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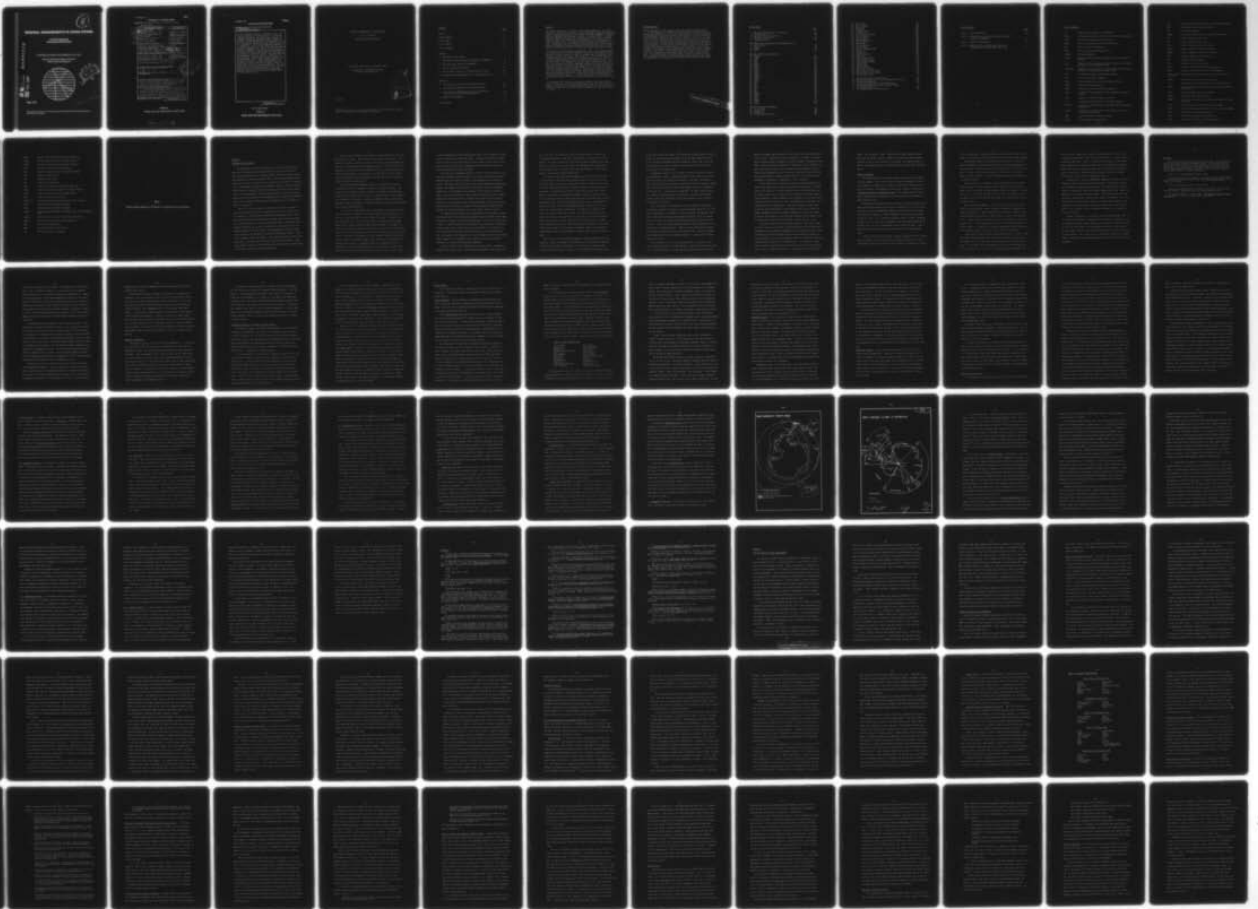
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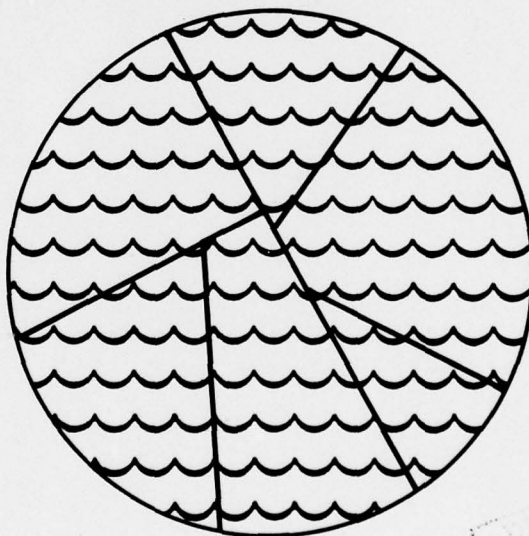
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ARMED SERVICES PROCUREMENT REGULATION

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at the bilateral, regional, or global levels. The regional approach to such forms of use as fishing, scientific research, and environmental control is gradually gaining in acceptance, and it would seem essential for the United States continuously to assess this marine regionalist trend, particularly from the standpoint of its own national ocean interests.

Changes are likely to occur in the nature of marine regional arrangements as a result of the virtually universal adoption by coastal states within the next few years of an exclusive economic zone extending up to 200 nautical miles from shore. One result may be the emergence of various types of restrictive regional regimes, covering the combined economic zones of neighboring states. Within such regimes, the fishing, scientific, military and other vessels of non-littoral countries may be excluded, or have their traditional activities severely curtailed. This condition may be particularly prevalent in the case of semi-enclosed seas and other narrow water bodies which are enclosed by the exclusive economic zones of their coastal states.

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ARMED SERVICES PROCUREMENT REGULATION

REGIONAL ARRANGEMENTS IN OCEAN AFFAIRS

Lewis M. Alexander

University of Rhode Island

Final Report under Contract N0014-75-C-1165

Fleet Analysis and Support Division
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ABSTRACT

The growing complexities of ocean use have made management at the international level increasingly important. Such complexities apply particularly to fisheries, pollution control, and scientific research, regardless of whether these are handled at the bilateral, regional, or global levels. Certain maritime problems lend themselves in particular to the regional approach, especially those associated with semi-enclosed seas, or the marginal portions of ocean basins. To respond to these problems a wide variety of regional arrangements have been employed, ranging from multi-national working groups to formally-structured institutions, and from units with a single, part-time coordinator to those with their own research and analysis staffs.

Two trends are evident in marine regionalism. One is that regional systems in the future will be forced to adjust to what may be an almost universal adoption by coastal states of exclusive economic zones, extending to up to 200 nautical miles from shore. Such a move will, in the short term, tend to reduce seriously the efficacy of existing regional units, as coastal countries become adjusted to their new rights and responsibilities. A second trend will be the emergence of various forms of restrictive regional action as countries seek joint management schemes for their collective off-shore waters, while at the same time imposing bans on certain activities of "outside" states, particularly with respect to such use forms as fishing, scientific research, and the passage of certain types of military vessels. It is this threat of restrictive action, particularly in semi-enclosed seas and other constricted water areas, which could be of considerable concern to the major maritime powers -- a concern which could be exacerbated if some maritime powers gained access to certain marine areas while others did not.

It is important that continual monitoring be done of the marine regional trend, in terms not only of the various forms it may take, but also of the impacts it may have on the marine environment itself, on the ocean interests of affected countries, and on the general international scene with respect to the sea.

ACKNOWLEDGEMENTS

In the preparation of this report I have been assisted by many persons. Dr. Stjepan Keckes of the United Nations Environment Programme has been particularly helpful, as have also Mr. Desmond Scott of the Intergovernmental Oceanographic Commission and Miss Clare Cuerden, Librarian of the FAO Fisheries Branch Library in Rome. Special thanks are also due to two officials of the U.S. Department of State, Miss Janice Barnes, Executive Secretary of the Panel on International Programs and International Cooperation in Ocean Affairs, OES/OFA, and Dr. Robert Hodgson, Director of the Office of the Geographer. My appreciation is extended to the persons who attended the June 1976 Seminar on Marine Regionalism and contributed to my understanding of the marine regional concept, and to the Marine Affairs graduate students at the University of Rhode Island who assisted me in the preparation of this manuscript, particularly James Eger, Connie Knapp and John Gold. Mr. Ralph Boragine prepared the maps. Finally, my thanks go to my wife, Jacqueline Alexander, who shared ideas with me during the two years of preparation, and who assisted in editing the final draft of this report.

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LIST OF ACRONYMS

ACC	Administrative Committee on Co-ordination
ALECSO	Arab League Educational, Cultural and Scientific Organization
ASEAN	Association of South East Asian Nations
BIMCO	Baltic and International Maritime Conferences
BSFC	Black Sea Fisheries Commission
BSSSC	Baltic Sea Salmon Standing Committee
CARICOM	Caribbean Community
CARPAS	Regional Fisheries Advisory Commission for the Southwest Atlantic
CCOP	Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Off-Shore Areas
CCOP/SOPAC	Committee for Co-ordination of Joint Prospecting for Mineral Resources in South Pacific Off-Shore Areas
CDCC	Caribbean Development Co-operation Committee
CEAO	West African Economic Community
CECAF	Fishery Committee for the Eastern Central Atlantic
CENTO	Central Treaty Organization
CEPEX	Controlled Ecosystems Pollution Experiment
CICAR	Co-operative Investigations of the Caribbean and Adjacent Regions
CIFA	Committee for Inland Fisheries of Africa
CIM	Co-operative Investigations in the Mediterranean
CINCWIO	Co-operative Investigations in the North and Central Western Indian Ocean
CINECA	Co-operative Investigations of the Northern Part of the Eastern Central Atlantic
CMEA	Council for Mutual Economic Assistance
CPOM	Mexican Oceanic Sorting Centre

CSK	Co-operative Study of the Kuroshio and Adjacent Regions
CUEA	Coastal Upwelling Ecosystems Analysis
EAC	East African Community
EAMFRO	East African Marine Fisheries Research Organizations
ECA	Economic Commission for Africa
ECE	Economic Commission for Europe
ECLA	Economic Commission for Latin America
ECOSOC	Economic and Social Council (of the UN)
ECOWAS	Economic Community of West African States
ECWA	Economic Commission for Western Asia
EEC	European Economic Community
EFTA	European Free Trade Association
EIFAC	European Inland Fisheries Advisory Commission
ERFEN	Regional Investigation of the El Niño Phenomenon
ESCAP (formerly ECAFE)	Economic and Social Commission for Asia and the Pacific
FAMOUS	French-American Mid-Ocean Undersea Study
FAO	Food and Agriculture Organization of the United Nations
FICSAS	Federation of the Institutions Concerned with the Study of the Adriatic Sea
GARP	Global Atmospheric Research Programme
GEOSECS	Geochemical Ocean Sections Study
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Pollution
GFCM	General Fisheries Council for the Mediterranean
GIPME	Global Investigation of Pollution in the Marine Environment
IAEA	International Atomic Energy Agency
IATTC	Inter-American Tropical Tuna Commission
IBSFC	International Baltic Sea Fishery Commission

ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
ICITA	International Cooperative Investigations of the Tropical Atlantic
ICLARM	International Center for Living Aquatic Resources Management
ICNAF	International Commission for the Northwest Atlantic Fisheries
ICSEAF	International Commission for the Southeast Atlantic Fisheries
ICSEM	International Commission for the Scientific Exploration of the Mediterranean Sea
ICSPRO	Inter-Secretariat Committee on Scientific Programs Relating to Oceanography
ICSU	International Council of Scientific Unions
IDOE	International Decade of Ocean Exploration
IGOSS	Integrated Global Ocean Station System
IGY	International Geophysical Year (1957-58)
IIOE	International Indian Ocean Expedition
IMCO	Inter-Governmental Maritime Consultative Organization
INPFC	International North Pacific Fisheries Commission
IOBC	Indian Ocean Biological Centre
IOC	Intergovernmental Oceanographic Commission
IOCARIBE	IOC Association for the Caribbean and Adjacent Regions
IODE	International Oceanographic Data Exchange
IOFC	Indian Ocean Fishery Commission
IPFC	Indo-Pacific Fisheries Council
IPHC	International Pacific Halibut Commission
IPSFC	International Pacific Salmon Fisheries Commission
ISOS	International Southern Ocean Studies
ITSU	International Tsunami Warning System in the Pacific

IWC	International Whaling Commission
JASIN	Joint Air-Sea Interaction Program
JCFC	Japan-China Joint Fisheries Commission
JKFC	Japan-Republic of Korea Joint Fisheries Commission
JONSWAP	Joint North Sea Wave Project
JSFC	Japan-Soviet Northwest Pacific Fisheries Commission
LAFTA	Latin American Free Trade Association
LEPOR	Long-Term and Expanded Programme of Oceanic Exploration
MC	Mixed Commission of 1962 (Baltic Sea)
MCBSF	Mixed Commission for Black Sea Fisheries
MONEX	Monsoon Circulation Experiment
NATO	North Atlantic Treaty Organization
NEAFC	North-East Atlantic Fisheries Commission
NODC	National Oceanographic Data Center
NORPAX	North Pacific Experiment
NPFSC	North Pacific Fur Seal Commission
OAS	Organization of American States
OAU	Organization of African Unity
OCAM	Common Organization of African and Malagasy States
ODECA	Organization of Central American States
OECD	Organization for Economic Co-operation and Development
OETO	Ocean Economics and Technology Office
OPANAL	Organization for the Prohibition of Nuclear Weapons in Latin America
OPEC	Organization of Petroleum Exporting Countries
PCSP	Permanent Commission of the Conference on the Use and Conservation of the Marine Resources of the South Pacific
RDC	Regional Data Center

RSNT	Revised Single Negotiating Text (of UNCLOS III)
SCNEA	Sealing Commission for the Northeast Atlantic
SCNWA	Sealing Commission for the Northwest Atlantic
SCOR	Scientific Committee on Ocean Research
SCSK	Shellfish Commission for the Skagerrak-Kattegat
SES	Seagrass Ecosystem Study
SOC	Southern Oceans Survey
SPC	South Pacific Commission
SPEC	South Pacific Bureau for Economic Cooperation
TEMA	Training, Education and Mutual Assistance Projects
UDEAC	Central African Customs and Economic Union
UEAC	Union of Central African States
UNCLOS III	Third United Nations Conference on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNITAR	United Nations Institute for Training and Research
WECAFC	Western Central Atlantic Fishery Commission
WHO	World Health Organization
WMO	World Meteorological Organization
VAP	Voluntary Assistance Programme

Map 1

"Physical Marine Regions of the World" is located at end of the report.

CHAPTER 1

RATIONALE FOR THE PROJECT

The traditional regime of the oceans has in the past been one which maximized the geographic extent and freedom of action of the high seas, while retaining narrow belts of offshore waters within which coastal states were empowered to exercise sovereign rights. Such a regime permitted those countries best able to utilize the sea to profit the most from its exploitation. The freedoms of navigation, overflight, fishing, scientific research, and the laying of submarine cables and pipelines have been of great importance to the development of the major maritime powers. But such an ocean regime also led to problems of environmental misuse, congestion and economic waste, and to inadequate protection of investments made by individuals or groups in ocean uses.

Since it was in the interests of the maritime powers to maintain a juridical regime of the oceans in which access was as open as possible to all countries, it followed that traditionally non-maritime states, which had the inclination and the potential to develop their own marine capacities, were free to do so. By the mid-twentieth century a number of these countries had built up, or were in the process of developing, their own shipping industries, fishing fleets, and oceanographic research vessels. At the same time, the relatively low costs of ocean-borne cargoes -- such as oil, minerals, grains and cement -- were coming to benefit many non-maritime states; so too were the low costs of fish and fish products. And a large number of countries were benefiting from the protection afforded them by the naval strength of major maritime powers.

Not until after World War II were there serious challenges to the freedom of the seas regime. These challenges were largely of two types -- the extensions seaward of national claims to jurisdiction, and the adherence of countries to international ocean management systems. The latter process has generally involved maritime areas beyond the limits of coastal state jurisdiction, although there are exceptions, as in the case of certain Pacific fisheries agreements, wherein regional provisions apply also to activities within nationally-claimed waters.¹

Of the international management systems or arrangements, there are three general levels of operation: bilateral, regional, and global. The choice of scale depends largely on the types of problems to be addressed. Fisheries and pollution control issues, for example, tend to lend themselves more frequently to bilateral or regional arrangements than to global ones; questions relating to freedom of scientific research are generally more worldwide in scope and application.

It is with the international marine arrangements at the regional scale that this Report is concerned. The trend toward marine regionalism is believed to be an important one for a variety of reasons. Increased use of the oceans and their resources brings with it increased needs for management systems. Improved fisheries harvesting techniques, for example, can threaten the extinction of entire stocks within a given area. Vessel-source pollution in a semi-enclosed sea may affect the interests of all the littoral states. Associated with greater use is the movement toward the adoption by coastal states of exclusive economic zones, extending to a maximum of 200 nautical miles offshore. Although the specific competences which will eventually be claimed within these zones is still unclear, it seems probable that before long most of the semi-enclosed seas of the world, as well

as other geographically-restricted maritime areas, will be completely closed off within national jurisdictional limits. Together with greater opportunities for coastal state administration of the economic zones should in time come pressures for multi-state management of certain maritime activities within the extended jurisdictional areas.

Associated with management needs will be those of data acquisition, and here again regional scientific projects, as well as those involving surveys and monitoring, are likely to expand. Also important are the desires of certain "have-not" countries to share in the wealth produced from ocean uses. Jamaica, for example, has proposed at the Third Law of the Sea Conference (UNCLOS III) a system whereby the countries of the Caribbean would have equal access to the fisheries of that water body beyond the coastal states' twelve-mile territorial limits.² Several land-locked countries, also at UNCLOS III, have suggested a form of regional economic zone, in which land-locked states of a "region" can share with their coastal neighbors in the exploitation of the resources of the coastal states' 200-mile zones.³

The negotiators at UNCLOS III have taken note of the regionalist trend, and the articles of the Revised Single Negotiating Text (RSNT)⁴ contain many references to regions and regional organizations. One criticism of the Text, in fact, is that the compilers of the articles use the regional terminology rather loosely, and at times seem to have fallen back on the regional concept when no other method for resolving difficult issues appeared practical. But regardless of ambiguities, it seems probable that any future oceans treaty emerging out of UNCLOS III will contain a considerable number of references to regional and subregional phenomena.

Even if no oceans treaty develops from the negotiations, increased regional action appears likely. But the gradual enclosure of the "free" seas

out to 200 miles from shore means that the regional units of tomorrow may be considerably different from those existing today. One objective of this report is to suggest alternative forms future regional arrangements may take. Another is to assess some of the impacts of contemporary and projected marine regional systems on United States needs and interests. In this latter context, certain points might be noted here.

One aspect of marine regional arrangements in other parts of the world is the possibility that they might adversely affect access of U.S. vessels to various types of activities within foreign states' economic zones. Such activities could include fishing, scientific research, and certain forms of navigation -- particularly by military vessels and aircraft, and by what might be considered to be potentially hazardous vessels in terms of pollution.⁵ Although countries acting alone might seek such restrictions in their own economic zone, if they act together as regional units, the problems of dealing with them, and of reaching understandings with regard to U.S. actions, may be considerably intensified. For example, one country of the region may assume a lead role, and force its policies upon member states. Should such policies run counter to U.S. interests, the results of regional restrictions could be serious, particularly in strategic areas. In addition to general restrictions, there are also special conditions which could affect access rights, such as efforts at regional control over particular international straits, or declarations of certain water bodies as "zones of peace."

The issue of access has another component, namely the question of other countries' rights with regard to the economic zone and continental margin of the United States and its possessions, in the event of a regional system to which the United States is a party. In the Caribbean/Gulf of Mexico area,

or the Arctic Ocean, for example, the United States might become involved in a regional science organization which, on the one hand, permitted access to U.S. vessels or platforms off other countries' shores; but at the same time granted access off U.S. coasts to similar activities by the Soviet Union, Cuba, or some other state.

An important element of U.S. interests in marine regionalism involves the investment of capital, conservation efforts, time spent at sea, education and training, or restrictive legislation. How much "investment" of these types should the United States expend with respect to regional arrangements, and how much should it expect other member-states of an agreement to which the U.S. is a party also to undertake? In some instances, would U.S. interests be better served by investing in unilateral or bilateral actions, rather than relying on a multi-state regional system to protect and promote its interests?

Even in existing, and reportedly successful, regional arrangements, the question continually surfaces, how much investment should the U.S. continue to underwrite? The Antarctic scientific effort, the regional activities of the Intergovernmental Oceanographic Commission (IOC), the regulatory activities of the international regional fisheries councils and commissions -- these and similar programs represent regional approaches to the organization of uninhabited space. What priorities should be given them, both within the framework of the total national effort, and of the federal ocean program? What are the competing demands? Are more marine regional programs necessary?

Any consideration of U.S. ocean interests must, of necessity, take into account the interests of other countries, particularly those with close ties to the United States. To what extent are their interests served by

regional agreements and institutions, even those to which the United States is not a party? Pursuing this one step further, it is useful to ask what impacts marine regional arrangements may have on general international relations. Would "non-aligned" countries be attracted to one or another of the major world powers because of the existence of marine regional systems? Within certain geographic areas of the world, could one or more of the non-super powers emerge as leaders of marine efforts? If so, would such developments be favorable, or unfavorable, to U.S. interests?

A final aspect of U.S. concern with respect to marine regionalism involves future directions in which the regionalist trend may go. As noted earlier, the advent of a 200-mile economic zone as a jurisdictional norm for coastal states raises a whole series of questions concerning future regional mechanisms. Should UNCLOS III fail to produce a new oceans treaty, regional ocean policy blocs may likely strengthen their cohesiveness in anticipation of future negotiations. And with or without a treaty, landlocked and other geographically-disadvantaged states will be seeking regional arrangements with their coastal neighbors in order to gain access to the sea, and, perhaps, to the fisheries resources of the economic zones of coastal states within the same "region" of which they are a part.

The issues raised here are more than rhetorical. They imply a need for policy decisions on the part of the United States with respect both to contemporary marine regional arrangements, and to future activities. Such decisions must be based largely on the current and projected impacts of such arrangements, both on marine-related conditions, and on the short- and long-term ocean interests of the United States. In some cases, contemporary regional systems may have few effects on either the ocean environment, or on U.S. goals and objectives. This may also hold true for the

future. But one thing is clear. Many facets of marine regionalism are still too new, and too subject to change, to warrant more than a general overview, so far as their potential is concerned. The subject matter itself is an evolving one, which in coming years must be kept under continual review.

Plan of the Report

The second chapter of this report contains an analysis of the nature of marine regions, and of various types of regional arrangements. Much of this material was contained in an article by the author, based on the results of the early investigations of this project, which was published in The American Journal of International Law.⁶ The component parts of the regional organizations are important to any projections into the future of marine regional trends.

Following this presentation of the geographic and organizational frameworks within which regional systems exist, a description is given of existing marine regional arrangements throughout the world, and of their potential impacts on ocean uses. These arrangements are classified according to activity area -- e.g., fisheries, pollution control, science, technology transfer, etc. Not only are the agreements and institutions themselves important, but so too are the geographic areas to which they apply. This is particularly true where two or more units pertain to the same maritime space.

A fourth chapter considers trends in marine regional activities, including the regional provisions contained in proposals at UNCLOS III, and developments underway or planned by states outside the framework of the Law

of the Sea Conference. Efforts are made to project certain trends, particularly in the light of anticipated changes in ocean jurisdictional patterns.

The following chapter assesses United States interests in marine regional arrangements, including their potential for improved management of the ocean and its resources, as well as the possibilities of the establishment of "closed" or exclusionary regimes in which access by the United States, or other countries, to specific maritime areas and their resources is limited or denied.

Finally, there is a concluding section which discusses areas where future research on marine regionalism might fruitfully be undertaken, together with an assessment of known research efforts now underway. As noted earlier, it is clear that the whole topic of marine regionalism is still very much in its infancy, and that much needs to be done with this complex and dynamic topic.

There are several appendices. One lists and briefly describes the status of regional marine systems in terms of membership, geographic coverage, functions, etc. Another tabulates the major marine regions of the world and details for each one of the principal regional systems applying to it. A third presents case studies of regional arrangements in two geographic areas -- the Caribbean/Gulf of Mexico, and the Mediterranean Sea. Finally, there is a summary of a seminar on regionalism held at the University of Rhode Island in June 1976. There is also a bibliography.

Several points should be noted concerning this study. A first is that the general approach adopted here is but one of a series of alternatives. The emphasis is on (1) categories of marine regions and regional arrangements, (2) the impact of these arrangements on the ocean environment and on the uses made of it, and (3) the relationship of the arrangements to U.S.

ocean interests. Among other avenues of approach might have been, first, an indepth consideration of the institutions themselves -- a path political scientists might favor; second, a discussion of the nature of the marine-related problems to be resolved, rather than of the mechanisms designed to handle them; third, a general discussion of U.S. ocean policy of which regional systems form a component part; and fourth, a case study method, utilizing one or more particular geographic regions.

A second point is that the methodology employed is oriented to the U.S. situation, rather than being completely objective. One danger is that it may be difficult to anticipate what certain U.S. interests might be with respect to regionalism, particularly under changing conditions. Should the ideologies of key countries change suddenly, what effects might this have on regional organizations of which these countries are members? Or if substantial finds of hydrocarbons, uranium, or other valuable materials were confirmed by a foreign country, say in the Antarctic area, what might be the best U.S. response, given the continued existence of a comprehensive treaty for the area?

Finally, the material in this Report has a decided geographic bent to it, due to the professional background of the Principal Investigator. It is not enough to consider regional systems in the abstract. Rather, they must be seen within the context of the geographic area to which they pertain, of their member countries, and of the interactions these countries may have with one another. Only in this way can a reasonable perspective be gained both of the regional arrangements themselves, and of their impacts on other phenomena.

Footnotes

¹The International Pacific Halibut Commission (IPHC) is concerned with stocks both within and beyond territorial waters. The International Pacific Salmon Fisheries Commission (IPSF) handles fisheries which occur almost exclusively in internal and territorial waters, while the North Pacific Fur Seal Commission (NPFSC) is involved with U.S. and Soviet exploitation on their respective islands of the herds.

²See U.N. Doc. A/Conf.62/SR.27, July 3, 1974.

³For a discussion of this concept, see Danzig, "A Funny Thing Happened to the Common Heritage on the Way to the Sea," San Diego Law Review, vol. 12 (1975), pp. 655-665.

⁴U.N. Doc. A/Conf.62/WP.8.Rev.1, May 6, 1976.

⁵Such vessels might include oil tankers, LNG carriers, vessels transporting chemicals, ammunition ships, and nuclear-powered vessels.

⁶"Regional Arrangements in the Oceans," The American Journal of International Law, vol. 71, no. 1 (January 1977), pp. 84-110.

CHAPTER 2

THE NATURE OF MARINE REGIONS AND REGIONAL ARRANGEMENTS

Recent literature on the law of the sea contains references to regions and subregions, with little indication as to what would or would not constitute a viable regional unit. In point of fact the term "region" carries with it certain connotations. An eminent geographer once defined a region as "an area on the earth's surface homogeneous with respect to announced criteria."¹ A colleague of his added to this that the area should be uninterrupted, and too large and varied to be readily identified as uniform throughout.² The homogeneous or unifying criteria could consist of a single feature, such as the presence of a certain linguistic or other ethnic group; or be a highly complex association of features, as in major climatic regions of the world. The two most important elements of a region are, first, that there exist within it some distinguishing feature or group of features; and second, that with respect to these criteria, the region be somehow distinguishable from surrounding areas. Any region may be subdivided into various subregions.

There are no such things as "natural" or self-determined regions. Rather, a region is "an intellectual concept, an entity for the purposes of thought, created by the selection of certain features that are relevant to an areal interest or problem and by the disregard of all features that are considered to be irrelevant."³ It is true, of course, that some regions would appear to be more distinguishable than others. The Mediterranean Sea, for example, is a physical region, defined by its peculiar coastal configuration, and is clearly separated from other maritime basins; so too are the

Black and Baltic Seas. Geographers, in their assessment of the regional concept, acknowledge the existence of certain well-defined geographic units, but even such units as these are perceived as "regions" in terms of some purpose. The Mediterranean Sea, up to the high-water mark along its shorelines, may be seen as a region by oceanographers, who are concerned with physical phenomena such as the circulation of Mediterranean waters. But if the Basin's regionality be considered with respect to some human or cultural processes -- such as shipping routes or fishing activities -- the regional focus may then apply also to the bordering coasts. In an assessment of sea-borne trade patterns, for example, how far inland from the coast should the "region" extend? In some cases, it might be necessary also to include the Black Sea and its coastal zone in the region, as well, perhaps, as some areas immediately west of the Strait of Gibraltar.

A region then is a "geographic generalization" whose distinguishing criteria are selected "in terms of a stated objective or problem."⁴ For the purposes of the problem "it is possible to define and identify areas which are homogeneous in terms of relevant criteria"⁵ but the selection of the criteria is left to the compiler of the particular region. Obviously there are certain commonly-accepted phenomena which may be employed in defining a region,⁶ and many areas of the earth's surface, once identified as "regions," have withstood the test of time and survived to be generally recognized by a particular name. But within the context of marine affairs, regionality is a fairly new concept -- which is why these definitional elements are included in this Report.

The boundaries of a region may be sharp and well-defined, or they may be indistinct and zonal in character. This depends in part on whether the region in question differs in nature from the areas around it, or whether

the difference is merely one of degree. The boundaries of jurisdictional units, such as townships, counties, or voting districts, are generally clearly defined by law. But where are the precise boundaries of a commercial fishing ground, in which the distinguishing criterion is the concentration of one or more fish stocks? Where are the limits of a coastal upwelling, or of a physical region, such as the Arctic? It does not necessarily negate the validity of the regional concept, as applied to a specific area, if the regional boundaries are indistinct. But if the region is mapped, some form of limits must be shown, however imprecise they may in reality be.

A few other points about regions. One is their universality. "The recognition of regional distinctions figures in all disciplines that deal with features that vary from place to place on earth."⁷ The concept may be used merely as a framework for collecting and assessing data or distributing benefits, as is done in some nationwide government or business organizations. On the global level, the United Nations Economic and Social Council (ECOSOC) has established a series of Regional Economic Commissions for purposes of development assistance. The Food and Agriculture Organization (FAO) has regional offices in Cairo, Accra, Santiago, Bangkok, and Rome; the World Health Organization has six geographical "Areas," while the World Bank maintains four regional offices throughout the world.

Regions may, of course, change with time, both in their nature and their geographic dimensions. And since regions are essentially intellectual concepts they may be interpreted differently by different observers. Two analysts, for example, might have quite divergent views as to what the homogeneous characteristics of the "Middle East" are, or even of where its

boundaries may be located, although both would probably agree that such a regional entity exists.

One utilitarian feature of regions is with respect to planning and management. This is particularly true in the case of urban areas, land use activities, and certain resource zones, such as river basins. It is also becoming true in terms of marine-related activities, such as fishing and pollution-control, where management units are increasingly being established. A second value of regions relates to the creation of what might be termed "regional consciousness." The more circulation of people, goods and ideas that take place within a geographic area, the more likelihood there may be of the creation of this consciousness, and of the ability of people to work together in the interests of better management of certain activities. The European Economic Community (EEC) might be seen as one example of this process.

Regional Arrangements

From regions, per se, we turn to "regional arrangements" -- a term used here to refer to multi-national treaties, conventions, or other types of agreements, together with the institutional mechanisms resulting from these phenomena. Some arrangements, such as the Declaration of the Indian Ocean as a Zone of Peace, carry with them no institutional mechanism for data acquisition and analysis, or for enforcement; others, such as those associated with regional fisheries activities, call for the establishment of commissions or councils. The intent here is not to go in detail into the organizational structure and functioning of such institutions, but rather to set up a broad conceptual framework for considering various types of marine regional arrangements, or "management systems."

The number of states involved in a "regional" system should normally be three or more (to distinguish "regional" from "bilateral"). There are, however, a few arrangements, particularly with respect to fisheries, in which only two governments are involved, as, for example, the IPHC which concerns the U.S. and Canada, and the Japan-Soviet Northwest Pacific Fisheries Commission (JSFC) which also involves only two states. The reasons for including these under the term "regional arrangements" is, first, that they cover a considerable expanse of ocean; and second, that in addition to the signatory states, they involve the fishing activities of a number of other countries.

The Regional Concept as Applied to Marine Affairs

The concept of region, as applied to marine affairs, can have either of two basic connotations. One relates to an expanse of waters which is set aside from other parts of the world ocean by some distinctive feature or features, such as the configuration of surrounding land areas. The Arctic Ocean, and the Black and Mediterranean Seas are examples of physically-defined "marine regions"; each contains subregions, as in the case of the Adriatic Sea -- a subregion of the Mediterranean.

A second connotation is with respect to groups of countries in an area having similar interests in ocean matters. References are often made to "regional blocs," such as those of the Latin American or African states, whose members adopt common policies toward jurisdictional ocean issues. Used in this sense, the regions are functional "marine-oriented" units, which exist because of the common concerns their members have with ocean issues. One of the first such "marine-oriented" regions, following World War II, comprised Chile, Ecuador, and Peru, which banded together in asserting 200-mile offshore claims in the Pacific.

The two connotations may overlap one another. The Baltic Sea, for example, is a physically-defined "marine region" with its own unique problems of fisheries management, pollution control, and other activities. The states surrounding it, in turn, represent a "marine-oriented" region because of their common concern for the sea's protection and development. Regional management issues for the Baltic can therefore be perceived either from the standpoint of the marine environment itself and of the marine problems there requiring regional action, or from the perspective of the littoral states of the Baltic region and of their willingness to work together on management issues relating to the Baltic. This dichotomy of approaches is one of the potentially confusing aspects of the regional concept.

There also may be circumstances in which the common interests of states of a "marine-oriented" region are focused not on one clearly-defined water area, but rather on some particular process, ocean policy objective, or other phenomenon. A group of countries in one geographic area may be concerned, for example, with routes of access to the sea for a land-locked country, e.g., Zambia; or with the development of a "regional" port, such as Lourenço Marques, which has in the past handled the sea-borne trade of several southern African states. Neighboring countries may also band together in support of some ocean policy action, such as developing a "matrimonial sea" concept,⁸ or opposing the creation of special international organizations with regulatory authority over highly migratory species, even when these are within coastal states' extended fisheries zones. The use of the term "region" with respect to states' actions or interest is often ambiguous, and may at times be found to lack empirical evidence of support for the classification. The term, nevertheless, is increasingly relied on in connection with law of the sea matters.⁹

Marine Regions

For identification purposes, three main types of marine regions will be noted here: (1) physical regions, (2) management regions, and (3) operational regions.

Physical Regions. Amid the complex of regional forms and functions some order may be found through the framework of physical marine regions of the world. These are finite in number, and might be divided into two subgroups: ocean basins and semi-enclosed seas.

Of the ocean basins, there may be said to be nine: the North Atlantic and South Atlantic Oceans,¹⁰ the Indian, Arctic, and Antarctic,¹¹ and four units of the Pacific -- North, South, West Central, and East Central.¹² All of the oceanic "regions," with the exception of the Central and South Pacific units, have some basis for distinctiveness on the grounds of configuration of surrounding land areas. The Atlantic and Pacific basins are often subdivided for management purposes into subregions, such as the Northwest and Northeast Atlantic, and the Southeast Pacific.

The designation of ocean basins as regions and subregions represents more than an academic exercise. Diplomats, naval officers, fisheries experts, shippers, and others often think in these terms. There are such obvious cases as the North Atlantic Treaty Organization (NATO), the NPFSC, and the designation of the Indian Ocean as a "Zone of Peace."¹³ There is a fishery committee of the Eastern Central Atlantic, and a commission for the Western Central Atlantic, as well as commissions for the Northeast and Northwest Atlantic fisheries. To go one step further, there is, under IOC, a program for Co-operative Investigations of the Northern Part of the Eastern Central Atlantic (CINECA). Clearly the concept of oceanic regions and subregions is an accepted one, although differences may exist as to the

number of principal subregions, and the geographic limits separating them from one another.

To a second category of physical regions belong the semi-enclosed seas, that is, seas which are partially surrounded by land areas. In a recent study of semi-enclosed seas of the world,¹⁴ several arbitrary criteria were suggested for differentiating "semi-enclosed" from other marginal water bodies. It was suggested that a semi-enclosed sea should have an area of at least 50,000 square nautical miles, be a primary sea rather than an arm of a larger semi-enclosed water body, and have at least 50 percent of its circumference occupied by land. Subsequent research on the topic in terms of the regional arrangement criteria has indicated, first, that the statistical requirements should be seen as guides, rather than as inflexible limits; and, second, that an added condition should be that the sea is bordered by two or more states.¹⁵ Using the several criteria noted above, the 24 seas, listed in Table 1, would qualify as semi-enclosed seas.

Table 1. Semi-enclosed seas.

Gulf of Aden	Sea of Japan
Arabian Sea	Mediterranean Sea
Andaman Sea	Gulf of Mexico
Baffin Bay-Davis Strait	North Sea
Baltic Sea	Sea of Okhotsk
Bay of Bengal	Gulf of Oman
Bering Sea	Persian (Arabian) Gulf
Black Sea	Red Sea
Caribbean Sea	Solomon Sea
Celebes Sea	South China Sea
East China-Yellow Sea	Sulu Sea
Gulf of Guinea	Timor-Arafura Seas

The rationale for the list in Table 1 is that it indicates physically-defined marine regions which are considered sufficiently extensive and distinguishable from other ocean areas to be suitable as sites for one or a

series of regional management activities. But it must be acknowledged that physical marine regions, per se, are in no way determinative of regional action. Their importance to regional arrangement issues may be measured in terms of three criteria. First, because of the physical uniqueness of most physical marine regions, they represent logical sites for management programs. This is particularly true for water bodies such as the Red and Mediterranean Seas, where there is little exchange of water with the open ocean, and where there is, in effect, a relatively closed marine ecosystem.

A second function of physical marine regions is that policymakers tend to think in terms of comprehensive geographic units, and they therefore often plan regional arrangements on a unit-wide basis. The countries of the Caribbean, for example, seem to spend little time considering programs for the western or eastern Caribbean, but rather think in terms of the region as a whole.

Finally, physical marine regions can serve a role in comparative studies of region activities. Since programs and statistics tend to be oriented within the framework of traditional geographic regions, it becomes possible, for example, to compare the success or failure of North Sea or Baltic fisheries or pollution control projects with those of other areas such as the Red or South China Seas.

Beyond the semi-enclosed seas are all manner of physical subregions, such as the Sea of Azov, the Gulfs of Bothnia, Thailand, and Aqaba, and the northwestern approaches to the Strait of Malacca. These could be the sites of less-extensive marine regional institutions. One of the more unique sub-regional systems is that of archipelagos. The two largest -- those formed by Indonesia and the Philippines -- have within their borders a number of partially-enclosed seas, such as Java, Flores, Banda, and Molucca. The two

archipelagic states also share in the control of the Celebes and Sulu Seas. The issue of archipelagic waters has been a difficult one at UNCLOS III. In Part II of the RSNT, which emerged from the Spring 1976 New York session of the Conference, Articles 118 through 127 suggest approaches to questions of the status of such waters and the rights of passage by foreign vessels through them. Associated with archipelagos are island arcs, such as the Leeward and Windward Islands of the Caribbean. Here, as in the case of archipelagos, the nature of regional arrangements depends strongly on the political configurations of the component units.¹⁶

Management Regions. This second type of marine region is functional in nature, and represents situations where there is a well-defined management problem which is capable of being handled as a discrete issue. The problem may be in the area of fisheries, environmental control, scientific investigation, or some other category. The annual range of migratory species, such as the yellowfin tuna, or, on a more limited basis, the Arctic cod, might form the basis for a management region. On a more restricted level would be the New York Bight, a favorite ocean dumping site, and one with potentially serious environmental problems. The important point is that the area in which the problem occurs may be distinguishable geographically from other maritime areas, thereby justifying its inclusion as a separate marine region. The problem itself may have subcomponents, and thus the region would be divisible into subregions.

Management regions exist because there is an identifiable problem or group of problems which justify some form of administrative action. The regions may or may not conform to physical marine regions or subregions. And the regions themselves may differ for different activities; that is, a fisheries management unit in one part of the world ocean may not be the

same as an environmental control area in this same sector. Also it should be noted that management regions may not always come under the purview of multi-state bodies. The Gulf of California, for example, is a semi-enclosed water body which might serve as a model management region, but is wholly surrounded by Mexico. Yet regardless of which organizations can or should perform the administrative functions, the concept of management regions and subregions, as rational units for action, remains a valid one.

It would be difficult to compile a world map of potential management regions, according to the various categories of marine-related activities, although such a map would certainly be an asset to the ocean management process. The task of identifying discrete management areas is largely an inductive one, which requires considerable time and expertise with respect to each of the activity areas concerned. One of the associated problems, as for example with fisheries, are the statistical areas which are set up in the interests of management. If the areas themselves do not correspond to discrete fisheries units the statistical data may prove misleading, and any management region set up on the basis of the figures may not be a viable one.

Operational Regions. These marine regions are the sites of one or more formal regional arrangements. They may be defined, for example, by the limits of competence of a regional fisheries commission or council, by the areal extent of the ocean space within which investigations by a scientific working group are being carried out, or by the terms of an international treaty, such as that of the Antarctic. Once a marine regional arrangement goes into effect, the maritime area to which it applies becomes an "operational" region.

The relationship between a "management" and an "operational" region is this: a management region exists because of the presence of an identifiable problem which is capable of being handled within the limits of that region. Hopefully, the framers of a regional treaty or other type of arrangement would recognize the existence of the management problem within its proper areal bounds, and would compile the arrangement accordingly. In this case the management region becomes also operational. But, unfortunately, there are many instances in which the operational area which is established by decision-makers either represents a case of attacking the wrong management issue, or else of addressing the right issue but within the wrong geographic limits.

