit if it is necessary to avert danger to human life, ship or aircraft. Such dumping shall be carried out with minim danger to human life and damage to the marine environment and the master of the ship or pilot of the aircraft shall report the dumping to the inspector.
		9(1)	The Minister of the Environment may grant any permit required upon receipt of the prescribed application form and the necessary information.
		9(5)	No permit may be granted in respect of substances specified in Schedule I except if the substance is rendered harmless by physical, chemical or biological process of the sea and does not render normally edible marine organisms inedible; or it is contained in another substance in a quantity or concentration that does not exceed the maximum quantity or concentration prescribed; or the dumping or disposal of a certain quantity of the substance is necessary to avert an emergency that poses an unacceptable risk relating to human health and admits of no other feasible solution.
		12(1)	An applicant or permit holder may file a notice of objection within thirty days on receipt of the notice from the Minister of the Environment if he is dissatisfied with the terms and conditions, or the permit has been refused or suspended or revoked or the terms and conditions have been varied.

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		12(2)	A Board of Review, consisting of not more than three persons of whom the chairman shall not be a public servant, shall be appointed by the Minister of the Environment to hear the Objection.
		(4)	The Board of Review shall inquire into any matter relevant to the purpose for which it was established and shall give all interested parties a reasonable opportunity of appearing before it to present evidence and make representations.
		(7)	After the conclusion of an inquiry, the Board of Review shall submit a report with its recommendation to the Minister of the Environment.
		13(5)	No proceedings may be instituted two years after the occurrence of the offence.
		20	The Minister of the Environment may appoint qualified persons as inspectors or analysts.
		21(1)	An inspector may enter any place in which he reasonably believes a substance intended for dumping or disposal is being loaded or go on board any ship anywhere in Canada or any area of the sea over which Canada exercises sovereignty or any aircraft if he reasonably believes that such ship or aircraft has on board a substance intended for dumping.

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		21(2)	An inspector may examine any substance found in any place entered or on a ship or aircraft boarded, open any container found, and take samples; require any person in any place entered or on a ship or aircraft boarded to produce for inspection books, documents or papers; travel on any ship or aircraft that is loaded with a substance intended for dumping; and detain any ship or aircraft for a reasonable time.
		22	An inspector may make a detention order in respect of the ship where the owner or master of a ship is charged with an offence.
		23	Where an inspector has reasonable grounds to believe that an owner of a ship or aircraft has committed an offence, he may with the consent of the Minister of the Environment, seize the ship or aircraft anywhere in Canada or within any area of the sea where Canada exercises sovereignty.
SCHEDULE I.			
Prohibited Substances -			1. Organohalogen compounds. 2. Mercury and Mercury compounds. 3. Cadmium and cadmium compounds. 4. Persistent plastics and persistent synthetic materials. 5. Crude oil, fuel oil, heavy diesel oil, lubricating oils, hydraulic fluids or mixtures of these. 6. High-level radioactive wastes or high-level radioactive matter.

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	SCHEDULE I.		
	Prohibited substances (cont'd)		7. Biological or chemical warfare substances.
			* * *
	SCHEDULE II.		
	Restricted Substances		1. Arsenic and arsenic compound. 2. Lead and lead compound. 3. Zinc and zinc compound. 4. Copper and copper compounds. 5. Organosilicon compounds. 6. Cyanides. 7. Fluorides. 8. Pesticides and pesticides by- products not included in Schedule I. 9. Beryllium and beryllium compounds. 10. Chromium and chromium compounds. 11. Nickel and nickel compounds. 12. Vanadium and vanadium compounds. 13. Containers and scrap metals. 14. Radioactive wastes and radioactive matter not included in Schedule I. 15. Bulky substances that would interfere with fishing.

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	SCHEDULE III		
	Factors to be taken into consideration in granting permits for ocean dumping		1. General considerations and conditions (1) Possible effects on amenities, presence of floating or stranded material, turbidity, objectionable odour, discoloration and foaming. (2) Effects on marine life, fish, shellfish culture, fish stocks and fisheries, seaweed harvesting and culture. (3) Possible effects on other uses of the sea: impairment of water quality for industrial use, under-water corrosion of structures, interference with ship operations from floating substances, interference with fishing or navigation through deposit or waste or solid objects on the sea floor and protection of areas of special importance for scientific or conservation purposes. (4) The practical availability of alternative land based methods of treatment, disposal or elimination, or of treatment to render the matter less harmful for dumping at sea. 2. Characteristics and composition of substance. (1) Total amount and average composition of substance dumped per year. (2) Form: solid, sludge, liquid or gaseous. (3) Properties: physical, solubility and density; chemical and biochemical - oxygen demand, nutrients; and biological - presence of viruses, bacteria, yeasts and parasites.

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(4) Toxicity.

(5) Persistence: physical, chemical and biological.

(6) Accumulation and bio-transformation in biological materials or sediments.

(7) Susceptibility to physical, chemical and biochemical changes and interaction in the aquatic environment with other dissolved organic and inorganic substances.

(8) Probability of production of taints or other changes reducing the marketability of fish, shellfish or other marine resources.

3. Characteristics of dumping site and method of deposit

(1) Location co-ordinates of the dumping site, depth and distance from the coast and location in relation to amenity area, spawning, nursery and fishing areas and exploitable resources.

(2) Rate of disposal per quantity per day, per week or per month.

(3) Methods of packaging and containment.

(4) Initial dilution achieved by proposed method of release.

(5) Dispersal characteristics - effects of currents, tides and wind on horizontal transport and vertical mixing.

(6) Water characteristics: Temperature, pH, salinity, stratification, oxygen indices of pollution (dissolved oxygen (DO)

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			chemical oxygen demand (COD), biochemical oxygen demand (BOD), nitrogen present in organic and mineral form including ammonia, suspended matter, other nutrients and productivity.
			(7) Bottom characteristics: topography, geochemical and geological characteristics and biological productivity.
			(8) Presence and effects of other dumpings that have been made in the dumping site - heavy metal background reading and organic carbon content.
			(9) Availability of an adequate scientific basis for assessing the consequences of such dumping.
			(10) Seasonal variations of the site.
Transport	2. Part XX: Pollution: Canada Shipping Act (RSC 1970 C.S-9)	727(1)	"Administrator" means the administrator of the Maritime Pollution Claims Fund. "Discharge" includes any spilling leaking, pumping, pouring, emitting, emptying, throwing or dumping. "Fisherman" means the holder of a commercial fishing licence, a hired hand who derives all or a substantial portion of his income from employment on a fishing vessel, a fishing vessel owner who derives all or a substantial portion of his income from rental of fishing vessels to holders of commercial fishing licences; and a person who

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		727(1) (cont'd)	derives all or a substantial portion of his income from the handling of the fish from fishing vessels but does not include a person engaged in the processing of fish.
			"Fund" means the Maritime Pollution Claims Fund.
			"Oil" means oil of any kind or in any form and includes petroleum fuel oil, sludge, oil refuse and oil mixed with wastes but does not include dredge spoil.
			"Owner" in relation to a ship, means the person having either by law or by contract, the rights of the owner of the ship as regards the possession and use of the ship.
			"Pollutant" means any substance that, if added to any water would degrade or alter or form part of a process of degradation or alteration of the quality of that water to an extent that is detrimental to its use by man or by any animal, fish, or plant that is useful to man; and any water that contains a substance in such a quantity or concentration, or that has been so treated, processed or changed, by heat or other means from a natural state that it would if added to any water, degrade or alter, or form part of a process of degradation or alteration of the quality of that water to an extent that is detrimental to their use by man or by any animal, fish or plant useful to man.