"Physical" marine regions are "operational" as well when they are the scenes of marine regional arrangements. Some semi-enclosed seas, such as the Caribbean, constitute more than one operational region, since they are the sites of regional fisheries, scientific, pollution control, and/or other activity area arrangements.

Two points in particular are important about operational regions. A first is their pattern of coverage, world-wide, including areas of overlap, particularly with respect to differing activity areas. In this connection, it is interesting to assess what effects the universal adoption of 200-mile economic zones would have on these operational units. Second, what non-littoral states are participants in the operational systems? Patterns of distant-water interests form an important component of international relationships among states.

Marine-Oriented Regions

If one approaches regional action in the oceans from the perspective

of participating states, rather than of the environmental problems requiring action, several factors become evident. A first is that the concerns of a country in a particular ocean-related issue may represent only an infinitesimal part of its overall national interest; thus, for example, an African state might line up with other states of the continent in a show of solidarity on certain policy issues, without being really concerned whatever with the merits of the problem. A second point is that regional groupings of states on one marine-related issue may differ from those on some other marine issue. Countries of the Caribbean may have joined with their South American neighbors in supporting national control over continental margin resources beyond the 200-mile limit, but differed with most of them in the concept of regional fishing rights in the "matrimonial sea" beyond coastal states' 12-mile exclusive fisheries zones.

A third point concerns the "integrative" factor among neighboring states. Groups of countries may be accustomed to working together on non-marine issues, developing what is often referred to as a "high level of transactions."¹⁷ Integration that is developed through such media as trade, mail, and telephone calls, may lead to the attainment of institutions and practices which bind the countries of a region ever closer together. What evolves are "compatibility of major values" and "mutual responsiveness" among regional members. Such has been the case of the EEC, the East European "Socialist" bloc, and the East African Community. Decision-makers in such "integrative" regions acquire a sense of "regional consciousness," a belief that the benefits of joint action on certain matters outweigh the costs associated with regional cooperation. The factor of integration within such multi-state groups can become an important element in marine regional systems, particularly when the time comes for significant "invest-

ments" of capital, jurisdictional sharing, or restrictive legislation by one or more of the member states.

A fourth point about marine-oriented regions concerns their role in providing access to the sea and its resources for land-locked and geographically-disadvantaged states. Switzerland, together with its northern neighbors, is part of a regional system, organized in the interests of access rights; so, too, are the states of the Danube Basin. Other land-locked countries of the world are seeking transit rights through contiguous coastal states. Hopefully for them some form of regional systems may be established so that access to the sea becomes possible through any one of a series of alternative routes through different countries.¹⁸

A more contentious form of regionalism is that associated with the possible granting of access rights to land-locked and geographically-disadvantaged states of the living resources of neighboring coastal states' economic zones on an equitable basis. If the immediate neighbors have few available fisheries resources in their zones, how about other coastal states of the "region?" Can the stocks in their economic zones be made available to the disadvantaged countries? Here the regional concept itself becomes clouded. How extensive a regional unit is involved in such concessionary arrangements? Is Mauritania, with its extensive fisheries resources, part of the same "region" as land-locked Niger and Chad? Does Iraq's "region" extend beyond the limits of the Persian (Arabian) Gulf? Such questions serve to emphasize the issue posed earlier in this chapter, namely that regions are essentially intellectual concepts, whose identification and validity depend on the uses to which the regional idea is being put.

Components of Marine Regional Arrangements

Superimposed on the patterns of physical and management regions of the ocean are the marine regional arrangements. As noted above, the areas served by the individual management systems represent "operational" marine regions which may or may not coincide with the physical and management units.

Great diversity exists in the forms and functions of marine regional arrangements. Some units exist as councils or commissions with certain regulatory powers; others are multi-state working groups. A number are affiliated with the United Nations or with one or more of its specialized agencies. There is a considerable amount of literature on the nature of such arrangements, particularly in terms of their operational structure and of their specific accomplishments.¹⁹ The rationale for the analysis here of the component parts of marine regional arrangements is twofold. First, it provides a conceptual framework within which the structure of a specific management system or group of systems can be appraised and compared with the structural elements of other units. From such comparisons may come suggestions for improvement. Second, within this conceptual framework, regional arrangements as functioning bodies can be assessed, and their strengths and weaknesses highlighted.

Table 2. Structural and functional elements of marine regional arrangements.

I. Activity Area

- A. Types of uses to be managed
 - 1. Primary
 - 2. Secondary
 - 3. Tertiary

II. Geographic Coverage

- A. Difficulties of definition of the "region"
- B. Density of coverage of regional arrangements

III. Membership

- A. Regional users
- B. Non-regional users
- C. Regional non-users
- D. Non-regional non-users

IV. Management Objectives

- A. Organizational functions
 - 1. Service
 - 2. Norm creation and allocation
 - 3. Rule observance and the settlement of disputes
 - 4. Operations
- B. Use categories
 - 1. Shared use
 - 2. Complementary use
 - 3. Compensatory use
 - 4. Limited use
 - 5. Administrative use
 - 6. Comprehensive use

V. Management Structure

- A. Institutional level
- B. Affiliation
- C. Operational framework
- D. Regulatory powers

VI. Management Techniques

- A. Harmonization of policies, standards, technologies

VII. Management Problems

- A. Deficiencies in management capabilities and resources
- B. Inadequate funding
- C. Conflicts of goals and methods
- D. Conflicts of uses
- E. Inadequate linkages among regional systems in the same area
- F. External integrative and divisive forces

VIII. Regional Impacts

- A. Impacts on the marine environment
- B. Impacts of national interests
- C. Impacts on international relations

A brief discussion of each of these components is given below.

I. Activity Area. A regional system may focus on the management of primary, secondary, or tertiary activities. Primary uses include fishing, mining, scientific research, discharge of wastes, shipping, military activities, energy production, and the construction of artificial islands.

Among the secondary activities are education and training, technology transfer, and surveying and monitoring. The management of these is often a more complex process than is the case with primary uses of the sea. Finally, there are the tertiary activities, such as access to the sea for developing and geographically-disadvantaged states, dispute settlement, or the sharing of revenues derived from the sea among developing countries. The regional application of these involve political processes which are above and beyond those directly associated with the marine environment.

II. Geographic Coverage. The concept of a "region," as has been already noted, is sometimes difficult to define. Often the most important regional unit is that which is perceived by the users of the regional mechanism. In the case of marine regional arrangements, one type of question which arises is whether or not the geographic area as defined is a reasonable one in terms of the objectives of the regional effort. If the conservation and management of particular fisheries stocks is the goal, does the area include the entire migratory range of these stocks? In the case of pollution control, are there important pollution sources whose origins are beyond the regional unit's competence? Conversely, the area included may be too great for a reasonable achievement of the system's objectives. An example here might be provided by the operational region of the Indo-Pacific Fisheries Council (IPFC), whose range includes the whole area of the Indian, and the Central and Western Pacific Oceans.

An associated issue concerns what might be termed "density of coverage" by regional units. In some parts of the world ocean, as for example, the North Atlantic, there is considerable overlap of the operational areas of fisheries, scientific research, and pollution control arrangements; in other maritime areas, there is virtually no coverage at all. And even if there is de facto coverage of an area by some regional system, the arrangement may not be a viable one. Some units, such as the "Southern Oceans" project of IOC, have to date, accomplished virtually nothing; the result here is that the ocean areas south of Africa, South America, and Australia receive virtually no attention whatever from marine regional efforts.

III. Membership. Membership in a marine regional system may be open or restricted. Some of the regional fisheries organizations in the Pacific (e.g., IPHC, IPSFC, and NPFSC) have limited memberships as does the Mixed Commission for Black Sea Fisheries (MCBSF). Most marine regional arrangements, however, tend to be open to all interested states which are willing to participate and abide by the stated regulations.

If membership in a regional system is open, four categories of states arise. First are the regional users, that is, those countries within the region which actually participate in the activities there for which a regional unit has been established. In the Mediterranean area, France is a contributor to the marine pollution problems there, and is a participant in the Mediterranean Action Plan; Albania, also a "user-state" is not a participant. Second are the regional non-users. Togo, a virtual non-user of West African fisheries, is a member of the Fishery Committee for the Eastern Central Atlantic (CECAF); Equatorial Guinea, also a non-user, is not a member.

A third category represents non-regional users. Japan is an important non-regional user of the Southwest African fisheries, and is a member of the International Commission for Southeast Atlantic Fisheries (ICSEAF); the Republic of China (Taiwan), a relatively important non-regional user, is not a member. Finally, there are the non-regional, non-user states. Of these the most important group are states which participate in regional units, either in anticipation of future benefits or to keep abreast of current developments. Greece and Israel, two non-regional countries which do almost no fishing whatever in the Indian Ocean, are both member-states of the Indian Ocean Fishery Commission (IOFC).

The advantages of this categorization is, first, to indicate the motives of countries which participate or do not participate in a particular marine arrangement, and second, to look for potential members which should join. A third value would be to indicate member-states which, as non-users, might be encouraged to resign.

Membership presumably implies obligations to support a particular regional system, in terms both of adhering to its rules and regulations, and in some cases of providing financial or other types of assistance. One form of assistance might be the use of member countries' port facilities as, for example, in multi-national scientific programs. And with the coming of the extended economic zone, support may also be rendered through the granting of access rights to member states' vessels for fishing, scientific research, or other "restricted" activities within a particular country's economic zone waters. But there remains the question of states which enjoy de jure membership in a regional organization, but which in fact do little or nothing to support it. One difficulty here is that when the time comes

for decisions to be made by the organization, these "inactive" members may be in a position to block or to support important innovations.

IV. Management Objectives. Regional systems are not "natural" phenomena. Each one is set up with certain goals in mind. Two ways of considering the issue of objectives are, first, in terms of the general "functions" of international organizations; and, second, with respect to their use forms.

A. With regard to the functions of organizations, Skolnikoff²⁰ notes four: service, norm creation and allocation, rule observance and settlement of disputes, and operations. Among "services" he includes information exchange, data gathering and analysis, consultation, facilitation and coordination of programs, and joint planning. Most existing regional marine systems fall within this group. A few are concerned with "norm creation and allocation" through the establishment of standards and regulations, and the allocation of costs and benefits. Within this category are the International Commission for the Northwest Atlantic Fisheries (ICNAF) and the North-East Atlantic Fisheries Commission (NEAFC).

"Rule observance" includes monitoring and enforcement of standards. The only regional fisheries organization which would fall within this group is the IPSFC, involving the U.S. and Canada. The Commission, over the years, has been credited with considerable success, but it is "almost exclusively concerned with the regulation of fisheries in internal and territorial waters...(and) it has the unique power to make certain decisions that are directly binding on the fishermen."²¹

"Operations" organizations, as defined by Skolnikoff, are involved with resource exploration and exploitation, technical assistance, research analysis and development, and provisions of financial support. Probably

the only regional "operations" institution with respect to the oceans is the International Council for the Exploration of the Sea (ICES), founded in 1902 in Copenhagen to encourage research connected with the exploration of the sea, and to coordinate the activities of participating members. The proposed International Seabed Authority (ISA) would be an operational organization, with regional components.²²

B. From functions we turn to use categories. How "exclusive" are the management systems intended to be? Regional arrangements may be made in the interest of shared use within a specific area, complementary use, compensatory use, limited use, and administrative use. Sometime in the future, comprehensive use provisions may be adopted. The use type is important, both because of the degree of investment by member states which may be involved, and because of the element of accessibility to the area covered by the arrangement.

Shared use means that two or more countries can utilize the same marine areas on a generally equitable footing. A good example of this is the mutual fishing rights of the EEC member states in each others' waters.²³ At UNCLOS III, as noted earlier, there have been references to the "matrimonial sea" concept, in which the waters beyond territorial limits would be designated as a common fishery ground for littoral states. Scientific research in the Antarctic is carried out on a "shared use" basis. The point is that multi-state activities are performed simultaneously and by agreement within an area with few or no concessions necessary for the common good on the part of the participants themselves.

Complementary use, on the other hand, involves some form of investment on the part of the regional participants. In the case of international fisheries commissions and councils, for example, the investment may

take the form of cooperative action in data acquisition, conservation measures, oceanographic research, and the allocation of the living resources of the region among member states. With respect to scientific research, IOC has instituted a wide variety of multilateral scientific programs and Co-operative Investigations²⁴ in many parts of the world. IOC has also launched a technology transfer program, TEMA (Training, Education and Mutual Assistance), which has held a number of regional meetings designed to promote cooperative actions among developing countries.²⁵

Compensatory use is an arrangement which might emerge from UNCLOS III negotiations, either as a part of a final treaty, or as a gradually-accepted mode of international behavior. As mentioned earlier, it has been suggested that land-locked countries may not only be entitled to the right of access to the sea through neighboring transit states, the joint use of port facilities of such states, and joint management of transportation media linking the land-locked states with the sea, but also to the right to exploit on an equitable basis the living resources of an adjoining coastal state's economic zone. Certain other compensatory arrangements may also come to apply to coastal "disadvantaged" states.²⁶

Limited use arrangements are potentially the most dangerous so far as the major maritime powers are concerned. The Soviet doctrine of "closed" or "regional" seas would deny the right of non-littoral military vessels to enter the Black, Baltic, and Okhotsk seas, and the Sea of Japan.²⁷ The possible establishment of certain water bodies as "zones of peace" could further restrict movement. If more and more coastal states extend their economic zones to 200 miles from shore, and if power contests between developed and developing states should increase in future years, it is possible that warships, research vessels, and fishing vessels of some or all

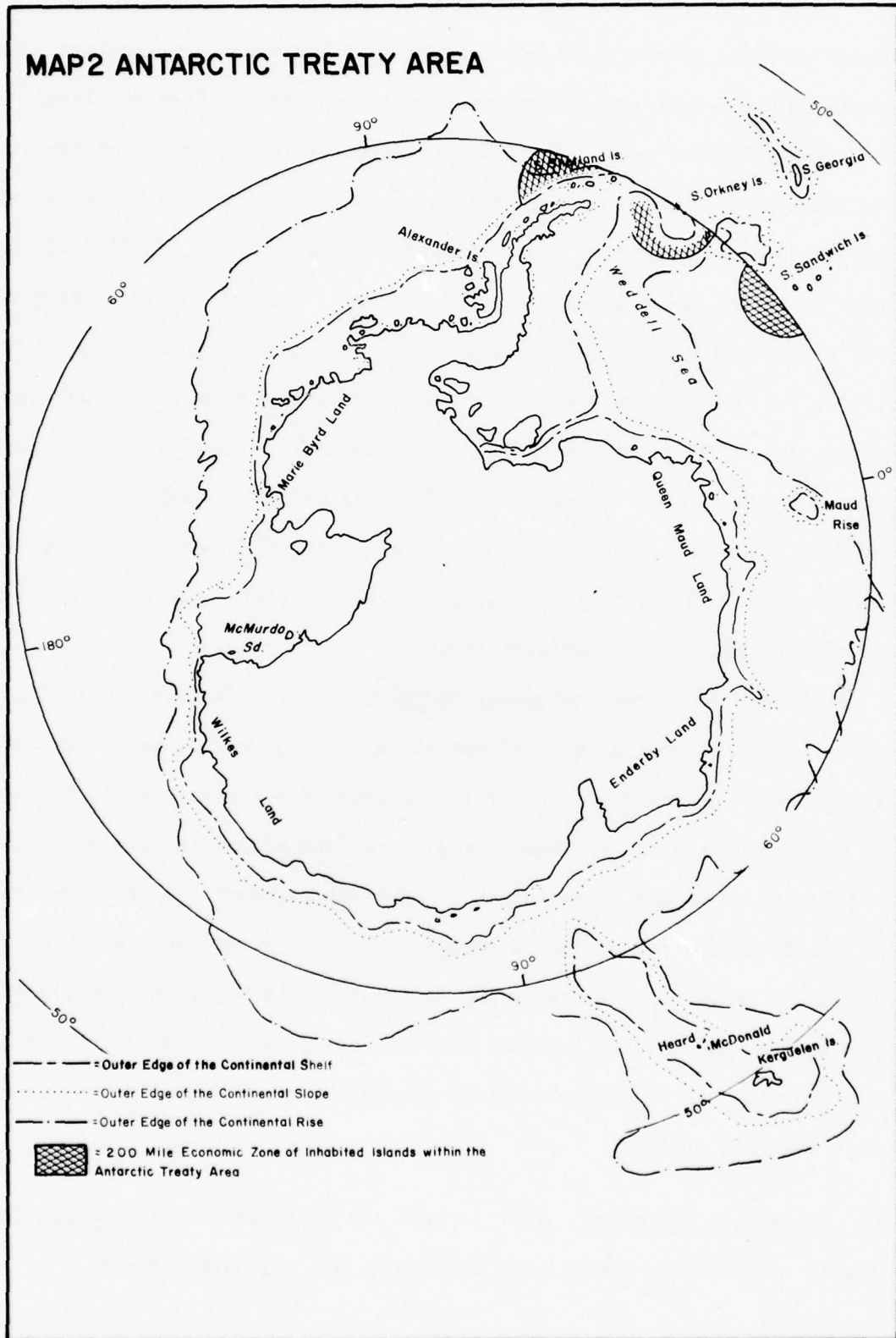
major maritime powers might be excluded from key areas, particularly semi-enclosed seas whose waters are completely shut off by 200-mile claims.²⁸

The principal administrative use region at this time is the Antarctic. According to the Antarctic Treaty, which was signed in 1959 by twelve states and entered into force in 1961, the Antarctic area south of 60° South Latitude is to be used for peaceful purposes only, with all national territorial claims and rights "frozen" for the ensuing thirty years. The international scientific cooperation which characterized the International Geophysical Year (IGY) of 1957-58 is to be continued, and there is provision for an unprecedented system of unilateral inspection of any part of Antarctica by observers of any signatory state. Although there is no single administrative body for Antarctica, the signatory states convene from time to time to discuss its administration.

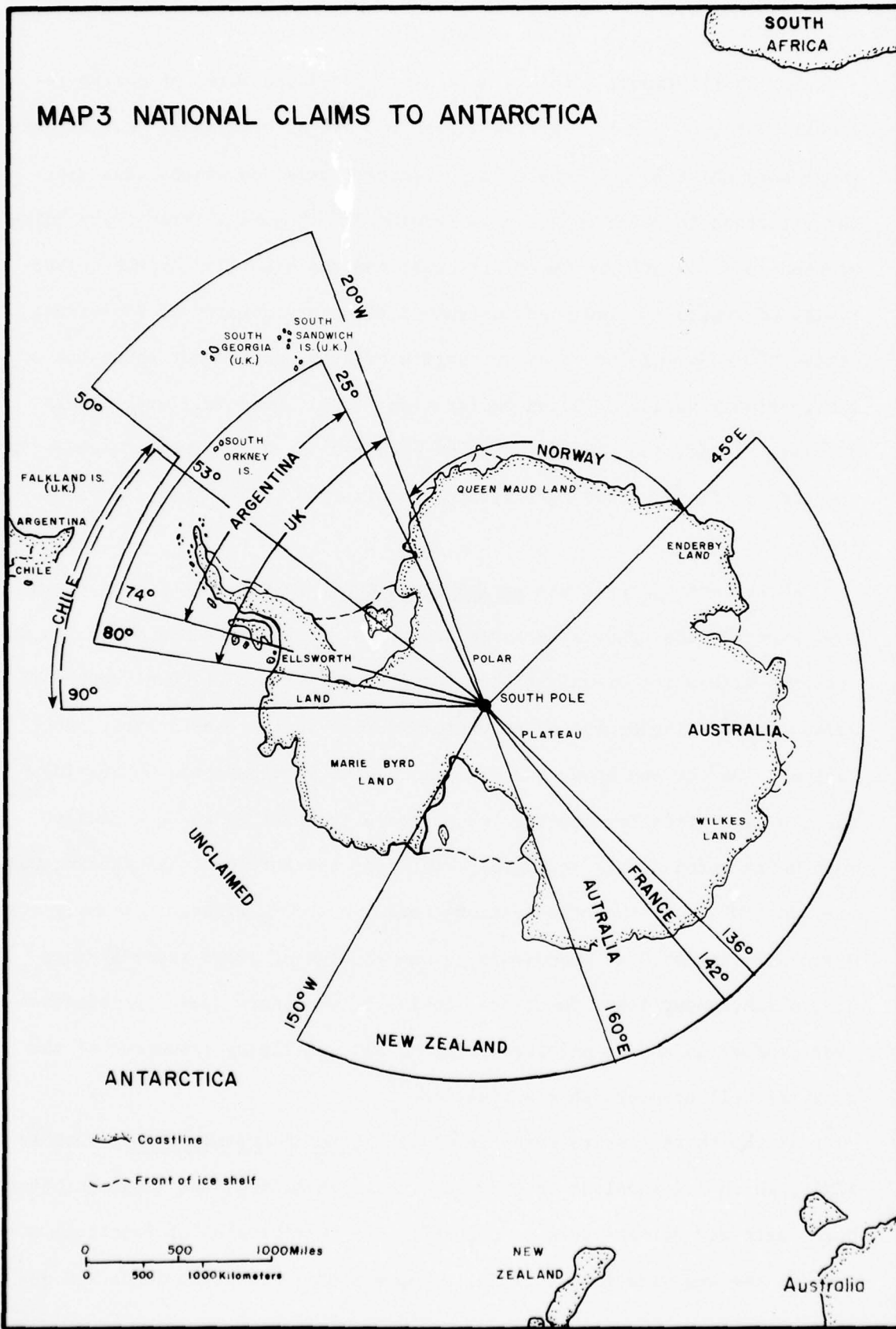
There are no true comprehensive use marine regions yet, except in areas under the jurisdiction of one state, such as Hudson Bay. Obviously the greater the number of littoral countries, the greater the difficulty of agreeing either on an overall regime for the administration of a single water body or on the coordination of specific regional use arrangements, as for fisheries and pollution control. But it is not inconceivable that in coming years coastal states may designate certain partially-enclosed water bodies, such as the Persian (Arabian) Gulf, as, in a sense, their "common property" to be comprehensively managed by the littoral states in concert with one another.

V. Management Structure. Four aspects are important here: institutional level, affiliation, operational framework, and regulatory powers.

MAP2 ANTARCTIC TREATY AREA



MAP3 NATIONAL CLAIMS TO ANTARCTICA



A. Institutional Level. There are three basic forms of marine regional systems. First, there is collective action by states, that is, arrangements which do not impose "any greater 'costs' on states than does the situation to which they are to respond."²⁹ Future interests are "discounted in favor of more immediate ones, and the viability of the collectivity of states is simply an instrument for the viability of individual states."³⁰ Many of the joint scientific efforts carried out under the International Decade of Ocean Exploration (IDOE) would fall within this category.³¹ So, too, would the joint fisheries surveys performed under the auspices of the Food and Agriculture Organization of the United Nations (FAO).

At the second level are regional regimes, "consisting of sets of mutual expectations, generally agreed to rules, regulations and plans, in accordance with which organizational energies and financial commitments are allocated."³² The degree of regulatory action varies considerably among regimes. On the one hand, for example, is the International Convention for the Regulation for Whaling, whose catch limitations to be effective must be accepted by all the member states of the International Whaling Commission (IWC). At the other extreme would be the "Caribbean Community for Ocean Development," as proposed by a non-government group several years ago, which, among other functions, could, if necessary, have jurisdiction over production and/or pricing of living and non-living resources of the area, as well as over other activities.³³

At the third institutional level are regional organizations, such as ICNAF, which are involved in planning, decision-making, and implementation. Here there may be considerable potential for an expansion of functions over time as the organization, through its operations, perceives needs and op-

portunities, and seeks approval from member states for the added authority to cope with these situations.

B. Affiliation. Many regional units are associated with specialized agencies of the United Nations. Among these are: (1) FAO, whose Fisheries Division is a moving force in regional fisheries activities; (2) United Nations Educational, Scientific and Cultural Organization (UNESCO), under which IOC is a lead agency in multi-national marine regional science programs; and (3) United Nations Environment Program (UNEP), which is responsible for marine regional pollution control efforts. Both the World Meteorological Organization (WMO), and the Inter-Governmental Maritime Consultative Organization (IMCO), although oriented more toward global than regional problems, take part in marine regional activities.³⁴

The U.N. General Assembly has itself become involved in marine regional considerations, as, for example, in its passage of the Resolution declaring the Indian Ocean to be a Zone of Peace. On the other hand, many regional arrangements are sponsored by the member states themselves. Among these are a majority of the regional fisheries organizations, the Antarctic Treaty, the Baltic Sea Pollution Prevention Agreement, and the European Agreement for the Prevention of Broadcasts Transmitted from Stations Outside National Territories.³⁵

Regional organizations, not necessarily marine-oriented, may be responsible for marine-related activities. Among these are the Common Fishery Policy of the EEC, the Treaty of Tlateloco, sponsored by the Organization of American States (OAS), which banned the use of nuclear weapons in Latin America³⁶; and the 1974 Mogadishu Declaration of the Organization of African Unity (OAU), which recognized the right of access to and from the sea by land-locked countries. In coming years, the Arab League Educational,

Cultural and Scientific Organization (ALECSO), may carry out regional pollution control measures in the Red Sea.

Affiliation with one of the U.N. specialized agencies guarantees the regional system administrative, and in some cases, financial support, as well as the opportunity for interaction with other units under the same U.N. body. But it prevents exclusivity. For example, the efforts at pollution control in the Red Sea would seem suited for UNEP's regional programs; the Arab states bordering the Red Sea, however, refuse to include Israel within their plans, with the result that their regional efforts cannot be carried out within the framework of a U.N. agency. There may also be a problem of membership in the U.N. organization. The Soviet Union, for example, is not a member of FAO; technically then it is not in a position to support FAO-sponsored regional fisheries units.

C. Organizational Framework. The implementing arm of a marine regional system may vary widely in size and complexity from a single coordinator to a complex group, complete with staff, plenary group, and subsidiary committees. Koers, in his study of regional fisheries organizations, notes that "(t)he central element in the organizational structure of most international fisheries organizations is a plenary group in which all member States are represented."³⁷ The group usually elects its own chairman, who presides over the meetings, and supervises the organization's business in the intervals between meetings. The necessary staff work for the unit may be handled by the organization's own secretariat, or by some outside agency, with which the regional group is affiliated. The coordination functions of the Co-operative Investigations in the Mediterranean (CIM), under IOC, are handled by a permanent operational unit, established in

Monaco and composed of scientists selected from member countries. At the University of Hawaii there is an Administrative Officer for the Nazca Plate Programme, a multi-national project under IDOE concerned with an investigation of plate tectonic processes in the Southeast Pacific. The Inter-American Tropical Tuna Commission (IATTC) has a relatively large staff of its own in La Jolla, California.

Regional organizations may also have subsidiary groups or committees, among the most important being those which carry out research activities for the unit. Both the International North Pacific Fisheries Commission (INPFC) and the IATTC, noted above, have their own research staff; so too does the IPSFC. NEAFC, on the other hand, is able to turn to ICES for its research support.

When the time comes for marine regional systems to develop their roles as binding regulatory systems, the need will arise for dispute settlement machinery. If a new oceans treaty evolves from UNCLOS III (or from some other source) some generally-accepted machinery for dispute settlement of ocean-related issues may come into being. But unless and until this occurs, the individual arrangements themselves must provide some means for conflict resolution -- a not-inconsiderable task in view of the voluntary nature of developmental-type marine regional programs.

D. Regulatory Powers. The requirements for regulatory action vary among the different activity areas. There may be need for coordination, but not regulation in regional scientific research efforts. With respect to pollution control, the extent of regulatory action, to date, is agreed upon and exercised by individual coastal states, as embodied within the articles of a particular convention or treaty. It is only in the field of fisheries that considerable variations may be found to exist.

The issue of regulatory powers in fisheries organizations is discussed in Chapter 3. Briefly stated, most international fisheries bodies are concerned with the collection and analysis of statistics and other data, the promotion and coordination of scientific research, and (for some but not all) the recommendation of conservation measures. In some cases the recommendations are binding on the member states, either at the time of promulgation, or in the event that within a specific time limit, no member state objects.³⁸ There also are arrangements where the organization determines the allocation of catch among member states. But, as has been noted repeatedly throughout this Report, it is anticipated that the advent of the exclusive economic zone will, at least in the short-term, result in a diminution of even those few regulatory powers which regional systems at this time enjoy.

VI. Management Techniques. Any analysis of the components of regional mechanisms should concern itself both with the methodology and with the relative success of the organization in carrying out the functions for which it was intended. There is no systematic way of approaching these issues, other than to list certain topical elements which must be handled. Among these are: (1) general policies of the member states toward ocean-related issues; (2) operational standards of member countries, including ship operations, measurement and research techniques, information storage and retrieval, report writing, and accounting procedures; and (3) technological levels of development of the member units.

It goes without saying that the greater the number of countries participating in a regional system, the greater may be the difficulty of harmonizing the various operational elements. This is particularly true if

some of the member countries are developed and other developing. It may also follow that different participants may perceive different benefits to be derived from the organization, both from the standpoint of its announced functions, and in terms of secondary benefits, such as technology transfer, the acquisition of scientific knowledge, or the experimentation with new methodologies for ocean activities.

Although each regional management system is in a sense unique in terms of geographic location, membership, and specific problems it is designed to address, something of a prototype, or series of prototypes, of regional units should in time develop as a result of experience. At such point the issue of management techniques will acquire increasing importance, as new units learn from the mistakes and successes of the past, and as older systems make necessary adjustments in their operational procedures.

VII. Management Problems. This heading constitutes something of a "catch-all" for a variety of "exogenous" problems with which a marine regional management system may have to accommodate its operations. Differences in the management capabilities of the member states is one type of issue; inadequate funding, either through member contributions, or through the support of an agency to which the unit is affiliated, may be another. Still another issue concerns the operations of other regional units in the same geographic area, and the nature of the linkages between the system in question and these other units. Adjusting to these situations is in a sense more of an "external" than an "internal" operation, and may require different types of skills on the part of the regional unit's operational executive or group.

One of the most complex of these externalities is the integrative and disintegrative forces existing within each regional system. Among the

integrative forces would be (1) the existence of other international arrangements among member states which would tend to reinforce the regional consciousness of the participants; (2) the perception by members of the existence or promise of a favorable cost/benefit ratio so far as participation in the agreement is concerned; and (3) a strong leadership role by some state, states or international organization, possibly including financial and technical aid for the effort. Both the investments by all or some of the member states, and the benefits derived from regional action, may at the current time be small, but in the long run, there may be considerable "pay off" from regional cooperation.

Disintegrative forces would include (1) political, territorial, ideological, or other differences among member states; (2) unfavorable cost/benefit ratios, including unequal costs and/or benefits to particular members, as perceived by their or other governments; (3) non-membership of one or more states of the region; and (4) non-participation de facto in the activities of the arrangement by one or more member states.

VIII. Regional Impacts. A final component of marine regional systems concerns their impacts both on the marine environment itself, and on the national/international scene. In both cases, there may be a wide spectrum of effects, in terms both of the arrangements themselves, and of the passage of time. WECAFC, a new fisheries organization for the Western Central Atlantic, has apparently to date had little real impact on fisheries management there, or on relations among the member states themselves. The Mediterranean Action Plan, although even newer than WECAFC, would seem to be exerting some influence on the ocean science community of the Mediterranean Basin, and holds prospects for having an impact on both vessel-source and

land-based pollution with respect to that water body in coming years. The Antarctic Treaty, although it seemed to have relatively little impact on the area in 1959 when the Treaty was concluded, is growing in importance with each passing year.

With regard to the environment itself, marine regional arrangements can have two types of impacts. A first is with respect to the stated objectives of the arrangement. Did fisheries conservation measures, instituted by an arrangement, arrest the deterioration of the affected stocks? Has vessel-source pollution in a particular water body declined as a result of a particular regional agreement? Did the conclusion of a regional treaty, such as that affecting the Antarctic, result in greater international cooperation with respect to scientific research? A corollary issue is, of course, whether or not similar or even better results might have been obtained in the absence of the regional agreement.

A second aspect of environmental impact concerns side-effects of a regional arrangement. In the process of obtaining one set of effects, have other uses of the marine environment been affected? For example, environmental protection provisions might conceivably affect the movement of certain types of military or of military-support vessels in a particular water body. Restrictions on the conduct of scientific research might also have military implications. Fisheries arrangements could carry with them certain access privileges to the ports of member states for vessels other than those associated with fishing. In some cases, "secondary" impacts such as these could, over time, prove to be more important than the "direct" impacts an agreement may have on a particular area.

Political impacts may also be important. In a subsequent chapter of this Report, some of the implications of marine regionalism to U.S. ocean

interests are discussed. A similar type of analysis could be applied with respect to other countries as well. One "international" effect of a growth in the regionalist trend might be a growing competition among major powers for access to regional activities. The Soviet Union, for example, might devise ways for effectively training fishermen or marine scientists from the Red Sea or Persian (Arabian) Gulf areas. As a result, Soviet fishing or oceanographic vessels could find themselves more welcomed within these water bodies than are vessels of other major maritime countries. Alternatively, the Chinese might seek the acquiescence of the littoral states to some sort of "closed" regime for the East China and South China Seas.

Associated with this may be the growth of regional lead-countries which, by various means, extend their influence throughout an area. One could identify a number of such potential leaders -- France in the western Mediterranean, Iran in the Persian (Arabian) Gulf, New Zealand in the southwestern Pacific. There may be more than one leader -- Mexico and Cuba, perhaps, in the northern Caribbean; Saudi Arabia and Egypt in the Red Sea. If the trend toward regional integration continues it might be a useful exercise to study the leadership roles individual states may play with respect to marine activities in their geographic areas.

Footnotes

¹Preston James, "Toward a Further Understanding of the Regional Concept," Annals of the Association of American Geographers, vol. XLII (September 1952), p. 197.

²Derwent Whittlesey, "The Regional Concept and the Regional Method," in P.E. James and C.F. Jones, eds., American Geography: Inventory & Prospect, Syracuse: Syracuse University Press, 1954, p. 21.

³Ibid., p. 30.

⁴James, op. cit., p. 199.

⁵Ibid.

⁶Most persons would agree on the validity of identifying certain urban regions, such as New York or Chicago (although they might differ as to where to delimit the regions' boundaries) or of political regions, such as specific nation-states.

⁷Whittlesey, op. cit., p. 21.

⁸The "matrimonial sea" proposal first surfaced at the Conference of Latin American States held at Santo Domingo in June 1972. Its thesis was that littoral states of a maritime area should have the right to participate on an equitable basis in fishing in the waters of an area seaward of a coastal state's twelve-mile limits. Nationals of non-littoral states would be excluded.

⁹States having common concerns, particularly with respect to ocean policy issues, may, of course, be considerably removed geographically from one another, as in the case of land-locked or archipelagic states. Seen in this context, they do not represent a "region" but rather an "interest group."

¹⁰A workable dividing line between the North and South Atlantic Basins might extend from Cape Sao Roque, Brazil (5°S. Lat.), to Cape Palmas, Liberia (5°N. Lat.).

¹¹There is no officially designated "Antarctic Ocean"; references are sometimes made to the "Southern Ocean." Because of the existence of the Antarctic Treaty, all waters south of 60°S. Lat. should be included within an oceanic body separate from the South Atlantic, South Pacific, and Indian oceans.

¹²In terms of a variety of factors, both physical and non-physical, the North Pacific might be considered as constituting the maritime area north of the Tropic of Cancer (23-1/2°N. Lat.), and the South Pacific that area south of the Tropic of Capricorn (23-1/2°S. Lat.). The Central Paci-

fic, lying between the two Tropics, could be subdivided into West and East by the International Date Line (approximately 180° Long.).

¹³See U.N. Resolution of December 16, 1971, declaring the Indian Ocean as a Zone of Peace, International Legal Materials, vol. 9 (1972), p. 217.

¹⁴Lewis M. Alexander, "Regionalism and the Law of the Sea: The Case of Semi-Enclosed Seas," Ocean Development and International Law, vol. 2 (1974), pp. 151-187.

¹⁵Hudson Bay and the Bismarck and Kara seas would qualify as semi-enclosed seas, from a regional standpoint, if there were no requirement that they be bordered by two or more states. So would the Java/Flores/Banda complex in Indonesia. Such seas would not appear susceptible to any form of multi-state management scheme.

¹⁶The interspersal of French and British owned islands in the Lesser Antilles has been a major stumbling block to regional cooperation there. Divided jurisdictions also exist in the Solomon Island chain.

¹⁷J. S. Nye, Peace in Parts: Integration and Conflict in Regional Organization (Boston: Little, Brown and Company, 1971), p. 32.

¹⁸Zambia is connected by rail with both the east and west coasts of Africa, via Tanzania, Zaire and Angola, Rhodesia and Mozambique, and with the South African rail network. Chad, in contrast, has no direct rail links with the sea.

¹⁹For regional fisheries systems, see A. W. Koers, International Regulation of Marine Fisheries: A Study of Regional Fisheries Organizations [London: Fishing News (Books) Ltd., 1973].

²⁰Eugene B. Skolnikoff, The International Imperatives of Technology: Technological Development for the International System (Berkeley: University of California, Institute of International Studies, 1972).

²¹Koers, op. cit., p. 84.

²²Article 20(4) of Part I of the RSNT notes that the Authority "may establish such regional centres or offices as it deems necessary for the performance of its functions."

²³See Michael Hardy, "Regional Approaches to Law of the Sea Problems: The European Economic Community," International and Comparative Law Quarterly, vol. 24 (1975), pp. 336-348; Mark Janis, "The Development of European Regional Law of the Sea," Ocean Development and International Law, vol. 1 (1973), pp. 137-158.

²⁴See Intergovernmental Oceanographic Commission, The International Decade of Ocean Exploration (IDOE), 1971-1980, Technical Series No. 13 (Paris: The UNESCO Press, 1975).

²⁵Intergovernmental Oceanographic Commission, Summary Reports, Regional Ad Hoc TEMA Meetings (Paris: The UNESCO Press).

²⁶Lewis M. Alexander and Robert D. Hodgson, "The Role of the Geographically-Disadvantaged States in the Law of the Sea," San Diego Law Review, vol. 13 (1976), pp. 560-583.

²⁷William E. Butler, The Soviet Union and the Law of the Sea (Baltimore and London: The Johns Hopkins Press, 1971), p. 127.

²⁸Of the semi-enclosed seas noted in Table 1, only the Arabian Sea, Bay of Bengal, and the Gulf of Guinea would contain extensive areas beyond the 200-mile economic zone. The other seas would be totally or almost completely closed off by 200-mile zones.

²⁹John G. Ruggie, "International Responses to Technology: Concepts and Trends," International Organization, vol. 29 (1975), p. 570.

³⁰Ibid.

³¹Intergovernmental Oceanographic Commission (IDOE), op. cit.

³²Ruggie, op. cit., p. 569.

³³David Krieger, "A Caribbean Community for Ocean Development," Caribbean Study Project Working Papers: Pacem in Maribus IV (Santa Barbara, California: Center for the Study of Democratic Institutions, 1973), p. 441.

³⁴WMO actually is divided operationally into six Regional Associations: Africa, Asia, South America, North and Central America, Southwest Pacific, and Europe.

³⁵United Nations Treaty Series, vol. 239, p. 634.

³⁶International Legal Materials, vol. 6 (1967), p. 521. For a discussion of the Treaty, see John R. Redick, "Regional Nuclear Arms Control in Latin America," International Organization, vol. 29 (1975), pp. 415-446.

³⁷Koers, op. cit., p. 130.

³⁸The terms of conventions vary with respect to situations in which one or more member states object to a recommendation. See Koers, ibid., p. 190.

CHAPTER 3

EXISTING MARINE REGIONAL ARRANGEMENTS

The pattern of marine regional arrangements, or management systems, of the developmental type, is a very uneven one, in terms both of activity areas, and of geographic coverage. There are currently 27 regional fisheries units (see Appendix A), of which six are FAO-sponsored, and the remainder independent. The only maritime areas not covered under even minimal organization by regional fisheries are the Antarctic or Southern Ocean and parts of the Eastern Pacific.¹ Of the regional scientific research systems, most are IOC-sponsored and fall either under the sponsorship of the Co-operative Investigations, of the International Decade of Ocean Exploration (IDOE), or of those programs of LEPOR (Long-Term and Expanded Programme of Oceanic Exploration and Research) which are not part of IDOE. In addition, there are several non-IOC regional systems.

In the field of environmental control, there are a number of regional agreements and conventions, one of which has led to the establishment of a comprehensive action plan for the Mediterranean. Two regional arrangements associated with the military also exist, as well as seven regional marine development programs, under the aegis of the United Nations Development Plan (UNDP). Among the miscellaneous groups of regional systems, the most important is the Antarctic Treaty.

The listing here is of regional, as contrasted with global units. Within the framework of IMCO, there are a number of global arrangements, such as the International Convention for the Prevention of Pollution of

the Sea by Oil (1954), and the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (1969). There is also a Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Underwater (1963), and a Treaty on the Prohibition of the Emplacement of Nuclear Weapons, and other Weapons of Mass Destruction on the Seabed and Ocean Floor and on the Subsoil Thereof (1971). Although these may relate to regions of the world ocean, they are themselves not regional in scope.

Several world organizations dealing with the oceans, have regional divisions. WMO, as noted earlier, has six regional associations. The World Health Organization (WHO) has established six geographical areas -- Eastern Mediterranean, Western Pacific, South-East Asia, Europe, Africa, and America. FAO's "regions" are Africa, America, Asia, Europe, and Western Asia.²

It is the thrust of this Report that regional arrangements (as contrasted with those at the global, unilateral, or bilateral scales) have certain basic qualities of their own, certain advantages and drawbacks, and that in assessing any future trends in marine regionalism, these features should be studied. It is not enough to establish a "field service" area of a global unit. A regional system, even if organized and supported by a parent group, should, by definition, operate under the conditions within the geographic region, and be prepared to stand or fall, according to the degree of support it receives from the countries of the area, supplemented at times by support from non-regional users.