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		721(2)	Any regulations made pursuant to this part apply to all Canadian waters south of the sixtieth parallel of north latitude; to all Canadian waters north of the sixtieth parallel of north latitude that are not within a shipping safety control zone prescribed pursuant to the Arctic Waters Pollution Prevention Act; any fishing zones of Canada prescribed pursuant to the Territorial Sea and Fishing Zones Act; and to all ships in the waters described above.
		728(1)	The Governor in council may make regulations prohibiting the discharge from ships of any of the specified pollutants in any waters to which this part applies.
		(2)	Where a ship has discharged a pollutant, or is in danger of discharging a pollutant or causing a discharge of a pollutant, the master of the ship shall immediately report the discharge of the pollutant or the danger to a pollution prevention officer.
		729	Where the Minister has reasonable cause to believe that a ship that is in distress, stranded, wrecked, sunk or abandoned is discharging or is likely to discharge a pollutant into any waters to which this part applies, may authorize the destruction if necessary, removal if possible, and sale, or disposition of the ship and its cargo. The proceeds from any sale or disposition of a ship shall be applied towards meeting the expenses incurred and any surplus shall be paid to the owner of the ship or cargo.

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		730	The Governor in council may make regulations prescribing substances and classes of substances that are for the purpose of this part of the Act, pollutants; circumstances under which, the location at which, and the manner in which the master of a ship shall report to a pollution prevention officer; respecting the fitting, maintenance, testing and use of electronic and navigational equipment on ships carrying pollutants; respecting the methods of retention of oil or other water by ships carrying pollutants; prescribing procedures and practices to be followed by persons on board ships in order to ensure safe navigation in waters to which this part applies for regulating and preventing pollution of the air by ships; respecting the records to be kept on board a ship; and establishing compulsory traffic routes and other shipping traffic controls considered necessary for safe navigation in waters to which this part applies.
		731	The Minister may designate a person as a pollution prevention officer or analyst for the purposes of this part and such a person shall be furnished with a certificate of his designation with his powers specified on the certificate.
		732	A pollution prevention officer may require any ship that is within waters to which this part of the Act applies or that is about to enter such waters, to provide him with information concerning the condition of the ship, its machinery and equipment and the nature and

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		732 (cont'd)	quantity of its cargo; go on board any ship that is within Canadian waters or he suspects on reasonable grounds to be bond for a place in Canada and conduct an inspection of the ship in order to determine whether the ship complies with regulations; and/or order a ship to proceed out of such waters.

		733	The master of any ship and every person on board the ship, shall give a pollution prevention officer all reasonable assistance in the course of his duties.

		734.	The owner of a ship that carries a pollutant in a bulk or the owners of that pollutant shall be liable or jointly liable for the costs and expenses of taking any action pursuant to the regulations under this part of the Act.

		735	The liability of the owner of the ship or the owner of the pollutant does not depend upon proof of fault or negligence but no person shall be liable for expenses as a result of carrying out the regulations or by Her Majesty in right of Canada or a province.

		736	Evidence of financial responsibility in the form of insurance or an indemnity bond, shall be provided by the owners of any ship that carries a pollutant in bulk and/or the owners of a pollutant being carried to and from any place in Canada.

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		737	There shall be established in the Consolidated Revenue Fund, an account to be known as the <u>Maritime pollution claims fund</u> to which shall be charged all amounts that are directed by the Administrator to be paid out of this fund.
		738	The Governor in council shall appoint an Administrator of the Marine pollution claims fund, who shall hold office for a term of five years only.
		740	All costs and expenses incurred by the Administrator in carrying out his duties and functions under this Act, shall be paid out of the Consolidated Revenue Fund at the direction of the Minister of Finance.
		741	The duties of the Administrator are: to review all claims that are submitted to him as a result of a discharge of pollutants which he considers appropriate to settle; to appear at and take such action as he considers appropriate for the proper administration of the fund, in any litigation relating to claims; review all notices received by him from a fisherman who alleges a loss of income as a result of a discharge of a pollutant and to settle and direct payment of claims; and to direct payment of all settlements and judgements resulting from any litigation, the remuneration and expenses of assessors, all costs awarded against the Fund in any litigation; and to take such action as he considers appropriate on any judgements or claims assigned to him.

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The Administrator may, for the purpose of carrying out his duties under this Act, obtain such professional, technical and other advice and assistance as he deems necessary.

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Where a fisherman alleges that he has suffered a loss of income including future income, from his activities as a fisherman, resulting from a discharge of a pollutant that was caused by or was otherwise attributable to a ship that is not recoverable under any law, may at any time within two years from the time when such discharge occurred, give notice in writing to the Administrator who shall direct payment of the amount of the loss alleged or transmit the notice to the Minister. Upon receipt of a notice from the Administrator, the Minister shall, after consultation with the Minister of the Environment and the Administrator, appoint persons who are not employed in the public service as assessors who shall assess the loss of income alleged by the fisherman and report to him within sixty days. The Administrator shall, on receipt of a copy of the assessor's report, direct payment to the fisherman an amount equal to the assessed loss.

748

There shall be paid to the Receiver-General, in respect of each ton of oil imported by ship into Canada in bulk, as a cargo and in respect of each ton of oil shipped from any place in Canada in bulk as a cargo of a ship, such amount as the Governor in council shall prescribe but not exceeding fifteen cents.

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		751	Amounts directed by the Administrator to be paid shall be paid out of the Consolidated Revenue Fund and charged to the Maritime Pollution Claims Fund in accordance with the following priorities: remuneration and expenses of assessors, and costs and expenses incurred by the Administrator and fees for services rendered by him; claims and costs awarded against the Fund, arising out of two separate incidents that give rise to civil liability; and claims and costs, awarded against the Fund, arising out of any one incident that gives rise to civil liability in respect of claims by fishermen for loss of income.
		752	Any person who and any ship that discharges a pollutant in contravention of any regulation made prohibiting the discharge from ships of specified pollutants, is guilty of an offence and liable on summary conviction to a fine not exceeding one hundred thousand dollars.
		753	Any person who fails to make a report as and when required under the regulations or fails to provide evidence of financial responsibility as and when required, is guilty of an offence and liable on summary conviction, to a fine not exceeding one hundred thousand dollars.
		754	Any ship that fails to comply with any reasonable requirement, order or direction of the pollution prevention officer, is guilty of an offence and liable on summary conviction to a fine not exceeding one hundred thousand dollars.

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		756	Every person who wilfully, in any manner, evades or attempts to evade payment of any amount in respect of oil imported by ship into Canada or oil shipped from any place in Canada, is guilty of an offence and liable on summary conviction, to a fine not exceeding five thousand dollars.
		760(1)	Whenever a pollution prevention officer suspects on reasonable grounds that: any provision of this part or any regulation made under this part, has been contravened by a ship or the owner of the ship or the owners of the pollutant have committed an offence, he may with the consent of the Minister, seize the ship and any pollutant in any Canadian waters to which this part applies.
		(2)	A ship and any pollutant seized, shall be retained in the custody of the pollution prevention officer making the seizure or shall be delivered into the custody of any person the Minister may direct.
		(3)	Where the pollutant seized is perishable, the pollution prevention officer may sell the pollutant and shall pay the proceeds to the Receiver-General or shall deposit the proceeds in a chartered bank to the credit of the Receiver-General.
		761(1)	Any ship and any pollutant seized and the proceeds realized from a sale of any perishable pollutant, shall be returned or paid to the person from whom the ship and pollutant were seized within thirty days from the seizure unless proceedings are instituted in respect

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		761(1) (cont'd)	of an offence alleged to have been committed by the ship.
		(4)	Where a ship and pollutant are seized and proceedings instituted result in a conviction and the imposition of a fine and the fine is not paid, the fine may be recovered, with costs, out of the proceeds of the sale of the ship and pollutant and any surplus paid to the persons from whom the property was seized.
Transport	3. Arctic waters Pollution Prevention Act (RSC 1970 C.2 First supplement)		<u>Preamble</u> (Objectives). While recognizing that the exploitation of the natural resources of the arctic areas and the transportation of those resources to the world markets are of potentially great significance to international trade and commerce and to the economy of Canada; Parliament is determined to see that the natural resources of the Canadian arctic are developed and exploited and the arctic waters are navigated only in a manner that takes cognizance of Canada's responsibility for the welfare of the Eskimo and other inhabitants of the Canadian arctic and the preservation of the peculiar ecological balance that now exists in the water, ice and land areas. 2 <u>Definitions:</u> "Owner" in relation to a ship, includes any person having for the time being, either by law or by contract, the same rights as the owner of the ship.

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			"Ship" includes any description of vessel or boat used or designed for use in navigation without regard to method or lack of propulsion. "Shipping safety zone" means an area of the arctic waters prescribed as a shipping safety zone by regulations. "Waste" means any substance or any water that contains a substance in such a quantity or concentration or that has been treated, processed or changed by heat or other means from its natural state that if added to any waters would degrade or alter or form part of a process of degradation or alteration of the quality of those waters to an extent that is detrimental to their use by man or by any animal, fish or plant that is useful to man.
		3	This Act applies to the waters adjacent to the main land and islands of the Canadian Arctic within the area enclosed by latitude sixty north, the one hundred and forty-first longitude and a line measured seaward from the nearest Canadian land to a distance of one hundred nautical miles except otherwise provided.
		4	No person or ship shall deposit or permit the deposit of waste of any type in the arctic waters or in any place on the mainland or islands of the Canadian Arctic under any conditions where such waste or any other waste that results from the deposit of such waste may enter the arctic waters.

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5			Any person who has deposited waste or carries on any undertaking that is in danger of causing any deposit of waste, shall immediately report the deposit or the danger of causing any deposit of waste to a pollution prevention officer.
6			Persons engaged in exploring for, developing or exploiting any natural resource on any land adjacent to the arctic waters or in any submarine area subjacent to the arctic waters; or any person who undertakes any activity on the mainland or islands of the Canadian Arctic or in the arctic waters; or the owner of any ship that navigates within the arctic waters or the owner(s) of the cargo of any such ship, are respectively and/or jointly liable up to the total amount for all costs and expenses of an incidental and for all actual loss or damage incurred by other persons in respect of any action undertaken to repair or remedy any condition that results from a deposit of waste.
7			The liability of any person pursuant to section 6, is absolute and does not depend upon proof of fault or negligence.
8			The Governor in council may require any person who engages in exploring for, developing or exploiting any natural resource on any land adjacent to the arctic waters or in any submarine area subjacent to the arctic waters; or any person who undertakes any activity on the mainland or islands of the Canadian Arctic or in the arctic waters that is likely to result in the deposit of waste; or any person who proposes to construct, alter, or extend any work(s) on the mainland or islands

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		8 (cont'd)	of the Canadian Arctic or in the arctic waters; or the owner of a ship that proposes to navigate or that navigates within any shipping safety zone specified by the Governor in council or the owners of the cargo of any ship; to provide evidence of financial responsibility in the form of insurance or an indemnity bond and in a form that will enable any person entitled to a claim to recover directly from the proceeds of such insurance or bond.
		10(1)	The Governor in council may require any person who proposes to construct, alter or extend any work or works on the mainland or islands of the Canadian Arctic or in the arctic waters that after completion, will form part of an undertaken the operation of which will likely result in the deposit of waste to provide a copy of such plans and specifications relating to the work(s) so that it can be determined whether the construction, alteration or extension if carried out, would constitute a violation of the Act.
		(2)	If after reviewing the plans and specifications provided and after giving the person who provided those plans a reasonable opportunity to be heard; the Governor in council is of the opinion that the deposit of waste that will occur with such plans and specification would constitute a violation of the Act, he may require such modifications in those plans and specification as he considers to be necessary, or prohibit the carrying out of the construction, alteration or extension.

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		11	The Governor in council may, by order, prescribe as a shipping safety control zone, any area of the arctic waters specified in the order; and may similarly amend any such area.
		12	The Governor in council may make regulations applicable to ships of any class, prohibiting any ship of that class from navigating within any shipping safety control zone: unless the ship complies with standards prescribed by regulations; without the aid of a pilot, or of a qualified ice navigator; or during any period specified in the regulations when ice conditions of a certain kind exist.
		13	Where the Governor in council has reasonable cause to believe that a ship that is within the arctic waters is in distress, is depositing waste or is likely to deposit waste, he may cause the ship or its cargo to be destroyed, if necessary, or to be removed if possible.
		14	The Governor in council may designate any person as pollution prevention officer. A pollution prevention officer shall be furnished with a certificate of his designation specifying his powers and on exercising such powers, shall produce the certificate if required to do so.
		15(1)	A pollution prevention officer may at any reasonable time, enter any area, place or premises, except where prohibited, where he believes there is being or has been carried

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15(1) out an activity that may or has
(cont'd) resulted in waste; or there is
waste that may be or has been
deposited in the arctic waters,
or on the mainland or islands in
violation of this Act.

(2) A pollution prevention officer
may at any reasonable time, enter
any area, place or premises in
which construction, alteration or
extension of work is being carried
out and conduct such inspections of
the work in order to determine
whether any plans and specifications
submitted to the Governor in council
and any modifications required by
him are being complied with.

(3) A pollution prevention officer
may, go on board any ship that is
within a shipping safety control
zone and conduct such inspections
as will enable him to determine
whether the ship complies with
standards prescribed by regulations;
or order any ship that is or near
a shipping safety control zone to
proceed outside such zone if, by
reason of weather, visibility, ice
or sea conditions, the condition of
the ship or its equipment or the
nature or condition of its cargo,
he is satisfied that such an order
is justified in the interests of
safety, or where he is informed
that a substantial quantity of waste
has been deposited in the arctic
waters or has entered the arctic
waters, or where on reasonable
grounds, he is satisfied that a
grave and imminent danger of sub-
stantial deposit of waste in the
arctic waters exists, may order any
ship within a specified area of the
arctic waters to take part in the
clean-up of such waste or in any
action to control or contain the
waste.