The basic support system for most marine regional units is the United Nations and its specialized agencies. Organizations with important ocean-related functions are (1) FAO, (2) UNESCO, (3) IMCO, (4) WMO, and (5) UNEP.

In addition, WHO, UNDP, UNITAR (United Nations Institute for Training and Research), IAEA (International Atomic Energy Agency), and UNCTAD (United Nations Conference on Trade and Development) also are concerned -- in some cases peripherally -- with ocean activities. Within the U.N. system are two major coordinating groups. One is ICSPRO, the Inter-Secretariat Committee on Scientific Programs Relating to Oceanography, to which belong FAO, UNESCO, WMO, and IMCO; the other is GESAMP, the Joint Group of Experts on the Scientific Aspects of Marine Pollution, whose members are IMCO, FAO, UNESCO, WMO, WHO, IAEA, UNEP, and the United Nations. Because of the far-flung nature of the U.N. system's ocean involvement, coordinating groups such as these are highly important to the task of allocating resources and responsibilities.

In the sections which follow, summaries will be given of the marine regional systems in each general category of activity area, from the standpoint of their nature and functions, and of the operational regions which they encompass. Following this will be a brief analysis of integrative non-marine regional systems, since these may act as centripetal forces helping to support the cooperative efforts of the marine regional unity.

Fishery Conservation and Management

Within the regional fisheries commissions, committees, and councils, there is considerable variety in form and functions. Seven of the arrangements are bilateral,³ and five others are trilateral.⁴ But several systems have considerably larger memberships. IOFC, for example, has 32 members, CECAF has 28, and WECAFC has 23.

Some of the systems deal with a single species or group of associated species within a region; the principal types covered by these arrangements

are salmon, halibut, tunas, seals, shellfish, and whales. In the case of whales, IWC relates to all waters of the world ocean wherein whaling is pursued commercially.

Activities of Regional Systems. There are various activities associated with international fisheries organizations. One may be promotion of the fisheries activities, an item of some importance in regional bodies such as IOFC and WECAFC, where all or most of the members are developing countries. Another task is to collect and compile basic data, particularly on biological factors of the fisheries, such as rates of recruitment, growth and mortality, migratory ranges of species, and fluctuations in year classes. Some regional units also assemble data on technological conditions, including fishing methods and gear and rates of catch, as well as on economic and social factors, such as demand for fish and fish products, structure of the fishing industry, wage and price levels, and conditions of technology transfer. Data for any regional body should be assembled, correlated, and analyzed in order to form a scientific basis for management.

In the handling of statistics most regional bodies rely on data supplied by member countries, although a few, such as the IATTC and the Pacific Salmon and Halibut Commissions, do their own collecting. In addition to acquiring data, a few units also carry out research, particularly in the population dynamics of species of direct concern. Other organizations rely on the fisheries research activities of their member countries. Stock assessment is an important aspect of any conservation process, and most regional units are engaged both in assessment and in recommending conservation measures where these are necessary. Such measures may take the form

of closed areas or seasons, minimum mesh sizes, limits on total fishing effort, or annual quotas on the volume of a species harvested.

In recommending conservation procedures, most regional units rely almost solely on biological factors. Although the term "optimal yield" is gradually being used in international fisheries matters, few existing conventions mention the relevance of economic considerations, or those of the environment, in setting regulations. So far as acceptance of recommendations by member states is concerned, procedures vary widely. In small fisheries bodies, decisions are usually taken only by a unanimous vote; in larger organizations a two-thirds, or three-fourths majority may be required. Some conventions stipulate that adopted conservation measures need only apply to those states which have voted for them. In others, recommended measures are not intended to have any binding force on member countries, but merely serve as guidelines for future action.

An additional aspect of management is that of catch allocation. Few regional organizations have reached a developmental stage where they attempt this function, although ICNAF was moving into this phase just prior to the withdrawal from it of the United States. One unusual arrangement where this activity is carried out is the International Pacific Salmon Fisheries Commission, some of whose uniqueness has already been noted (see page 30). The Salmon Commission is one of the few organizations with the explicit responsibility of allocating the catch between the fishermen of the two member states. It also is one of the few fishery bodies with an independent international research staff.

Still another problem is that of enforcement. "The enforcement on the high seas of any measure adopted by fishery bodies is in the first instance the responsibility of each member country with respect to the

vessels flying its flag....However, the need to supplement national enforcement systems by some form of international policing, especially within the framework of fishery bodies, has made itself felt over the years. It stems from the fact that some member countries are not in a material or financial position to impose effective control over their own vessels, especially when they are engaged in long-distance fishing, and that the stringency of national systems tends to vary. In addition, an international control system may have a considerable influence on the fishermen themselves, since, quite apart from any deterrent effect that it may have, it gives them greater assurance that the fishermen of other member countries will be subject to the same degree of control."⁵

International enforcement provisions are contained in several of the conventions of regional bodies with limited memberships (e.g., NPFSC, JSFC). In systems with a larger membership, countries may take it upon themselves to board the vessels of other member states on the high seas, and report violations of the convention to the flag state of the vessels boarded. In the case of the Whaling Commission, factory ships now carry international observers on board.

From this brief resume, several factors emerge. One is that a basic function of regional fisheries units has been the collection, compilation, and analysis of basic data. This in itself is an important, and at times complex activity, and one which hopefully will be continued even with the advent of the exclusive economic zone.

On the basis of biological evidence, regional fisheries organizations often recommend conservation measures to their member states. But such measures generally fail to take into account economic factors of the fishery, nor in most cases are they binding on member countries. Few regional

systems become involved in allocations of catch, nor do they engage in any form of international conservation measures. Even the world-ranging International Whaling Commission has failed to live up to its promises, despite the input of scientists, and the use of international observers. For one thing, the IWC must regulate whaling on the basis of artificial blue whale units (equal to two fin, two and a half humpbacks, or six sei whales); for another, the Commission has no authority with regard to allocation of the catch. And still another factor has been the failure of the whaling states to accept effective conservation measures.⁶ Other regional units face other problems. The IATTC, for example, does not number among its members the countries off whose coasts most of the Southeastern Pacific tuna are harvested. Part of the effective area of ICSEAF is off the coast of Namibia, whose political status is, and may continue to be, an uncertain one. The area of competence of IPFC has never been clearly defined, and overlaps to a considerable degree with that of IOFC.

Effects of the Exclusive Economic Zone. A more basic problem facing nearly all of the regional commissions concerns the effects of the coming 200-mile zone. Will foreigners be allowed to fish the surplus stocks under reasonable access conditions? What regulatory functions will regional organizations likely have both within and beyond the exclusive economic zone? What differences will there be between the management activities of regional units composed mostly of developed countries, and those of developing states?

It seems likely, as has been noted earlier, that in the immediate future there will be a period of intense nationalism, as coastal states become accustomed to their newly-acquired ocean space (or to the fact that

their possession of such space is no longer generally contested). During this time regional units can continue to play a role in data acquisition, compilation and analysis. As coastal countries become increasingly aware of the opportunities and needs of fisheries management in their exclusive economic zones, they may also become more interested in having access to an effective data base; as a consequence, they may either increase their own efforts toward data acquisition, or look for such services on the part of the regional organizations themselves. There may, on the other hand, be some reluctance, for a time at least, on the part of coastal states, to adopt fisheries conservation measures in their exclusive zone which are recommended by an international body, but which the state itself does not fully support.

When it comes to allocation of catch, coastal states, both developed and developing, will in the short-term, probably insist in performing this task by themselves. This presumably would be true even with respect to surplus catches, that is fisheries within the Total Allowable Catch (however that may be determined by the state in question), but above and beyond that total which the nationals of the coastal state can harvest. A country such as the United States would want to use this allocation process as a means for acquiring certain reciprocal privileges from foreign countries, rather than turning the process over to ICNAF or some other regional organization. A West African state might seek to work this process so as to gain maximum economic gain from alternative bidders.

A question arises whether or not, over a period of years, the universal adoption of 200-mile economic zones will lead to an increase or reduction in total world fisheries catch. Are there substantial fisheries off the coasts of both developing and developed states which, while now har-

vested by distant-water fleets, may soon become unavailable to them, and yet not be utilized by nationals of the coastal states?

In a recent paper, an FAO official reported that in 1972, the total marine catch of the world, excluding whales, came to 55.8 million metric tons; of this 40.5 million tons were caught by vessels fishing off the coast of their own country. The remaining 15.3 million tons was accounted for by fleets operating off other states' coasts. Of this, 10.6 million tons were taken by fleets of developed countries off the coasts of other developed states, 3.6 million by them off the coasts of developing countries, and 1.1 million by the distant-water vessels of developing states (e.g., Taiwan, South Korea, Thailand) off other countries' coasts.⁷

One might assume that for a time the "domestic" fishing industries of most coastal states, both developed and developing, may grow rather slowly, once economic zones are established, so that in the short-term, the figure of approximately 40 million tons caught off countries' own coasts may not change substantially. Of the 4 million tons or so taken by distant-water fleets off developing countries' coasts, an argument might be made that the figure would likely continue, or perhaps grow. The rationale for this is that the coastal states might seek to license foreign fishing in considerable quantities in order to earn revenue. But off developed states' coasts, foreign fishing would have little cause to increase, and indeed might decline. Developed states would presumably be less interested in revenue acquisition from foreign licenses than they would in improving the economic lot of their own fishermen. To accomplish this, they might seek to reduce the pressures of foreign fishing and thereby increase the average catch per unit effort of their own nationals in their coastal waters, as well as reducing the chances of congestion and gear conflict with foreign ves-

sels. If this reasoning holds, the total world catch would, in the short-term at least, fail to increase, and might possibly decline.

Hopefully, in the long-term, the opportunities for effective management schemes within economic zones, would lead to improved practices, accommodations between coastal and distant-water fleets, joint management arrangements involving neighboring states, and a general strengthening of the roles of regional fisheries bodies. Underutilized stocks (as off the Argentine coast, southwest Africa, and the northwest coast of North America) would become increasingly utilized, within the framework of effective management systems. But what triggers this new approach may not be a simple reassertion of logic, but rather the threat -- real or implied -- of widespread chaos in world fisheries, brought on by excessive unilateralism and a lack of attention to effective conservation and management practices.

Impacts of Regional Fisheries Units. The impact of the regional fisheries organizations on the marine environment itself may be measured in several ways. From the standpoint of access by vessels of non-member states to the living resources covered by the fisheries arrangements, the impact is minimal. The INPFC restricts access of Japanese vessels to pelagic salmon east of 175°W. Long., and while not actually mentioning access rights of non-member states, acts as a deterrent to pelagic salmon fishing by non-member countries in the Northeast Pacific. PCSP is a restrictive-type regime, affecting fisheries within the 200-mile zones of Chile, Ecuador, and Peru. The IWC also acts as something of a deterrent to commercial whaling by non-member states. But by and large, access restrictions occur through unilateral action by coastal states outside the framework of regional fisheries bodies.

A related issue concerns the freedom of member states to fish within the framework of the regional units. Here the principal problem concerns conditions of overfishing. The question of member state compliance with the conservation recommendations of regional bodies has already been noted. In point of fact there frequently are international pressures on member states of a regional fishery organization to curtail fishing under certain conditions in the interests of maintaining or restoring the maximum sustainable yield (MSY) of a particular stock or group of stocks.

A third impact is on the state of the fisheries themselves. Here opinions may vary, but in general, it may be said that the regional fishery organizations have represented a positive development, and that such shortcomings as they possess could with time be ameliorated. Certainly many of the fisheries stocks of the world ocean would be in far more serious shape than they now are were it not for the work of regional bodies. Again, the potential impact of the economic zone on the efficacy of these regional bodies should be noted.

The effect of regional fisheries bodies on other uses of the sea has been minimal. It is obvious that marine fisheries have various forms of interactions with other types of ocean use. For example, marine pollution may affect coastal breeding and nursery grounds. The presence of fixed structures, undersea cables and pipelines, and debris on the ocean floor have impact on fishing activities. The existence of fishing fleets in heavily-travelled shipping routes can lead to congestion and navigational hazards. But such multi-use conflicts are almost never covered by regional fisheries arrangements. Certainly in the future it would seem that many of them would be handled within the rubric of "management" of the exclusive economic zone by the coastal state.

The impact of regional fisheries systems on the general relationships among states has also been minimal. There may have been some effects in the case of developing states of a region, such as West Africa or the Indian Ocean littoral, in their working together on regional fisheries problems, but other factors, such as bi-national confrontations (e.g., Iceland and the U.K.) or the exertion of unilateral claims, as in the case of Argentina's virtual closure of the Patagonian shelf fisheries to foreign vessels, tend to have greater international implications than do the regional fisheries units themselves.

It should also be noted that in addition to the 27 arrangements noted in Appendix A, there are other forms of international fisheries action which can affect ocean activities. One is the scores of bilateral arrangements, such as those between the United States, and the Soviet Union, Japan, Canada, and Poland. Second is certain types of "special agreements" on certain fisheries such as those involving the Atlanto-Scandian herring⁸ and the Arcto-Norwegian cod.⁹ In the Pacific basin is ICLARM (International Center for Living Aquatic Resources Management), sponsored by the Rockefeller Foundation, which is concerned primarily with aquaculture and artisanal fisheries throughout the area. Another regional organization is EAMFRO, the East African Marine Fisheries Research Organization, which investigates not only the commercial fisheries of the East African coast, but is also active in marine pollution research. Finally, there are various regional development projects carried out under the aegis of existing regional fisheries units, sometimes in cooperation with other agencies, as for example, the Indian Ocean Fishery Survey and Development Programme which is associated with IOFC, funded by UNDP, and is affiliated with IOC's Long-Term and Expanded Programme of Oceanic Exploration and Research. In a

global activity as diverse as marine fisheries, such "subregional" units will probably continue to multiply in the coming years.

Scientific Research

The principal organization responsible for regional marine scientific activities is UNESCO, a specialized agency of the UN, whose mission within the field of science is to "maintain, increase and diffuse knowledge by recommending the necessary international conventions, promoting research programmes and encouraging the international exchange of scientists and scientific materials, and strengthening national infrastructure and regional cooperation."¹⁰ Within UNESCO the two major agencies concerned with marine science are IOC and the Division of Marine Sciences.

The Intergovernmental Oceanographic Commission. IOC is not a project agency, but rather functions as a coordinating group for activities undertaken by individual countries, or by organizations such as FAO, WMO, IMCO, and UNEP. IOC has three main sections: Ocean Science; Ocean Services; and Training, Education and Mutual Assistance.

Ocean Science. In the Ocean Science section there are several sub-categories. One is the Regional Co-operative Investigations. Currently, as noted earlier, there are four of these in operation: (1) Co-operative Study of the Kuroshio and Adjacent Regions (CSK); (2) Co-operative Investigations in the Mediterranean (CIM); (3) Co-operative Investigations of the Northern Part of the Eastern Central Atlantic (CINECA); and (4) Southern Oceans Survey (SOC), which is concerned with the waters surrounding the Antarctic. Two other projects, Regional Investigation of the El Niño Phenomenon (ERFEN) and Co-operative Investigations in the North and Central Western Indian Ocean (CINCWIO) are being planned.¹¹ In previous years, two other projects

also existed. One was the International Cooperative Investigations of the Tropical Atlantic (ICITA) which took place in 1962 and 1963. The other was Co-operative Investigations of the Caribbean and Adjacent Regions (CICAR); this project, after seven years of successful operation, was terminated in 1975.¹²

The three primary benefits of the Co-operative Investigations are first, that they provide for increased knowledge of a marine area; second, they facilitate the coordination of scientific efforts of member states; and third, they present a mechanism for the transfer of education and training from developed to developing countries.

A second aspect of IOC's Ocean Science sector concerns LEPOR, and particularly the Programme's acceleration phase, IDOE. Within the framework of IDOE, there are four divisions -- Environmental Forecasting, Environmental Quality, Seabed Assessment, and Living Resources. These, in turn, each consist of several specific projects, such as the Investigation of the Equatorial Undercurrent of the West Pacific, or Coastal Upwelling Ecosystems Analysis. Not all of IDOE's projects are regional; some, such as CLIMAP (Long-Range Investigation, Mapping and Prediction), are global in scope. Consequently, the list of IDOE projects in Appendix A includes only those which relate to a particular regional area (even though in some cases there may be only two countries involved in the project). IDOE activities, it should be noted, are carried out by individual countries under the guidelines of coordinated planning and implementation systems. The U.S. IDOE Program, for example, is a major component in a number of the cooperative projects.

There are several LEPOR programs, not a part of IDOE, such as the Study of North Sea Pollution, and the Fish Stock Assessment in the South

Atlantic. These are not included in IDOE, because it is expected they will continue in operation after 1981, the expiration date for the International Decade. In addition, there are two IOC science programs not a part of LEPOR; one is IOCARIBE, the IOC Association for the Caribbean and Adjacent Regions; the other is ITSU, the International Tsunami Warning System in the Pacific. The latter is designed to support the activities of the International Tsunami Information Centre in Honolulu.

IOCARIBE was established in 1976, at the time of termination of CICAR. It was not intended as a continuation of CICAR but is a project-oriented body, the projects themselves being interdisciplinary in nature, and coordinated individually by small management groups. The task of the governing body of IOCARIBE is to oversee all IOC activities in the Caribbean and adjacent areas. Among the projects to be undertaken by IOCARIBE are the Management and Development of Marine Fisheries in the Lesser Antillean Island Area and Central America, Environmental Geology of the Coastal Zone, and Biology and Culture of Mangrove Oysters. IOCARIBE is intended to continue for seven years, and its membership includes eleven states of the Caribbean, Brazil, and four non-Latin American countries, including the United States (see Appendix C).

Two special aspects of IOCARIBE are, first, that it may assist in the activities of two regional centers, the Mexican Oceanic Sorting Centre (CPOM) which is concerned with zooplankton samples, and the Regional Data Centre (RDC), a part of the U.S. NODC in Washington. In addition, it has been recommended that a regional system for the exchange of documentation and a bibliography of marine science activities be established, and that there be founded a Regional Marine Science Documentation Centre, possibly in Trinidad and Tobago. A second aspect is that IOCARIBE is intended to

work closely with other regional agencies in the area -- FAO, UNEP, the U.N. Office of Ocean Economics and Technology (OETO), and ECOSOC's Economic Commission for Latin America (ECLA) and its Caribbean Development Co-operation Committee (CDCC). The extent to which successful linkages are formed with these organizations will provide at least one basis for evaluating the viability of IOCARIBE.

One non-regional program of IOC's Ocean Science effort is the Comprehensive Plan for Global Investigation of Pollution in the Marine Environment (GIPME), which provides a framework under which member states can conduct and coordinate their national programs in marine research and monitoring.

The marine science activities of IOC are coordinated with those of other agencies of the U.N. family through ICSPRO. This organization consists of the executive heads of the United Nations, FAO, UNESCO, WMO, and IMCO, and is designed to sustain the work of IOC through relevant parts of these other organizations' programs, and to utilize IOC for advice and review in the area of marine science. Another marine science coordinating agency is ECOSOC's Administrative Committee on Co-ordination (ACC), whose Sub-committee on Marine Science and its Applications attempts to ensure that agencies consult with one another informally when drafting their program of work, and, when possible, exchange and discuss these drafts before submitting them to their governing bodies for approval. The need for such an agency (which, unlike ICSPRO, does not service IOC alone), the difficulties in coordination which it encounters, and the fact that its effects are at times far from successful, attest to the increasing complexity and potential overlap of marine science efforts within the U.N.

Ocean Services. A second section of IOC is concerned with Ocean Services, including the Integrated Global Ocean Station System (IGOSS), and the International Oceanographic Data Exchange (IODE). Both of these units are primarily global in scope. IGOSS, however, is planning soon to monitor pollutants in areas of the Persian Gulf; along the tanker routes from the Gulf to Japan and around Africa to Europe; in the Atlantic Ocean north of 5°S. Lat.; in the Caribbean, North and Mediterranean seas and the Gulf of St. Lawrence; in the Norwegian and Barents seas; and in an area off South America lacking tanker traffic (for use as a control).

Training, Education and Mutual Assistance. IOC's third section is concerned with the coordination of training and education in the marine sciences, with particular emphasis on the developing countries. The principal agency for this activity is TEMA (Training, Education and Mutual Assistance) which, over the past several years, has conducted regional meetings in such cities as Mexico City, Casablanca, Manila, Cairo and Montevideo. Table 3 gives the dates of the meetings and the participating countries.

TEMA is not designed as a body to develop and fund programs in training and research, but rather acts as a catalyst to bring together countries in the marine sciences, so that they may develop their own programs and may initiate plans for joint ventures. TEMA officials have suggested that each member state establish its own marine science planning committee, and that these convene from time to time as regional working committees to consider marine science issues of mutual interest.

Among the types of recommendations which have come from regional TEMA meetings are (1) national inventories of needs and resources in marine education and training; (2) the establishment of regional instrumentation, data,

Table 3. Regional TEMA meetings.

Mexico City, 10-12 April 1975

Canada	Netherlands
Colombia	Spain
Costa Rica	Trinidad and Tobago
Cuba	U.K.
Dominican Republic	U.S.A.
Jamaica	U.S.S.R.
Mexico	Venezuela

Casablanca, 3-5 June 1975

Federal Republic of Germany	Morocco
France	Nigeria
Gabon	Sierra Leone
	U.S.A.

Manila, 15-19 September 1975

Federal Republic of Germany	Japan
France	Malaysia
Indonesia	Philippines
	U.S.A.

Cairo, 4-8 January 1976

Egypt	Saudi Arabia
France	Sudan
Federal Republic of Germany	Sweden
Iran	Tunisia
Iraq	U.K.
Kuwait	U.S.A.
Libya	U.S.S.R.
	Yemen, Peoples Demo- cratic Republic of

Montevideo, 15-19 November 1976

Argentina	France
Brazil	Peru
Ecuador	U.S.A.
Federal Republic of Germany	Uruguay

sorting, and information centers; (3) visiting professorships; (4) cooperation in the training of marine technicians; and (5) joint participation in oceanographic cruises. But without the facilities for providing outside funding, TEMA has made slow progress among the countries of the developing world. One potentially hopeful sign has been the adoption by IOC of a resolution requesting the Working Committee for TEMA to consider a Voluntary Assistance Program (VAP) to train students from developing countries to the point where they can work with some of the IOC multi-national scientific activities, such as GIPME and IGOSS. Although the amount of funds available for VAP will probably be small, and the scope of its activities limited, its existence may serve to strengthen the regional activities TEMA is endeavoring to stimulate.

The Division of Marine Sciences. The second UNESCO unit concerned with scientific research is the Division of Marine Sciences. The Division "is responsible for assisting member States to attain high quality marine science programmes and scientific infrastructure so that they can participate in programmes organized and coordinated by IOC....It provides expert advice and policy guidance...executes UNDP-funded programmes in eleven countries, supports certain regional research activities and assists member States in strengthening regional cooperation in marine science."¹³ The Division also operates three regional biological sorting centers: the Indian Ocean Biological Centre, the Regional Marine Biological Centre in Singapore, and the Mexican Oceanic Sorting Centre.

Other Regional Science Units. Outside of the framework of UNESCO, the principal regional science organization is ICES. Founded in 1902, the Council is concerned with research and investigation in the North Atlantic

and adjacent seas. It provides scientific advice to NEAFC and to the International Baltic Sea Fishery Commission (IBSFC). In addition, it has carried out extensive studies of pollution in the North and Baltic seas. ICES also operates a regional data center for the Northeast Atlantic area. It is a long-standing and highly-respected regional marine science body, which is the only one of its kind in the world.¹⁴

Two other regional science groups are the International Commission for the Scientific Exploration of the Mediterranean Sea (ICSEM) and the Federation of the Institutions Concerned with the Study of the Adriatic Sea (FICSAS). ICSEM, which dates back to 1919, is based in Monaco, and has a role of suggesting and coordinating programs of scientific research in the Mediterranean and adjacent seas. It is not a funding agency, but it does publish scientific communications relating to projects which it has approved. In recent years it has participated with IOC and FAO in the Co-operative Investigations in the Mediterranean (CIM). FICSAS is an example of a subregional body. (See Appendix A.)

Trends in the Marine Science Systems. The regional scientific research systems may be expected to continue for a time, even with the advent of the 200-mile zone, because individual scientists in the member states will presumably recognize the importance of coordinated action over fairly broad geographic areas. Major oceanographic states may, in fact, see in the IOC and other bodies mechanisms for obtaining access to the economic zones of other coastal states under the guise of internationally-sponsored programs. The danger here, of course, is that science-oriented bodies of the U.N. family could in time become sufficiently "politicized" (particularly with respect to the issue of access of member states' vessels in economic zone

waters) that some of the efficacy of the programs which they sponsor could be considerably reduced.

Two other points should be noted. Article III-87 of the RSNT speaks of the establishment of "regional marine scientific and technological research centres," especially in developing states, in order to "stimulate and advance the conduct of marine scientific research by developing states and promote the transfer of technology." Article III-88 spells out the functions of such regional centres. Associated with this is the fact that developed countries which educate and train persons from the developing world in marine science and technology often establish working relationships both with the professionals themselves and with their home institutions which continue long after the education or training programs have ended.

The inference from the above would seem to be that if the United States is interested in securing access for its oceanographic research vessels in foreign economic zone waters, it might well consider: (1) supporting and indeed expanding the work of IOC and other agencies in terms of regional science efforts; (2) underwriting the establishment of marine science and technology centres in the developing world; and (3) increasing its support for education and training of marine scientists and technicians in institutions within the United States, including efforts to ensure that these persons' experiences, while in the U.S., are as productive and enjoyable as possible.

Environmental Control

Regional arrangements for pollution control and abatement tend to be more complex, and more difficult to negotiate, than is the case with sci-

entific research, and even, in many cases, fisheries conservation and management. Listed below are several categories of problems.

1. Pollution types and levels may vary widely from area to area:
 - Some maritime regions or subregions may be affected most by land-based pollutants, others by vessel-source pollution, still others from pollution emanating from the seabed, either as a result of natural or of man-made causes.
 - There are differences in the perception of governments as to the threat of pollution and the "investment" necessary to cope with it.
 - There are differences in the depth, water movement, absorptive capacity, and rate of flushing between one water body and another. Pollution may be a particularly critical problem in certain semi-enclosed seas.
2. Coastal states may vary widely in terms of their technological abilities, and their capability of funding remedial measures:
 - Some states may feel that they are not prime sources of pollution, but that their neighbors are.
 - Some states may lack the capabilities to carry out monitoring activities in their offshore waters. And even if remedial measures are suggested, they may be unwilling to bear their share of the costs of such action.
 - Some states of a region may, for ideological or other reasons, be unwilling to work with their neighboring states for pollution control measures.
3. Even if joint action is possible, the development of a mutually-acceptable management system may be extremely difficult:
 - There is need for a comprehensive system of data collection and assessment, under conditions of mutually-recognized techniques.
 - From this information, a series of environmental standards must be compiled, such standards to be accommodated both with regional needs and with global standards.
 - An operational system must be established which is suitable to the changing character of marine pollution and technology within the region.
 - Arrangements must be made for coordination of a regional regime's rules and regulations with other legal systems, for effective enforcement measures, and for the development of a method of tech-

nical assistance so that developing nation members of a regional environmental control system can derive maximum benefits from participation.

One consequence of these issues is that global environmental control systems are very difficult to manage; regional ones are only slightly less so.

The Inter-Governmental Maritime Consultative Organization. A principal agency involved with environmental control is IMCO, a specialized agency of the U.N. It is not a regulatory organization, but has the functions of promoting intergovernmental cooperation and consultation concerning governmental regulations and practices related to technical matters affecting international commercial shipping, and of promoting the highest practicable standards in maritime safety, efficiency of navigation, and the prevention and control of marine pollution from ships. To these ends, IMCO collects and disseminates information, provides technical assistance to developing countries, makes recommendations for action, and drafts conventions or agreements.

In its work, IMCO is assisted by UNEP, GIPME of IOC, FAO, and other agencies. IMCO is also a member of GESAMP, founded in 1968 as a coordinating group to which FAO, UNESCO, WMO, WHO (World Health Organization), IAEA (International Atomic Energy Agency) and UNEP also belong. GESAMP's function is to advise organizations on the scientific aspects of marine pollution, to provide relevant information, and to serve where necessary as a coordinating mechanism for the scientific activities of its member states as regards marine pollution.

United Nations Environment Programme. As noted earlier, the conventions and instruments established under IMCO have been largely global in nature. But another agency, UNEP, which was established in 1972, does have regional

components. UNEP's principal functions are to promote international cooperation in the field of the environment, to recommend policies to this end, and to provide general policy guidelines for the direction and coordination of environmental programs within the U.N. system. It is an important agency of the U.N., and within its environmental purview fall the oceans and seas.

So far as marine regional activities are concerned, UNEP is involved in the development of comprehensive action plans for the protection of the marine environment, consisting of environmental assessment and management, with elements of integrated planning, conservation, environmental law, and other supporting measures. It also supports programs for conservation and management of living marine resources, including marine mammals, marine turtles, as well as general surveys into ocean ecosystems in various regions of the world.

The most ambitious of UNEP's marine regional programs so far is the Mediterranean Action Plan, described in detail in Appendix C, which grew out of a 1976 Convention for the Protection of the Mediterranean Sea against Pollution. At the present time, UNEP is also planning an environmental program for the Caribbean/Gulf of Mexico, and has taken the initial step of convening a scientific conference in Trinidad to which scientists (representing themselves, not their governments) gathered for the purpose of establishing priority areas where regional monitoring and research will be useful. From this meeting a draft report will be prepared by UNEP and submitted to an intergovernmental meeting late in 1977. At this latter meeting an Action Plan for the Caribbean will hopefully be drawn up and adopted, just as the Action Plan for the Mediterranean was drawn up and adopted at Barcelona in 1975.

UNEP may also play an observer's role in some sort of an Action Plan for the Red Sea and Gulf of Aden. In this case, the rest of the littoral states refuse to include Israel in this plan, so rather than work under U.N. auspices, planning must be carried out within the framework of ALECSO. In the Persian (Arabian) Gulf -- including the Gulf of Oman -- progress toward an integrated approach to environmental control has been blocked by an issue of semantics. Iran is insisting on the use of "Persian Gulf" only to refer to the water body inside of the Strait of Hormuz. The Arab states want "Arabian Gulf," "Arab-Persian Gulf," or just "Gulf." There is little basic scientific infrastructure in the Gulf, and it is believed that regional centers, rather than national laboratories as in the case of the Mediterranean, should be developed for the area.¹⁵

UNEP is also interested in the East Asian Waters Region, extending from the Bay of Bengal to the Sea of Japan, and including the waters of the Indonesian archipelago. In 1976 a scientific meeting was convened at Penang, Malaysia, and from this recommendations emerged on environmental control problems in the region. It was felt that many of the East Asian water bodies do not yet have serious pollution problems, and that perhaps the one area best suited for a regional approach would be Malacca Straits. Preparations for the development of an Action Plan may begin soon here. A similar planning process may soon be underway in the West African Coastal Region, where environmental threats appear to be developing.

In addition to the Mediterranean Action Plan, there have been several regional pollution agreements applicable to the waters off Northwestern Europe. These are:

Agreement for Cooperation in Dealing with Pollution of the North Sea by Oil (Bonn Convention), 1969

Agreement between Denmark, Finland, Norway and Sweden concerning Cooperation in Measures to Deal with Pollution of the Sea by Oil (Nordic Agreement), 1971

Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention), 1974

Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden, 1974

The signatories to these conventions, and the status of ratifications, are shown in Appendix A.

Trends in Marine Environmental Control Systems. Several points should be noted about possible future trends in marine environmental control arrangements, particularly in view of the impending adoption by all or most coastal states of an extra-territorial economic zone. One is that with the advent of the zone, coastal states will be permitted to impose unilateral conservation measures (particularly with respect to vessel-source pollution) out to a maximum of 200 miles from shore. Article II-44 of the RSNT -- parts of which text would seem to reflect the thinking of most UNCLOS III delegates -- would cede to the coastal states "(j)urisdiction with regard to the preservation of the marine environment, including pollution control and abatement." Although subsequent articles in Part III of the RSNT speak of the need for regional action, where appropriate, in dealing with pollution control problems, several articles (as, for example, III-17) mention that in the setting of standards account should be taken of "the economic capacity of developing countries and their need for economic development." To some analysts this implies double standards in the economic zones of certain developing states.

The developed maritime states (which over the years have been significant contributors to marine pollution problems) can be expected slowly

to ratify and abide by global and regional pollution control agreements and amendments. In some cases the rate of progress toward acceptance of international standards may be miniscule, and little may be possible with respect to land-based pollutants. Greatest progress will probably be made in semi-enclosed seas, and other restricted water bodies where the pollution potential is most evident.

But what about the developing coastal states, particularly those which feel that much of the marine pollution problems are not of their making, and that stringent pollution control problems might possibly infringe on their economic development? What sorts of regional (or global) arrangements might they agree to which would affect the waters of their economic zones?

While it is difficult to suggest even alternative types of future regional pollution control arrangements in the developing world, certain points should be noted. A first is that spokesmen for developing countries may, for some time to come, perceive the principal pollution threats in their economic zone waters as coming from the passage of tankers, LNG ships, and other vessels, not belonging to their own nationals. Distinctions may exist in their mind between foreign flag vessels proceeding through economic zone waters to the coastal state's ports, and those in transit from the economic zone of one neighboring state to that of another. But whatever the source and purpose of foreign flag vessels may be, it seems likely that the early regional pollution control arrangements in waters bordered by developing states (as, perhaps, in the Red Sea) will be directed largely toward foreign flag vessels, probably of types not owned by the littoral countries themselves. Such standards as are imposed may be relatively high -- higher than those imposed through IMCO conventions.

Several variables exist. The operational area affected by a regional system may be bordered both by developing and developed states (e.g., the Mediterranean). One or more of the developing member states may have commercial vessels under its own flag (Liberia, Ghana), in which case pollution control standards must be established so as to take this into account; or else some system of double standards would probably be established -- one set for vessels of foreign states and another for the vessels of littoral states of the region or subregion. Major maritime countries could in time find such regional or subregional arrangements to be somewhat troublesome. Finally, it should be noted that many developing states may be reluctant to take action against any non-vessel-source pollution in their economic zone which is caused by the coastal state's activities. Included in this category might be such items as pollution from offshore wells, from industrial establishments along the coasts or rivers flowing into the sea, and air-borne pollutants such as DDT, carried from the land out over the offshore waters.

Military Uses

While there are several defense pacts (e.g., NATO, SEATO) whose terms of reference contain provisions affecting maritime as well as terrestrial areas, it is felt here that the principal interest would be in arrangements which formally preclude certain types of military activities in particular areas. There are, first, two global arrangements, one being the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Underwater,¹⁶ and the other the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons of Mass Destruction on the Seabed and Ocean Floor, and on the Subsoil Thereof.¹⁷ Both global treaties are now in force.

But there have also been several regional agreements, which seek to prohibit certain activities in specific areas. Among these are agreements affecting the Indian Ocean, Latin America, and Antarctica.

In the case of the Indian Ocean, there was in 1971 a Resolution passed by the General Assembly, entitled "Declaration of the Indian Ocean as a Zone of Peace." The Declaration notes that further escalation and expansion of the military presence of littoral states is to be halted, all foreign bases, military installations, or logistical supply facilities within the Indian Ocean are to be prohibited, along with the removal of nuclear weapons and weapons of mass destruction, and manifestations of Great Power military presence are to be eliminated. Although the vote on the Declaration was 62 in favor, none against, 56 abstaining, and 15 absent, its provisions do not yet seem to have been put into effect.¹⁸

In 1967, 18 Latin American states concluded a Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlateloco), under which parties are to refrain, directly and indirectly, from the testing, use, manufacture, production, possession or control of any nuclear weapons.¹⁹ One problem here has been that the three nuclear powers of Latin America -- Argentina, Brazil, and Venezuela -- are not parties to the Treaty.

A third issue of prohibition is contained in the Antarctic Treaty. Article I stipulates "Antarctica shall be used for peaceful purposes only. There shall be prohibited, inter alia, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons." Moreover, Article V prohibits any nuclear explosions in Antarctica, and the disposal there of radioactive waste material.

While their actual effectiveness may be minimal, it seems reasonable

to assume that other regional "zones of peace" may be proclaimed, as, for example, in some of the maritime basins of Southeast Asia, or in the waters off West Africa. Such proclamations may cost the littoral states little or nothing in the sense of "investments" and could be seen as contributing at least some moral pressure in the direction of world disarmament.²⁰

A more contentious form of regional arrangement, with respect to military activities, is the designation of certain water bodies as "closed seas" -- closed, that is, to the military vessels of non-littoral states. According to Butler,²¹ the Soviets interpret their "closed" or "regional" sea policy as applying to the Black, Baltic, and Okhotsk seas, as well as to the Sea of Japan. Actions such as these are "regional" not in the sense of joint action by neighboring states, but rather unilateral measures affecting one regional sea. There have been reports in the past that the Soviets have attempted to get agreement on the part of all states bordering semi-enclosed seas adjacent to the USSR for the establishment of "restrictive" regimes there, at least so far as foreign warships are concerned. But none of these attempts, apparently, have been successful. It would, in fact, seem to be in the best interests of the United States and other maritime powers to continue working to ensure that at least one littoral state of each of the semi-enclosed seas bordering the Soviet Union (e.g., Sweden, Turkey, Japan) resist what have become long-term efforts by the USSR to gain multi-national support for non-access regimes to military vessels of "outside" powers within the seas adjacent to the USSR.

Regional Development Projects

The United Nations Development Programme (UNDP), in cooperation with FAO, has been assisting developing countries in their efforts to accelerate

their economic and social development by providing funds, trained personnel, planned facilities and other forms of support for their fisheries industries. There are now over 125 individual country fisheries development projects underway, as well as the following six regional fisheries development programs.

- Indian Ocean Fishery Survey and Development Programme
- Development of Fisheries in Eastern Central Atlantic
- Development of Fisheries in Western Central Atlantic
- South China Sea Fisheries Development and Co-ordination Program
- Caribbean Fisheries Training and Development Centre
- Southern Ocean Fisheries Survey and Development Programme

In addition, UNDP also contributes to a Commercial Fisheries Information Service for Latin America, and to an Aquaculture Development and Coordination Programme which, at this point in time, does not have any one specific regional focus.

At least one additional area in which UNDP-supported fisheries activities might be expected to be inaugurated is the Central Pacific, including Fiji, Tonga, and other islands and island groups, whose only regional fisheries contacts now are with the loosely-organized IPFC.

The UN Economic and Social Council began in 1947 to establish regional economic commissions, which were intergovernmental bodies designed to initiate and participate in measures for maintaining and strengthening the economic relations in their respective regions. The five commissions are:

- The Economic Commission for Europe (ECE)
- The Economic and Social Commission for Asia and the Pacific (ESCAP)
- The Economic Commission for Latin America (ECLA)
- The Economic Commission for Africa (ECA)
- The Economic Commission for Western Asia (ECWA)

Several of the commissions now have a large number of subsidiary bodies which meet regularly. In addition, the commissions have established a series of institutional arrangements, such as the Latin American Free Trade Association, the African and Asian Development Banks, the Economic Developing Planning Institute in Africa, Asia and Latin America, and such cooperative undertakings as the economic integration of Latin America.

CCOP and CCOP/SOPAC. With respect to the marine environment, two special units of ESCAP have been established -- the Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Off-Shore Areas (CCOP), and the Committee for Co-ordination of Joint Prospecting for Mineral Resources in South Pacific Off-Shore Areas (CCOP/SOPAC).

CCOP's functions are (1) to promote, coordinate and advise on the planning and implementation of surveys, prospecting projects and investigations in the waters of its member countries; (2) to provide similar support for training programs and facilities pertinent to geological, geophysical, and related fields; and (3) to seek out possible sources of financial and technical support for offshore activities. The principal commodities for which it has been established are petroleum, tin, and other types of marine minerals. Members of CCOP include Indonesia, Japan, Democratic Kampachea (formerly Cambodia), Malaysia, Philippines, Republic of Korea, Singapore, Thailand, and the Trust Territory of the Pacific Islands. South

Vietnam was formerly a member; it is unclear whether the unified Vietnam will join or not. One interesting point is that of the members of CCOP, Indonesia, Malaysia, Philippines, Singapore and Thailand, are also the five member states of the Association of South East Asian Nations (ASEAN), which has been formed to promote cooperation in the economic, social, technical, cultural, scientific and administrative fields in the region. It is expected that ASEAN will become increasingly active in marine-related matters in coming years, including fisheries issues, prospecting for and exploiting offshore minerals, shipping regulations, and the possible declaration of a "zone of peace" regime for their collective economic zones.

CCOP/SOPAC has much the same purposes as CCOP; its principal difference is that its operational area lies to the east of CCOP's. Its membership includes Cook Islands, Fiji, Gilbert Islands, Tonga and Western Samoa. Tuvalu (formerly the Ellice Islands) has expressed an interest in becoming a member. To date, CCOP/SOPAC has carried out considerably fewer activities than has CCOP.

Indications would seem to point in the direction of increased regional marine development projects of these types in coming years, under the aegis of United Nations agencies, or of various types of regional economic or other units. But it must be noted that all of these development arrangements are supportive in nature. None of them are involved with actual exploitation, or with sharing of the resultant wealth. But even joint scientific, technical, and other supportive activities can contribute over the years to the strengthening of regional bonds, and to the framework, sometime in the future, for the establishment of truly binding marine regional and subregional units.