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY
		16	The owner or person in charge of and every person found in any area, place or premises, shall give a pollution prevention officer all reasonable assistance in his power to enable the pollution prevention officer to carry out his duties and functions under this Act and furnish the pollution prevention officer with such information, as he may require.
		17	No person shall obstruct or hinder a pollution prevention officer in the performance of his duties and functions or knowingly make a false or misleading statement, either verbally or in writing, to a pollution prevention officer.
		18	Any person who and any ship that deposits waste in an arctic waters shipping safety control zone in violation of the prescribed regulations, is guilty of an offence and liable, on summary conviction to a fine not exceeding five thousand dollars and one hundred thousand dollars respectively.
		19(1)	Any person who fails to make a report to a pollution prevention officer, or fails to provide the Governor in council with evidence of financial responsibility, or fails to provide any plans and specifications or constructs, alters or extends any work, is guilty of an offence and is liable on summary conviction to a fine not exceeding twenty-five thousand dollars.

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY
		(2)	Any ship that navigates within a shipping control zone without complying with standards prescribed by regulations, or the master of such ship who fails to comply with an order given by a pollution prevention officer or fails to make a report to a pollution prevention officer, is guilty of an offence and is liable on summary conviction to a fine not exceeding twenty-five thousand dollars.
		20(1)	In any prosecution of an offence under this Act, the establishment that the offence was committed by an employee or agent of the accused, without identifying the employee or agent, shall constitute a sufficient proof of the offence unless the accused can establish that the offence was committed without his knowledge or consent and that he exercised all due diligence to prevent the offence from taking place.
		(2)	In any prosecution of a ship for an offence under this Act, it shall constitute a sufficient proof that the ship has committed the offence if it is established that the act or the neglect that constitute the offence was committed by the master of, or any person on board, the ship.
		23	Whenever a pollution prevention officer suspects on reasonable grounds that any provision of this Act or the regulations has been contravened by a ship; or the owner of a ship or cargo has committed an offence, he may, with the consent of the Governor in council, seize the ship and its cargo anywhere in

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY
		23 (cont'd)	the arctic waters or elsewhere in the territorial sea, internal or inland waters of Canada.
		25	The provisions of Section 59 of the Fisheries Act apply, with such modifications as the circumstances may require, in respect of any ship and cargo forfeited under this Act.
Transport	Arctic Shipping Pollution Pre- vention Regula- tions P.C. 1972-2443 October 5, 1972 SOR/72-426 Oct. 10 1972 (Canada Gazette Part II Vol.106 No. 20, Oct. 25, 1972) as amended by SOR/73-300 June 8, 1973 (Canada Gazette Part II, V.107, No.12)	2	Interpretations: "Arctic class ship" means a self-propelled ship that complies with the construction standards specified as class 1, 1A, 2, 3, 4, 5, 6, 7, 8 or 10 in the Regulations. "Master" includes every person having command or charge of any ship, but does not include a pilot. "Person in charge of the deck watch" includes every person who has immediate charge of the navigation or security of a ship other than the pilot. "Safety convention" means the International Convention for the Safety of Life at Sea, 1960, signed in London on the 12th of June 1960. "Sewage" means human or animal waste generated on board a ship. "Ship" includes any vessel or boat used or designed for use in navigation.

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY
		2 (cont'd)	"Tanker" means a ship in which the greater part of the cargo space is intended to be used for the carriage of liquid cargo and is carrying oil in that part of the cargo space.
			"Zone" means an area of the arctic waters designated as a shipping safety control zone under the Act.
		4	Non-Canadian ships that are registered in states that are not signatories to the safety convention shall not navigate in any zone unless they comply with the Regulations of the Canada Shipping Act.
		5	Non-Canadian ships registered in countries that are not signatories to the International convention on Load Lines, 1966, or the International Load Line Convention 1930, shall not navigate in any zone unless they comply with the Load Line Regulations.
		6	No ship carrying oil in excess of 16,000 cubic feet shall navigate in any zone unless it meets the construction standards prescribed for that class in these Regulations.
		7	No self-propelled ship shall navigate within any zone unless it complies with the provisions of the Navigating Appliances Regulations.

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY
		8	Self-propelled ships shall not navigate within any zone unless they comply with the provisions of the charts and publications Regulations.
		9	Ships of at least 300 gross tonnage, shall not navigate within zone 1, 2, 3, 4, 5, 6, 8, 9, 10 or 13 unless it has on board a radiotelephone that can receive or transmit on any of following frequencies: 2182KHZ, 2638KHZ, two 2MHZ band set, or 405to535KHZ band.
		10	No arctic class ship shall navigate within any zone unless it is provided on each side of the deck with a bunkering station to which may be connected a bunkering hose and with such handling facilities as are necessary to permit the safe control of a bunkering hose link-up from one ship to another.
		12	The owner or master of any ship that proposes to navigate within any zone may apply for an arctic pollution prevention certificate.
		14	Arctic pollution prevention certificate shall be issued to the owner or master of a ship only when the ship complies with the standards prescribed in the Regulations in respect of that ship.
		18	Where there are essential changes in the conditions upon which an arctic pollution prevention certificate was issued, the owner or master of the ship shall report

DEPARTMENT	ACT/REGULATIONS	SECTION	SUMMARY

18 (cont'd)			the changes to the nearest pollution prevention officer. Failure to report renders the Arctic pollution prevention certificate invalid if the ship navigates within a zone.

19			No ship shall navigate within any zone unless it complies with the Dangerous Goods Shipping Regulations.

21			No self-propelled ship shall navigate within any zone unless it has at least two separate and distinct deck watchers and the master on board shall be on duty as required by ordinary practice of seamen.

23			No person shall act or be permitted to act as a master or be in charge of the deck watch on a ship of more than 100 tons unless he holds a valid certificate of licence acceptable to the Minister of Transport and is capable of operating the navigational equipment the ship is fitted with.

24			The person in charge of the deck watch shall also be capable of using radio telephone for communication in accordance with international radiotelephone operating procedures.

26			No tanker shall navigate within a zone without the aid of a qualified ice navigator.

DEPARTMENT

ACT/REGULATIONS

SECTION

SUMMARY

27

No self-propelled ship shall navigate within any zone unless it has sufficient fuel and sufficient fresh water or equipment capable of producing sufficient fresh water to enable the ship complete its intended voyage within the zone.

Source: Summary compiled by author from: International Convention for the Prevention of Pollution of the Sea by Oil 1954, amended 1962 and 1969; International Convention for the Prevention of Pollution from Ships 1973 and Protocol relating to intervention of the high seas in cases of marine pollution by substances other than oil; Ocean Dumping Control Act (SC 1974-75 c.55); Part XX: Pollution Canada Shipping Act (RSC 1970 C. S-9); Arctic Waters Pollution Prevention Act (RSC 1970 C.2 first supplement); and Arctic Shipping Pollution Prevention Regulation, P.C. 1972 - 2443 October 5, 1972 SOR/72-426 Oct. 10, 1972 (Canada Gazette Part II, Vol. 106 No. 20, Oct. 25, 1972) as amended by SOR/73-300 June 8, 1973 (Canada Gazette Part II, Vol. 107, No. 12).

A P P E N D I X "D"

Federal Agencies with Significant Responsibilities
for Offshore Resources Development

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific information required.