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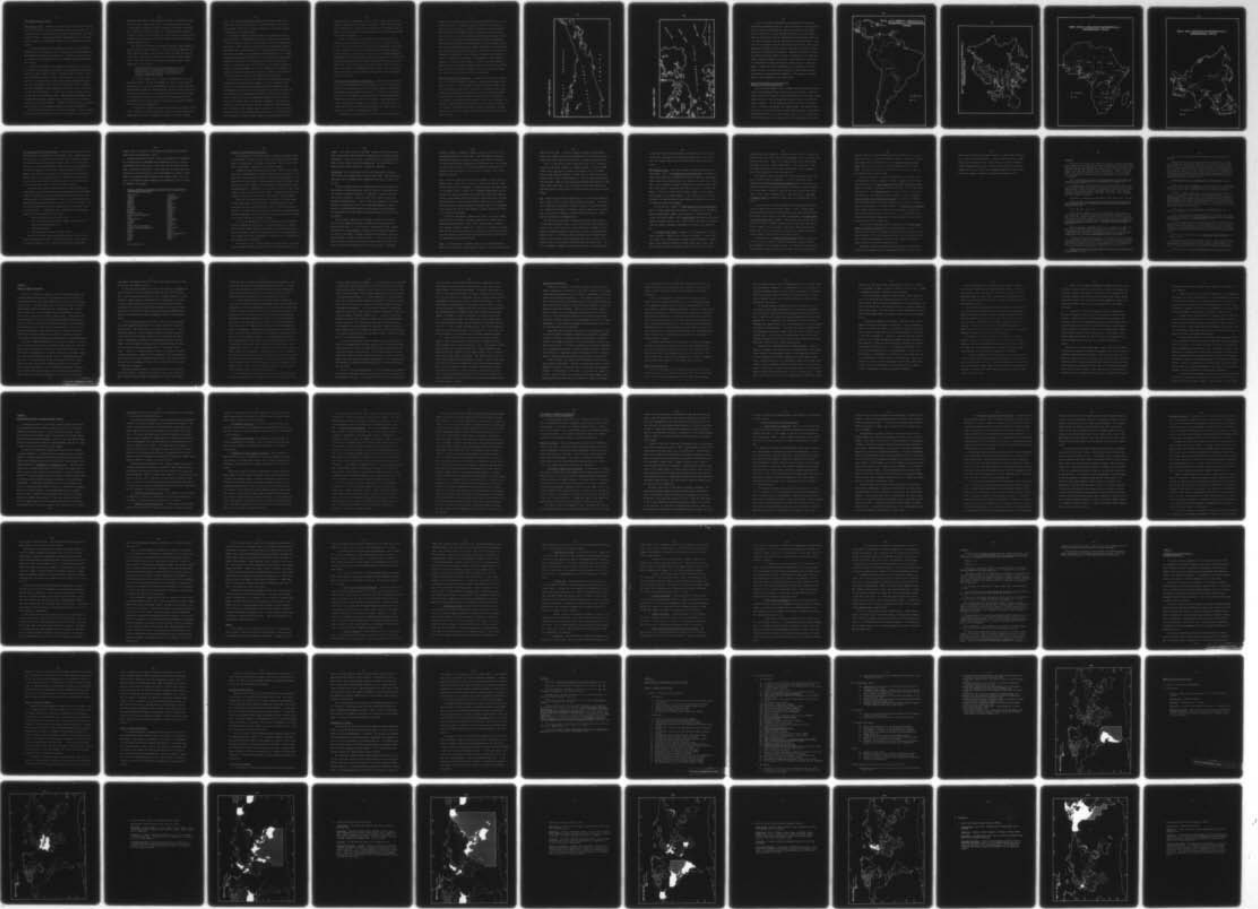
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Other Marine Regional Systems

The Antarctic Treaty. Although its operational area includes both the land mass of the Antarctic as well as the adjacent waters south of 60°S. Lat., the Antarctic Treaty is considered here as a form of marine regional unit which, on the one hand, is unique among regional arrangements, and, on the other, points up some of the difficulties inherent in any comprehensive regional system.

The Treaty was concluded in 1959 among 12 countries,²² and followed immediately the IGY during which the 12 countries had established more than 50 overwintering stations in the Antarctic. The Treaty came also in part as a response to the prospects of a U.N. trusteeship being established for the Antarctic.

A number of publications have appeared on the Antarctic Treaty, and our concern here is primarily with aspects of the agreement which might have relevance to other regional systems. The Treaty came into effect in 1961, and is scheduled to run for 30 years. However, there is no formal expiration date. As 1991 approaches, assuming no relevant amendments have up to that time been adopted, states party to the Treaty may elect to withdraw, may seek an amendment formally lengthening the Treaty's life, or may decide to leave the text untouched -- in which case the Treaty continues in much the same form for an indefinite period. Modifications and amendments must be accepted by unanimous agreement of the parties entitled to representation at the consultative meetings. A somewhat unusual provision is that the Treaty contains its own compulsory measures for dispute settlement.²³

One of the unique features of the Antarctic agreement is that it freezes territorial claims to the area.²⁴ Also, as noted earlier, it provides for

demilitarization and for a ban on nuclear explosion. Although the Treaty covers all waters south of 60°S. Lat., it specifies these as high seas, in which there is freedom of fishing, navigation, overflight, and the laying of submarine cables and pipelines.²⁵ Since there are no recognized territorial claims on the land-mass itself, there can be no internal or territorial waters adjacent to the land, no economic zone, and no nationally-claimed continental shelf.

The provisions of the Treaty concerning scientific research appear, at least up to now, to have worked well. This includes the arrangement for mutual inspection rights. But in several areas, the Treaty may prove to be deficient. One of these concerns its relationship with non-signatory states. Rose notes that Article X might be construed to apply to non-signatories. Its text reads:

Each of the Contracting Parties undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present treaty.

"It is unclear whether 'no one' refers to nonsignatories, or to the Contracting Parties. Despite the language, the treaty is not binding on nonsignatories. As has been suggested before by various writers, the Contracting Parties could face serious problems, involving either action by nationals of nonsignatories, or the possibility of the assertion of a claim by a nonsignatory state which is not bound by the moratorium on claims. But perhaps the most serious conflict could arise in the event of commercial activities by nonsignatories."²⁶

A second potential difficulty concerns the relative exclusivity of the Treaty. Only those countries may become a party to the Treaty which have demonstrated an interest by conducting substantial scientific research

there. What about the developing countries of the world, which have no capability for such research efforts? Are their interests to be continually ignored, particularly if and when commercially-recoverable minerals or power fuels are discovered there?

The possible linkages between the Antarctic and UNCLOS III are numerous and complex. Environmentalists may worry about potential polluting of the dense Antarctic waters, rich in nutrients, which flow northward off the Antarctic shelf, and then circulate deep within the Atlantic, Pacific, and Indian oceans, feeding organic life. Fisheries groups may become concerned over the immense resource potential of the Antarctic krill. Seabed mining spokesmen may wonder whether or not an International Seabed Regime's competence would extend to the maritime areas covered by the Antarctic Treaty. And developing countries (particularly if they should become frustrated at a failure of UNCLOS III to devise a Seabeds Treaty acceptable to them) might begin questioning why the potential resources of the Antarctic should not acquire a status as "the common heritage of mankind."

The third problem concerns the possibility of commercially recoverable resources being discovered in the Antarctic or on its continental shelf. In 1973, it was estimated that the western shelf of the Antarctic might have potential resources of 45 billion barrels of oil and 115 trillion cubic feet of natural gas. Although these estimates have never been repeated, there is reason to believe that hydrocarbon resources do in fact exist on parts of the Antarctic shelf, and that on the land-mass itself there are reserves of coal, copper, nickel, and iron. While the technological problems of exploiting these resources may be immense (as is the case with seabed mining), their very existence raises the question, is there need now to begin planning for a special regime, within which exploitation may even-

tually take place? The Antarctic Treaty itself is silent on the issue of commercial exploitation of resources in the area. Perhaps the Treaty will have terminated prior to the start of exploitation. But perhaps, also, the advent of exploitation within the next decade may serve to render the Treaty itself almost meaningless.

In sum, it would appear that the Antarctic Treaty has been an effective regional instrument during the years since its coming into force, in part because of the relatively few activities and interests in the area. Given a continuance of this state of affairs, the Treaty should continue to work effectively for some years to come. But it is poorly equipped to handle some of the diverse economic and political pressures, (a) should commercially-recoverable resources become available in the Antarctic, or (b) should some of the non-signatory states begin serious action in the U.N. to become participants in the management of the Antarctic and in the distribution of the wealth they may anticipate being derived from the exploitation of its resources.

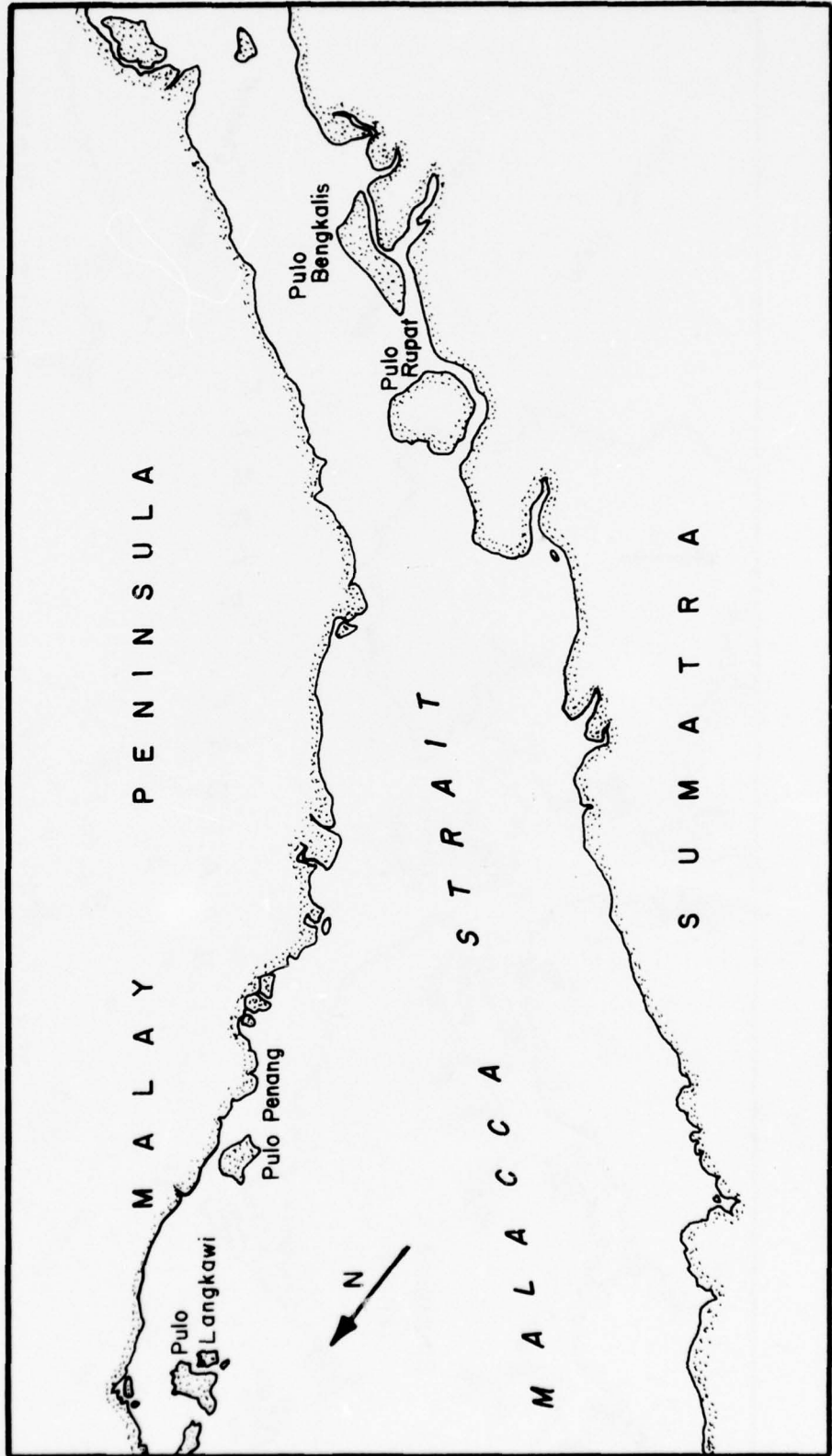
The 1965 European Agreement on Broadcasting. Turning now from the Antarctic to other miscellaneous regional arrangements, we shall consider first the 1965 European Agreement for the Prevention of Broadcasts Transmitted from Stations Outside National Territories.²⁷ Any member of the Council of Europe,²⁸ and any member or associate member of the International Telecommunications Union may accede to the agreement. Present membership includes Denmark, Sweden, Belgium, U.K., and France. Others which have signed with reservations are the Federal Republic of Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, and Norway.

The Agreement came into being as a result of illegal radio stations

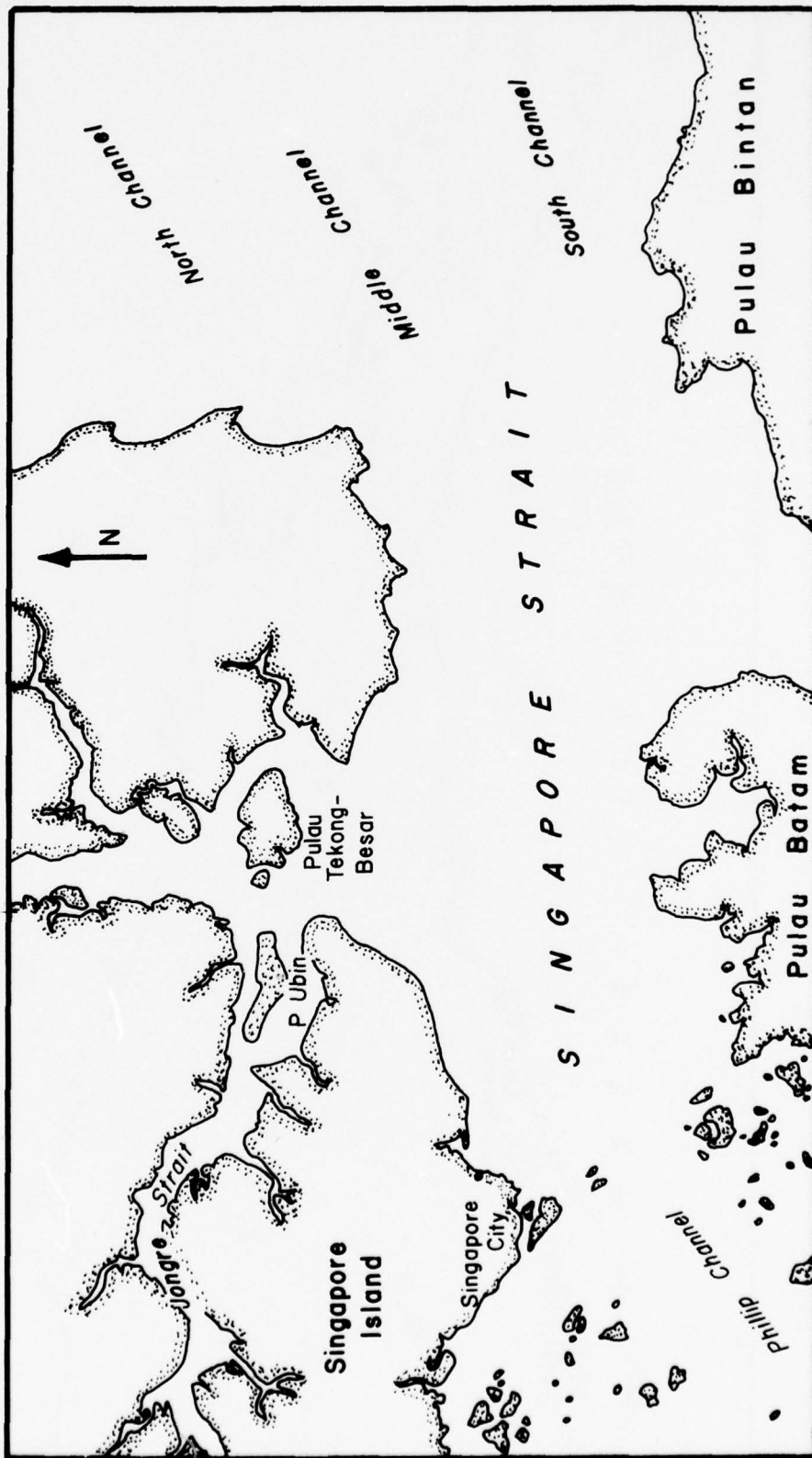
operating in Northwestern Europe in maritime areas beyond the limits of national jurisdiction. It operates under the auspices of the Council of Europe, one of its principal stipulations being that contracting parties may prohibit the establishment and use of broadcasting stations onboard ships, aircraft or any other airborne or floating objects outside national territories. These parties have the authority to apply the Agreement's provisions both to nationals and non-nationals guilty of harmful interference to radio-communication service, whether the offense occurred within or beyond the parties' national territories. A special provision applies the Agreement to broadcasting stations installed or maintained on objects affixed to or supported by the seabed. This Agreement is a good example of countries of a region coming together to resolve a "nuisance" problem of mutual concern, even though the method chosen for the resolution may represent an extension of national competence, of a very limited form, beyond the generally-accepted boundaries of state jurisdiction.

The 1971 Malacca Straits Statement. A somewhat different form of regional action was the 1971 Statement of Indonesia, Malaysia and Singapore on the Malacca Straits.²⁹ In the Statement, the three governments agreed on the need for tripartite cooperation on the safety of navigation in the Straits of Malacca and Singapore, and declared that a body to coordinate efforts for the safety of navigation in the two Straits should be established -- such a body to be composed only of the three coastal states concerned. But the three differed on the issue of whether or not the Straits of Malacca and Singapore are international straits, Indonesia and Malaysia claiming that they are not, while Singapore merely took note of the other two countries' position.

MAP4 THE STRAIT OF MALACCA



MAP 5 SINGAPORE STRAIT



Pulau Bintan

Pulau Batam

North Channel

Middle Channel

South Channel

SINGAPORE STRAIT

N

Johore Strait

Singapore Island

Singapore City

Pulau Tekong-Besar

P Ubin

Phillip Channel

So far as is known, no effective tri-national body has been established for coordinating efforts for safety of navigation in the two Straits. But if it does come into being and commences setting rules and regulations for conditions of passage through the Straits, or if the littoral states of other straits used for international navigation begin taking similar steps, the results could be significant to the maritime states. Article II-40 of the RSNT notes that states bordering straits may make laws and regulations relating to transit passage with respect to safety of navigation and to the prevention of pollution. Among the items noted in the previous RSNT article with respect to safety of navigation are sea lanes and traffic separation schemes. But in time, states bordering a strait used for international navigation may decide, either alone or as a regional group, to expand this area of competence so as to prohibit or limit the transit of ships of a certain type or design, or those without certain navigational or pollution-control equipment, on the grounds of potential damage to the environment of the coastal state.

Regional Arrangements for Land-Locked and Geographically-Disadvantaged States

One of the hotly-debated issues at UNCLOS III has concerned the access rights of "disadvantaged" states to the sea and its resources. There are several facets to the problem. Land-locked states have traditionally sought rights of access to the sea through the territory of one or more of their coastal neighbors. In a few cases such access is possible via navigable rivers -- the Rhine, the Danube, the Paraguay-Parana. But often the question arises as to which one of the coastal nations adjoining a land-locked country should serve as its transit state to the sea. Is it possible that all the coastal states of a "region" share in the responsibility for guar-

MAP 6 LATIN AMERICA: LANDLOCKED & GEOGRAPHICALLY DISADVANTAGED STATES



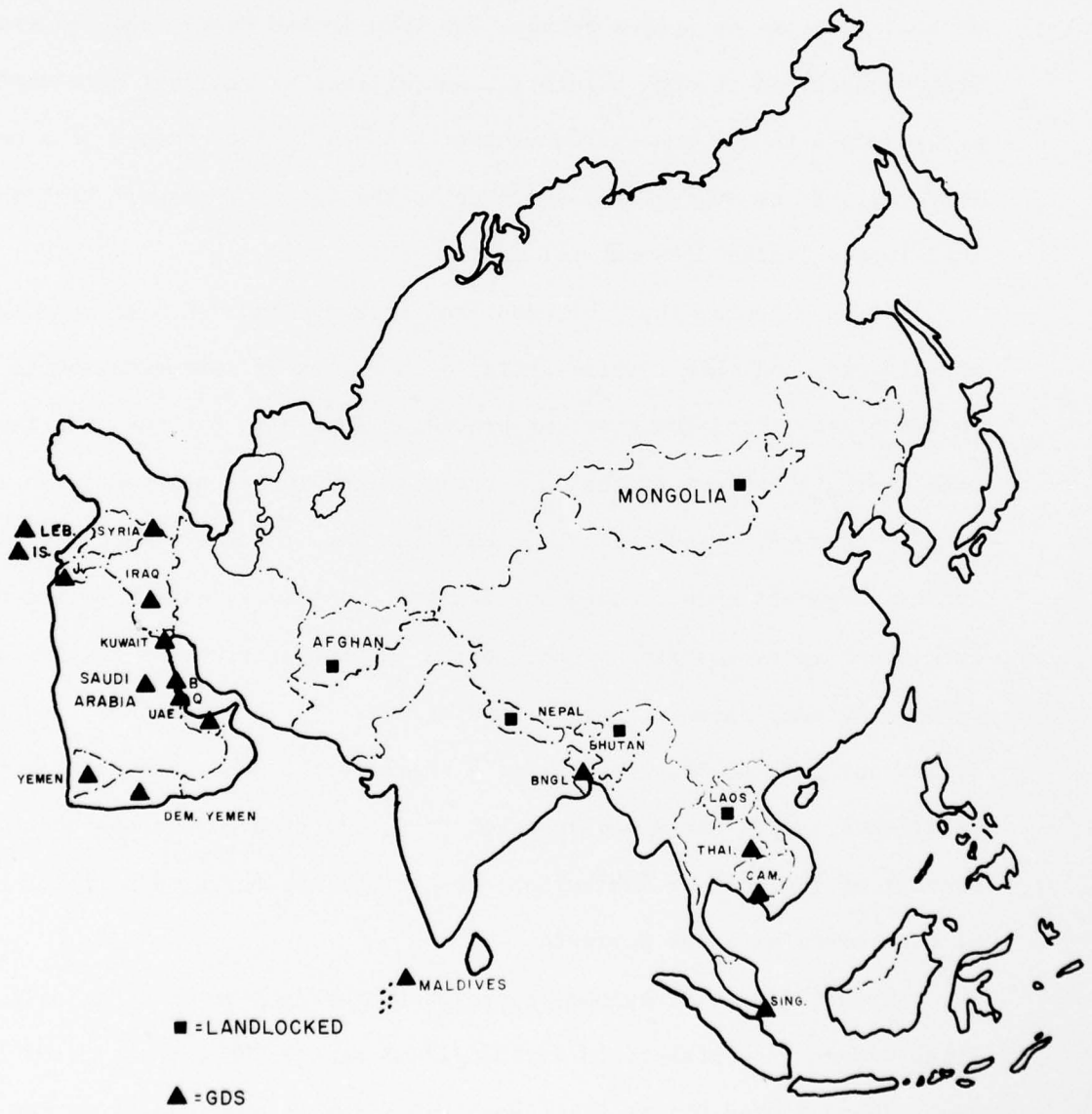
MAP 7 EUROPE: LANDLOCKED & GEOGRAPHICALLY
DISADVANTAGED STATES



MAP8 AFRICA: LANDLOCKED & GEOGRAPHICALLY DISADVANTAGED STATES



MAP 9 ASIA: LANDLOCKED & GEOGRAPHICALLY DISADVANTAGED STATES



anteeing access rights to the sea for a land-locked country of the same "region?"

Access Rights in the RSNT. The only reference in the RSNT to a regional approach to freedom of transit rights of land-locked states is in Article II-110(2), which states, "The terms and conditions for exercising freedom of transit shall be agreed between the land-locked States and the transit States concerned through bilateral, subregional or regional agreement, in accordance with the present Convention." Clearly the concept of a mandatory regional or subregional approach to the issue of transit rights for land-locked states does not yet exist.

Yet an argument could be made that in many cases such an approach is a valid one, and that coastal states of a region or subregion should share in the planning and the costs of providing access to the sea. On the one hand, certain coastal states have several land-locked neighbors who might turn to them for transit rights. Both Tanzania and Zaire have five land-locked neighbors each. Could not Tanzania reasonably expect assistance from other coastal states of the region in providing access to the sea for Uganda, Rwanda, Burundi, Zambia, and Malawi? If the rights of land-locked states not only to transit, but to a share in the management of the transit facilities, represent a new approach to an old problem, so too should the concept of regional or subregional responsibility for access rights also be considered as a new approach.

Support for this regional approach to the problem of land-locked countries' needs is contained in Article II-58 of the RSNT, which reads in part, "Land-locked States shall have the right to participate in the exploitation of the living resources of the exclusive economic zones of adjoining coastal states on an equitable basis, taking into account the rele-

vant economic and geographical circumstances of all the States concerned." Here is a regional concept spelled out, subject only to the proviso that other states of the land-locked country's "region" must be adjacent to it. But presumably all the adjacent coastal states share in the responsibility for providing for the land-locked country's fishery needs.³⁰

A somewhat complex variation of the fisheries rights principle is contained in Article II-59, entitled "Right of certain developing coastal States in a subregion or region." Section I of this Article states, "Developing coastal states which are situated in a subregion or region whose geographical peculiarities make such states particularly dependent for the satisfaction of the nutritional needs of their populations upon the exploitation of the living resources in the exclusive economic zones of their neighboring States, and developing coastal States which can claim no exclusive economic zones of their own, shall have the right to participate, on an equitable basis, in the exploitation of living resources in the exclusive economic zone of other States in a subregion or region."

It is difficult to identify states which might be included in the first category of countries noted in this Article, in part because of the problems of defining "geographically-disadvantaged" states (see below). Possibly some of the West African countries, such as Benin, Cameroon, Equatorial Guinea, and Gambia might fit into this group. Much simpler would be the task of selecting those countries with no exclusive economic zone of their own (assuming, that is, that they confine the breadth of their territorial sea to 12 miles). Among the coastal states with no economic zones whatever are Singapore, Jordan, Iraq, Zaire, and Togo. If Article II-59 survives to become part of a new oceans treaty, some of the countries to which it would theoretically apply may be difficult to identify.

The Geographically-Disadvantaged States. Reference should be made to the concept itself of "geographically-disadvantaged" states. Among the principal criteria for inclusion in such a category are (1) limited coastlines, (2) small continental margins and/or economic zones, (3) a shelf-locked location (i.e., no outer continental margin beyond a 200-meter depth), and (4) inclusion among one of the world's "Least-Developed" countries.³¹ Other criteria might be (a) limited resource potential in the prospective economic zones, (b) isolated locations, (c) producers of minerals which may also come from the mining of seabed minerals, and (d) location so as to be a transit state for one or more land-locked countries.

There have been several recent publications on the geographically-disadvantaged states³² and 50 land-locked and geographically-disadvantaged countries, together with the Byelorussian SSR of the Soviet Union, have joined together at the United Nations to form a Group of Land-Locked and Geographically-Disadvantaged States (see Table 4).³³ Maps 5 through 8 show both the land-locked and some of the geographically-disadvantaged states of four continents. In identifying the 51 geographically-disadvantaged countries, the following criteria were used:

1. coastline limited to less than 200 miles
2. area of continental margin and/or economic zone limited to less than 5,000 square nautical miles
3. shelf-locked location
4. inclusion among the "least developed" states.

There is, of course, nothing authoritative, either in terms of the criteria selected for inclusion, nor of the statistical limits placed on the specific categories. But a perusal of the maps will, among other

things, indicate "clusters" of land-locked and geographically-disadvantaged states within geographic regions.

Whatever the future may bring in terms of "compensatory" arrangements for the land-locked and geographically-disadvantaged states, it must be acknowledged that at this point in time, there are few regional arrangements in existence to help them. In the short-term, at least, their best prospects for assistance may lie with the development of economic or other forms of association involving them and their transit states, as in the case of the European Economic Community (for Luxembourg) or the East African Community (for Uganda).

Table 4. Members of the group of land-locked and geographically-disadvantaged states, 1976.

Afghanistan*	Lesotho*
Algeria	Liechtenstein*
Austria*	Luxembourg*
Bahrain	Malawi*
Belgium	Mali*
Bhutan*	Mongolia*
Bolivia*	Nepal*
Botswana*	Netherlands
Bulgaria	Niger*
Burundi*	Paraguay*
Byelorussian SSR	Poland
Central African Republic*	Qatar
Chad*	Rwanda*
Czechoslovakia*	San Marino*
Ethiopia	Singapore
Finland	Sudan
Gambia	Swaziland*
German Democratic Republic	Sweden
Germany, Federal Republic of	Switzerland*
Greece	Turkey
Hungary*	Uganda*
Iraq	United Arab Emirates
Jamaica	Upper Volta*
Jordan	Zaire*
Kuwait	Zambia*
Laos*	

*Land-locked state.

Integrative Non-Marine Regional Systems

The "centripetal" or unifying elements in any marine regional system are considerably reinforced if all or most of the member states have other forms of international ties binding them together. Such ties may be economic, environmental, ideological, or cultural in nature.

Although the terms used to describe the above categories may be somewhat loose, they nevertheless represent concrete types of situations. Economic ties are represented by the EEC or the East African Community. Environmental ties may be found in the Organization for the Development of the Senegal River, or the Committee for Coordination of Investigations of the Lower Mekong Basin. Ideological ties are evident in the Arab League or the Council for Mutual Economic Assistance (CMEA). Cultural ties may be continental in scope (e.g., OAS, OAU), or more limited in nature (ASEAN).

There are, of course, other types of association. Military groups include NATO, SEATO, and the Warsaw Pact. The Organization of Petroleum Exporting Countries (OPEC) includes countries from various parts of the world. The point here is to emphasize those forms of regional and sub-regional arrangements which might have some lasting effects on the integrative process affecting the countries involved.

It is not the intention here to go into detail on each of the multinational organizations extant today. Some exist in name only. Others have only very limited impacts on the countries of which they are a part. Our concern here is with the "spill-over" effects of such organizations, so far as marine activities are concerned. To this end, only a relatively few institutions will be considered.

On the global scale, a principal group of regional bodies are the Regional Economic Commissions of ECOSOC, which as noted earlier are five in

number -- ECE, ESCAP, ECLA, ECA, and ECWA. Together with their subsidiary bodies these groups could constitute an important force in marine regional development, if they elect to take a leadership role, in cooperation with UNDP, FAO, IOC, UNESCO, and other organizations. The United States is a member of three of the commissions -- ESCAP, ECE, and ECLA.

OAS and OAU. At the continental level are the Organization of American States (OAS) and the Organization of African Unity (OAU). Both have played important roles in regional policy formulation with respect to the law of the sea.

OAS has a primary function of strengthening the peace and security of the continent, preventing possible causes of conflict, and working toward the peaceful settlement of disputes. In addition, it provides advisory services and training in a series of fields such as public finance and development administration. In 1972, 15 OAS states attended a specialized Conference on Problems of the Sea in the Dominican Republic, at which a majority of the participants approved the Declaration of Santo Domingo, laying down what became the general Latin American position on law of the sea matters.

OAU is a larger organization (47 members, compared to 25 for OAS), and its area of competence extends to islands and island groups of the Western Indian Ocean. It is also largely a legal/political body, designed to promote unity and development, to defend the sovereignty and territorial integrity of members, to promote international cooperation, and to coordinate members' economic and other policies. In 1973, law of the sea experts met under OAU auspices and issued the Addis Ababa Declaration, outlining a unified African approach to law of the sea issues. Subsequent

meetings of experts at Mogadishu, Kampala, and other cities have led to certain modifications of the 1973 text. The 1974 Kampala Declaration is particularly noteworthy, because it recognizes the right of free access for land-locked and other geographically-disadvantaged states "to and from the area of the sea-bed, in order to enable them to participate in the exploration and exploitation of the area and its resources and to derive benefits there from."

EEC. At the next organizational level are a number of economic and ideological groups. One of these is the EEC, growing out of the 1957 Treaty of Rome, which now has nine members -- Belgium, Denmark, the Federal Republic of Germany, France, Ireland, Italy, Luxembourg, Netherlands, and U.K. The EEC is a customs union within which goods move freely from country to country, while uniform tariffs are applied to goods entering the EEC from outside countries. There have been historic bonds (as well as historic divisions) among the member countries of Western Europe for a considerable time, and over the past few years economic, cultural, and other ties seem to have become even stronger.

The EEC has established a common fishery policy, including a common organization of the market in fisheries products, and a common policy toward jurisdictional claims. Early in 1977, the EEC states, acting as a unit, adopted a 200-mile economic zone. The EEC, as a single unit, signed both the 1974 Paris Convention for the Prevention of Marine Pollution from Land-Based Sources and the 1976 Barcelona Convention for the Protection of the Mediterranean Sea against Pollution.

CMEA. In Eastern Europe is the CMEA, which has as its European members Bulgaria, Czechoslovakia, German Democratic Republic (GDR), Hungary, Poland,

Romania, and the USSR. In addition, Mongolia and Cuba are CMEA members. Albania was a member, but has not participated since 1961; Yugoslavia has in recent years participated only with respect to matters of mutual interest.

CMEA is a much looser economic organization than is EEC, although on ideological and policy grounds it is probably stronger. It has no common fishery policy, per se, but a number of its members, such as the USSR, Poland, German Democratic Republic, and Cuba, have in recent years greatly increased their fleets' fishing capacities. With the organizational framework available to CMEA for joint planning and program implementation in many fields, there would seem to be little doubt that the system could easily undertake whatever united action it felt was necessary with regard to ocean affairs.

EAC. Another regional economic organization is the East African Community (EAC), formed in 1967 to include Kenya, Tanzania, and Uganda. The system has a complicated institutional structure including an East African Authority, a Legislative Assembly, a Tribunal, a Court of Appeals, and a Corporation, which exercises authority over the East African railways, airways, harbors, and post and telecommunications.

The EAC has been successful in reducing tariffs and other barriers on trade among the member states, and in providing land-locked Uganda with access to the sea and with the use of port facilities at Mombasa. But it would be a mistake to attempt to equate EAC's success at integration with that of the EEC. For one thing, the infrastructures of the East African countries are not nearly so well developed as are those in Europe. For another, there are considerable differences among the member states. Tanzania and Uganda are among the world's poorest states in terms of per cap-

ita GNP, while the policies of Uganda's General Amin are not always consistent with a program of slow and careful planning for closer integration. As a result, EAC may, for the time being at least, develop very slowly.

Other Regional Groups. There are a number of limited-type regional economic groups. One is the European Free Trade Association, established in 1960 for the objectives of achieving free trade in industrial goods among member countries, and contributing to the expansion of world trade in general. It was originally intended as something of a counter-balance to EEC, but in 1972, the U.K. and Denmark left EFTA to join EEC. The other EFTA members -- Austria, Iceland, Norway, Portugal, Sweden, and Switzerland (with Finland as an associate member) -- have established free trade arrangements for industrial goods moving between the member states, as well as between the EFTA and EEC members.

In Latin America is LAFTA, the Latin American Free Trade Association, which is working toward free trade among its 10 member states; the Central American Common Market (ODECA), which includes five Central American states, but excludes Panama; and the Andean Group, embracing Bolivia, Chile, Colombia, Ecuador, and Peru. But in none of these Latin American organizations has economic integration proceeded to the point it has reached in EEC.

The League of Arab States is another regional organization of considerable standing. Founded in 1945, it now has 18 members -- Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Republic, Morocco, Oman, Peoples Democratic Republic of Yemen, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen.³⁴ Like some of the other

regional bodies, the League has a largely political role, its principal purpose being to insure closer relations between members and to coordinate their political activities. There is an Economic Council, and an Arab Development Bank, as well as a Joint Defense Council. One expectation is that the League may before long work toward environmental control programs in both the Red Sea and the Persian (Arabian) Gulf.

The countries of West and Central Africa have been involved in a number of regional economic arrangements. In 1959, several West African states formed the West African Economic Community (CEAO), designed to coordinate transportation and other economic activities, and lead eventually to a Customs Union. Included in CEAO were three West African land-locked states -- Mali, Niger, and Upper Volta. Three years later, a West African Monetary Union was formed with pretty much the same membership as in CEAO.³⁵

A final version of the Treaty formally instituting the West African Economic Community came into force on January 1, 1974. Eighteen months later delegates from the seven CEAO countries, plus those from eight other West African states, signed a new Treaty establishing the Economic Community of West African States (ECOWAS). One important aspect of the new organization is that it contains Nigeria, and all of the other West African states. ECOWAS is also an economic organization, destined for Customs Union status. If it is successful, it should go far toward settling the transit problems of West African's land-locked states.

In Central Africa a Customs and Economic Union (UDEAC) was set up in 1964, consisting of Cameroon, Central African Empire (formerly Central African Republic), Chad, Congo, and Gabon. The adherence of Chad, Central African Empire, Congo, and Zaire to this organization should have facili-

tated the search by land-locked Chad and Central African Empire for access rights to the sea. In 1968, four members of UDEAC -- Central African Empire, Chad, Congo, and Zaire formed a new unit, the Union of Central African States (UEAC), but later the Central African Empire withdrew to rejoin UDEAC. In point of fact, there is at this time little activity going on with respect either to UEAC or UDEAC.

There are, of course, many other regional bodies in existence which could potentially serve as integrative elements. ASEAN in Southeast Asia was noted earlier. The Common Organization of African and Malagasy States (OCAM) is an economic arrangement linking France with 12 of its former African territories. The Mano River Union was set up in 1973 by Sierra Leone and Liberia as a new subregional economic grouping. OECD, the Organization for Economic Co-operation and Development is an effective 23-member body (consisting largely of developed countries), which works for economic growth and employment in its member countries. The South Pacific Commission (SPC) includes several Pacific islands and island groups, together with Australia, New Zealand, France, U.K. and U.S. It is a consultative and advisory body which among other things has become involved in reef fisheries and the exploitation of skipjack tuna.

A more recent Southwestern Pacific organization is the South Pacific Bureau for Economic Cooperation (SPEC) with headquarters in Suva, Fiji. It includes more of the smaller islands than does SPC, and eliminates the non-regional members.³⁶ It is particularly concerned with fishing and other aspects of maritime development, and could in time become an important regional body for a five-million square mile area.

Integrative organizations between and among states are difficult to maintain and strengthen because of the domestic interests in each of the

member countries which may encounter financial or other types of hardship as a result of international action. Strong economic unions are seldom formed; political unions of two or more states are even less frequent, except through military action. But even limited forms of associations among states, such as joint river development projects, may help to pave the way for regional cooperation in ocean-related matters as well.

Footnotes

¹The IPFC, which covers the "Indo-Pacific" area, has no eastern border, but FAO maps show it as ending at or near the meridian of 160°W. Long. East of here, there is, off the northwest coast of North America, the INPPFC covering waters of the North Pacific; and off the coasts of Ecuador, Peru, and Chile, out to 200 miles offshore, the tri-nation PCSP. There is also the IATTC, whose area of coverage overlaps, to some extent, that of the PCSP. But other than these, the waters of the eastern Pacific are not covered by agreements.

²Data from Annotated Directory of Intergovernmental Organizations Concerned with Ocean Affairs, U.N. Doc. A/Conf.62/L14, 10 August 1976.

³As noted earlier, these bilateral fisheries arrangements are considered under the heading of "regional" systems because of the extensive ocean areas covered by their provisions, and the number of other countries whose interests are concerned with the arrangement in question. The bilateral fisheries systems include IPHC, IPFSC, JCFC, JKFC, JSFC, SCNEA, and SCNWA. (See the listing of acronyms.)

⁴Trilateral arrangements include CARPAS, INPFC, MCBSE, PCSP, and SCSK.

⁵Report on FAO, the FAO Committee on Fisheries and International and Regional Fishery Bodies, FID/C/331 (Rome: Food and Agriculture Organization, 1975), p. 35.

⁶Koers, op. cit., pp. 87-90.

⁷Data from F.E. Popper, "The role of FAO and the regional organizations after the conclusion of the Third United Nations Conference on the Law of the Sea." Address presented at the Tenth Annual Conference of the Law of the Sea Institute, Kingston, Rhode Island, June 1976. Scheduled for publication in Miles and Gamble, eds., Proceedings of the Tenth Annual Law of the Sea Conference (Cambridge, Mass.: Ballinger Publishing Company, May 1977).

⁸See, for example, "Agreement between the Governments of Iceland, Norway and the Soviet Union on the Regulation of the Fishing of Atlanto-Scandian Herring, done at Moscow, February 25, 1972." For the text, see R. Churchill and M. Nordquist, New Directions in the Law of the Sea, vol. I (Dobbs Ferry, New York: Oceana Publications, 1975), pp. 449-451.

⁹"Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland, the Government of the Kingdom of Norway and the Government of the Union of Soviet Socialist Republics on the Regulation of the Fishing of North-East Arctic (Arcto-Norwegian) Cod, London, March 15, 1974." See Churchill and Nordquist, ibid., vol. IV, pp. 175-179.

¹⁰Annotated Directory of Intergovernmental Organizations Concerned with Oceans Affairs, op. cit., p. 31.

¹¹In July 1976, IOC held an IDOE workshop to initiate planning for CINCWIO.

¹²One of the other early regional marine science projects was IIOE, the International Indian Ocean Expedition, a multi-national, multi-ship, multi-disciplinary coordinated study which was begun in 1959 and lasted for six years. Among the results of the program was the establishment of an Indian Ocean Biological Center at Cochin, an International Meteorological Center at Bombay, and a wide variety of publications. Although originally conceived by SCOR (Scientific Committee on Ocean Research) of the International Council of Scientific Unions (ICSU), responsibility for coordinating IIOE passed to IOC in 1962.

¹³Annotated Directory of Intergovernmental Organizations, op. cit., p. 32.

¹⁴But if NEAFC should disappear, or its responsibilities be drastically curtailed, as a result of a withdrawal of the EEC countries from the fisheries organization, ICES itself might lose one of its major functions.

¹⁵In 1972, a regional meeting was convened in Qatar to discuss a proposal for a cooperative fishery survey and development project in the Persian (Arabian) Gulf. Out of this came a Committee for the Development and Management of the Fishery Resources of the Gulf and the Sea of Oman, whose Regional Fishery Survey and Development Program -- begun in 1975 and funded by UNDP for an initial three-year period -- includes Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates. Only Oman, of the Gulf states, is not included.

¹⁶For the text, see American Journal of International Law, vol. 57 (1963), pp. 1026-1028.

¹⁷U.N. General Assembly Resolution 2260(XXV), 7 December 1970. The text appears in Shigeru Oda, The International Law of the Ocean Development: Basic Documents (Leiden: A.W. Sijthof, 1972), p. 439.

¹⁸In recent months the Soviets have again raised the issue of the Indian Ocean as a "Zone of Peace," claiming (despite U.S. assertions that the Soviets use Berbera, Somalia, as a naval base) that they have no military facilities in the Indian Ocean Basin, while the United States, by contrast, is planning to construct a naval base at Diego Garcia in the Chagos Archipelago.

¹⁹For the text of the Treaty, see International Legal Materials, vol. 6 (1967), p. 521.

²⁰The designation of certain maritime areas as "zones of peace" could in time become a highly politicized issue. There is, for example, no accepted definition of what activities are actually prohibited within such a zone, nor are there provisions for inspection or enforcement procedures.

²¹William Butler, The Soviet Union and the Law of the Sea, op. cit., p. 127.

²²The original parties were Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, U.K., U.S., U.S.S.R. Later accessions include Czechoslovakia, Denmark, German Democratic Republic, Netherlands, Poland, and Romania. Other states of the U.N. may ratify the Treaty, but the original 12 contracting parties hold the right to grant acceptance into active participation in the system. For the text of the Antarctic Treaty, see United States Treaties, vol. 12, p. 794.

²³Article XI notes that if a dispute between two or more of the contracting parties concerning the interpretation or application of the Treaty cannot be resolved by "negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, or other practical means" it shall, with the consent of all parties to the dispute, be referred to the International Court of Justice for settlement.

²⁴Seven states had pre-treaty claims: Argentina, Australia, Chile, France, New Zealand, Norway, and U.K. (see Map 3). Article IV of the Treaty states that nothing in the Treaty will be interpreted as a renunciation of an asserted claim, as a diminution of a claim, nor as prejudicing the view of any party as to the legal status of sovereign claims. In addition, while the Treaty is in force, no activities taking place in the Antarctic will constitute a basis for asserting, supporting or denying an existing claim.

²⁵In the vicinity of 60°S. Lat., there are areas where a 200-mile economic zone, based on nearby islands, would extend into the Antarctic Treaty operational area, thereby affecting some of the high seas freedoms in this marginal area. See Map 2.

²⁶Julia Rose, "Antarctic Condominium: Building a New Legal Order for Commercial Interests," Marine Technology Society Journal, vol. 10 (1976), pp.19-28.

²⁷For the text, see United Nations Treaty Series, vol. 634, p. 239.

²⁸An organization, started in 1949, for the purpose of bringing the countries of Europe closer together, and facilitating their economic and social progress. There is an intergovernmental Committee of Ministers, a Consultative Assembly, and a Secretariat. The membership includes 16 West European states as well as Turkey.

²⁹For the text of the Statement, see Churchill and Nordquist, New Directions in the Law of the Sea (Dobbs Ferry, New York: Oceana Publishing Company), vol. IV, p. 330.

³⁰The actual implementation of this article may depend, first, on whether a comprehensive and binding oceans treaty emerges from UNCLOS III; and second, even in the event of a treaty, whether or not the affected transit states will sign and ratify it.

³¹In Resolution 3487(XXX) approved 12 December 1976, the U.N. General Assembly decided to include Bangladesh, the Central African Empire, Democratic Yemen, and Gambia to the list of hard-core least-developed countries. Already on the list of countries designated as the least-developed among developing countries were Botswana, Burundi, Chad, Benin (Dahomey), Ethiopia, Guinea, Lesotho, Mali, Malawi, Niger, Rwanda, Somalia, Sudan, Uganda,

United Republic of Tanzania, Upper Volta, Afghanistan, Bhutan, Laos, Maldives, Nepal, Western Samoa, Yemen, and Haiti. Sikkim, also one of the "least developed" was recently incorporated into India.

³²See, for example, Franck, Baredi and Aron, "The New Poor: Land-Locked, Shelf-Locked, and Other Geographically Disadvantaged States," New York University Journal of International Law and Politics, vol. 7 (Spring 1974), pp. 33-57. See also, Alexander and Hodgson, "The Role of Geographically-Disadvantaged States in the Law of the Sea," op. cit.

³³All of the land-locked states are included in the group, except Andorra and Vatican City, neither of which are members of the U.N. But it should be noted that Liechtenstein and San Marino, also non-members of the U.N., are in the group. Among the prominent "geographically-disadvantaged" states who are U.N. members but not in this group, are Albania, Barbados, Benin, Congo, Kuwait, Malta, Mauritius, Monaco, and Syria.

³⁴It should be noted that the six members of the League of Arab States which are located in Africa are also members of the OAU.

³⁵Togo, an observer with CEAQ, was a member of the Monetary Union. Mali, a regular member of CEAQ, was not in the Union.

³⁶Included in SPEC are Fiji, Western Samoa, Tonga, British Solomons, Niue, Nauru, Cook Islands, Gilbert Islands, and Tuvalu, with Australia and New Zealand as supporting members.

CHAPTER 4

TRENDS IN MARINE REGIONALISM

While it is difficult to predict, even in the most general terms, the directions marine regionalism will take either in terms of the short- or the long-term future, some general statements can be made as to what seems likely to occur. The most obvious point is that the creation of strong marine regional systems will generally take a considerable time to evolve. Coastal states will first go through a period of nationalism as they adjust to their acquisition of exclusive economic zones. These states must concern themselves with the not-inconsiderable management problems associated with their new acquisitions, including such issues as the exploration and exploitation of the living and non-living resources of the zone, environmental protection, national security matters, maritime boundary delimitations with neighboring countries, and (for some) problems relating to access rights of nearby land-locked and geographically-disadvantaged states.

The pace of regional development will, of course, be uneven. The countries of the EEC, having already established strong economic ties with one another, have moved ahead with respect to common fisheries policies. Pollution control arrangements can be expected to remain, and probably strengthen, in the seas of Northwestern Europe, as well as the Mediterranean and Black seas. In the Red Sea and the Persian (Arabian) Gulf, the littoral states will likely increase their coordinated efforts in the fields of data collection and analysis, and of environmental protection. Multi-national resource development programs, such as CCOP and the Indian Ocean Fishery Survey, will continue, particularly if they go on receiving out-

side support; and perhaps before long, some of the regional efforts by TEMA will begin to have tangible results.

On the other hand, a number of existing marine regional arrangements are likely to decline in form and function through the advent of the economic zone. This has already been seen in the cases of ICNAF and NEAFC.¹ In some instances, regional fisheries organizations will continue their activities in terms of data collection and analysis, but most regulatory functions will remain for some time to come within the purview of the coastal states. Eventually certain forms of binding bilateral management arrangements may develop; from bilateralism, regional management systems can then gradually evolve.

It is not inconceivable that one result of the new ocean nationalism may be that agreements and treaties will on many occasions be signed but never ratified. Two examples may serve to point up this issue. In some developing countries, in their desperate struggle for economic growth, it is possible that their national leaders will sign agreements for various types of international cooperation, including those associated with the oceans. The establishment of regional ports, regional training and education facilities, regional oceanographic centers -- these and similar issues -- could, at a meeting of heads of state or of top-level scientists or other professionals, appear to be very worthwhile. But such agreements could, over time (a) not be ratified by most or all of the signatory states; (b) apply only to peripheral activities; or (c) come into force but never be effectively implemented.

And among developed countries, regional agreements may be signed but not become effective. Developed states generally have a more complex domestic interest structure than do developing ones, and with the coming of

the 200-mile zone the domestic interest problems may be magnified. Even without the new jurisdiction implementations may be difficult. Already it is clear, for example, that the 1973 Convention for the Prevention of Pollution from Ships has failed of ratification in the United States, largely because of the opposition of certain domestic interests.²

It has been suggested earlier in this report that the future will bring new forms of marine regional arrangements, and new impacts from these arrangements on the marine environment. Considerations of the future must, of course, be made in terms both of the short-term and the long-term. As a generalization, it might be stated that in the short-term perspective developmental regional arrangements are likely to decline rather than expand both in their functions and their impacts. Most of the developed states (which would be expected to play leadership roles in regional scientific, environmental, and education and training activities) face economic, social and other problems which will undoubtedly take priority over general marine developmental programs, at least during the next decade. The developing states of the world are increasingly concerned with the New International Economic Order, and with their own internal growth. Such regional marine activities as they engage in will likely be restrictive in nature rather than developmental. The United Nations itself is becoming politicized in its operations to the extent that much of the positive work of ECOSOC and the Specialized Agencies is becoming neutralized by dissent over extraneous issues. Even the Antarctic Treaty may be weakened if (a) non-party states seek roles in the management process, and/or (b) recoverable resources in the area begin to be exploited.

If such eventualities occur, one might ask what would the reactions be of the two super-powers, the United States and the Soviet Union? The

following might be among the responses. (1) If both countries are interested in maximizing freedom of operations in the world ocean (while at the same time protecting certain domestic interests such as coastal fisheries) they would likely participate in those regional arrangements which they perceive as enhancing these freedoms. (2) If both countries have a general goal of preserving, and where possible improving, the quality of the marine environment, they could be expected to give at least minimal support to regional environmental arrangements. (3) If the Soviets continue to expand their world-wide fishing activities, they will probably participate actively in an increasing number of regional fisheries units -- a course of action the United States would not be expected to follow since our fishing interests are more localized. (4) If present military trends continue, both the United States and the Soviet Union will become more involved in "zones of peace" debates, the Soviets arguing that they have no foreign military bases in a particular maritime area, while the United States is forced to be more overt in its military activities.

In sum, given the relative lack of support by most countries of the world for developmental-type regional regimes, and the increasingly-politicized United Nations system, it would seem that such regional systems face an uncertain future in the near-term. If the systems themselves are not viable their impacts will not be particularly strong. Fisheries, environmental, scientific and other regional arrangements will not disappear; most will continue, and some new ones may develop, but their regulatory powers will be minimal.

And what of the long-term prospects? The answer depends on the types of relationships neighboring states have with one another in the closing years of the Twentieth Century. It is possible that the current nationalism will

continue and that viable economic and/or political organizations on the multi-national scale will still be limited to only a few areas, such as Western Europe or the United Arab Emirates. If regional interactions improve in areas such as West Africa, the Persian (Arabian) Gulf area, Southeast Asia, the mid-Pacific island region, and the Caribbean, marine regional arrangements may be quite successful. Two points need emphasis. First, most countries, whether coastal or land-locked, will not enter into "binding" marine regional arrangements unless they can perceive obvious benefits from such participation ("binding" in the sense of participation through tangible investments of capital, jurisdiction, restrictive legislation, etc., in the regional system). The second point is that regional marine relationships generally follow, and are supported by, other types of interstate ties -- such as customs or economic unions. But if two neighboring countries have serious differences, it is unrealistic to expect them to become participants in any regulatory type of regional management program.

It is possible that by the last decade of the Twentieth Century a number of fairly strong regional systems may exist throughout the world on the economic, more so than the political, level. Such systems will unite small countries with one another and/or with a larger neighboring state. Among the potential "regional" leaders might be Nigeria, Brazil, Indonesia, Saudi Arabia, Zambia, Kenya, and Vietnam. Such regional "blocs" will be economic and perhaps political/ideological in nature. The ties which unite the countries in these blocs might well extend to marine relationships as well. The result could be a series of regional "limited-access" systems with respect to fisheries, scientific research, and military activities. So far as pollution abatement and control is concerned, the impetus for action would probably come from the UN system, but again the approach might be largely regional in nature.

Regionalism and UNCLOS III

Perhaps the treatment of the regional concept in the RSNT might be taken as something of an indication of what could be expected in the future concerning marine regionalism, with or without a comprehensive and binding oceans treaty emerging from UNCLOS III. The Chairmen of Committees I, II, and III were well aware of the potentialities of the regionalist trend and some two dozen of the articles in the RSNT contain references to marine regionalism in one form or another. Specifically, the regional concept is used with respect to (1) the management and conservation of living resources; (2) the protection and preservation of the marine environment; (3) marine scientific research; (4) the development and transfer of marine technology; (5) land-locked and geographically-disadvantaged states; and (6) the International Seabed Authority.

Under these topical headings references are made throughout the Text to "regional" and/or "subregional" organizations, agreements, programmes, standards, and levels of cooperation and the harmonization of policies. There are, for example, allusions to "relevant subregional, regional and global organizations," to "bilateral, subregional and regional agreements," and to "recommended subregional, regional or global standards." There are also references to "geographic regions and subregions," and to "regional centres," without further definition of how the terms are being used.³

In most instances, the imprecisions of terminology would not seem to cause practical difficulties. The RSNT is calling upon countries to move beyond the unilateral and bilateral levels in attacking ocean management problems. It might perhaps be true here, as in certain other aspects of the Text, that the chances for a successful oceans treaty adoption and implementation would be enhanced by the vagueness of regional terminology.

It is largely with respect to articles which imply certain specific commitments on the part of coastal states of a "region," as in the case of Article II-59,⁴ that the inexactness of the terminology could become troublesome.

In sum, it would appear that whether or not a new oceans treaty emerges or does not emerge from UNCLOS III is an issue which would have little direct consequences upon the future of marine regionalism.⁵ But there might be a number of indirect consequences. For one, as noted earlier, regional ocean policy blocs may strengthen their cohesiveness in anticipation of future negotiations. The major maritime powers may be faced with solid African blocs, Arab blocs, Latin American blocs, and Southeast Asian blocs, each demanding attention to its own regional needs and aspirations. Superimposed on this will be the demands of certain interest groups, such as the land-locked and geographically-disadvantaged, the archipelago states, and the straits states. With the passage of time, their seriousness of purpose could well increase.

The general uncertainties of a post-UNCLOS III regime could engender a feeling of frustration on the part of at least some developing states. They may be excluded from sharing in the wealth of the "common heritage" seabed minerals and in any management role in their exploitation. The resulting frustration might cause developing states to refuse to cooperate with the major maritime powers in any regional ocean activities.

Some Future Contingencies

Earlier in this report it was suggested that regions are basically intellectual concepts, a statement which implies there can be great flexibility in the nature and geographical extent of regions and subregions.

From the physical point of view, the Mediterranean Sea is a "region"; from the socio-economic standpoint it is considerably less of a one because of the great differences which exist, politically, economically, and socially, between the countries along its northern and southern shores. In time these differences may, of course, become lessened, and a greater sense of "regionality" can develop.

The regional approach to problem-solving in the ocean has, by its very nature, certain unique characteristics, in terms both of opportunities and of needs. These have been covered fairly extensively in this report. Countries tend to utilize the regional approach only when other approaches fail. It is generally less cumbersome to rely on bilateral arrangements than regional ones, and it is more spectacular to look for global resolutions to marine problems. Even within the regional framework there are geographical hierarchies, ranging from three or four countries to continental units. In this context it should be noted that the term "sub-regional" generally refers to a small regional unit, rather than to an administrative subdivision of a larger regional system.

Three points are important about the regional approach. A first is that it is suitable to only certain types of problem-solving. Many issues, either because of their geographic scope or of the complexities involved in their resolution, can be better handled at some other organizational level. Associated with this is a second point, namely that for many ocean-related issues the geographic extent of the problem may not be regional in nature. It may involve a number of discontinuous areas, or it may be semi-global in nature and therefore concern a series of regional units. A final point is that regions are not merely an agglomeration of neighboring states.

There must be some sense of unity among them, be it physical, cultural, or socioeconomic in nature. Failure to recognize this may lead to attempts at unworkable "regional" solutions to marine problems.

What do these points suggest in terms of future marine regional actions? For one thing, they imply that there are certain limits to the variety both of the institutional arrangements and of the geographic areas that in the future can be successfully utilized in a regional handling of ocean-related issues. This could lead to certain predictabilities on the part of ocean administrators as to what to expect in the way of regional actions.

A second result might be that the whole "anatomy" of the regional approach to marine issues would be quantifiable. Since the approach is finite in its nature and extent, it is capable of systematic assessment both in terms of current forms and of anticipated changes. This matter is referred to in Chapter 6. Finally, it is possible that the term "region" has itself become something of a misnomer and should be defined more explicitly. Among the terms which might be adopted with reference to regional characteristics are: (1) "contiguous," referring to no more than four touching states; (2) "subcontinental" as in the case of West Africa; (3) "continental"; (4) "thelassic," with reference to countries bordering on or located within a semi-enclosed sea; and (5) "insulatory" as in the case of island groups in the Pacific. Other terms may prove to be more satisfactory. The point here is that a more descriptive lexicography is needed for regional designators.

One of the imponderables associated with the regional concept is the existence of what might be termed "perceived" regions. How do national leaders perceive the region of which they are a part? Does this perception change over time? While such questions are germane to the general socio-political life of states, they would also apply to contiguous marine areas as well.

One of the more rewarding areas for future regional research might be in connection with the question, how do islands and island groups (particularly those well away from the continental mainlands) perceive the marine regions of which they are a part? While the land areas involved are small, the extent of their combined economic zones may be enormous. If they possess the means for implementing regulations against certain activities by outside countries, the impacts of an island grouping's decisions on ocean use can be considerable.

Listed below are a series of potential consequences of marine regional trends over the coming decade or so. The list is by no means exhaustive, nor are the individual items considered in detail. Should this report have been completed either a year ago or a year from now, certain aspects of the listing would undoubtedly be different.

1. Regional arrangements for granting access to the sea and its resources to land-locked and geographically-disadvantaged states will progress extremely slowly, if at all. Bilateral agreements are possible, but multi-state regional systems (except in the instance of long-standing arrangements in Europe) which impose binding obligations on coastal states will be long in evolving.

2. There will be a gradual development of regional centers for such activities as data compilation and assessment, education and training, and scientific research. The growth of such centers will be supported by the UN system; countries which do not have one or more marine centers located within their borders will receive some forms of compensation (again, possibly from the UN) in order to win their cooperation in the regional activities.

3. There may be a trend toward expanded claims to competence on the part of regional systems based on the existence of "special circumstances." Coastal states of a regional group could, for example, seek to expand their areas of competence within their combined economic zones. As an illustration, the littoral states of the Black Sea might endeavor jointly to prevent the presence in that area of certain types of "potential pollutant" vessels of non-littoral states, on the grounds of the unique ecology of the Black Sea, and of the special environmental problems which might ensue in the case of an accident involving such vessels.

The states of a region might attempt, again on the basis of "special circumstance" situations, to expand the geographic limits of their areas of competence beyond 200 miles from shore. Such could be the case, for example, off Southeast Asia or the eastern coast of South America, where the continental shelf extends more than 200 miles from the coast, and where regional control over commercial fisheries may also be asserted to distances greater than 200 miles offshore. Such could also be the case where the discharge of oil, even beyond the 200-mile limit, might potentially affect

the economic zone waters of coastal states, because of the movement of ocean currents.

4. There may also be a trend toward "comprehensive use" arrangements, particularly in certain semi-enclosed seas. Such arrangements could relate to a variety of activities (e.g., fishing, military use, scientific research) and could be both restrictive and developmental in nature. Among the potential candidates for such types of comprehensive use regimes might be the Sea of Okhotsk, the Red Sea, and the Persian (Arabian) Gulf.

5. Another form of regime which may be invoked is that of "zones of peace" for certain maritime areas. It is obvious that there could be a variety of motives behind the countries seeking such a regime; also the chances of such a regime being effectively implemented may be remote. But as a rallying cry, particularly among certain non-maritime states, such a proposal could have considerable effectiveness.

6. Because of the potential for relatively rapid ideological shifts in the governments of some of the recently-independent states, particularly of Africa and Asia, it is possible that the life span for some marine regional arrangements may be somewhat limited. For example, a shift in the leanings of a relatively "new" country from anti-Soviet (or Chinese) to a policy favoring one of these countries may have the effect of disturbing the country's relations with neighboring states with different ideological leanings. While it is impossible to be specific about such eventualities for particular areas, political problems such as these have had, and can continue to exert, an influence on multi-national arrangements.

7. As has been noted repeatedly in this report, the opportunities for the creation of restrictive maritime regimes have been diminished by the adoption of exclusive economic regimes. Certain countries, in particular,

may be denied access to large areas. Among the likely candidates for exclusion from regional waters or regional programs are Israel and South Africa; other states may in time join the list of "undesirables." Shutting a country's vessels out of the economic zones of most of the world's coastal states can represent a potent political action, even if most of the states involved lack the capacity to enforce the restrictions.⁶ Similarly, denial to that country of the right to participate in marine regional programs, even with respect to the waters adjoining its coast, can also represent a severe cost.

Footnotes

¹See Edward Miles, "An Assessment of the Impact of Proposed Changes in the Law of the Sea on Regional Fishery Commissions, on FAO Technical Assistance Programmes in Fisheries and on the FAO Committee on Fisheries and Department of Fisheries," unpublished manuscript (Seattle, Washington: University of Washington, Institute for Marine Studies, December 1975).

²One provision of the Convention is that new oil tankers of over 70,000 dwt for which the building contract is placed after 31 December 1975, must be fitted with segregated ballast tanks -- an issue some U.S. interests oppose.

Among the other provisions of the Convention is the designation of certain maritime regions as special areas in which oil discharge is completely prohibited except by very small ships. These areas include the Mediterranean, Black, Baltic, and Red seas, the Persian (Arabian) Gulf, and the Gulf of Oman.

³A review of the RSNT reveals the use of the following terms, and the specific articles in which they appear:

Regional (or Region): I-30; II-53; III-18,87,88

Regional and/or Subregional: II-51,52,59,106

Regional and/or Global: III-7,17,18,19,22

Regional and/or International: III-10,84

Subregional, Regional and/or Global: III-50,107

Bilateral, Subregional or Regional: II-58,110

Bilateral, Regional and/or Multilateral: III-54,82

Bilateral, Regional or other Multilateral: III-67

⁴This Article, as noted earlier, calls upon states of a subregion or region to share in the exploitation of the living resources of their economic zones with "(d)eveloping coastal States...whose geographical peculiarities make such States dependent for the satisfaction of the nutritional needs of their population upon the exploitation of the living resources in the exclusive economic zones of their neighboring States."

⁵For discussions of the effects of non-agreement at UNCLOS III, see "The Consequences of Non-Agreement," in Lewis M. Alexander, ed., The Law of the Sea: A New Geneva Conference (Kingston, R.I.: University of Rhode Island, Law of the Sea Institute, 1971), pp. 1-77. See also H. Gary Knight, Consequences of Non-Agreement at the Third U.N. Law of the Sea Conference (Washington, D.C.: The American Society of International Law, 1976); and Lewis M. Alexander, "Some Consequences of Non-Agreement at UNCLOS III," Marine Technology Society Journal (forthcoming).

⁶It has been estimated that if all coastal states of the world adopt an exclusive economic zone out to a maximum of 200 nautical miles from shore, nearly 36 percent of the world ocean would be included within national limits. See "Theoretical Areal Allocations of Seabed for Coastal States...," International Boundary Study, Series A, Limits in the Seas, No. 46, August 12, 1972. (Washington, D.C.: Department of State, Office of the Geographer), p. 35.

CHAPTER 5

UNITED STATES INTERESTS IN MARINE REGIONAL SYSTEMS

A descriptive analysis of the nature of marine regional systems, and of the problems they are intended to address, does little to answer the question, how do these systems -- both existing and projected -- impact on the interests of the United States? What aspects of the global regionalist trend are particularly germane to the U.S. short-term and long-term objectives as they are now perceived? What procedures might the U.S. adopt in order to further its interests in these regards?

An analytical framework for considering the topic of U.S. interests in marine regionalism is contained within the general concept of "national interest." Frankel suggests the definition of national interest as "the general and continuing ends for which a nation acts,"¹ and proceeds to distinguish between its aspirational and operational levels. "On the aspirational level, national interest refers to the vision of the good life, to some ideal set of goals which the state would like to realize if this were possible."² These are normally long-term interests, rooted in history and/or ideology, and are determined largely by political will rather than by capabilities. A world where boundaries are secure, and territorial conflicts are settled peacefully might be taken as an "aspirational" component of the U.S. national interest. "On the operational level," the author goes on to note, "national interests refers to the sum total of interests and policies actually being pursued."³ These are usually short-term interests, stemming largely from considerations of expediency or necessity, and determined more in terms of capability than of political will. Serious

consequences may arise for a country if a considerable gap exists between its aspirational and operational goals.

The national interest concept involves both foreign policy and domestic interests, the latter frequently being in conflict with one another. For example, one aspirational goal of the United States with respect to the oceans might be seen to be the maximization of the freedoms of the high seas. Yet a recent operational goal has been the protection of domestic coastal fisheries through the establishment of a 200-mile fisheries conservation and management zone (and this despite the strong opposition of at least one domestic fishing group -- the distant-water tuna industry). A relevant question here is, what group or groups articulate the "national interest" in a particular activity area, at a particular point in time? Within the federal government, the executive and legislative branches would seem on a number of occasions to vie for this role.

Within the overall framework of U.S. national interest, the idea of a "national ocean interest" should be identified.⁴ What "general and continuing ends" does the United States seek with respect to the oceans and their borderlands? While a "national ocean interest," as a subset of the total national interest, must by definition be consistent with national interest goals, it also has its own particular concerns and potential trade-offs.⁵ As guidelines for analysis in determining national ocean policy, the following five categories of objectives are suggested:

1. Protection of national security. This fundamental objective might be thought of in terms of (a) protection of the national homeland; and (b) support for foreign interests relating to U.S. security.

2. Promotion of economic interests. The acquisition of wealth from marine-related activities is linked to accessibility to marine areas and

resources by the United States, to the dependence of the U.S. on various marine phenomena, and to the nature and extent of the "investments" which must be made in order to realize such wealth.

3. Environmental protection. This involves pollution control and abatement, conservation of both renewable and non-renewable resources, and the setting aside of certain "vulnerable" areas and objects in the interest of future benefits.

4. Acquisition of knowledge. This process may take such forms as acquiring knowledge "for knowledge's sake," for economic or military purposes, in the interests of environmental forecasting, or for aesthetic or other gains.

5. Furtherance of world community interests. Through support of United Nations activities, through various assistance programs to developing countries, and through other measures aimed at general international improvement, the United States is strongly committed to this type of objective.

These general goals are primarily aspirational in nature, and may at times conflict with one another. Unilateral action by the United States in mining the manganese nodules of the deep seabed might be seen as conforming with the objectives both of promoting economic interests and of furthering national security, while at the same time such activity could also be taken as being inimical to world community interests, particularly the interests of countries which have hoped to benefit from the exploitation of these "common heritage of mankind" resources. But even though they may at times appear to be inconsistent with one another, these topics have value in providing something of an analytical basis for discussing the components of the national ocean interest concept.

The "national ocean interest" can be pursued at any one of four levels of operation -- unilateral, bilateral, multilateral, or global. The level selected depends largely on the type of problems to be addressed. At all but the unilateral scale, any country faces two functional types of systems -- restrictive and developmental. Restrictive arrangements tend to limit freedom of action in the oceans for all or some outside states. Developmental arrangements, on the other hand, involve "investments" by countries in order to achieve some common goal or series of goals. One form of restrictive arrangement might be a decision by the littoral states of a semi-enclosed sea to ban all ships of non-littoral countries from carrying out such activities as fishing or scientific research within that water body. Since the extended economic zones of the littoral states could completely close off the waters of the semi-enclosed sea, the joint action of the littoral states could curtail various uses of the maritime area by outside powers. A developmental arrangement might be a regional fisheries agreement, whereby member countries undertake joint surveys and scientific research efforts in the interests of protecting and improving stocks, as well as engage in mutual conservation measures such as the establishment of catch quotas, closed areas and/or seasons, and the regulation of mesh sizes.

Some confusion could arise over terminology, since "developmental" arrangements, as in the conservation example noted above, may involve restrictions on member countries' activities. But a distinction between the developmental and restrictive types of systems lies in the issue of intent. Were restrictions imposed on one country or group of countries to the detriment of others, or are they intended for the general good of all states? Restrictive arrangements are, by definition, intended to be favorable to some, at the expense of others.

The policies of the United States toward both restrictive and developmental activities in the oceans should be seen first in terms of alternative responses -- e.g., support, opposition, or non-action; and second, if action is called for, how much support or opposition should be expended and in what form? The choice of response depends in part on the nature of the marine arrangements themselves which are the object of analysis, and in part on the legal/political oceanic regime of the future, within which they must operate. Should a new oceans treaty, based largely on the articles of the RSNT, eventually come into force for the United States and for all or most other countries, one could anticipate future marine regional arrangements with at least some bases of expectation, since a general juridical system for the oceans would presumably have been established. But if no oceans treaty emerges from UNCLOS III, the short-term (and perhaps long-term) conditions of the future law of the sea are at best uncertain. For example, the status of the economic zone may become that of the territorial sea, with restrictions on overflight and on certain forms of military transit, and with no recognition of the principle of "optimum yield" for fisheries in the zone and of the establishment of surplus catches for foreigners. Individual countries, acting alone or in concert with their neighbors, will be forced to work out the best arrangements of which they are capable, within the frameworks of loosely-defined customary international law, and of what they perceive to be within their own best interests. Restrictive regional systems may multiply, and aspirational ocean interests of developed maritime states may be forced to yield to the operational interests of developing coastal countries. Under these conditions the U.S. must devise strategies for dealing with unilateral, bilateral, regional, and perhaps global ocean arrangements which it finds to be inimical to its own interests.

A Conceptual Framework for Analysis of
U.S. Interests in Marine Regionalism

In seeking answers to questions of U.S. interest and response to existing or proposed marine regional arrangements, three types of issues should be considered: (1) the nature of a regional system in terms of its functions; (2) its impact on U.S. ocean interests; and (3) alternative responses by the United States. In the section that follows, topics are arranged according to the functional aspects of regional organizations.

Restrictive Systems. These, as noted earlier, serve to limit freedoms of action in the ocean. A principal form of distinction among restrictive regional arrangements involves the countries themselves to which particular restrictions apply or do not apply. In other words, is participation in certain activities forbidden to all states, or to some and not others? In the latter case, are restrictions placed specifically on U.S. activities? Some examples may serve to point up this distinction.

1. Restrictions applied to all countries. In the Antarctic, military activities, as noted earlier, are unlawful for all member states of the 1961 Antarctic Treaty. So too are efforts to establish or enforce territorial claims in Antarctica by member countries. The United States is a signatory to the Treaty, and it would seem at this time to be in the U.S. interest to refrain from advancing territorial claims of its own south of 60°S. Lat., or from supporting other countries' claims. Not only are U.S. security interests served by a continuation of the Treaty, but so too are the interests of the other signatory countries. Further, the Treaty's terms permit the United States to actively carry out scientific research in the area.

The Antarctic Treaty may terminate in 1991. Even before that time its terms may require revision, in part because of the active interests of some

states in the living and non-living resources of the area covered by the Treaty. Thus the United States must weigh such questions with regard to the Treaty arrangements as (1) should the Treaty be renewed after its 30-year life-span; (2) what changes should be made in its articles even prior to 1991; (3) ought the United States to materially increase the funds allotted to its scientific activities in the Antarctic; and (4) what responses should be made to a possible territorial or resource claim in the area by another power?

A number of "universal restriction" arrangements apply, or could potentially affect, military activities. There is, for example, the U.N. Resolution declaring the Indian Ocean to be a "Zone of Peace." Given the existence of U.S. plans for a military base in the Chagos Archipelago, such a regime, as proposed by the Declaration, would seem to be inconsistent with U.S. operational interests there. Indeed, the whole issue of zones of peace may prove difficult to accommodate. Countries without nuclear capabilities, for example, might, in concert with one another, seek to ban all nuclear-powered vessels from their common economic zones on the grounds of environmental protection. Although the restrictions would apply universally, the impacts would be uneven, since the principal countries affected would be those with nuclear capabilities.

Universal restrictions on the transit of warships, submarines, and potentially-polluting commercial vessels through certain international straits or through the inter-island waters of archipelagos would also be detrimental to the operational interests of only a relatively small number of states, even though the constraints would apply equally to the vessels of all countries. In other words, although certain regional systems are established whose restrictions are seemingly universal in nature, care must

be taken to identify those countries whose ocean interests are particularly affected adversely.

2. Restrictions limited to certain countries.

a. United States not restricted. Here, as in cases noted above, a principal form of restrictive regional system are those associated with military activities, as, for example, in the case of the North Atlantic Treaty Organization (NATO). In this instance, non-member countries cannot participate in military exercises, nor share in the exchange of defense data.

In another activity area, the International Pacific Halibut and Pacific Salmon Fisheries Commissions each have limited memberships, as does also the North Pacific Fur Seal Commission. Thus the United States benefits from the limited number of states participating in the fisheries. The establishment of 200-mile fisheries zones by both the U.S. and Canada could mean that in future years joint fisheries management systems might be established for certain stocks, with other countries barred from participation. In this way the United States and Canada could partake of the opportunities offered by effective management of the living resources of North American coastal waters, while enjoying the protection offered by an exclusionary regime.

Still another situation, and one in which the status of U.S. "inclusion" or "exclusion" is as yet undetermined, relates to the Caribbean Sea, and to the possibility of a "matrimonial" system being established there with respect to commercial fisheries. Under such a regime, littoral countries would share in the exploitation of the fisheries resources beyond the 12-mile limits, but participation by outsiders would be forbidden. Would the United States, by virtue of its control over Puerto Rico, qualify as a

littoral state, and thus be eligible for participation? And would the Gulf of Mexico, with its not-inconsiderable fisheries resources, be considered within the matrimonial regime -- in which case the United States would certainly be included as a member state, at least so far as that body of water is concerned?

Looking ahead, to a world in which all or most states claim an extended economic zone, and in which perhaps no new oceans treaty is forthcoming, it would seem to be in the U.S. national interest to participate in a number of restrictive regional systems from which potential competitors are excluded. Among these might, as in the past, be military arrangements, particularly for the seas bordering North America. Fisheries arrangements could also be worked out, not only for the protection of U.S. coastal activities in the waters off the immediate neighbors of the United States, such as Canada, Mexico, and the Bahamas, but also with respect to more distant fisheries, such as those of U.S. shrimpers in the Caribbean, or of tuna fleets in the east-central Atlantic. Sports fishermen may in time travel some distance from the U.S. coast, and desire certain types of regional arrangements to protect their interests, particularly vis-a-vis commercial fishing activities from other distant-water states.

Attention should also be drawn to the possibilities of restrictive-type regional arrangements, involving the United States and foreign countries bordering on an area of scientific concern to the U.S. oceanographic community. The potential might exist for United States assistance to such countries in scientific education and training, and in other forms of technological transfer -- including assistance in the development of regional science centers -- in exchange for permission for U.S. oceanographic groups to carry out research in the countries' economic zones.

b. Restrictions applied to the United States. Although there are not many marine regional systems at present from which the United States is deliberately excluded, a number will probably develop in coming years as a result of the general adoption by coastal countries of exclusive economic zones. One question to be addressed in the case of such situations, is whether exclusion is really detrimental to United States interests. Do competing major powers participate in the arrangement, and derive benefits therefrom which the U.S. should also try to enjoy? A second question would then be, what are the costs of entry for the U.S. into the regional system, assuming entry is at all possible?

The Permanent Commission of the Conference on the Use and Conservation of the Marine Resources of the South Pacific (PCSP) is a restrictive regional organization, limited to the states of Chile, Peru, and Ecuador. U.S. entry at this time would appear to be virtually impossible; in the absence of a new oceans treaty, however, the United States might wish somehow to participate with the member states of PCSP in the management of the fisheries stocks (particularly tuna) in their offshore waters.⁶ In such a case, the issue of costs of entry might then arise.

The activities associated with PCSP do not directly involve the Soviet Union. But there are other cases in which exclusionary regional systems have, or could, develop which might be of considerable benefit to the interests of the Soviet Union, vis-a-vis those of the United States. One of these concerns the "regional" seas bordering the U.S.S.R., in which the warships of non-littoral countries are excluded.⁷ An extension of the "regional sea" concept to such water bodies as the Black and Baltic seas and the Sea of Japan might be seen as a serious blow to U.S. military concerns. Or consider the possibility of a Mediterranean regional system being estab-

lished, of which the Soviets are participants, which places restrictions on the activities of non-littoral countries with respect to fishing, scientific research, or military activities within the Mediterranean. U.S. interests would certainly be affected, and the United States would inevitably be faced with the need to consider the "costs" of obtaining entry into such a group, or of non-compliance with its restrictions. What is true of the Mediterranean would also hold for other semi-enclosed seas as well, such as the South China and East China seas, the Red Sea, or the Persian (Arabian) Gulf.⁸

Two points should be remembered about potential regional arrangements which restrict activities of vessels from the United States and from other countries closely allied to the U.S. In the absence of a new oceans treaty, coastal countries might claim complete sovereignty in their exclusive economic zones, subject only to the proviso of innocent passage. Under such conditions the U.S. would have to weigh carefully its response to certain forms of restrictive regimes, including a response of non-compliance, backed up by military force. A second point is that unacceptable restrictions might be imposed regionally by countries other than the "major powers," with the result that certain regional "leaders" could in time emerge, with whom the U.S. could face confrontations. While it is obviously dangerous to anticipate which specific states might adopt such leadership positions, a review of global conditions could identify certain countries which would possibly have the location and relative power potential to qualify for positions of marine regional leadership. A number of possible regional leaders were suggested on pages 44 and 115. To these lists might be added Indonesia, India, Venezuela, and South Africa.

Developmental Systems. In contrast with the restrictive regional systems are those involving "investments" to achieve certain goals. Among the goals are fisheries conservation and management, pollution control and abatement, the acquisition of scientific knowledge, technology transfer, navigational safety, the peaceful settlement of marine-related issues, and access to the sea and its resources for land-locked and geographically-disadvantaged states. In time, other developmental issues may evolve with respect to the sea.

Although certain goals may be explicitly stated for a regional development system, others may be implied. For example, pollution control and abatement plans for the Mediterranean, as embodied in the "Mediterranean Action Plan," carry with them the potential for technology transfer from the developed countries of the northern rim of the basin to developing countries on the southern rim, as well as of increased oceanographic knowledge of the Mediterranean waters. A regional system for access to the sea for one or more land-locked states may have economic and political pay-offs as well, in terms of improved interactions among the states involved.

A number of general questions arise from a consideration of national interests with respect to marine developmental systems. What forms of investment are required? Who are the principal investors, and what countries the principal beneficiaries? To what extent do investments in regional development systems detract from a country's investments in its own domestic activities? The answers to such questions lie in part in some form of cost/benefit analysis, which considers both direct and indirect costs, as well as direct and indirect benefits. Unfortunately, most decisions concerning U.S. involvement in marine developmental arrangements seem to have been reached without the benefit of such analysis.

It is not the intent here to propose an analytical scheme for assessing U.S. interests in developmental arrangements. Projects of this type should

ideally be carried out by multi-disciplinary teams, comprising economists, political scientists, and professionals in the particular activity area under consideration. Some of the alternative goals of such an arrangement have already been noted. Forms of "investment" on the part of the United States and of other countries might include the expenditure of funds, the use of trained personnel and of equipment (including ships), the passage of restrictive legislation in the interests of conservation and management, adherence to regional rules and regulations by U.S. citizens, the sharing of knowledge and of authority among member states, and the use of member countries' territory or economic zones for developmental purposes. In some cases, "investment" is limited, and must be allocated among competitive users. Such would be the case for the expenditure of funds, or the use of personnel or ship time. In other instances, such as the sharing of authority or the use of member states' territory or economic zones, the investment need not be made at the expense of other uses.

Presumably the United States would be supportive of any marine regional development system, so long as U.S. interests were not jeopardized. Zambia's concern for access to the sea, the moves of the Baltic states toward environmental protection in that water body, the efforts of the Southeast Asian states through CCOP to explore for offshore hydrocarbons -- these and similar activities would appear to further international interests, and at the same time pose no threat to U.S. interests. They could receive the "moral" support of the United States, with no appreciable expenditure of U.S. effort.

But conditions, of course, may change. Zambia might seek active U.S. support for its efforts toward regional action (thereby involving U.S. relations with Tanzania, Mozambique, and Angola); the Baltic states, in the

interests of pollution control, may plan restrictions on the passage through that sea of certain potentially-polluting vessels; the Southeast Asian countries could request a substantial increase in funding for their exploration activities through IOC or UNDP. At such times the U.S. must ask itself what increases in developmental support it is prepared to make.

The same is, of course, true with respect to regional arrangements of which the United States is itself a participant. How much assistance should we render to IOCARIBE? What new responsibilities might we assume with respect to IATTC? The answers to such questions involve not only the level of input by the United States relative to that of other member countries, but also, domestically, how much of the federal budget should go toward international development activities? Although issues such as these are answered primarily at the political level, concerned professional groups can provide input into the decisions through careful analytical studies of the costs and benefits of alternative actions.

U.S. Response to New Forms of Regional Arrangements

In assessing its potential interests in, and responses to, regional development arrangements in the oceans, the United States must first consider the regional situation as it now exists, and then anticipate what new types of arrangements may come into being. This report has gone fairly intensively into the issue of existing arrangements. Most of these occur outside the framework of UNCLOS III. Some are the result of actions by the states concerned; others have been generated by the United Nations and its specialized agencies. Developmental arrangements to date involve primarily fisheries conservation and management, environmental protection, and the acquisition of knowledge, both through oceanographic research, and through

various forms of data collection. The United States actively supports regional efforts in all of these activities fields.