DEPARTMENT	BRANCHES/DIVISIONS
1. Communications	1. Policy
	2. Research
	3. Space Program
	4. Service
	1. Engineering
	2. Operations
	1. Bureau of Competition Policy
	2. Bureau of Consumer Affairs
	3. Bureau of Corporate Affairs
	4. Bureau of Intellectual Property
	1. Field Operations Services
	6. Policy Analysis Group
	7. Legal Branch
11. Consumer and Corporate Affairs	
	1. Patent Appeal Board
	1. Foreign Appeal Board

REGIONAL OFFICE

3. Atlantic Region
Moncton N.B.
3. Pacific Region
Vancouver B.C.
1. Halifax N.S.
Vancouver B.C.

STATUTES

- [illegible]

PAUL HARTLEY COMPANY

1. Standing Committee on Broadcasting, Film and
Amusement to the Arts

PARLIAMENTARY COMMITTEE

Standing Committee on Natural Resources and Public Works

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STATUTES

1. Canada Lands Survey Act (RSC 1970 C-15)
2. (RSC 1970 C-15)
3. National Energy Board Act (RSC 1970 C-15)
4. National Energy Board Act (RSC 1970 C-15)
5. National Energy Board Act (RSC 1970 C-15)
6. National Energy Board Act (RSC 1970 C-15)
7. National Energy Board Act (RSC 1970 C-15)
8. National Energy Board Act (RSC 1970 C-15)
9. National Energy Board Act (RSC 1970 C-15)
10. National Energy Board Act (RSC 1970 C-15)

REGIONAL OFFICE

See Regional Office

BRANCHES

1. Energy Policy
2. Research and Technology
3. Research and Technology
4. Research and Technology
5. Research and Technology
6. Research and Technology
7. Research and Technology
8. Research and Technology
9. Research and Technology
10. Research and Technology

COMMISSIONS/INDEPENDENT

1. National Energy Board
2. National Energy Board

DEPARTMENT

1. National Energy Board
2. National Energy Board

DEPARTMENT

1. National Energy Board
2. National Energy Board

20 Regional Offices

1. Bedford, N.S.
2. Vancouver B.C.
3. Halifax, N.S.
4. West Vancouver B.C.
5. Seattle, B.C.
6. Seattle, B.C.
7. Seattle, B.C.
8. West Vancouver B.C.

1. National Energy Board

1. National Energy Board
2. National Energy Board

Environment IV, Environment and Fisheries

1. Environmental Services
2. Environmental Services
3. Environmental Services
4. Environmental Services
5. Environmental Services
6. Environmental Services
7. Environmental Services
8. Environmental Services
9. Environmental Services
10. Environmental Services

1. Standing Committee on Fisheries and Forestry

2. Standing Committee on Miscellaneous Estimates

STAFF	HEADQUARTERS	COMMISSIONS/INSTITUTIONS	BRANCHES/DIVISIONS	REGIONAL OFFICE	STATUTES	PARLIAMENTARY COMMITTEES
Fisheries	F. Fisheries and Marine Services Government Ottawa 13 March 1979	1. Canadian Wildlife Corporation 2. Environmental Assessment Panel 3. Fisheries Price Support Board 4. Fisheries Research Board of Canada	1. Fisheries and Marine Services: (a) Fisheries Management (b) Game and Aquatic Sciences (c) Environmental Sciences and Marine Mammals (d) Small Craft Harbour Branch (e) Recreational Fisheries Branch (f) Provincial and Federal Affairs Branch 2. Planning and Finance Branch	1. St. John's Nfld 2. Halifax, N.S. 3. Dartmouth, N.S. 4. St. Andrew's N.B. 5. Vancouver B.C. 6. West Vancouver B.C. 7. Victoria B.C. 8. Moncton, N.B.	13. Whistler Birds Convention Act 14. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 15. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 16. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 17. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 18. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 19. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 20. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 21. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 22. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44) 23. (SC 1974 C. 44) - Whistler Convention Act (SC 1974 C. 44)	1. Standing Committee on Fisheries and Forestry 1. Standing Committee on Fisheries and Forestry 1. Standing Committee on Fisheries and Forestry

SECTOR	DEPARTMENT	BUREAU/COMMISSION/EDUCATION/RESEARCH/POWER	BRANCHES/DIVISIONS	REGIONAL OFFICE	STATUTES	EXTRACURRICULAR COMMITTEE
External Affairs	VI. External Affairs		- Under-Secretarial Group: - Operational Centre - Policy and Public Group - Research and Intelligence Liaison - Special Research Bureau - Chief and Negotiator - Area Bureau: - Bureau of Economic and Scientific Affairs - Ad and Development Divisions - Commercial Policy Divisions - Transport, Communications and Information Divisions - Scientific Relations and Environmental Protection Division - Bureau of Cultural Affairs and Area Control Affairs: - Bureau of United Nations Affairs - Bureau of Public Affairs - Administrative Division - World Institutions Division - Bureau of Co-ordination: - Federal-provincial Co-ordination Division - Commonwealth Institutions Division - Francophone Institutions Division - Ad Hoc Committees		- An Act respecting the International Boundary Waters Treaty and the Institute of International Law - Department of External Affairs Act (RSC 1970 c. 1-25) - International Development Research Centre Act (RSC 1970 c. 21, First Supplement) - International Law and Fishing Vessels Act - United Nations Act (RSC 1970 c. 10-3)	Standing Committee on External Affairs and National Defence
		Interdepartmental Committee on External Relations				Standing Committee on External Affairs and National Defence

SECTION	SUBJECT	BRANCHES/DIVISIONS	REGIONAL OFFICE	STATUTES	PARLIAMENTARY COMMITTEE
Finance	VIII. Finance	1. Economic Progress and Government Finance Branch: (a) Economic Development Division (b) Monetary Division (c) Finance and International Relations Branch 2. The Policy and Federal-Provincial Relations Branch (a) Communications and Business Income Division (b) International Tax Policy Division (c) Federal-Provincial Relations Division 3. Tariffs, Trade and Aid Branch 4. Economic Development Policy and International Finance Branch 5. Long Range Economic Planning Branch	No regional offices	1. Canada Development Corporation Act (SC 1978-71-72 C. 49) 2. Tariff Act (SC 1979 C. 6-41) 3. Finance Act (SC 1978 C. 7-12) as amended 4. Income Tax Act (SC 1979 C. 7-13) as amended 5. Customs Act (SC 1979 C. 7-14) as amended 6. Financial Institutions Act (SC 1979 C. 7-15) 7. Income Tax Act (SC 1979-72 C. 43) as amended 8. Industrial Development Act (SC 1979 C. 1-4) 9. International Development Act (SC 1979 C. 1-5) 10. Provincial Statute Act (SC 1979 C. 7-16) 11. Tariff Board Act (SC 1979 C. 7-17)	1. Standing Committee on Natural Resources 2. Standing Committee on International Affairs and National Defence 3. Standing Committee on Finance Trade and Economic Affairs
Industry, Trade and Commerce	VIII. Industry, Trade and Commerce	1. Industry Group: (a) Industrial Development (b) Industrial Trade Group 2. International Trade Group: (a) International Trade (b) International Trade Relations 3. Planning, Research and Evaluation Group.	1. St. John's, Nfld. 2. Halifax, N.S. 3. Fredericton, N.B. 4. Vancouver, B.C.	1. Export and Import Permit Act (SC 1979 C. 7-17) as amended 2. Export Development Act (SC 1979 C. 7-18) as amended 3. Trade Development Act (SC 1979 C. 7-19) 4. Foreign Investment Act (SC 1979-78 C. 40) 5. Foreign Investment Act (SC 1979-78 C. 40) 6. National Development Bank Act (SC 1979-78 C. 40) 7. National Development Bank Act (SC 1979-78 C. 40) 8. National Development Bank Act (SC 1979-78 C. 40) 9. National Development Bank Act (SC 1979-78 C. 40) 10. National Development Bank Act (SC 1979-78 C. 40) 11. National Development Bank Act (SC 1979-78 C. 40) 12. National Development Bank Act (SC 1979-78 C. 40)	1. Standing Committee on Finance Trade and Economic Affairs.