With respect to yet another form of regional development, there are to date no binding procedures for granting access to the sea for land-locked states, nor have any arrangements been worked out whereby land-locked and geographically-disadvantaged states would acquire access to the resources of other states' economic zones.⁹ In the absence of an oceans treaty, such forms of access will probably be worked out only on a case-by-case basis. Again, the United States would probably continue to support efforts at regional solutions to the access problem, although it should be noted that the issue would seem to have little direct effect on U.S. activities.¹⁰

Even existing marine regional development arrangements are being affected by new law of the sea developments, particularly the move toward 200-mile zones. Already this is true in the case of fisheries,¹¹ as evidenced by the recent withdrawal of the United States from ICNAF. Should this trend continue, the few regulatory powers other regional fisheries units have acquired may soon be removed, leaving only the IWC -- whose supervisory objects travel for the most part beyond 200-mile limits -- as a serious regulatory fisheries body.

Since coastal states may soon claim jurisdiction over environmental control and scientific research within their exclusive economic zones, it may turn out that some regional pollution control and scientific investigation systems could in time come under pressures for revision. One particular instance where this might happen would be with respect to the imposition of "double standards" concerning pollution control in the economic zones of developing coastal states -- one set of standards with respect to

ships from the developing countries, and another set for those from developed states.¹²

So far as new developmental arrangements are concerned, governments will, of course, have to ask themselves (particularly in the light of their new jurisdictions in the economic zone) what forms of regional cooperation would seem to them to be in their own best interests. A good case could be made for joint fisheries management schemes, involving the economic zones of several contiguous states, although here the role of development may become entwined with that of restrictions on access to the surplus resources by all or some states. Regional approaches to environmental control problems would also seem logical, but such initiatives may be affected, first, by the fact that some marine areas are not nearly as threatened by pollution as are others¹³; and second, by the reluctance of many countries to "invest" substantially in pollution-control activities, except through the efforts and support of outside agencies.

What then might be some aspects of the U.S. interest in future marine regional development systems? One is that the United States should strongly support the regional development concept, and should, where possible, participate in such systems. Closing off 36 percent of ocean space within economic zones or other national limits could lead in time to considerable degradation of the marine environment and marine resources, unless coastal states are encouraged to join and participate in developmental arrangements. Developing countries in particular may be reluctant to allow infringements on their newly-won rights in the economic zone, through adherence to such regional schemes, and the U.S. could provide an excellent example of restraint by supporting multi-national institutions whose conservation and management standards are accepted by the U.S. and applied to its own national waters.

At the same time the U.S. should seek to accommodate international interests with those of its domestic users, thus giving the federal government greater flexibility in its negotiations with other countries of the region. And, along with encouraging specific developmental programs, the United States should also support the international bodies which help to develop these programs -- among them UNEP, FAO's Fisheries Division, and IOC. Many projects which these organizations have initiated have received funding from UNDP -- another unit which is worthy of support. Here again, it should be noted that we may be witnessing the start of an "era of ocean nationalism" as the coming of the exclusive economic zone is linked with what may well be a breakdown in negotiations at UNCLOS III. Under conditions of nationalism, regional (and global) developmental efforts may, at least in the short-term, tend to fare badly.

In addition to supporting development systems, the U.S. should try to avoid their being used for political purposes. At times such use might seem to be beneficial to U.S. interests, vis-a-vis those of competing major powers; but there would often be cases where the opposite would be true. Member states of a regional grouping might withdraw or diminish support for its objectives, on the grounds of its political character. Further, a regional development arrangement which, in effect, becomes "politicized," could begin to adopt restrictive measures -- some of them perhaps to the disadvantage of the United States.

Summary

In this chapter we have considered various aspects of the national ocean interest of the United States with respect both to restrictive and developmental forms of marine regional arrangements. Through the various

analytical frameworks which have been suggested for assessment and decision-making with regard to U.S. action, the following points seem to emerge.

1. The United States must anticipate ocean management issues in terms of a variety of approaches, ranging from unilateral action to global cooperation. Even if regional action is anticipated, there is generally a wide variety of choices, both with respect to the geographic extent of the "region" involved and to the institutional mechanisms selected for management purposes.

2. U.S. officials would seem, in the foreseeable future, to be faced with a finite number of categories of marine regional arrangements, whether these be restrictive or developmental in nature. The principal categories are as follows:

a. Fisheries Conservation and Management. Since most of the world's commercial catch is within 200 miles of the coast, it follows that the regional fisheries organizations of the future will face the problems of coastal state jurisdiction. For most areas of the world, United States fisheries interests are not directly involved in regional action. But the interests of our allies (e.g., Japan, United Kingdom, Republic of Korea) may be directly affected. And in the case of tuna, shrimp, lobster (in the Bahamas), salmon, and whales, our own concerns are strong. Further, it is to our interests to accomplish what we can in supporting the development of commercial fisheries of the developing states. Therefore we should actively support regional fisheries organizations and the principle of full utilization of fisheries within the framework of optimal yield.

b. Scientific Research. A major interest of the U.S. oceans community is maximization of the freedom of scientific research in maritime areas beyond the U.S. coastal waters. To this end, the United States should

support the regional research activities of IOC, since participation in IOC-sponsored programs helps to alleviate the access problem in foreign economic zones. But two other avenues are also open. One is U.S. participation in foreign regional science activities as they may develop in the future, including possible support for the establishment of regional science centers in the developing world. Another course of action is to encourage the education and training of marine scientists from the developing countries in the United States (and maintaining contacts with, and support for, the graduates after they have returned to their own countries) in order to strengthen personal and institutional ties between the U.S. ocean science community and the developing states. A variation of this might be for U.S. oceanographic institutions to modify somewhat their offerings so as to meet the ocean science needs of developing states. Rather than expose all incoming students to highly-complex oceanographic and instrumentation issues, some attempt might be made to introduce them to more fundamental aspects of pollution control, aquaculture, and coastal zone management which are germane to the real-world conditions of the countries from which they come.

c. Environmental Control. The United States should be particularly concerned with regional environmental control efforts, not only because of its general support for efforts to improve the marine environment, but also because many of the perceived potential polluters in foreign regions may be U.S. ships, or vessels travelling to U.S. ports. This is particularly true with respect to nuclear-powered vessels, tankers, and LNG ships. The assertion that U.S. military vessels enjoy sovereign immunity in foreign states' waters may prove to be somewhat illusory. The U.S. must watch closely regional action, both within and outside the framework of

IMCO Conventions, to restrict access of vessels associated with the United States, on the grounds of environmental hazards.

d. Education and Training. As noted earlier, the U.S. might, for a relatively small investment, reap considerable benefits through education and training, and through other forms of "technology transfer" involving the developing countries. The contacts established could not only counter similar education and training projects on the part of the Soviet Union, China, and other states; they might also ease the problem of access, particularly of U.S. oceanographic vessels, in the foreign states' economic zones.

e. Military Uses. The United States may be faced with an increasing number of resolutions for establishing certain maritime areas as "zones of peace." Already this has occurred in the Indian Ocean; it may soon develop in the South China Sea. The list of potential peace zones is long, and could include such maritime areas as the Red Sea, the Persian (Arabian) Gulf, the Caribbean, and the Antarctic Ocean. The U.S. response might be that defense is a global issue, and that any military steps the United States takes within the framework of its national interest, are basically a response to Soviet actions.

Another concern is the problem of "closed" or "regional" seas contiguous to the Soviet Union. The U.S. must retain the right of access to these waters, even when they become a part of the littoral states' economic zones. It is not unreasonable to anticipate that the Peoples Republic of China will, in time, seek some sort of restricted regime for the seas contiguous to its territory.

f. Navigation. Regional action with respect to commercial shipping may be of three types. The first course is the establishment of re-

gional ports, such as superports or ports for the handling of containerized cargo. Because of its global interests, the United States should actively support those proposals for regional coordination which seem to coincide with its own interests.

Countries may also band together to improve channels, navigational aids, traffic separation schemes, etc. These activities may directly affect U.S. shipping interests, and support should be given or withheld, according to what appears to be the most advantageous proposals.

Finally, the issue of transit through international straits is of importance. For non-military vessels there is the problem of sea-lanes and traffic separation schemes, and the promulgation of rules relating to potential pollutants. The possibility of regional management schemes for certain straits might result in unwarranted restrictions, and should be a matter of considerable concern to U.S. officials.

g. Resource Development. There already exist a number of projects involving the development of fisheries or mineral exploitation on a regional scale. Most of these are supported by UNDP. Assuming the regional projects are viable, this would seem to be a worthwhile method of marine resource development, and should be supported by the United States.

h. Dispute Settlement. A regional approach to the settlement of offshore boundaries and other forms of ocean-related disputes may in time evolve in various parts of the world. The United States should welcome such actions as contributing toward general peace and stability.

i. Land-Locked and Geographically-Disadvantaged States. The United States has no land-locked countries anywhere near its territory, although nations such as Haiti, Dominican Republic, Jamaica, and possibly

Cuba, could, on one pretext or another, claim designation as geographically-disadvantaged. Given this status they might demand priority rights with respect to surplus stocks in U.S. coastal waters, or they might insist on "equitable treatment" with U.S. nationals in the general exploitation of fisheries resources.

In addition to the issues involving U.S. coastal waters, the United States should weigh carefully whether or not to actively support the access demands of land-locked and geographically-disadvantaged states in other parts of the world. The principles of equity may, on the one hand, weigh in favor of the special rights of such countries. But the needs and interests of the transit states must also be considered. How can Zaire, with an almost non-existent economic zone, respond to the demands of its five contiguous land-locked states? Should our relations with Brazil and Argentina, or with India, be jeopardized by the access demands of their neighboring land-locked states?

j. Other Regional Arrangements. Under this heading come the Antarctic Treaty, and regional arrangements to prevent nuisances, develop energy, zone ocean areas, regulate the uses of undersea features, etc. With imagination, one can conceive of any number of applications to which the regional concept can be put.

With respect to Antarctica, the United States would seem to have three primary objectives: (1) maintain the area for peaceful purposes only; (2) continue the current regime of scientific research; and (3) uphold the principle of non-recognition of territorial claims. Within the framework of these objectives, other provisions may be made for resource utilization, or for the inclusion of new states into the Antarctic Treaty group.

It is difficult to speculate on the positions to be taken with respect to other potential regional arrangements, without knowing the content of such units. But it might be taken as a generalization that the United States should adhere to its traditional principle of maximizing freedom of action in the oceans, unless some compelling counter-argument is recognized. The primacy of the United States in most ocean-oriented activities dictates this "freedom" principle. Any action by regional groups to restrict freedom of access should be viewed with considerable concern.

3. Diplomatically, the United States is becoming increasingly isolated. This is due in part to the successes of the "Socialist" countries, and in part to the preoccupation of many Third World states with the New International Economic Order. There is also the relative impotence of the West European nations because of their own economic difficulties. Further, the United States continues to support two of the international "pariahs" -- South Africa and Israel. U.S. isolation cannot help but affect international marine activities, which involve American interest. Countries may become suspicious of U.S. motives, and question the bases of U.S. interests in developmental-type regional regimes.

The U.S. has great power and great responsibilities. United States policy is based not only on the nation's role as an international standard-setter and force for peace, but also as an arbiter of conflicting domestic interests. To perform these several functions requires a clear understanding of regional processes, and a studied response at all times to perceived and operational needs.

Footnotes

¹Joseph Frankel, National Interest (New York: Praeger Publishers, 1970), p. 18. See also Major Problems in United States Foreign Policy, 1953-1954 (Washington: The Brookings Institution, 1955), pp. 373-375.

²Ibid., p. 31.

³Ibid., p. 32.

⁴See Lewis M. Alexander, "Indices of National Interest in the Oceans," Ocean Development and International Law, vol. 1 (March 1973), pp. 21-49.

⁵One might, indeed, ask if trade-offs associated with the national ocean interest need necessarily to be ocean-related, or whether a right of U.S. vessels to fish or carry on scientific research in another country's territorial waters or economic zone might be acquired in exchange for the granting to that state of special access rights to the U.S. market for its principal export commodities.

⁶So too might the governments of Japan, South Korea, and the Republic of China.

⁷See William Butler, The Soviet Union and the Law of the Sea (Baltimore and London: The Johns Hopkins Press, 1971), pp. 127-134.

⁸See Lewis M. Alexander, "Regionalism and the Law of the Sea: The Case of Semi-Enclosed Seas," Ocean Dev. and Int. Law Journal, vol. 2 (1974).

⁹An exception would be through the principle of surplus fisheries stocks, as supported by the United States. Fishing vessels of a land-locked country would enjoy similar rights as those of a coastal state so far as receiving an allocation of the surplus stocks (e.g., those within the total "optimal yield" which are not harvested by the coastal state's vessels) which they can harvest.

¹⁰Although there are no land-locked countries within 2,600 miles of continental United States, a case could conceivably be made for access for "geographically-disadvantaged states" of the Caribbean (including, perhaps, Cuba) to the fisheries of the U.S. economic zone, under some form of regional access arrangement.

¹¹See Edward Miles, "An Assessment of the Impact of Proposed Changes in the Law of the Sea on Regional Fishery Commissions," op. cit.

¹²In the Revised Single Negotiating Text, Article 4, Part III, reads in part, "States shall take all necessary measures, consistent with this convention to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities" (emphasis added). Article 17, Part III, in considering pollution of the marine en-

vironment from land-based sources, takes note of "the economic capacity of developing countries and their need for economic development."

¹³In contrast to conditions in the North Sea, the northern Mediterranean, and parts of the Caribbean, are those in such seas as the South China and East China seas, or the Andaman Sea-Bay of Bengal area.

CHAPTER 6

RESEARCH NEEDS AND OPPORTUNITIES IN MARINE REGIONALISM

The study of marine regionalism is a relatively new one, both from the standpoint of the nature of marine regions, and of the forms and functions of regional treaties, conventions, proclamations and institutions. Regimes of the ocean have traditionally been approached from either the global or the national perspective. If consideration is given to regional issues, it is usually in terms of regional policies or decisions.

There have, of course, been exceptions. In 1973 Koers published a detailed work on the structure of regional fisheries bodies.¹ In the same year, an article by Janis² considered marine regional activities in Europe. Subsequently, there have been articles on the topic of regionalism by Alexander,³ Hardy,⁴ Janis,⁵ and others.⁶ But to date there has been little systematic work in the field.

So far as is known, the principal multi-disciplinary studies now being pursued on marine regional arrangements are those at the University of Washington, and under the auspices of the Royal Institute of International Affairs. At Washington, a project under Professor Miles, funded by the Rockefeller Foundation, is examining all aspects of use and of use conflicts in the North Pacific, north of 30°N. lat. From this study of problems to be addressed will come recommendations for the institutional mechanisms to handle such issues.

In the case of the Royal Institute, the Scottish Branch has formed a North Sea Study Group to examine the international politics of the North Sea. The project, begun in October 1975, is scheduled for completion in

October 1977.⁷ The focus is on the changing patterns of exploitation of North Sea resources, with particular emphasis on oil and gas, fisheries, environmental protection and defense. The study is supported by a grant from the Social Science Research Council.

Given the few examples that now exist of in-depth research on marine regionalism, together with the relative newness of the regional method as applied in the oceans, it would seem profitable to suggest new avenues of investigation into the topic. In so doing, it must be remembered, first, that the regional approach to marine problems is still very much in the formative stage and that before long problems may arise, and institutional mechanisms evolve, which are at this point in time unforeseen. A second point, as has been noted several times in this report, is that with the advent of the 200-mile zone, a period of nationalism is probably going to begin in law of the sea matters, with the result that even some of those marine regional arrangements that now exist may be eliminated, or at least weakened, while the inauguration of new and more binding regional systems may be postponed for a number of years.

In light of these caveats, let us look at the issue of research on the topic of marine regionalism. It is suggested here that there are at least five avenues of approach. These are: (1) an in-depth analysis of one or more specific regions; (2) systematic studies of the component elements of marine regionalism; (3) an assessment of changes in the regional approach as a result of new developments in the law of the sea; (4) research into U.S. foreign and domestic policies with regard to marine regional arrangements; and (5) development of a model for marine regional systems. Each of these potential approaches will now be considered in somewhat more detail.

Regional Analyses

A detailed analysis of one or more physical marine regions could yield extensive data both on the needs and opportunities for regional and subregional action, and on the viability of any existing arrangements operating in the area. Consideration could be given to such real-life problems as data acquisition, policy formulation, the perception of problems by countries of the region, the influence of outside nations, and the competition among member states for positions of leadership. Also the impacts of regional systems both on the marine environment itself, and on the relationship among member countries could be assessed.

The research should be carried out by a multi-disciplinary team which includes marine scientists, social scientists, and lawyers. The exact size of research group would depend both on the scope of the project, and on their ability to use outside support. A familiarity with the area in question would be essential, and there should be close interaction with people and institutions of the region being studied. In order to develop the tools and techniques for regional research of this type it would be well to begin with a clearly-defined area, such as the Caribbean/Gulf of Mexico, the Mediterranean, or the Baltic Sea. And because of the relative scarcity of existing regional systems in the developing world, it would also seem wise to concentrate initial efforts in marine regions which are within or which border the developed countries.

The results of a systematic regional study would, of course, be considerably enhanced through comparative studies of other marine regions, where the similarities and differences of problems and approaches to resolution could be analyzed. To this end, it might prove fruitful (1) for the in-depth analysis of one regional area to be followed by a year or so of

comparative studies of other regions and regional systems (based in part on data acquired through research activities of other persons or groups); and (2) for some form of ongoing mechanism to be established which could act as an information center or "clearing house" of marine regional investigations, so that duplications of effort could be minimized, and researchers could benefit from the experiences of their colleagues working on other projects. Such a mechanism might conceivably be established under the aegis of some institution, such as the Law of the Sea Institute in Hawaii.

Studies of Regional Components

Turning to the second suggestion, namely a series of systematic studies of component elements of marine regionalism, it is clear, first, that such studies need not be on the level of magnitude of the in-depth regional analysis suggested earlier, and, second, that here even more than in the previous case, there is need for coordination of efforts among researchers. The topics could vary widely, ranging from physical or management regions of the ocean to types of marine problems requiring regional approaches to resolution, to alternative institutional mechanisms for handling regional issues, and finally to studies of the national ocean interest as an element in the total regional framework. With respect to an analysis of problem types, research could be carried out into the categories of problems which could best be handled at the unilateral, bilateral or global scales; even at the regional level, some situations may lend themselves more to a subregional approach.

The impacts of regional systems are also important. What are the direct and indirect effects of regional action on the marine environment (including living and non-living resources)? What are the impacts on the

interests and policies of specific countries or on groups of states? In these systematic studies, there is nothing to preclude their being undertaken within the context of one or more geographical regions, such as Western Europe or the Mediterranean Sea. What distinguishes this type of approach from the previous suggestion is that it is focused on a particular institution or process within the regional framework, rather than on a system of institutions and processes within one geographic area. Going one step farther, a researcher who adopts this "systematic" approach might carry out work in the general area of international regional systems, as Nye⁸ and others have done. Alternatively he could investigate existing non-marine regional arrangements, both in order to learn more about institutional mechanisms which might be transferrable to marine regional phenomena, and to assess the integrative elements in these systems which could have a bearing on marine-related arrangements involving the same cast of countries.

Changes in Marine Regionalism

Still another approach to regional analysis might be in terms of current and projected marine regional systems in the light of law of the sea developments. What might the differences be in the event of a comprehensive and binding oceans treaty emerging from UNCLOS III, as compared with the situation absent a treaty? Even if a new treaty is forthcoming, what may transpire with respect to marine regionalism during the transition period before the treaty becomes effective? And with or without a treaty what short- and long-term effects will the general adoption of 200-mile economic zones have on the development and operations of marine regional systems?

Studies of this kind must in part be speculative, and they can in no way be seen as substitutes for research in the first two suggested categories. But they can add an important dimension to regional understanding, and as such they should be encouraged.

National Interest Analyses

There is also the "national interest" approach to marine regionalism as seen specifically from the United States point of view. Here the researcher must ask himself how U.S. attitudes toward, and participation in, multi-national marine regional arrangements conform both with overall U.S. oceans policy, and with the total national interests. In some cases does our involvement reflect merely an historic interest -- a belief that the costs of non-participation might be greater than those of minimal support? Are certain agencies of government in favor of a particular regional action while others are opposed? One acid test of commitment is the level of funding allocated to one regional system or to a group of them. Is this level increasing or decreasing over time?

There are a host of issues concerning marine regionalism which could be addressed within the context of "U.S. national interest," including the trade-offs between support or non-support of a regional effort on the one hand, and other U.S. policy objectives on the other. To what extent can we bypass difficulties at the bilateral level (as, for example, with Canada or Mexico) by going the regional route? Alternatively, under what conditions is bilateralism with respect to these countries preferable to regionalism?

A Systems Model Approach

A final approach to marine regionalism might be through the develop-

ment of a systems model into which all sorts of data could be fed, and from which various analyses could be derived. One advantage of such a model would be that it would permit comparative analyses of regional systems as they differ from one another spatially, or as a single system develops differences over time. Another advantage of the model would be that it could provide advice for groups of countries or for U.N. agencies which are planning new regional organizations, or are carrying out major modifications of existing ones.

Such a model would be only as good as the information being fed into it. And there is relatively little hard data now existing on marine regional arrangements throughout the world. There is, then, a sound reason for delaying the development of the model for several years at least until there is a greater collection of data for it to utilize.

Coordination of Efforts

There remains the question of how these suggested research operations might be initiated and their operations coordinated, at least so far as exchange of data and methodologies is concerned. The initiation and support of research projects in the field of marine regionalism will probably continue to be on an individual or institution-wide basis. The principal support activities might be in the form of publications and workshops dealing with the theme of regional research methods. In this way guidelines may gradually develop for regional marine research efforts.

The coordination efforts, while perhaps initially difficult to develop, may in the long run prove to be of considerable value. The form these efforts might take could run the gamut from a one-time workshop on marine regional problems to a formal coordinating organization supported by outside funds. The workshop approach was tried by this investigator in June 1976

(see Appendix D) and proved to be of very limited value. It was convened just prior to the annual Law of the Sea Institute Conference. A second workshop, scheduled for January 1977, was never held because the invited participants felt they had higher priorities for the suggested date than attendance at a workshop on marine regional arrangements. From these experiences the conclusion emerges that the concept of marine regionalism is still very much in its infancy, despite what might appear intellectually to be the pressing nature of the issue in law of the sea developments.

A somewhat different approach will be that of the Law of the Sea Institute whose 11th Annual Conference, scheduled for Honolulu in November 1977, will have as its theme "Regionalization and the Law of the Sea." The program will consist of papers and panels directed toward a wide variety of regional themes and the resulting Proceedings may serve as a catalyst for proposals and publications in this area. The Institute is also planning to appoint a committee on marine regionalism next November which could conceivably accept the role of a coordinating mechanism, as noted earlier.

One point is clear. The issue of marine regionalism is going to become increasingly complex with the passage of time. Reflecting as it does not only scientific and social science phenomena, but also the policy issues of states, the concept seems destined to attract increasing interest -- and with it increasing budgetary support -- in the coming years. Ultimately a new sub-branch of regional analysis will develop, with its own data base and methodologies. How that development takes place -- in an organized or disorganized manner -- depends to a considerable extent on how research efforts at this early stage of its growth are coordinated and managed.

Footnotes

¹A.W. Koers, International Regulation of Marine Fisheries, op. cit.

²Mark Janis, "The Development of European Law of the Sea," op. cit.

³Lewis M. Alexander, "Regionalism and the Law of the Sea," op. cit.; "Regional Arrangements in the Oceans," op. cit.

⁴Michael Hardy, "Regional Approaches to Law of the Sea Problems: The European Economic Community," op. cit.

⁵Mark Janis, "The Roles of Regional Law of the Sea," San Diego Law Review, vol. 12 (1975), pp. 553-569.

⁶Charles Odidi Okidi, "Toward Regional Arrangements for Regulation of Marine Pollution: An Appraisal of Opinions," Ocean Development and International Law, vol. 4 (1977), pp. 1-27; Bo Johnson, "The Baltic Conventions," The International and Comparative Law Quarterly, vol. 25 (1977), pp. 1-15; Michael Palmer and David Thomas, "Arms Control and the Mediterranean," The World Today, vol. 27 (1971), pp. 495-502; Francisco Orrego Vicuna, "Regional Approaches to Law of the Sea: Latin America," in Perspectives on Ocean Policy: Conference on Conflict and Order in Ocean Relations (Washington: The Johns Hopkins School of Advanced International Studies, 1975), pp. 75-87.

⁷For a description of the project, see "International Politics of the North Sea," Marine Policy, vol. 1 (1977), pp. 73-75.

⁸Joseph Nye, Peace in Parts: Integration and Conflict in Regional Organization (Boston: Little, Brown and Company, 1971).

APPENDIX A

DESCRIPTIONS OF CURRENT MARINE REGIONAL SYSTEMS

Table of Regional Organizations

I. Fisheries Conservation and Management

A. FAO-Sponsored

1. Regional Fisheries Advisory Commission for the Southwest Atlantic (CARPAS)
2. Fishery Committee for the Eastern Central Atlantic (CECAF)
3. General Fisheries Council for the Mediterranean (GFCM)
4. Indian Ocean Fishery Commission (IOFC)
5. Indo-Pacific Fisheries Council (IPFC)
6. Western Central Atlantic Fishery Commission (WECAFC)

B. Independent

7. Baltic Sea Salmon Standing Committee (BSSSC)
8. Inter-American Tropical Tuna Commission (IATTC)
9. International Baltic Sea Fishery Commission (IBSFC)
10. International Commission for the Conservation of Atlantic Tunas (ICCAT)
11. International Commission for the Northwest Atlantic Fisheries (ICNAF)
12. International Commission for the Southeast Atlantic Fisheries (ICSEAF)
13. International North Pacific Fisheries Commission (INPFC)
14. International Pacific Halibut Commission (IPHC)
15. International Pacific Salmon Fisheries Commission (IPSFC)
16. International Whaling Commission (IWC)
17. Japan-China Joint Fisheries Commission (JCFC)
18. Japan-Republic of Korea Joint Fisheries Commission (JKFC)
19. Japanese-Soviet Northwest Pacific Fisheries Commission (JSFC)
20. Mixed Commission of 1962 (Baltic Sea) (MC)
21. Mixed Commission for Black Sea Fisheries (MCBSF)
22. North-East Atlantic Fisheries Commission (NEAFC)
23. North Pacific Fur Seal Commission (NPFSC)
24. Permanent Commission of the Conference on the Use and Conservation of the Marine Resources of the South Pacific (PCSP)
25. Sealing Commission for the Northeast Atlantic (SCNEA)
26. Sealing Commission for the Northwest Atlantic (SCNWA)
27. Shellfish Commission for the Skagerrak-Kattegat (SCSK)

II. Scientific Research

A. IOC-Sponsored

28. Co-operative Study of the Kuroshio and Adjacent Regions (CSK)
29. Co-operative Investigations in the Mediterranean (CIM)
30. Co-operative Investigations of the Northern Part of the Eastern Central Atlantic (CINECA)
31. Southern Oceans Survey (SOC)
32. Regional Investigation of the El Nino Phenomenon (ERFEN)
33. IDOE: Environmental Forecasting Program
- 33a. Investigation of the Subtropical Convergence in the Southwest Atlantic Ocean
- 33b. Investigation of the Equatorial Undercurrent of the Western Pacific
- 33c. Sea Surface Current Project
- 33d. North Pacific Experiment (NORPAX)
- 33e. International Southern Ocean Studies (ISOS)
- 33f. Monsoon Circulation Experiment (MONEX)
- 33g. Joint Air-Sea Interaction Program (JASIN)
- 33h. Joint North Sea Wave Project (JONSWAP)
- 33i. Overflow Studies
- 33j. Mid-Ocean Dynamics Experiment and Test Area (POLYMODE)
34. IDOE: Environmental Quality Program
- 34a. Pollutant Transfer
- 34b. Geochemical Ocean Sections Study (GEOSECS)
- 34c. Saronikos Gulf Pollution Study
- 34d. Controlled Ecosystems Pollution Experiment (CEPEX)
- 34e. Pollution/Ecology Studies
35. IDOE: Seabed Assessment Program
- 35a. Southeast Atlantic Margins
- 35b. Southwest Atlantic Margins
- 35c. French-American Mid-Ocean Undersea Study (FAMOUS)
- 35d. Plate Tectonics and Metallogenesis (Nazca Plate)
- 35e. Manganese Nodules Project
36. IDOE: Living Resources -- Assessment and Ecology Program
- 36a. Coastal Upwelling Ecosystems Analysis (CUEA)
- 36b. Seagrass Ecosystem Study (SES)
37. LEPOR Programmes, not part of IDOE
- 37a. Variability of the Sea Surface Temperature and Salinity Fields of the South-West Pacific and Indian Ocean
- 37b. Study of North Sea Pollution
- 37c. Studies of Organic Sedimentary Processes on Shelves, Slopes and the Deep Ocean Floor of the South-West Pacific
- 37d. Assessment of the Living Resources in the North Atlantic
- 37e. Fish Stock Assessment in the South Atlantic
38. International Tsunami Warning System in the Pacific (ITSU)
39. IOC Association for the Caribbean and Adjacent Regions (IOCARIBE)

B. Independent

40. International Council for the Exploration of the Sea (ICES)
41. International Commission for the Scientific Exploration of the Mediterranean Sea (ICSEM)

42. Federation of the Institutions Concerned with the Study of the Adriatic Sea (FICSAS)

III. Environmental Control

43. Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil, 1969
44. Agreement between Denmark, Finland, Norway and Sweden Concerning Co-operation in Measures to Deal with Pollution of the Sea by Oil (Nordic Agreement), 1971
45. Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974
46. Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden, 1974
47. Convention for the Protection of the Mediterranean Sea against Pollution (Mediterranean Action Plan), 1976

IV. Military

48. Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlateloco), 1967
49. Declaration of the Indian Ocean as a Zone of Peace, 1971

V. Regional Development

50. Indian Ocean Fishery Survey and Development Programme
51. Development of Fisheries in the Eastern Central Atlantic
52. Development of Fisheries in the Western Central Atlantic
53. South China Sea Fisheries Development and Coordinating Programme (Phase II)
54. Caribbean Fisheries Training and Development Centre
55. Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Off-Shore Areas (CCOP)
56. Committee for Co-ordination of Joint Prospecting for Mineral Resources in South Pacific Off-Shore Areas (CCOP/SOPAC)

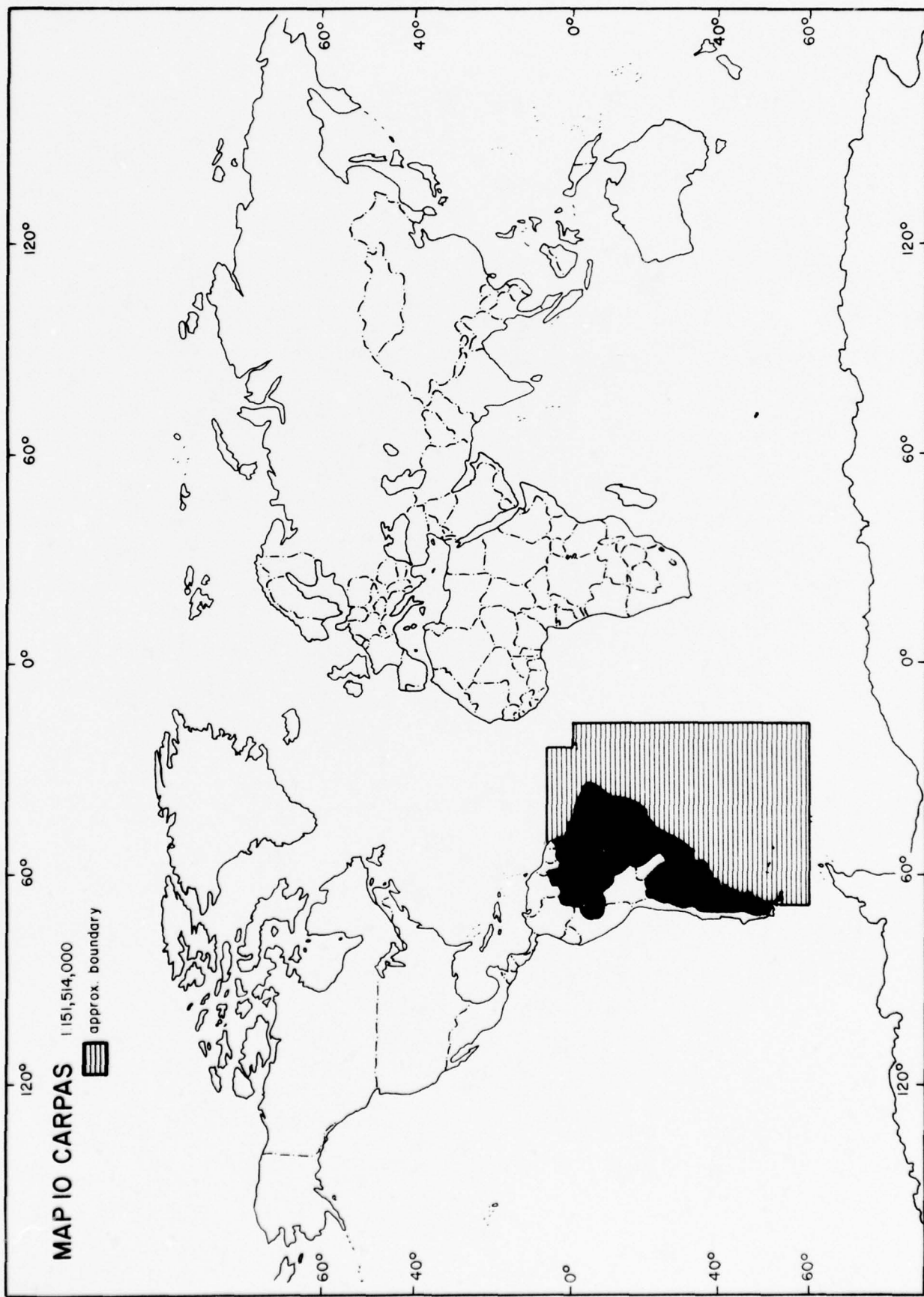
Others

57. Antarctic Treaty, 1959
58. European Agreement for the Prevention of Broadcasts Transmitted from Stations Outside National Territories, 1965
59. Statement of Indonesia, Malaysia and Singapore on the Malacca Straits, 16 November 1971

Global Conventions and Treaties with Regional Implications

- International Convention for the Prevention of Pollution of the Sea by Oil, 1954

- International Convention Relating to Intervention on the High Seas
in Cases of Oil Pollution Casualties, 1969
- International Convention on Civil Liability for Oil Pollution Damage,
1969
- Convention Relating to Civil Liability in the Field of Maritime
Carriage of Nuclear Material, 1971
- International Convention on the Establishment of an International
Fund for Compensation for Oil Pollution Damage, 1971
- International Convention for the Prevention of Pollution from Ships,
1973
- Convention on the Liability of Operators of Nuclear Ships, 1962
- Convention for the Prevention of Marine Pollution by Dumping from
Ships and Aircraft (Oslo Convention), 1972
- Convention on the Prevention of Marine Pollution by Dumping of Wastes
and Other Matter (London Convention), 1972
- Convention for the Prevention of Marine Pollution from Land-Based
Sources (Paris Convention), 1974
- Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer
Space and Underwater, 1963
- Treaty on the Prohibition of the Emplacement of Nuclear Weapons and
Other Weapons of Mass Destruction on the Sea-Bed and the Ocean
Floor and in the Subsoil Thereof, 1971



TABLES OF REGIONAL ORGANIZATIONS

I. Fisheries Conservation and Management

A. FAO-Sponsored

1. Regional Fisheries Advisory Commission for the Southwest Atlantic (CARPAS)

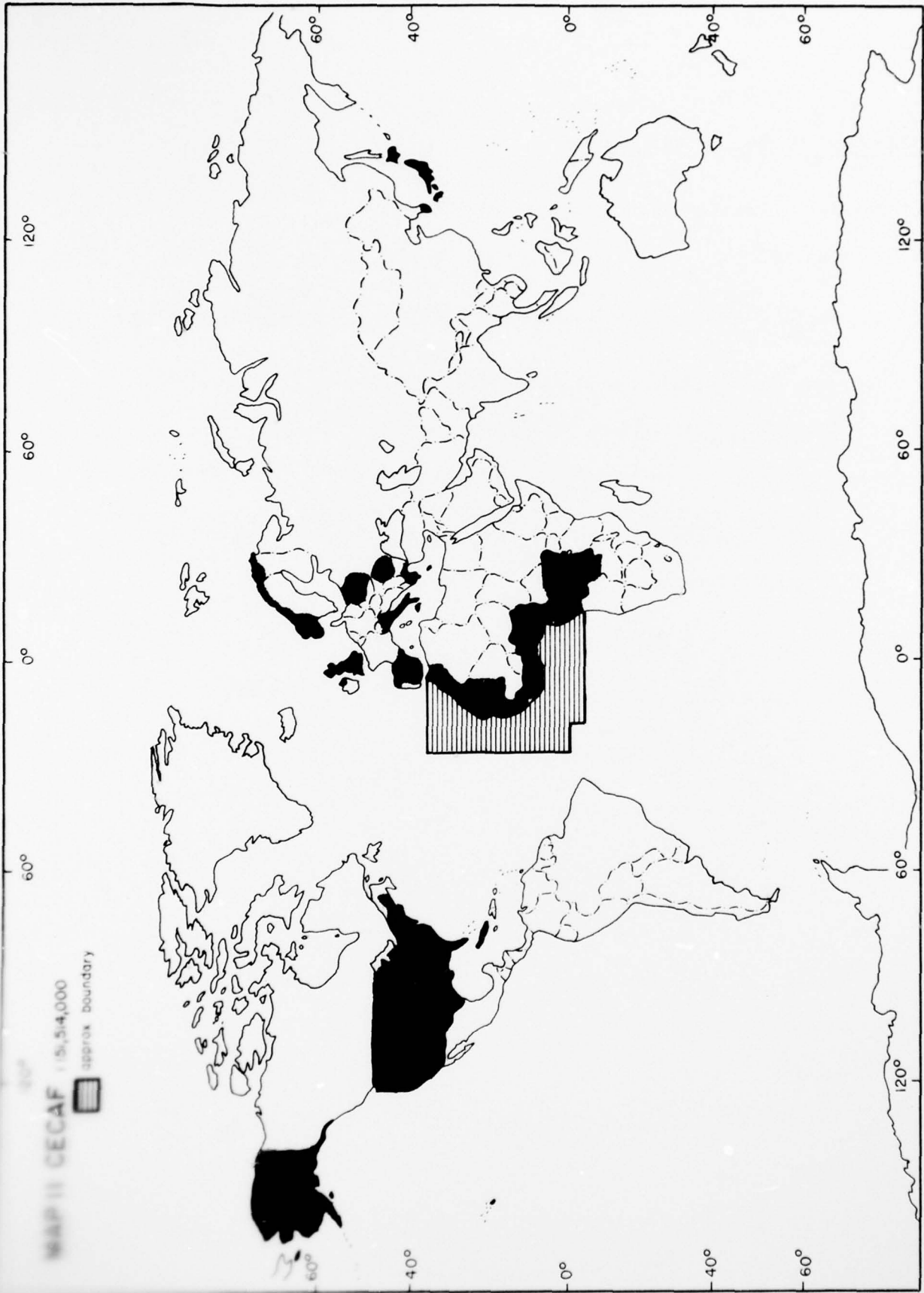
Area Covered: Southwest Atlantic

Membership: Argentina, Brazil, Uruguay

Structure: An advisory body with little autonomy. Closed membership.

Functions and Powers: Advises FAO on fishery matters concerning the Southwest Atlantic. Seeks to develop an organized approach to the rational exploitation of fishery resources and to encourage cooperative investigations.

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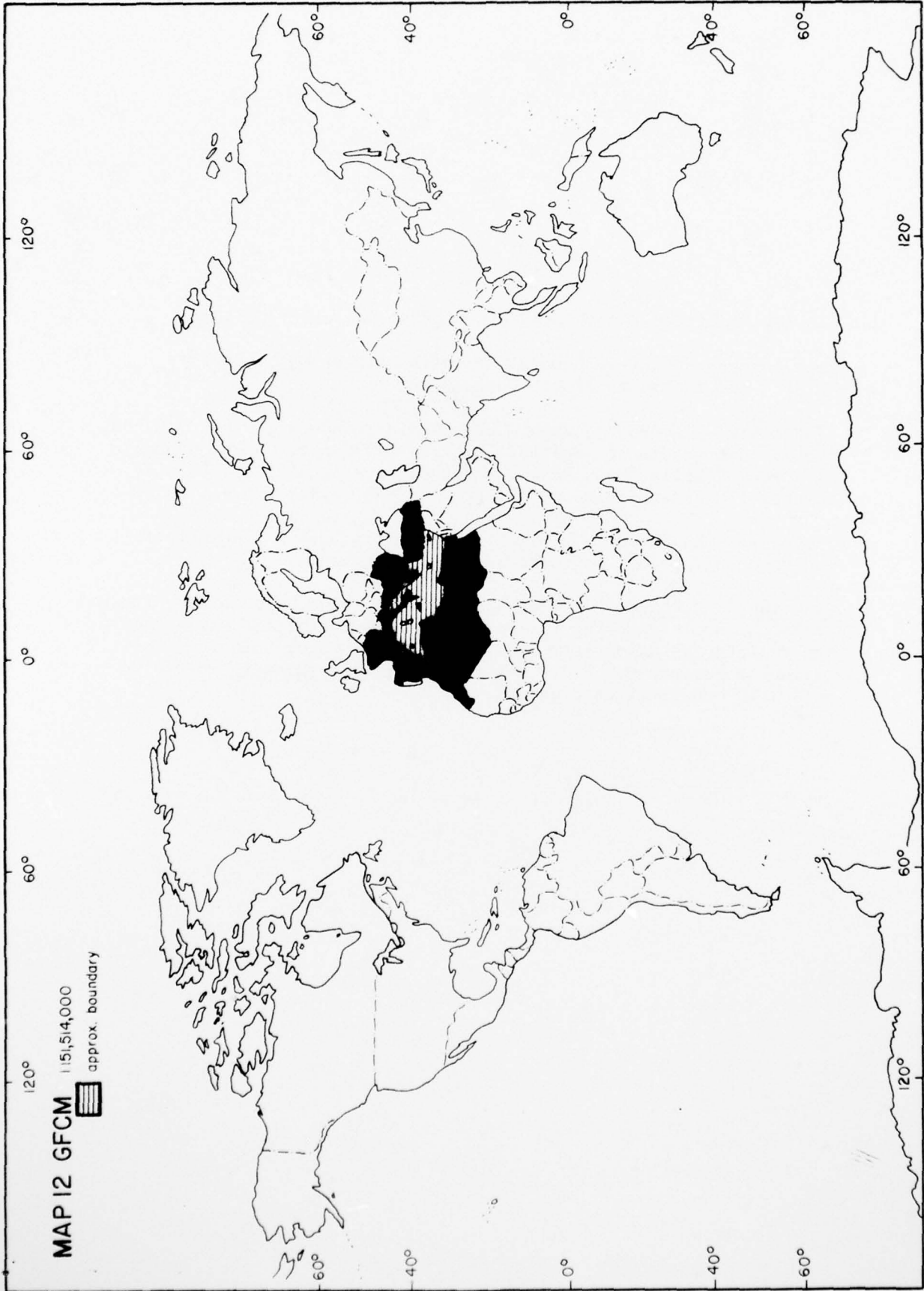
2. Fishery Committee for the Eastern Central Atlantic (CECAF)

Area Covered: Eastern Central Atlantic between Cape Spartel, Morocco and the mouth of the Congo River

Membership: Cameroon, Congo, Cuba, Benin (Dahomey), France, Gabon, Gambia, Ghana, Greece, Guinea, Italy, Ivory Coast, Japan, Republic of Korea, Liberia, Mauritania, Morocco, Nigeria, Norway, Poland, Romania, Senegal, Sierra Leone, Spain, Togo, U.K., U.S.A., Zaire

Structure: An advisory body with membership open to FAO members who have an interest in fisheries of the region.

Functions and Powers: Collects and disseminates information; renders technical assistance for the development of marine fisheries and for the training of scientists and technicians; promotes rational utilization of resources. CECAF has virtually no regulatory powers to deal with conservation problems.



MAP 12 GFCM 1:51,514,000
approx. boundary

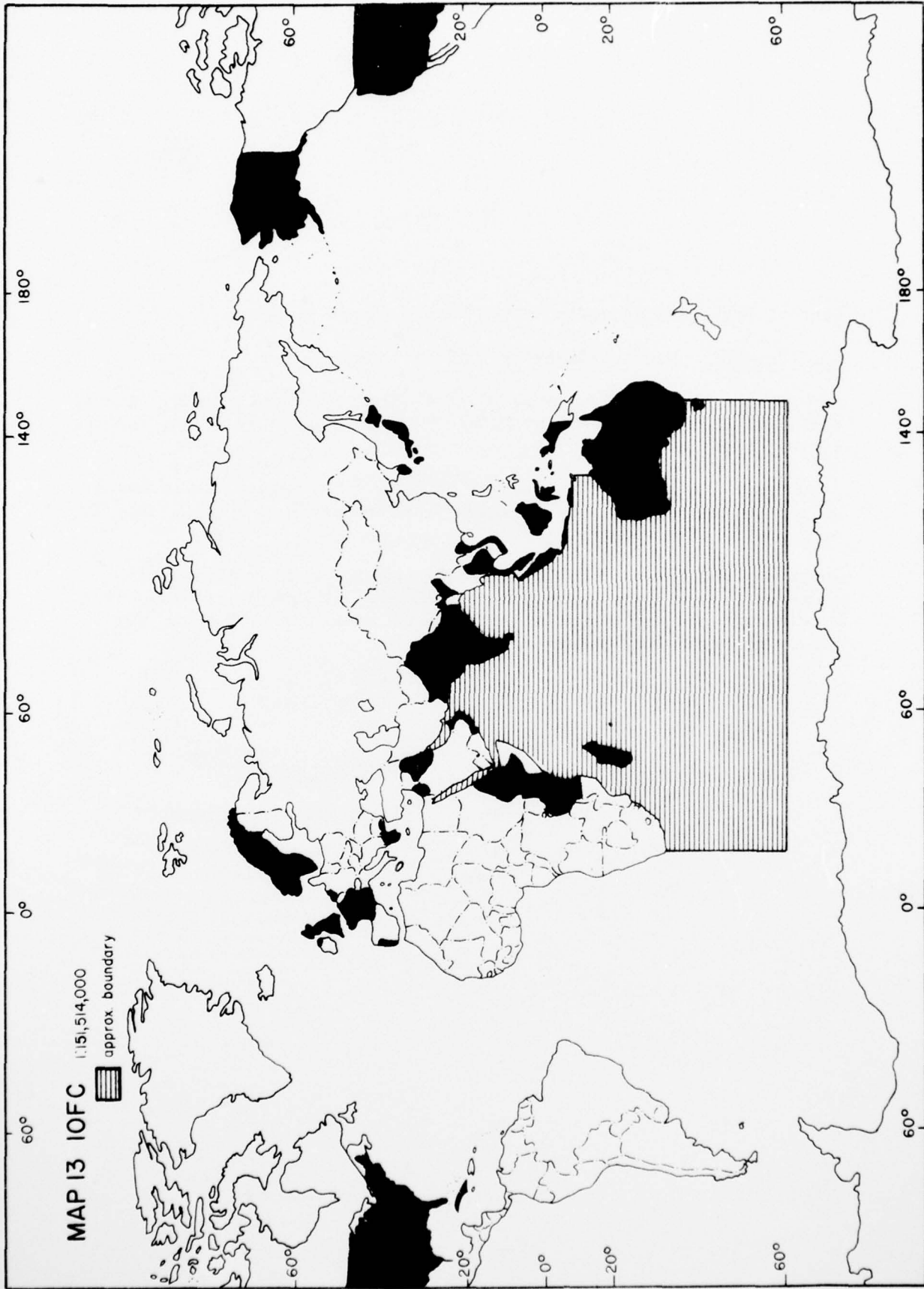
3. General Fisheries Council for the Mediterranean (GFCM)

Area Covered: Mediterranean Sea and contiguous waters

Membership: Algeria, Bulgaria, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Morocco, Romania, Spain, Tunisia, Turkey, Yugoslavia

Structure: An advisory body whose membership is open to all members of the United Nations. Applications must be approved by a two-thirds majority of GFCM members.

Functions and Powers: Collects and disseminates information; encourages fisheries research and development; advises on problems of development and the proper utilization of resources. GFCM has virtually no regulatory powers.



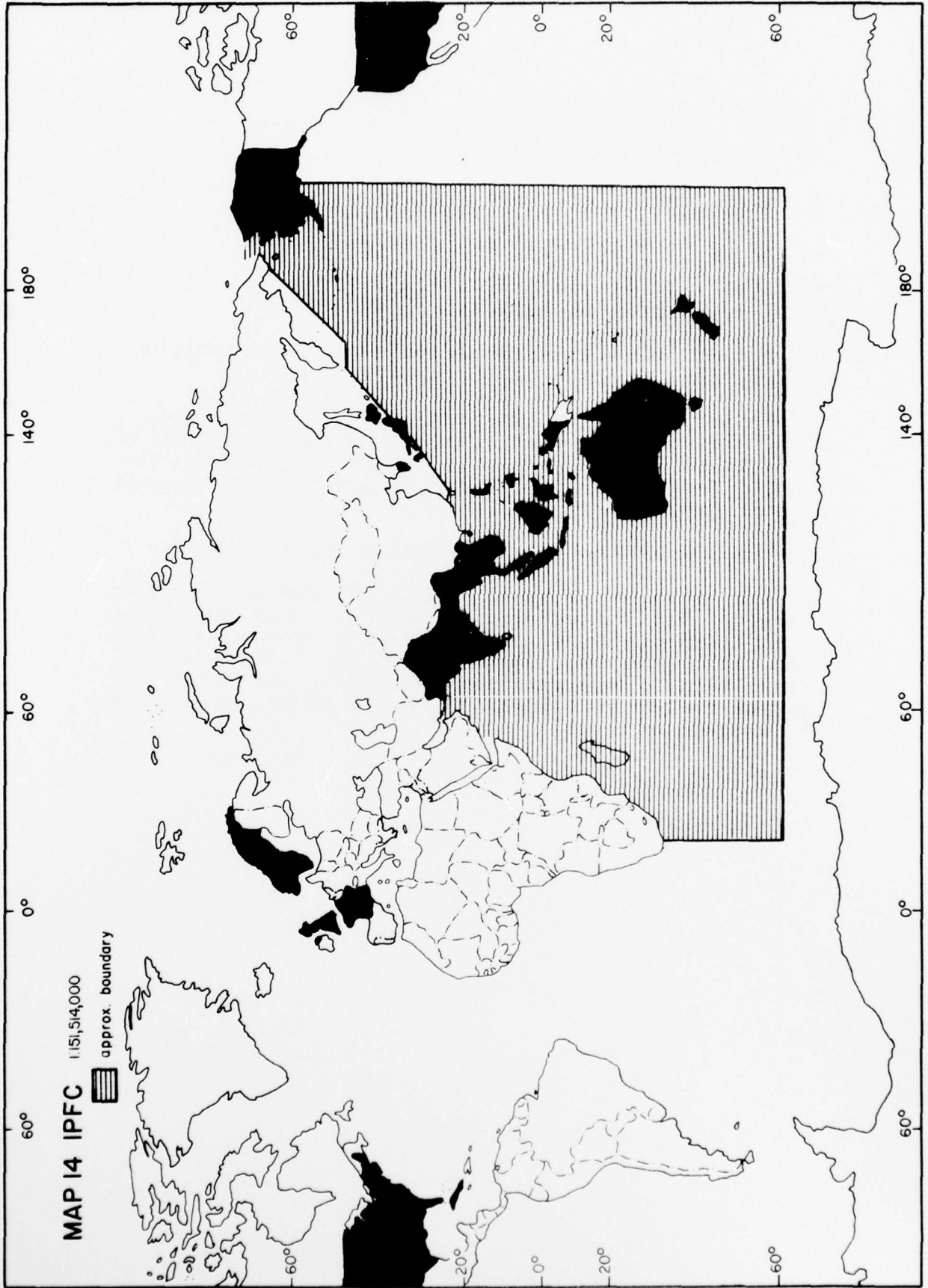
4. Indian Ocean Fishery Commission (IOFC)

Area Covered: Indian Ocean and adjacent seas, but excluding the Antarctic area

Membership: Australia, Bahrain, Cuba, Ethiopia, France, Greece, India, Indonesia, Iraq, Israel, Japan, Jordan, Kenya, Republic of Korea, Kuwait, Madagascar, Malaysia, Mauritius, Netherlands, Norway, Oman, Pakistan, Portugal, Qatar, Sri Lanka, Sweden, Tanzania, Thailand, United Arab Emirates, U.K., U.S.A., Vietnam

Structure: An advisory body open to all FAO member states.

Functions and Powers: Promotes, assists and coordinates national programs of fishery development, including the examination of management functions. It is actively engaged in improving the collection of statistical data, and in reviewing the state of the fisheries. Under its aegis the Indian Ocean Fishery and Development Programme has been established. It has only minimal powers to deal with conservation issues.



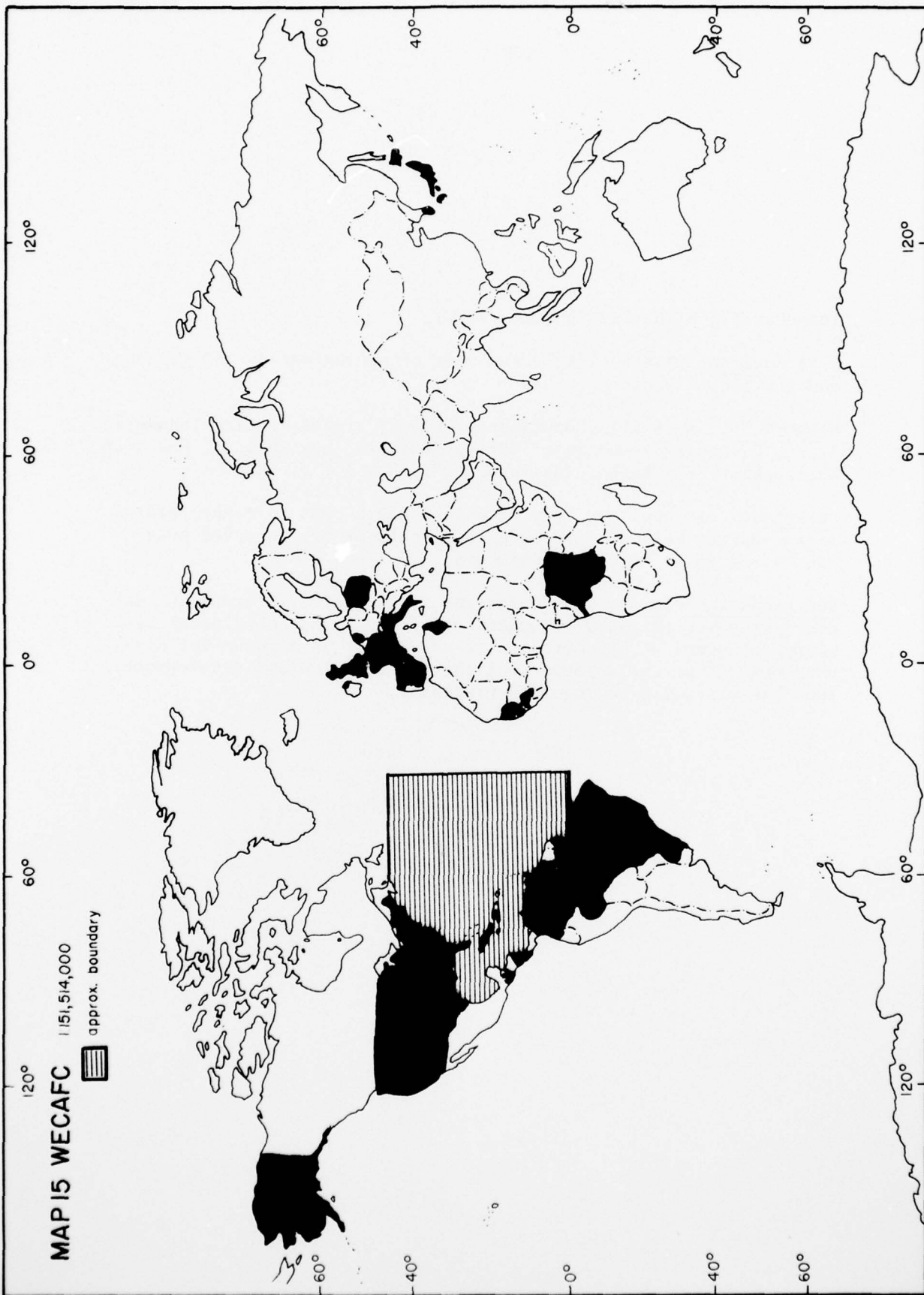
5. Indo-Pacific Fisheries Council (IPFC)

Area Covered: The Pacific Ocean west of approximately 150°W. Long., and the Indian Ocean

Membership: Australia, Bangladesh, Burma, France, India, Indonesia, Japan, Cambodia, Republic of Korea, Malaysia, New Zealand, Pakistan, Philippines, Sri Lanka, Thailand, U.K., U.S.A., Vietnam

Structure: An advisory body with membership open to member states of the United Nations, providing applications are approved by a two-thirds majority of IPFC members.

Functions and Powers: Assembles and disseminates information, encourages research and development activities, and coordinates research programs of its member states. Serves as a forum for discussions of various aspects of fisheries research and development. IPFC has virtually no regulatory powers.



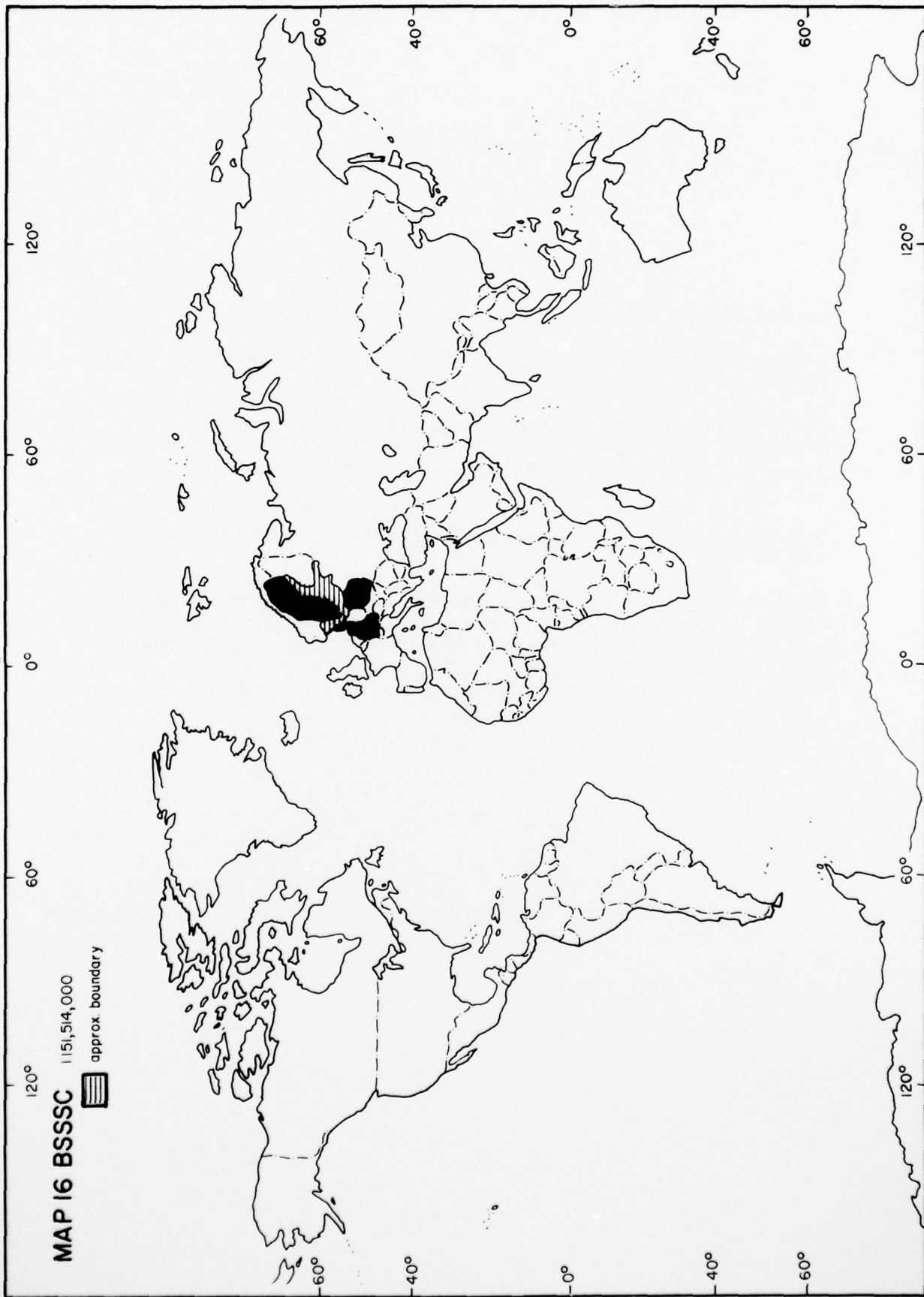
6. Western Central Atlantic Fishery Commission (WECAFC)

Area Covered: Western Central Atlantic Ocean, including the Caribbean Sea and the Gulf of Mexico

Membership: Brazil, Colombia, Cuba, France, Guatemala, Guinea, Guyana, Haiti, Italy, Jamaica, Japan, Republic of Korea, Netherlands, Nicaragua, Poland, Senegal, Spain, Trinidad and Tobago, Tunisia, U.K., U.S.A., Venezuela, Zaire

Structure: An advisory body with membership open to all FAO member states.

Functions and Powers: Promotes the collection of statistics; facilitates the coordination of research programs; assists member governments in establishing rational fisheries policies. WECAFC has no regulatory powers of its own.



B. Independent

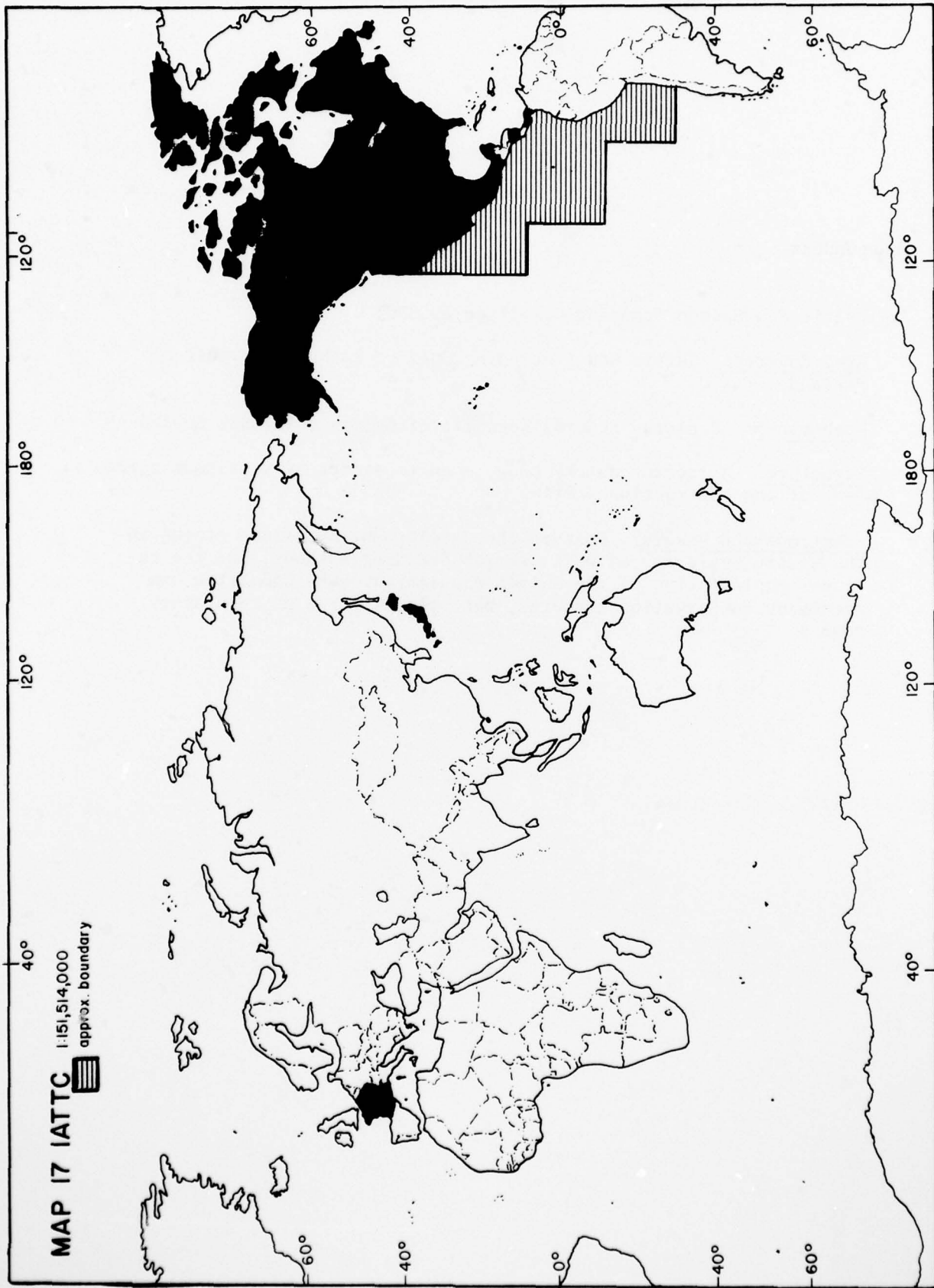
7. Baltic Sea Salmon Standing Committee (BSSSC)

Area Covered: Baltic Sea, including Gulf of Bothnia and Gulf of Finland

Membership: Denmark, Federal Republic of Germany, Poland, Sweden

Structure: A recommendatory body, open to states by unanimous agreement of the contracting parties.

Functions and Powers: Fosters the development of salmon stocks in the Baltic Sea area, as well as fish breeding methods, and the rational exploitation of the salmon population. The Committee can recommend conservation measures, but otherwise has no regulatory powers.



8. Inter-American Tropical Tuna Commission (IATTC)

Area Covered: Eastern Pacific Ocean

Membership: Canada, Costa Rica, France, Japan, Mexico, Nicaragua, Panama, U.S.A.

Structure: A recommendatory organization with its own international staff which carries out research and suggests conservation measures. Membership open to signatory states and others by unanimous agreement of the contracting parties.

Functions and Powers: The Commission is responsible for investigating the stocks of tuna in the Eastern Pacific, and for recommending conservation measures in order to maintain the stocks at the level of maximum sustainable yield. Headquarters are in La Jolla, California. One problem is that Ecuador and Peru, off whose coasts much of the yellowfin tuna is caught, are not members of the Commission.

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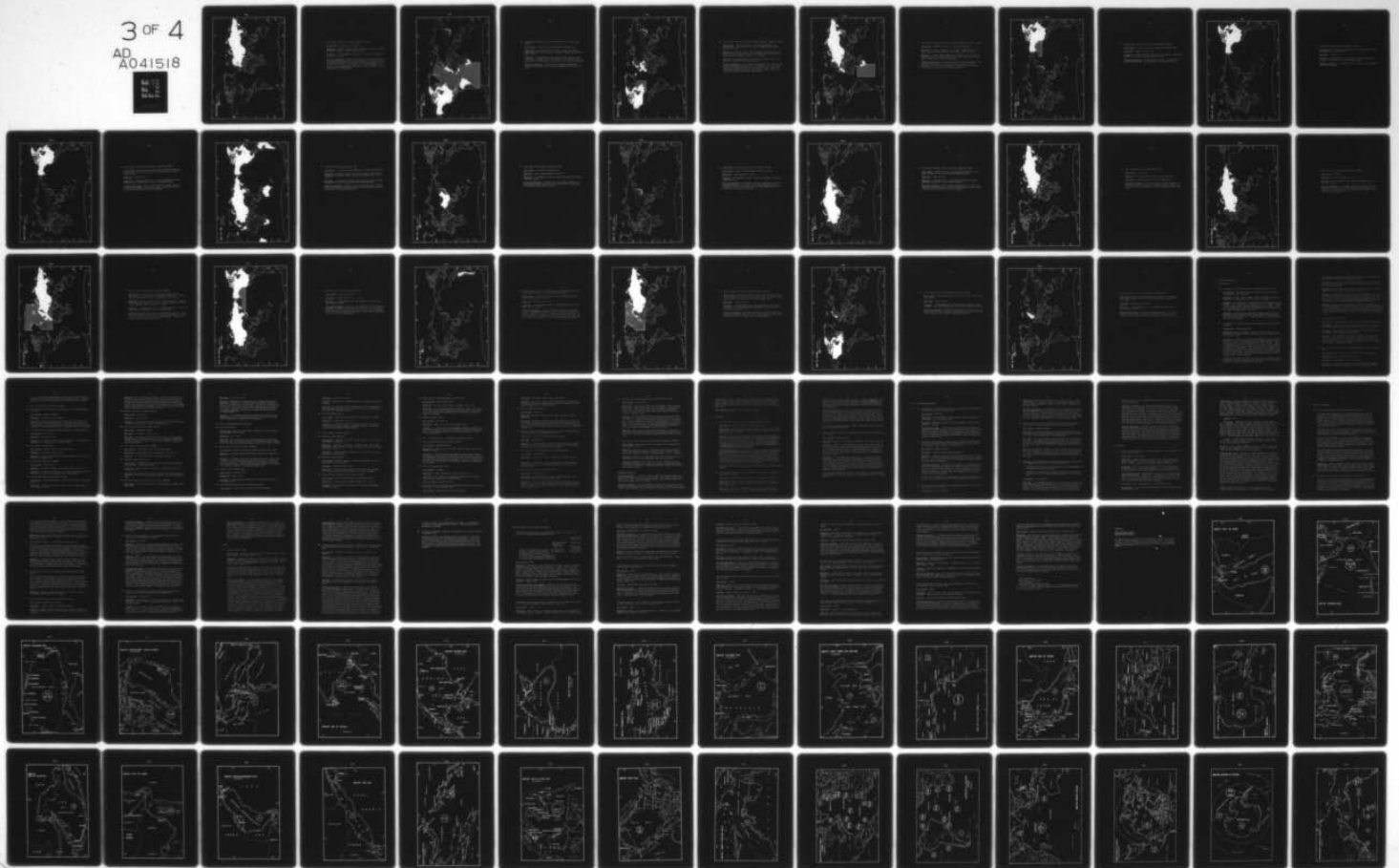
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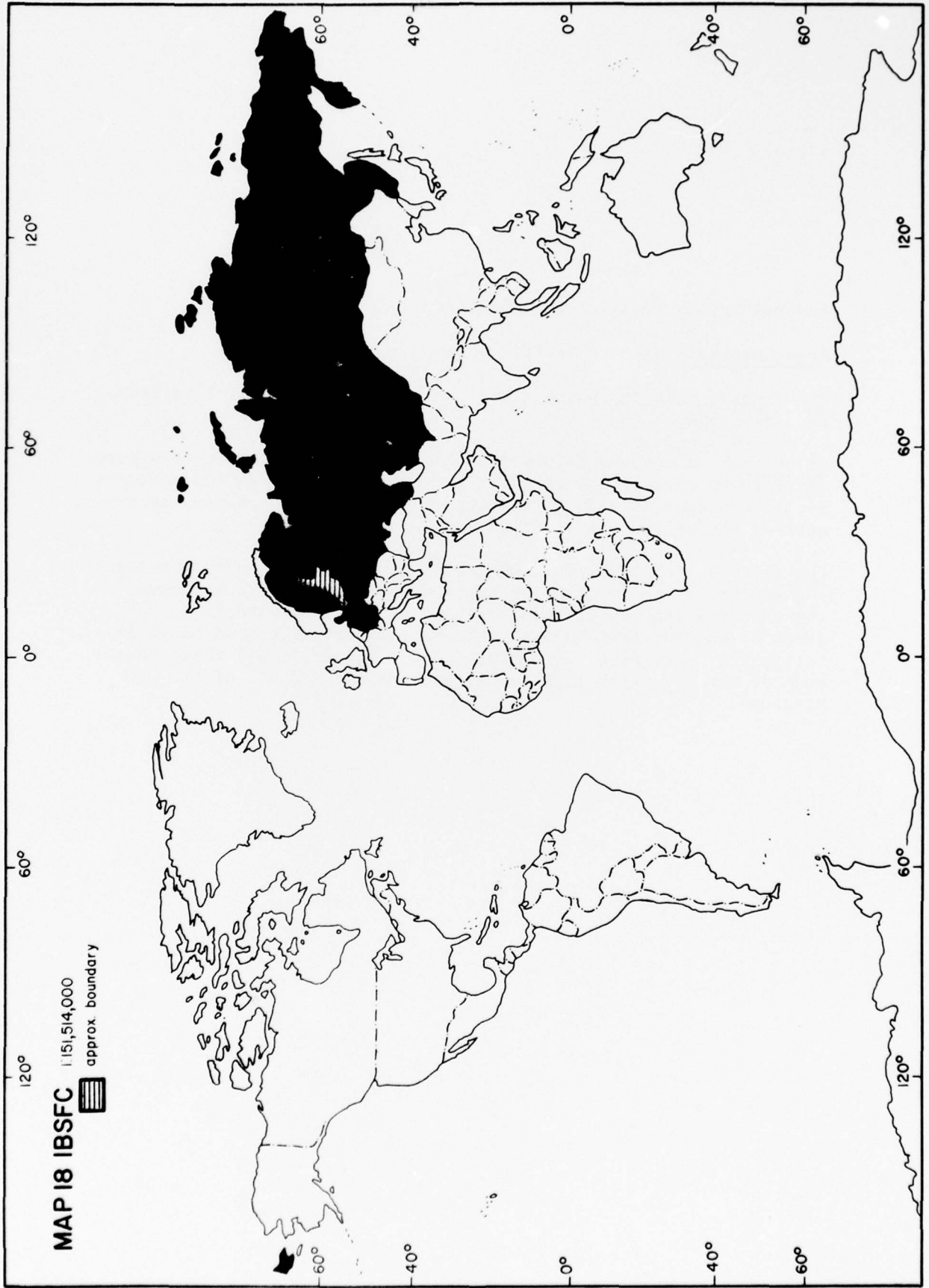
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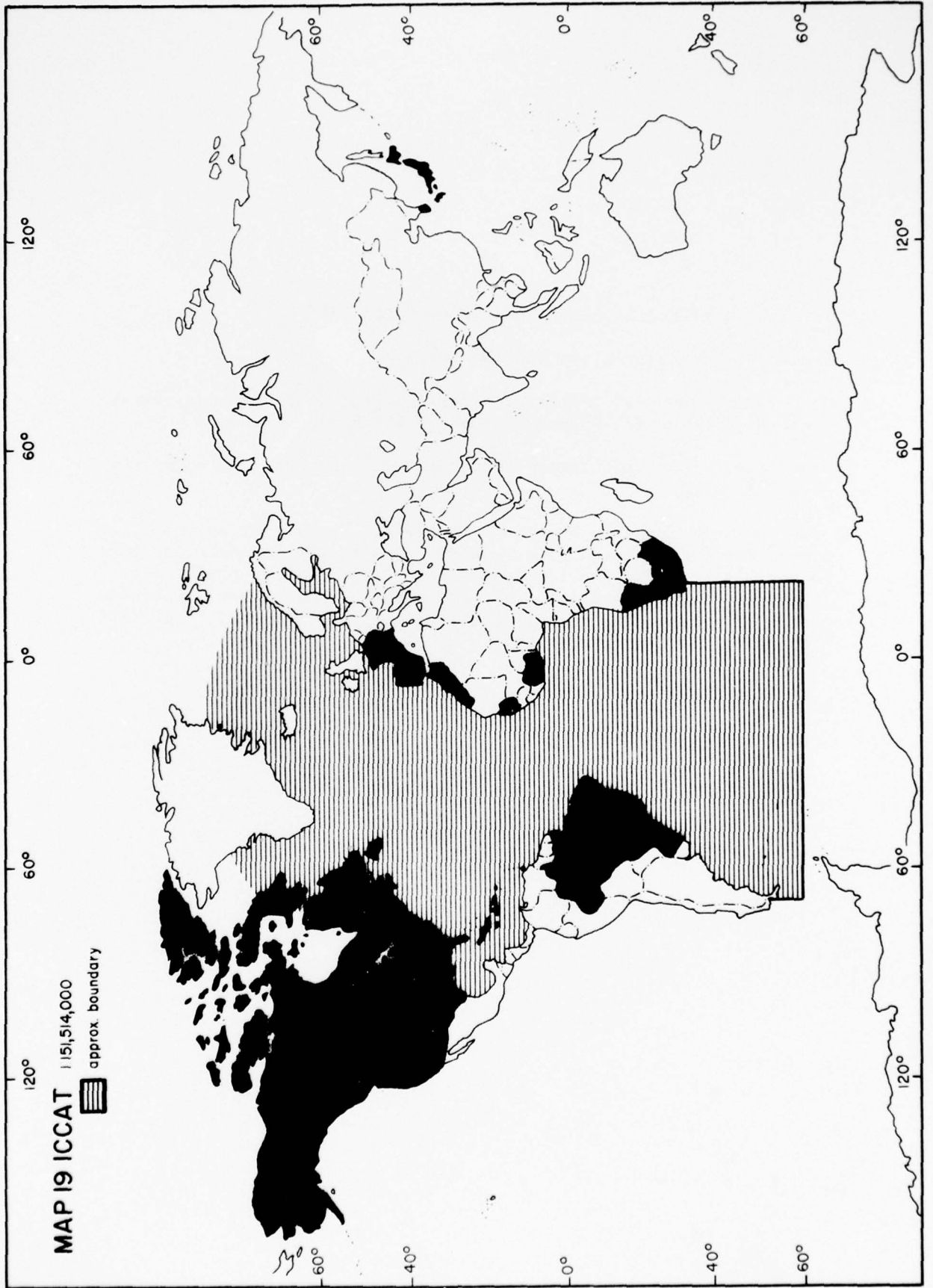
9. International Baltic Sea Fishery Commission (IBSFC)

Area Covered: Baltic Sea and the Belts

Membership: Denmark, Finland, Federal Republic of Germany, German Democratic Republic, Poland, Sweden, U.S.S.R.

Structure: A recommendatory body open to countries invited by the contracting parties.

Functions and Powers: Maintains the Baltic Sea fisheries under review; coordinates scientific research efforts of the member states; recommends conservation regulations including fishing gear, size limits of fish, closed areas and seasons. Also recommends the allocation of catch among member countries, as well as methods for implementing the recommendations.



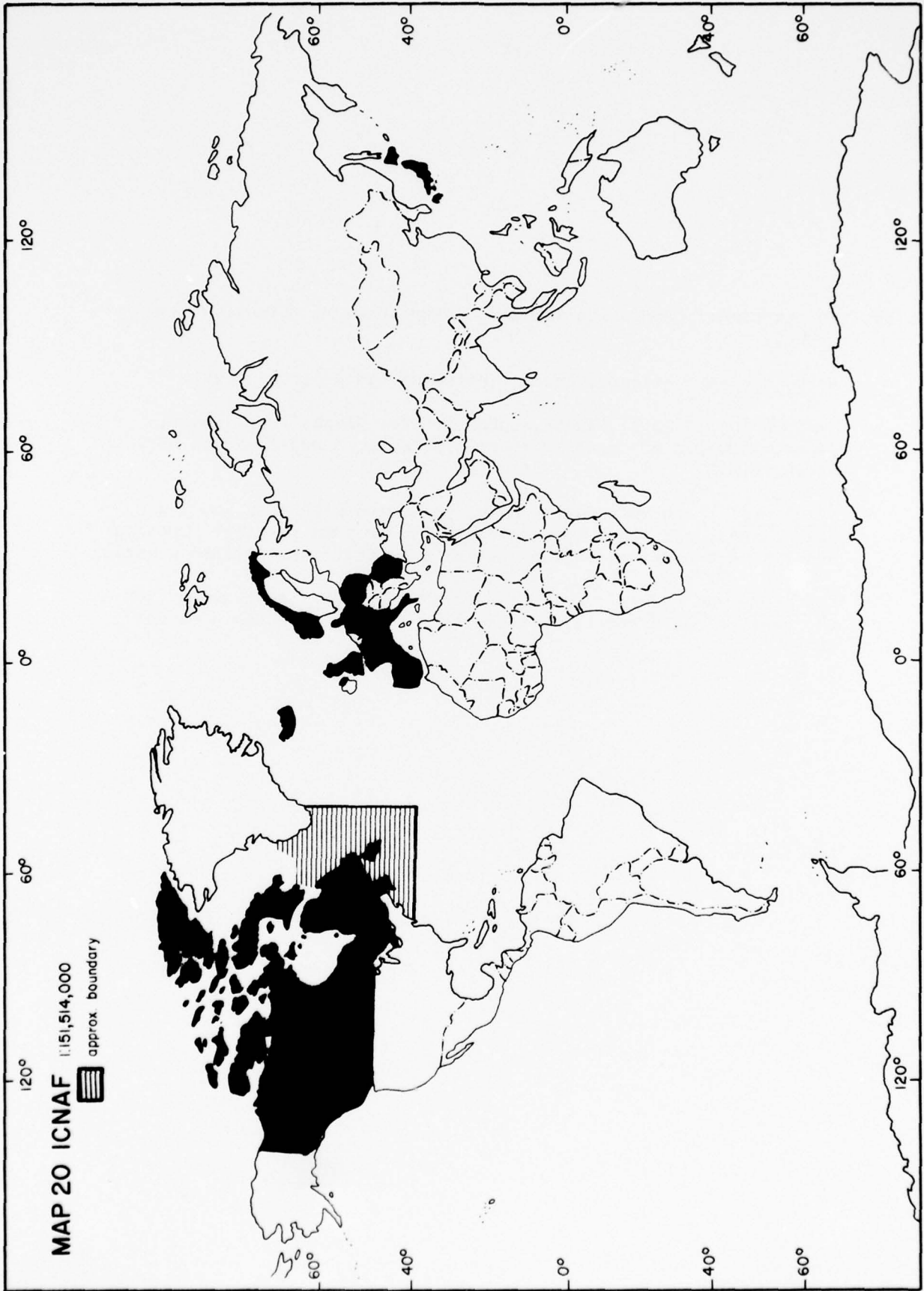
10. International Commission for the Conservation of Atlantic Tunas
(ICCAT)

Area Covered: Atlantic Ocean, including the adjacent seas

Membership: Brazil, Canada, Cuba, France, Ghana, Ivory Coast, Japan, Republic of Korea, Morocco, Portugal, Senegal, South Africa, Spain, U.S.A.

Structure: A recommendatory body, concerned with tuna and tuna-like fishes, and other species exploited in tuna fishing. Open to members of the United Nations and of any of its specialized agencies.

Functions and Powers: Collects and disseminates information. On the basis of data received, recommends conservation measures for tuna.