SECTION

DEPARTMENT

COMMISSIONS/COMMITTEES/STATES

BRANCHES/DIVISIONS

1. Export Development Corporation
 1. Insurance
 2. Loans
 3. Foreign Investment Guarantees
2. Foreign Investment Review Agency
 1. Compliance Branch
 2. Research and Analysis
3. National Design Councils
4. Statistics Canada
 1. Business Statistics
 2. Statistical Services
5. Planning and Research Branch
 - (a) Advisory and Research Services
 - (b) Policy Planning Section
 - (c) Statistical and Administrative and International Law
6. Scientific and Social Legal Services Branch
 1. The Litigation Branch

Justice H. J. Justice

REGIONAL OFFICE

1. St. John's, Nfld.
2. Halifax, N.S.
3. Fredericton, N.B.
4. Vancouver, B.C.
5. St. John's, Nfld.
6. Halifax, N.S.
7. Vancouver, B.C.

STATUTES

1. Export Development Act (RSC 1978 C-110)
2. Financial Administration Act (RSC 1978 C-1-10)
3. Foreign Investment Review Act (RSC 1978 C-1-10)
4. Foreign Investment Review Act (RSC 1978 C-1-10)
5. National Design Councils Act (RSC 1978 C-1-10)
6. Statistics Act (RSC 1978 C-1-10)
7. Planning and Research Act (RSC 1978 C-1-10)
8. Scientific and Social Legal Services Act (RSC 1978 C-1-10)

PARLIAMENTARY COMMITTEES

1. Standing Committee on Finance, Trade and Economic Affairs
2. Standing Committee on Finance, Trade and Economic Affairs
3. Standing Committee on Finance, Trade and Economic Affairs
4. Standing Committee on Finance, Trade and Economic Affairs
5. Standing Committee on Finance, Trade and Economic Affairs
6. Standing Committee on Finance, Trade and Economic Affairs
7. Standing Committee on Finance, Trade and Economic Affairs
8. Standing Committee on Finance, Trade and Economic Affairs

SELECT	DEPARTMENT	BOARDS/COMMISSIONS/ REGULATIONS/STATUTES	BRANCHES/DIVISIONS	REGIONAL OFFICE	STATUTES	PARLIAMENTARY COMMITTEE
Labour	Labour	1. Merchant Seamen Compensation Bill	1. Accident Prevention and Compensation Branch	1. St. John Nfld. 2. St. John and Halifax N.S. 3. St. John and Miramichi N.B. 4. Fredericton N.S.	1. Canada Labour Code (RSC 1970 C. L-1) 2. Employment of Labour Act (RSC 1970 C. L-2) 3. Merchant Seamen Compensation Act (RSC 1970 C. L-3) 4. C. M-11 as amended	1. Standing Committee on Labour, Manpower and Immigration
Manpower II Manpower and Immigration	Manpower	1. Merchant Seamen Compensation Bill	1. Canada Manpower Division: (a) Manpower Employer Services Branch (b) Manpower Training Branch 2. Maritime Command	1. Halifax, N.S. 2. Moncton, N.B.	1. Merchant Seamen Compensation Act (RSC 1970 C. M-11) as amended 2. Adult Occupational Training Act (RSC 1970 C. A-7) 3. Area Development Incentives Act (RSC 1970 C. 13) 4. Section 11) 5. Manpower and Immigration Act (RSC 1970 C. M-1) 6. National Development Incentives Act (RSC 1970 C. N-1, Section 13)	1. Standing Committee on Labour, Manpower and Immigration 2. Standing Committee on Immigration
Defence III National Defence	Defence	1. Merchant Seamen Compensation Bill	1. Maritime Command	1. Halifax, N.S. 2. Esquimaux, N.C.	1. National Defence Act (RSC 1970 C. N-2) as amended. 2. Visiting Forces Act (RSC 1970 C. V-4) as amended.	1. Standing Committee on External Affairs and National Defence

SECTOR	DEPARTMENT	BOARDS/COMMISSIONS/COMMITTEES/INDEPENDENT	BRANCHES/DIVISIONS	MEDICAL OFFICE	STATUTES	PARLIAMENTARY COMMITTEE
Health III	National Health and Welfare		1. Immigration Medical Service 2. Canadian Medical Association 3. Health Protection		1. Canada Shipping Act (RSC 1970 C. 34, Part V) as amended. 2. (RSC 1970 C. 34) as amended. 3. Patented Products Act (RSC 1970 C. 34-3) 4. Importation Act (RSC 1970 C. 34, Part II) 5. Quarantine Act (RSC 1970 C. 34, Part I) 6. Customs Act (RSC 1970 C. 44) 7. Excise Act (RSC 1970 C. 44) as amended. 8. Income Tax Act (RSC 1970 C. 44) as amended.	1. Standing Committee on Health, Welfare and Social Affairs
Transportation IV	National Revenue	1. Customs and Excise 2. Transport	1. Tariff Programs and Appraisal 2. Customs Operations 3. Excise 4. Operations 5. Systems and Planning	1. Sydney, N.S. 2. St. John's, Nfld. 3. St. John's, N.S. 4. St. John's, N.S. 5. Victoria, B.C. 6. Vancouver, B.C. 7. Winnipeg, M.B. 8. Montreal, P.Q.		1. Standing Committee on Public Accounts
Federal, Provincial and Territorial	Federal, Provincial and Territorial	1. Federal, Provincial and Territorial	1. Operations Division: (a) Scientific Policy and Information (b) Scientific Policy and Information (c) External Policy and Reference Secretariat (d) External Policy and Reference Secretariat 2. Plans Division: (a) Scientific Policy and Information (b) Scientific Policy and Information (c) External Policy and Reference Secretariat (d) External Policy and Reference Secretariat 3. Federal-Provincial Relations Office		1. British North America Act 1867. 2. Statute of Westminster 1931. 3. Statute of Westminster 1931. 4. Statute of Westminster 1931. 5. Statute of Westminster 1931. 6. Statute of Westminster 1931. 7. Statute of Westminster 1931. 8. Statute of Westminster 1931. 9. Statute of Westminster 1931. 10. Statute of Westminster 1931. 11. Statute of Westminster 1931. 12. Statute of Westminster 1931. 13. Statute of Westminster 1931. 14. Statute of Westminster 1931. 15. Statute of Westminster 1931. 16. Statute of Westminster 1931. 17. Statute of Westminster 1931. 18. Statute of Westminster 1931. 19. Statute of Westminster 1931. 20. Statute of Westminster 1931. 21. Statute of Westminster 1931. 22. Statute of Westminster 1931. 23. Statute of Westminster 1931. 24. Statute of Westminster 1931. 25. Statute of Westminster 1931. 26. Statute of Westminster 1931. 27. Statute of Westminster 1931. 28. Statute of Westminster 1931. 29. Statute of Westminster 1931. 30. Statute of Westminster 1931. 31. Statute of Westminster 1931. 32. Statute of Westminster 1931. 33. Statute of Westminster 1931. 34. Statute of Westminster 1931. 35. Statute of Westminster 1931. 36. Statute of Westminster 1931. 37. Statute of Westminster 1931. 38. Statute of Westminster 1931. 39. Statute of Westminster 1931. 40. Statute of Westminster 1931. 41. Statute of Westminster 1931. 42. Statute of Westminster 1931. 43. Statute of Westminster 1931. 44. Statute of Westminster 1931. 45. Statute of Westminster 1931. 46. Statute of Westminster 1931. 47. Statute of Westminster 1931. 48. Statute of Westminster 1931. 49. Statute of Westminster 1931. 50. Statute of Westminster 1931. 51. Statute of Westminster 1931. 52. Statute of Westminster 1931. 53. Statute of Westminster 1931. 54. Statute of Westminster 1931. 55. Statute of Westminster 1931. 56. Statute of Westminster 1931. 57. Statute of Westminster 1931. 58. Statute of Westminster 1931. 59. Statute of Westminster 1931. 60. Statute of Westminster 1931. 61. Statute of Westminster 1931. 62. Statute of Westminster 1931. 63. Statute of Westminster 1931. 64. Statute of Westminster 1931. 65. Statute of Westminster 1931. 66. Statute of Westminster 1931. 67. Statute of Westminster 1931. 68. Statute of Westminster 1931. 69. Statute of Westminster 1931. 70. Statute of Westminster 1931. 71. Statute of Westminster 1931. 72. Statute of Westminster 1931. 73. Statute of Westminster 1931. 74. Statute of Westminster 1931. 75. Statute of Westminster 1931. 76. Statute of Westminster 1931. 77. Statute of Westminster 1931. 78. Statute of Westminster 1931. 79. Statute of Westminster 1931. 80. Statute of Westminster 1931. 81. Statute of Westminster 1931. 82. Statute of Westminster 1931. 83. Statute of Westminster 1931. 84. Statute of Westminster 1931. 85. Statute of Westminster 1931. 86. Statute of Westminster 1931. 87. Statute of Westminster 1931. 88. Statute of Westminster 1931. 89. Statute of Westminster 1931. 90. Statute of Westminster 1931. 91. Statute of Westminster 1931. 92. Statute of Westminster 1931. 93. Statute of Westminster 1931. 94. Statute of Westminster 1931. 95. Statute of Westminster 1931. 96. Statute of Westminster 1931. 97. Statute of Westminster 1931. 98. Statute of Westminster 1931. 99. Statute of Westminster 1931. 100. Statute of Westminster 1931.	

REPORTS

Public Works IV.

Regional Economic Development

1. Atlantic Development Council
2. Regional Development
Initiative Study

Science and VIII Technology

PLANNING/DIVISION

PLANNING/DIVISION Economic Council of Canada

1. Planning and Coordination
2. Industrial Incentives
3. Development Opportunity Initiatives

1. Policy
2. Program Review and Assessment
3. Co-operation

REGIONAL OFFICE

1. Montreal, P.Q.
(Atlantic Region)

STATES

1. Economic Council Act (SEC 1978 c. 2-1)
2. Dry Dock Facilities Act (SEC 1978 c. 2-2)
3. C.C.R. Section 31
4. Public Works Act (SEC 1978 c. 2-10)

1. Department of Regional Economic Expansion Act
(SEC 1978 c. 1-1)
2. Regional Development Incentives Act (SEC 1978
c. 2-3) (S. 31)

1. Ministers of State Act
(SEC 1978 c. 1-1)
2. Proclamation (SEC 1978 c. 1-1) August 1978
3. Proclamation (SEC 1978 c. 1-1) August 1978

LEGISLATIVE COMMITTEE

1. Standing Committee on Finance, Trade
and Economic Affairs
2. Standing Committee on Natural Resources
and Public Works

1. Standing Committee on Regional Development

2. Standing Committee on Regional Development

1. Standing Committee on Miscellaneous Estimates

SECTORS

DEPARTMENTS

BOARDS/COMMISSIONS/ COMMITTEES/INSTITUTIONS

1. Canadian Patents and Development Limited
2. National Research Council

ACROSS/SECTIONS

1. National Research Laboratories
2. University of Canada
3. Scientific and Technical Information

REGIONAL OFFICE

STATUTES

1. Subsidiary of National Research Council of Canada
2. National Research Council Act (RSC 1970 c. N-11)

3. Science Council of Canada Act (RSC 1970 c. S-1)

4. Department of State Act (RSC 1970 c. S-11)

5. National Museums Act (RSC 1970 c. N-12)

6. National Museums Act (RSC 1970 c. N-12)

7. Royal Canadian Mounted Police Act (RSC 1970 c. R-4)

8. Royal Canadian Mounted Police Act (RSC 1970 c. R-4)

Standing Committee on Miscellaneous Estimates
Standing Committee on Broadcasting, Film and
Amusement to the Arts

Standing Committee on Justice and Legal Affairs

SIC	DEPARTMENT	SIC/COMMISSIONS/ COMPANIES/ESTABLISHMENTS	BRANCHES/DIVISIONS	REGIONAL OFFICE	STATUTES	PARLIAMENTARY COMMITTEE
Services III.	Supply and Services		1. Supply Administration 2. Science and Engineering 3. Management Services	1. Burlington, N.S. 2. Halifax, N.S. 3. Montreal, N.S. 4. Vancouver, N.S.	1. Department of Supply and Services Act (S.C. 1970 C. 5-13)	2. Standing Committee on Miscellaneous Initiatives
Transport III.	Transport	1. Canadian Commercial Corporation	1. Canadian Commercial Corporation Administration (CCCA) (a) Air Navigation Division (b) Marine and Pilots Services Branch (c) Canadian Coast Guard Fleet 2. Canadian Air Transportation Administration (CAT)	1. St. John's, N.S. 2. Montreal, N.S. 3. Vancouver, N.S.	1. Canadian Commercial Corporation Act (S.C. 1970 C. 5-13) 2. Canadian Shipping Act (S.C. 1970 C. 5-13) 3. Canadian Shipping Act (S.C. 1970 C. 5-13) 4. Canadian Shipping Act (S.C. 1970 C. 5-13) 5. Canadian Shipping Act (S.C. 1970 C. 5-13) 6. Canadian Shipping Act (S.C. 1970 C. 5-13) 7. Canadian Shipping Act (S.C. 1970 C. 5-13) 8. Canadian Shipping Act (S.C. 1970 C. 5-13) 9. Canadian Shipping Act (S.C. 1970 C. 5-13) as amended	1. Standing Committee on Transport and Communications
		2. Atlantic Pilotage Authority	(a) Marine and Ferry Branch	1. Saint John, N.S.	1. Pilotage Act (S.C. 1970-71-72 C. 13) as amended	1. Standing Committee on Miscellaneous Initiatives 2. Standing Committee on Transport and Communications

NOTE	DEPARTMENT	BOARDS/COMMISSIONS /COMMISSIONS/INSTITUTIONS	BRANCHES/DIVISIONS	REGIONAL OFFICE	STATUTES	PARLIAMENTARY COMMITTEE
Economic Affairs Treasury Board		1. Maritime Pollution Claims Fund 2. National Harbours Board 3. Pacific Pilgrimage Authority	1. Program Branch 2. Planning Branch 3. Administrative Policy Branch	1. Canada Shipping Act (RSC 1970 C. 37, S. 6 and Supplement) 2. National Harbours Board Act (RSC 1970 C. 38-6) 3. Pilgrimage Act (SC 1970-71-72 C. 32) as amended.	1. Standing Committee on Transport and Communications 2. Standing Committee on Transport and Communications	1. Standing Committee on Miscellaneous Initiatives

A P P E N D I X "E"

Petroleum Refining Establishments on the East and West Coasts

A P P E N D I X "E"

PETROLEUM REFINING ESTABLISHMENTS ON THE EAST AND WEST COASTS

<u>Newfoundland</u>		<u>Nova Scotia</u>	<u>New Brunswick</u>	<u>British Columbia</u>
1. Golden Eagle Canada Ltd. (HOLLYROOD)	1. Gulf Oil Canada Ltd. (Point Tupper)	1. Imperial Oil Ltd - Imperial Oil Enterprises Ltd (Dartmouth)	1. Irving Oil Ltd Refining Division (Saint John)	1. Gulf Oil Canada Ltd. (Kamloops)
2. Provincial Refining Co. Ltd** (Come by Chance)	2. Imperial Oil Ltd - Imperial Oil Enterprises Ltd (Halifax)	3. Texaco Canada Ltd. (Halifax)		2. Gulf Oil Canada Ltd. (Port Moody)
	4. Gulf Oil Trading Ltd* (Point Tupper)			3. Husky Oil Operations Ltd (Prince George Refinery)
				4. Imperial Oil Ltd - Imperial Enterprises Ltd (IOCO)
				5. Pacific Petroleum Ltd (McMahon Plant - Taylor)
				6. Shell Canada Ltd. (Burnaby)
				7. Standard Oil Company of British Columbia & Chevron Canada Ltd. (Burnaby)
				8. Union Oil of Canada*

* Ceased operation by 1976
 ** Operational by 1974

Source: Statistics Canada, Petroleum Refineries Catalogue No. 45-205.

A P P E N D I X "F"

3

Variables Chosen to Represent Activity/Use Levels

A P P E N D I X "F"

VARIABLE CHOSEN TO REPRESENT ACTIVITY/USE LEVELS

<u>SECTOR</u>	<u>SECTOR ACTIVITY/USE</u>	<u>PROXY VARIABLE</u>	<u>UNIT OF MEASUREMENT</u>
Fishing	1. Sports Fishing	Sport Fishing Licences	Number of Licences
	Source: Statistics Canada, Annual Statistical Digest: Travel, Tourism and Outdoor Recreation Catalogue No. 66-202.		
	2. Commercial Fishing	Craft Engaged in Fishing	Number of Craft
	Source: Statistics Canada, Annual Fisheries Statistics of Canada - Catalogue No. 24-201		
	3. Shell Fishing	Shell fish Landed	Pounds of Shellfish
	Source: Statistics Canada, Annual Fisheries Statistics of Canada - Catalogue No. 24-201		
Transportation	4. Commercial Shipping	Arrival and departure of vessels	Number of Movements
	Source: Statistics Canada, Annual Shipping Report Part II: International Seaborning by port, Catalogue No. 54-203.		
	5. Search and Rescue	Search and Rescue Missions	Incidents of search and rescue
	Source: Provided by Transport Canada, Coastguard Search and Rescue Fleet Systems.		

SECTOR	SECTOR ACTIVITY/USE	PROXY VARIABLE	UNIT OF MEASUREMENT
/Energy	6. Port Facilities (Harbours)	Cargo Handled	Tonnage of Cargo Handled
	Source: Statistics Canada, Shipping Report II International Seabourne Shipping by Port - Catalogue No. 54-203. Annual		
	7. Offshore Gas and Oil Exploration	Drilling	Number of Drilling per Week
	Source: A Maclean-Hunter Publication Oilweek.		
	8. Petroleum Refinery	Crude Petroleum Refined	Tonnage of Crude Petroleum refined
	Source: Statistics Canada. Petroleum Refineries - Catalogue No. 54-203 - Annual.		

<u>SECTOR</u>	<u>SECTOR ACTIVITY/USE</u>	<u>PROXY VARIABLE</u>	<u>UNIT OF MEASUREMENT</u>
Recreation	9. Sailing and Boating	Ownership of Boats	Number of Household Owning boats
	Source: Statistics Canada, Annual Statistical Digest, Travel, Tourism and Outdoor Recreation, Catalogue No. 66-202		
Communication	10. Use of Airspace by Helicopters	Hours Flown	Number of Hours flown
	Source: Statistics Canada, Aviation Statistics Catalogue No. 51-004.		
	11. Cable Communication	"Submarine" cablegrams	Number of Cablegrams sent via submarine cable
	Source: Statistics Canada, Telecommunication Statistics - Catalogue Number 65-201.		

<u>SECTOR</u>	<u>SECTOR ACTIVITY/USE</u>	<u>PROXY VARIABLE</u>	<u>UNIT OF MEASUREMENT</u>
Defence	12. Military	Naval Exercise	Number of Naval Exercise
	Source: Information on Naval Exercises by Maritime Command can be obtained from the Department of National Defence if they are declassified.		
Research	13. Scientific Research	Fisheries and Marine Research	Spending Estimates
	Source: The "Blue Book" of The Government's Spending Estimates.		

A P P E N D I X "G"

List of Senior Government Officials
interviewed and agencies outside Canada
that provided material for this thesis .

APPENDIX "G"

List of Senior Government Officials interviewed and Agencies
outside Canada that provided material for this thesis

1. Senior Government Officials interviewed

<u>Department</u>	<u>Name of Official</u>
Communications	Patrick J. Muncaster International Telecom- munications Branch
Energy, Mines and Resources	Donald F. Sherwin Chief, Resources Geology Division Resources Management and Conservation Branch
Canada Centre for Remote Sensing	Arthur M. Kelly Special Advisor Planning Liaison Program Planning and Evaluation
Environment	Dr. D.B. Carlisle Advisor Water Quality Research J.G. Michael Parkes National Co-ordinator Shore Zone Integrated Program Leo Boychuk Resources Information Economist Water Resources Document Reference Centre (WATDOC)
External Affairs	Lawrence Herman Law of the Sea Section Legal Operations Division
Fisheries and Oceans	Jean E. Haché A/Director Resources Allocation Branch Mary H. Walsh International Marine Policy International Directorate Fisheries and Marine Service

<u>Department</u>	<u>Name of Official</u>
Fisheries and Oceans (cont'd)	E.J. Cooper Territorial Waters Officer Ocean and Aquatic Affairs
	M.S. Spanogle Fisheries Research Board of Canada
Industry, Trade and Commerce	David R. Kerluke Ocean Industries Division
National Defence	Major Barry Fiwer
Science and Technology	M.E. Smith, Policy Advisor Government Branch
Transportation	H.H. Whiteman Senior Planning Officer Canadian Coast Guard
	J.J. Chaffey Search and Rescue, Fleet Systems Canadian Coast Guard
	G.R. Meek Search and Rescue, Fleet Systems Canadian Coast Guard
	Charles Pratt Public Affairs Officer Transport Canada

2. Agencies outside Canada that provided material

<u>Agency</u>	<u>Contact Person</u>
United Nations Third Conference on the Law of the Sea	Bernardo Zuleta Under-Secretary-General Special Representative of the Secretary-General to the Third United Nations Conference on the Law of the Sea
Department of Energy- Petroleum Production Division London United Kingdom	D.L. Carpenter
British Gas Corporation London United Kingdom	
Scottish Economic Planning Department Edinburgh	L.R. Warmer