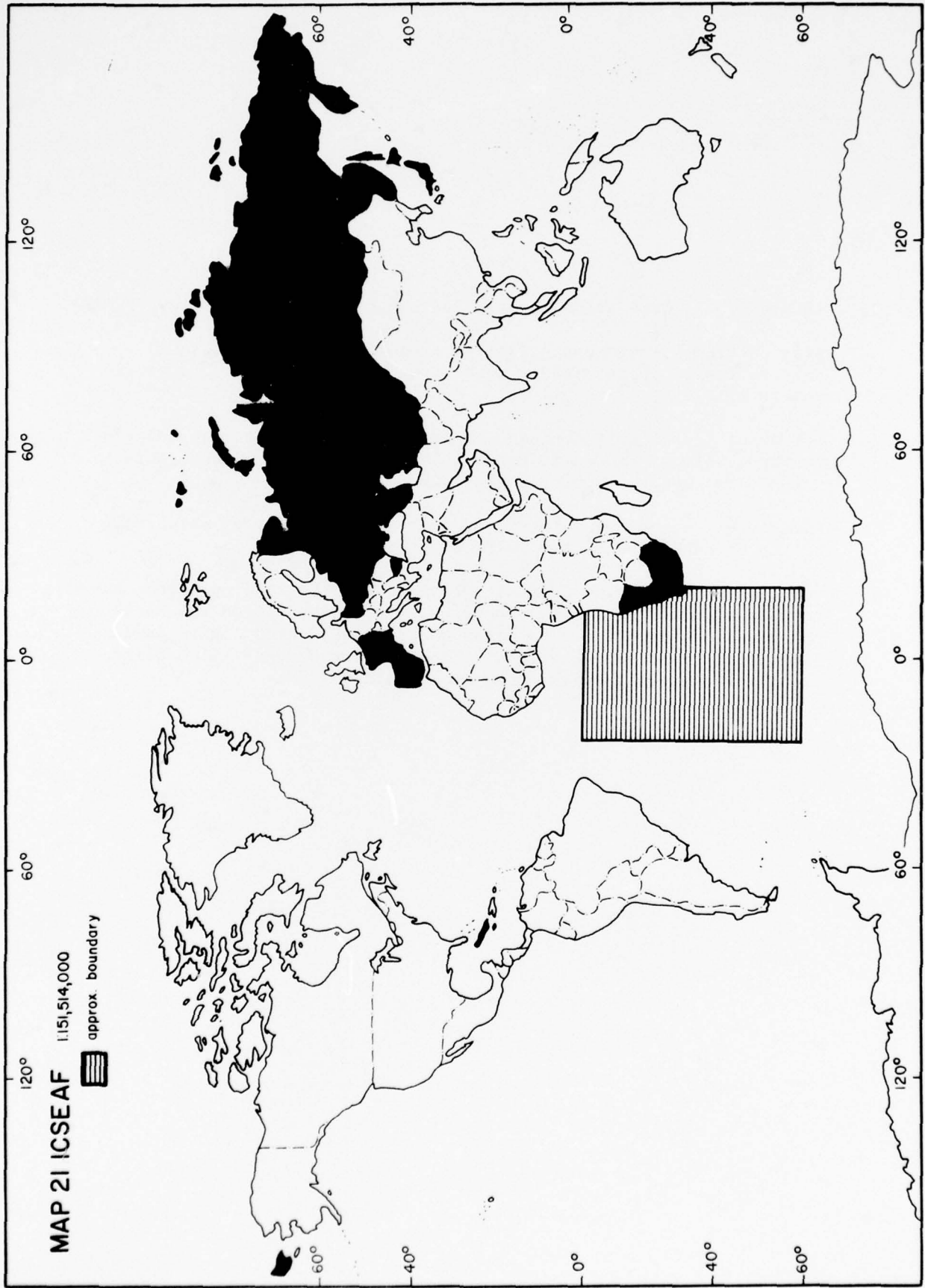
11. International Commission for the Northwest Atlantic Fisheries (ICNAF)

Area Covered: Northwest Atlantic, excluding territorial seas.
Eastern limit, approximately 42°W. Long.; southern limit, approximately 39°N. Lat.

Membership: Bulgaria, Canada, Denmark, France, Federal Republic of Germany, German Democratic Republic, Iceland, Italy, Japan, Norway, Poland, Portugal, Romania, Spain, U.K., U.S.S.R.

Structure: A recommendatory body open to all countries which give notice of adherence to the 1949 Convention.

Functions and Powers: Carries out investigations and research, based on data supplied by member countries; recommends action for stock conservation through closed areas and seasons, catch limits, size limitations, and gear control. ICNAF also recommends catch allocations for certain species among member states.



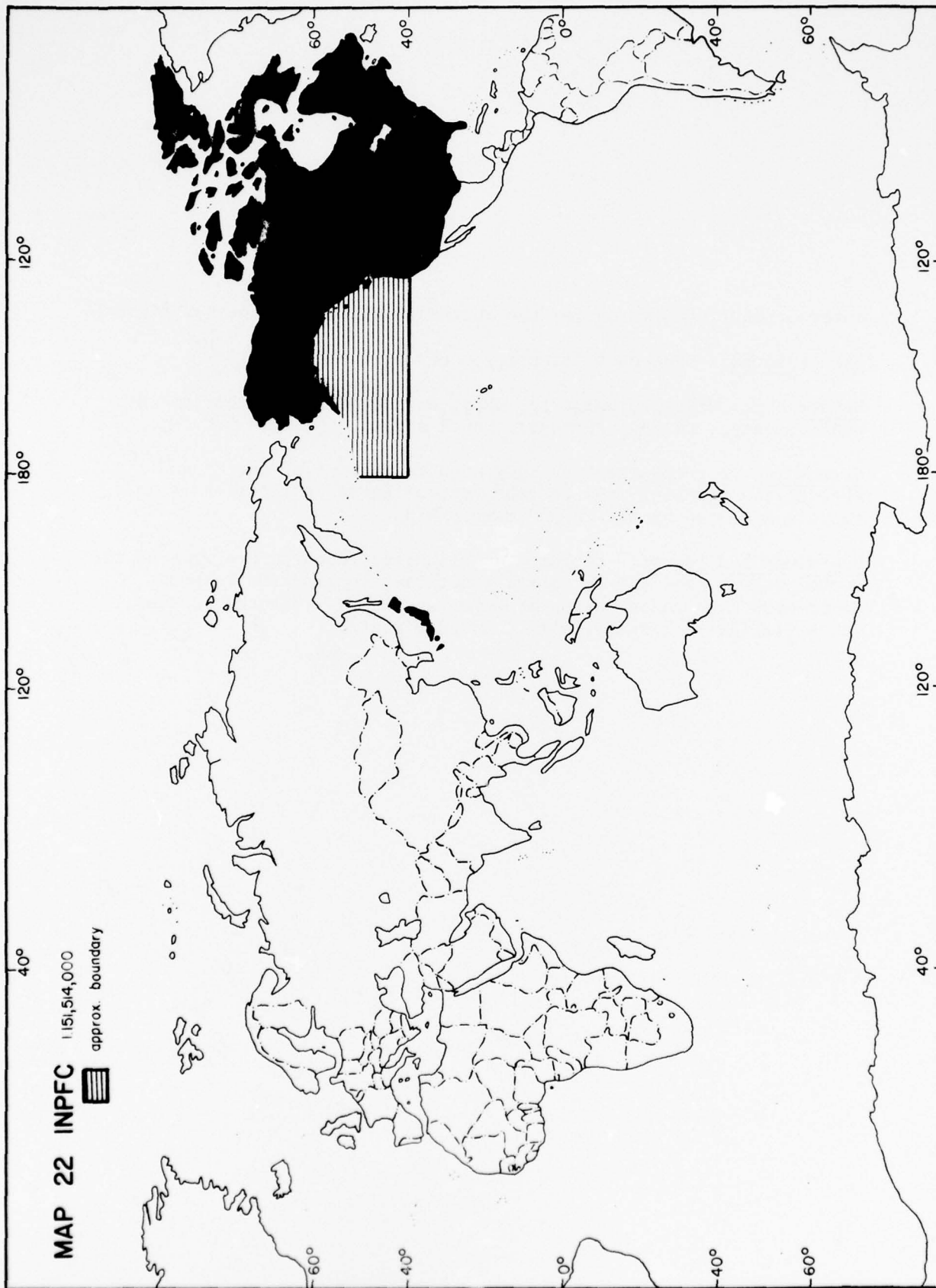
12. International Commission for the Southeast Atlantic Fisheries (ICSEAF)

Area Covered: Southeast Atlantic, south of the Congo River

Membership: Belgium, Bulgaria, Cuba, France, German Democratic Republic, Japan, Poland, Portugal, South Africa, Spain, U.S.S.R.

Structure: A recommendatory body open to members of the UN and its specialized agencies, and to other states whose application is unanimously approved by the ICSEAF membership.

Functions and Powers: Coordinates fisheries research programs of the member states, as well as carrying out its own research efforts. Recommends such conservation measures as closed areas and seasons, catch limitations, size limits, and gear control.



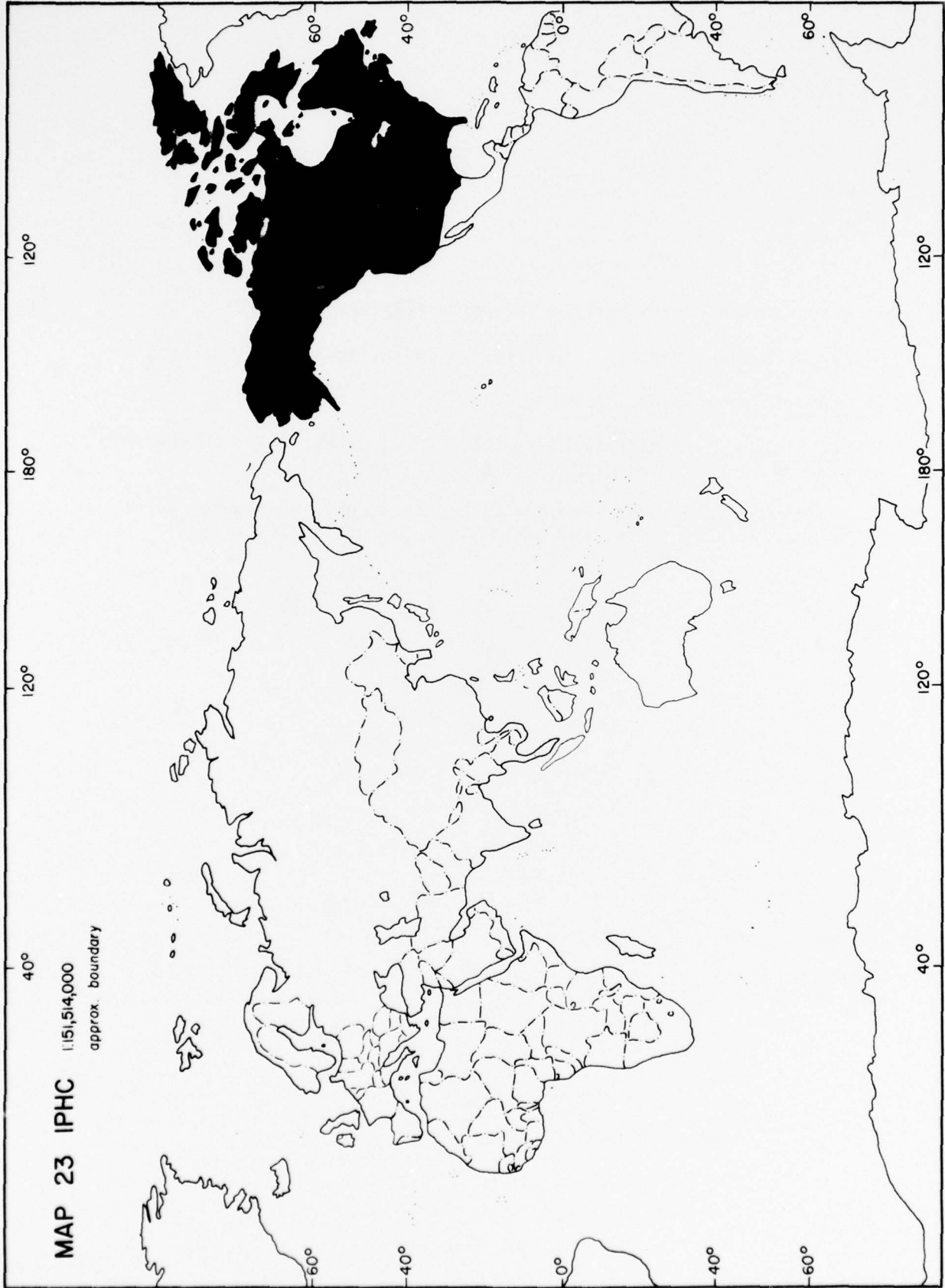
13. International North Pacific Fisheries Commission (INPFC)

Area Covered: Northeast Pacific, excluding territorial waters

Membership: Canada, Japan, U.S.A.

Structure: A regulatory body with a small secretariat. Membership limited to the three original signatory states.

Functions and Powers: Reviews fisheries stocks, recommends joint conservation measures, and administers the abstention system.



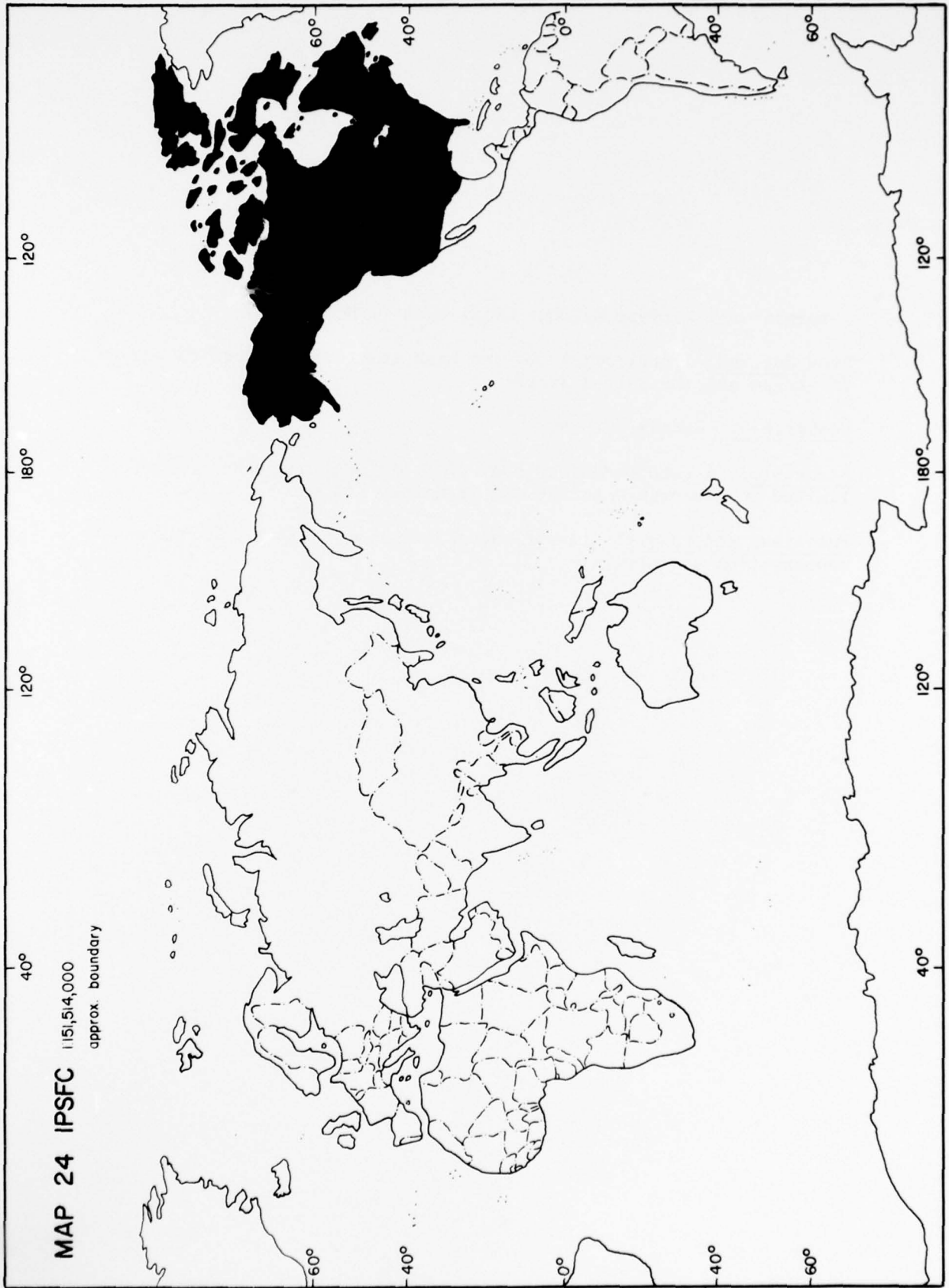
14. International Pacific Halibut Commission (IPHC)

Area Covered: Territorial sea and high seas off the western coasts of Canada and the United States

Membership: Canada, U.S.A.

Structure: A recommendatory body with its own independent staff, limited in membership to the two signatory states.

Functions and Powers: Investigates stocks of halibut and recommends conservation measures.



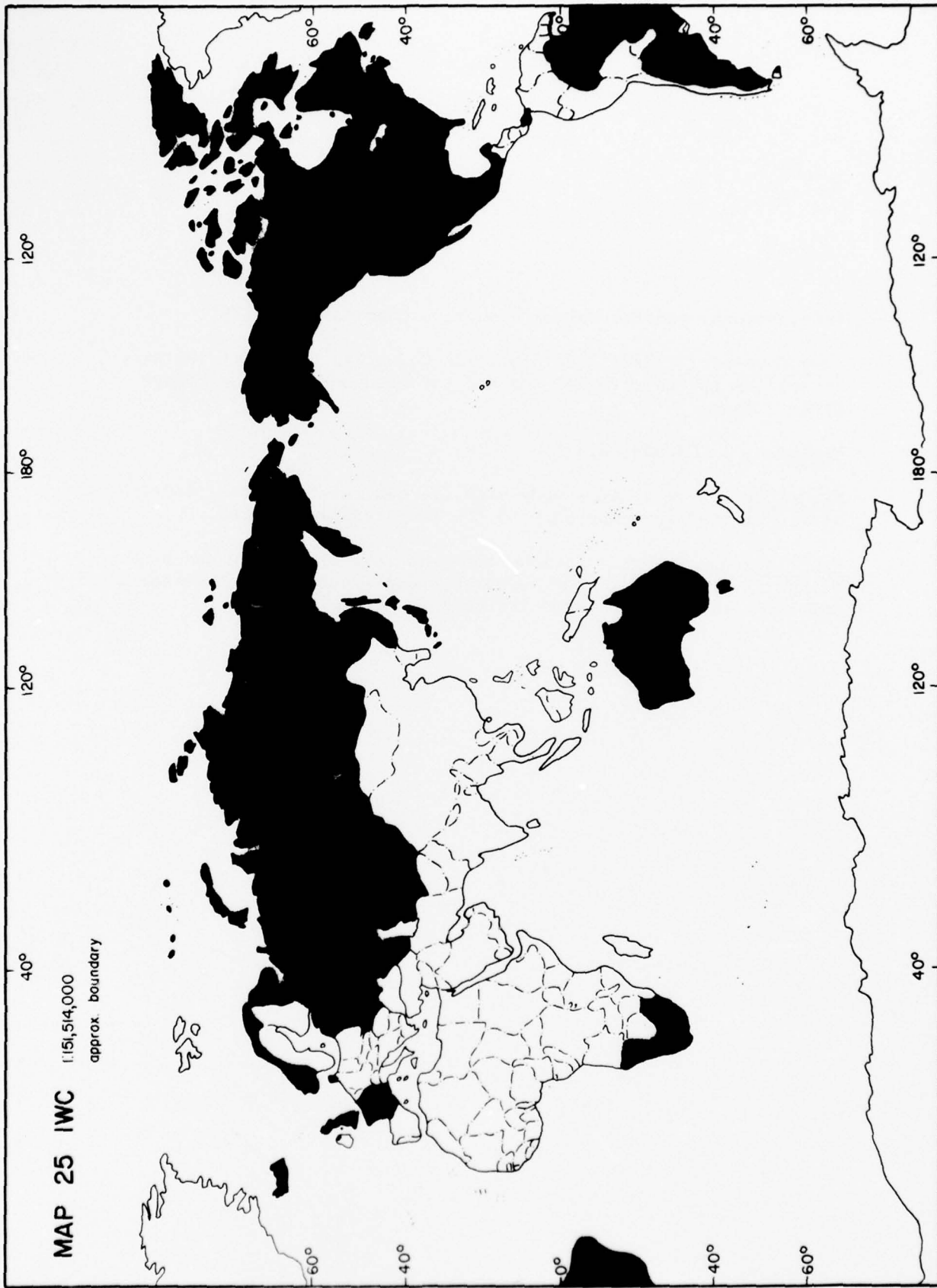
15. International Pacific Salmon Fisheries Commission (IPSFC)

Area Covered: Fraser River (British Columbia) and its tributaries, as well as the territorial sea and the high seas off the Fraser River estuary

Membership: Canada, U.S.A.

Structure: A regulatory body with its own international research staff, limited in membership to the two signatory states.

Functions and Powers: Reviews the Fraser River sockeye and pink salmon stocks, carries out research, adopts conservation measures, and allocates catch between the member states.



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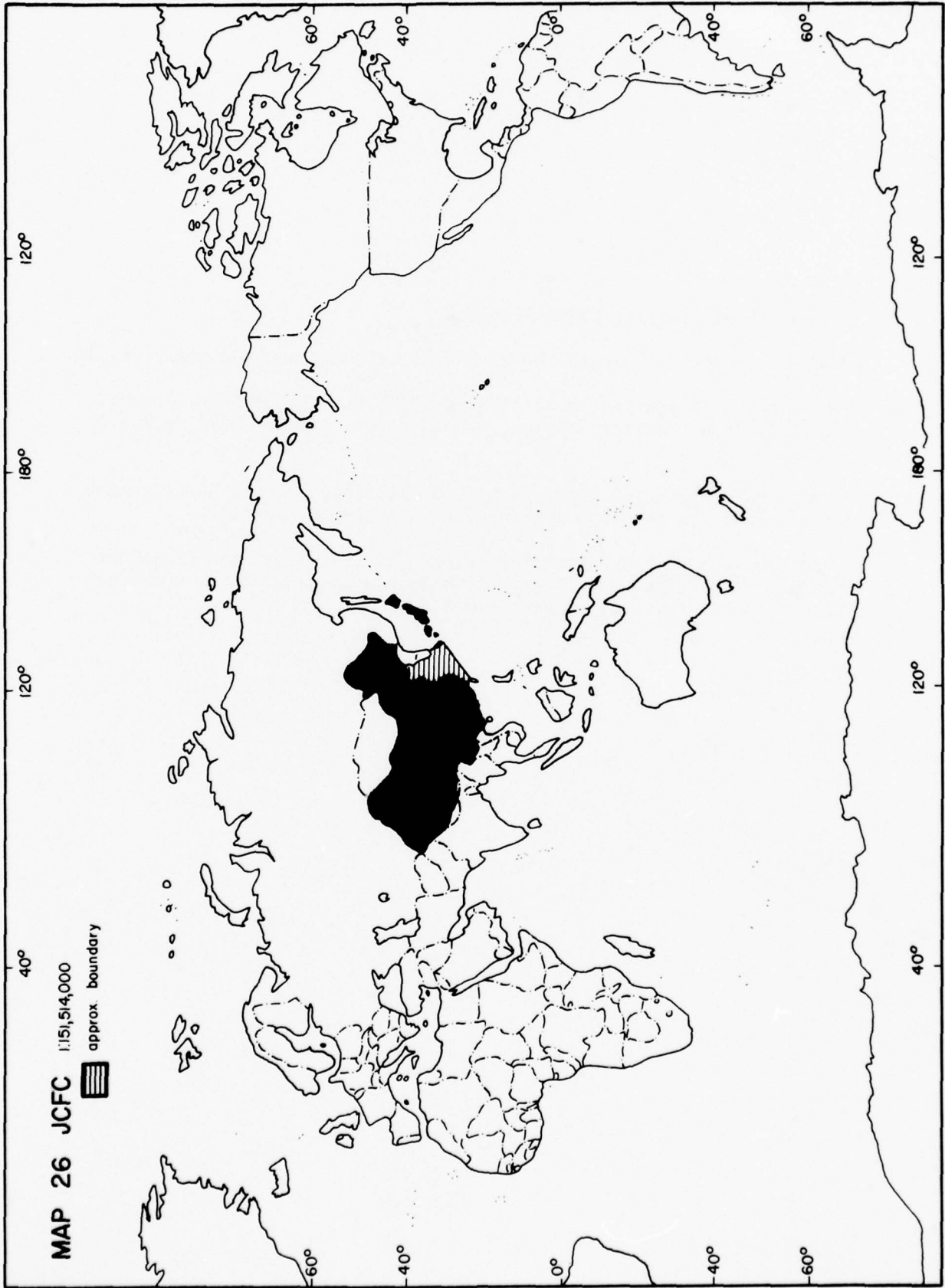
16. International Whaling Commission (IWC)

Area Covered: All waters in which whaling is prosecuted commercially.

Membership: Argentina, Australia, Brazil, Canada, Denmark, France, Iceland, Japan, Mexico, Norway, Panama, South Africa, U.K., U.S.A., U.S.S.R.

Structure: A regulatory body open to all states giving notification of adherence to the 1946 International Whaling Convention.

Functions and Powers: Promotes scientific investigations of member states, reviews the conditions of whale stocks, and adopts conservation measures for their preservation.



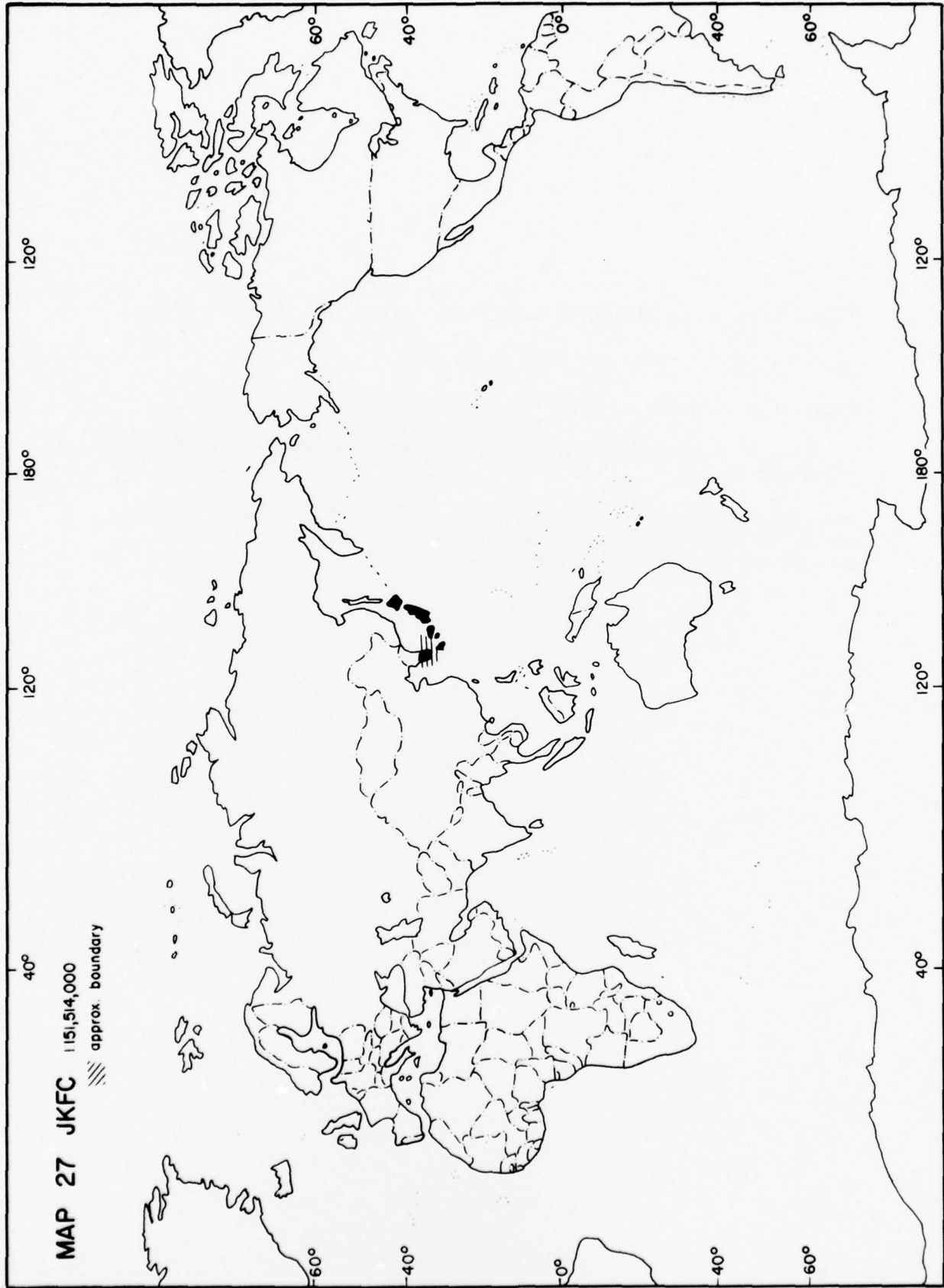
17. Japan-China Joint Fisheries Commission (JCFC)

Area Covered: Yellow and East China seas

Membership: Japan, Peoples Republic of China

Structure: A recommendatory body, limited in membership to the two signatory states.

Functions and Powers: Exchanges data and conducts studies on the condition of fishery resources in the Yellow and East China seas, and recommends conservation measures.



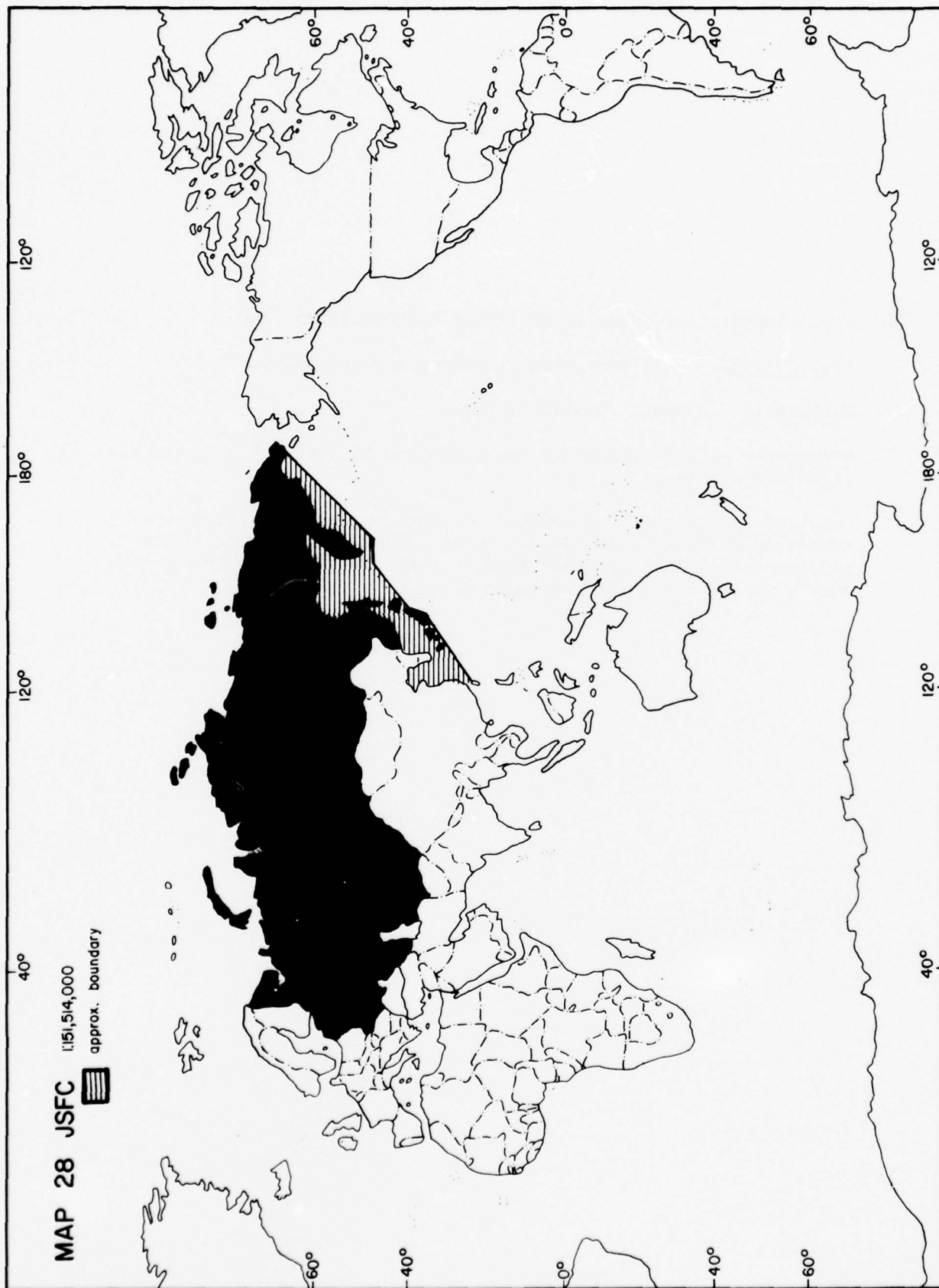
18. Japan-Republic of Korea Joint Fisheries Commission (JKFC)

Area Covered: High seas waters between the two countries.

Membership: Japan, Republic of Korea

Structure: A recommendatory body, limited in membership to the two signatory states.

Functions and Powers: Recommends scientific investigations and conservation measures with respect to the joint control zones; also recommends revisions of the regulatory measures adopted by the two countries for the joint control zones.



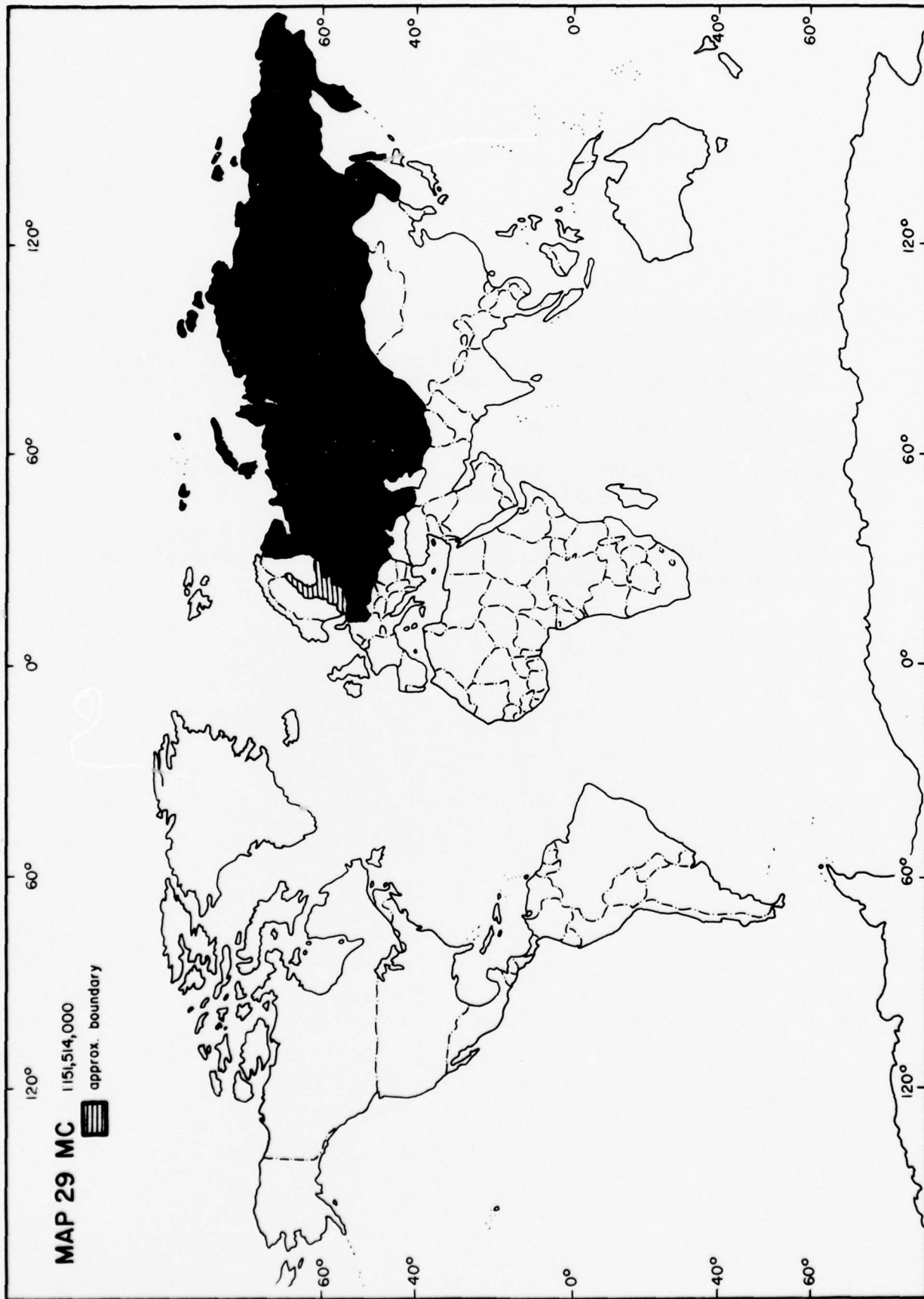
19. Japan-Soviet Northwest Pacific Fisheries Commission (JSFC)

Area Covered: Northwest Pacific, including Sea of Okhotsk, Sea of Japan, and Bering Sea, but excluding territorial waters

Membership: Japan, U.S.S.R.

Structure: A regulatory body, with special reference to salmon.
Membership restricted to the signatory states.

Functions and Powers: Reviews conservation measures in force, coordinates research programs, determines total annual catch of salmon, and allocates quotas between the two countries.



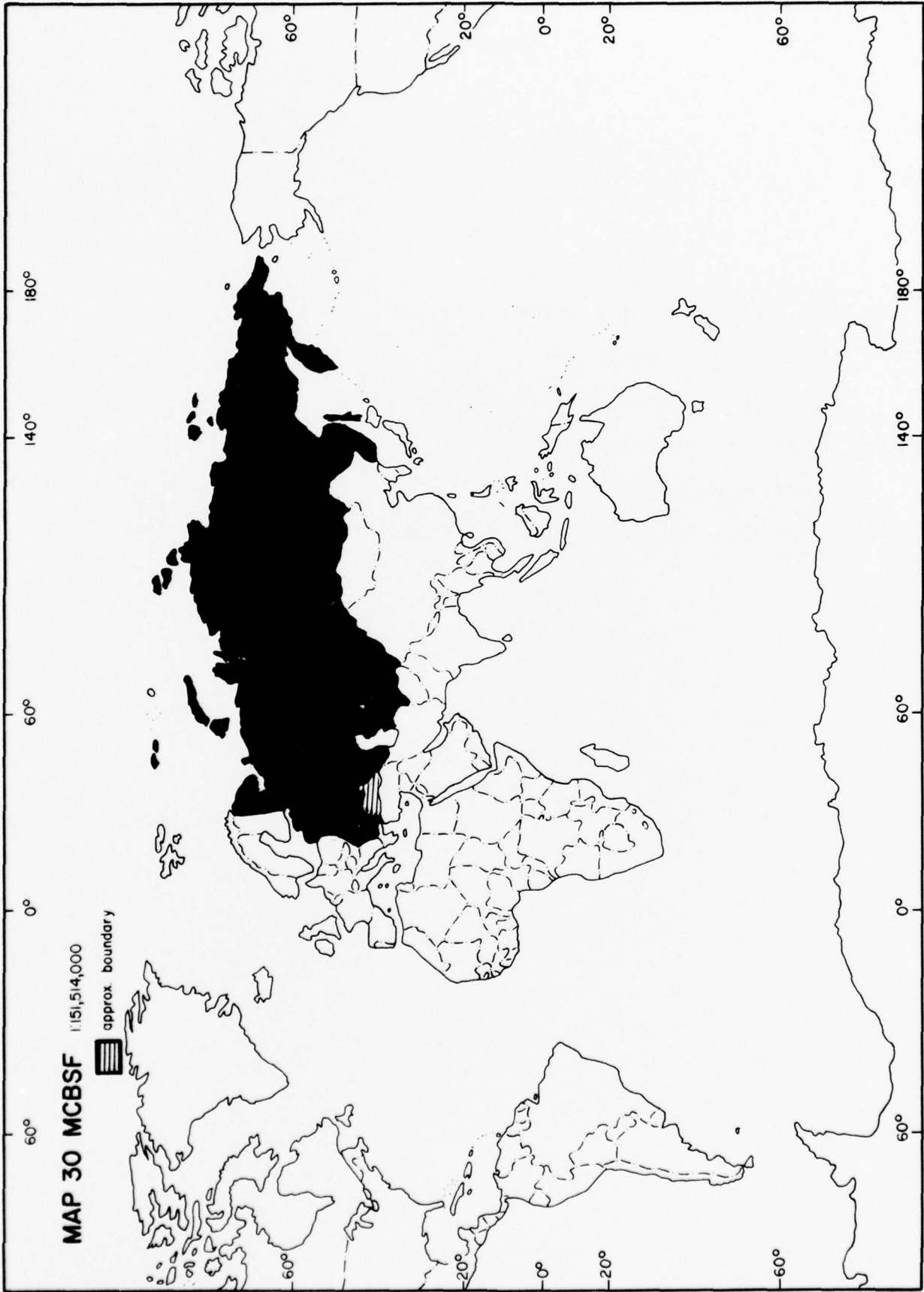
20. Mixed Commission of 1962 (Baltic Sea) (MC)

Area Covered: Baltic Sea

Membership: German Democratic Republic, Poland, U.S.S.R.

Structure: An advisory body with closed membership.

Functions and Powers: Concerned primarily with the expansion of the distant water fisheries of the member states. Provides for cooperation and the exchange of information among the three countries.



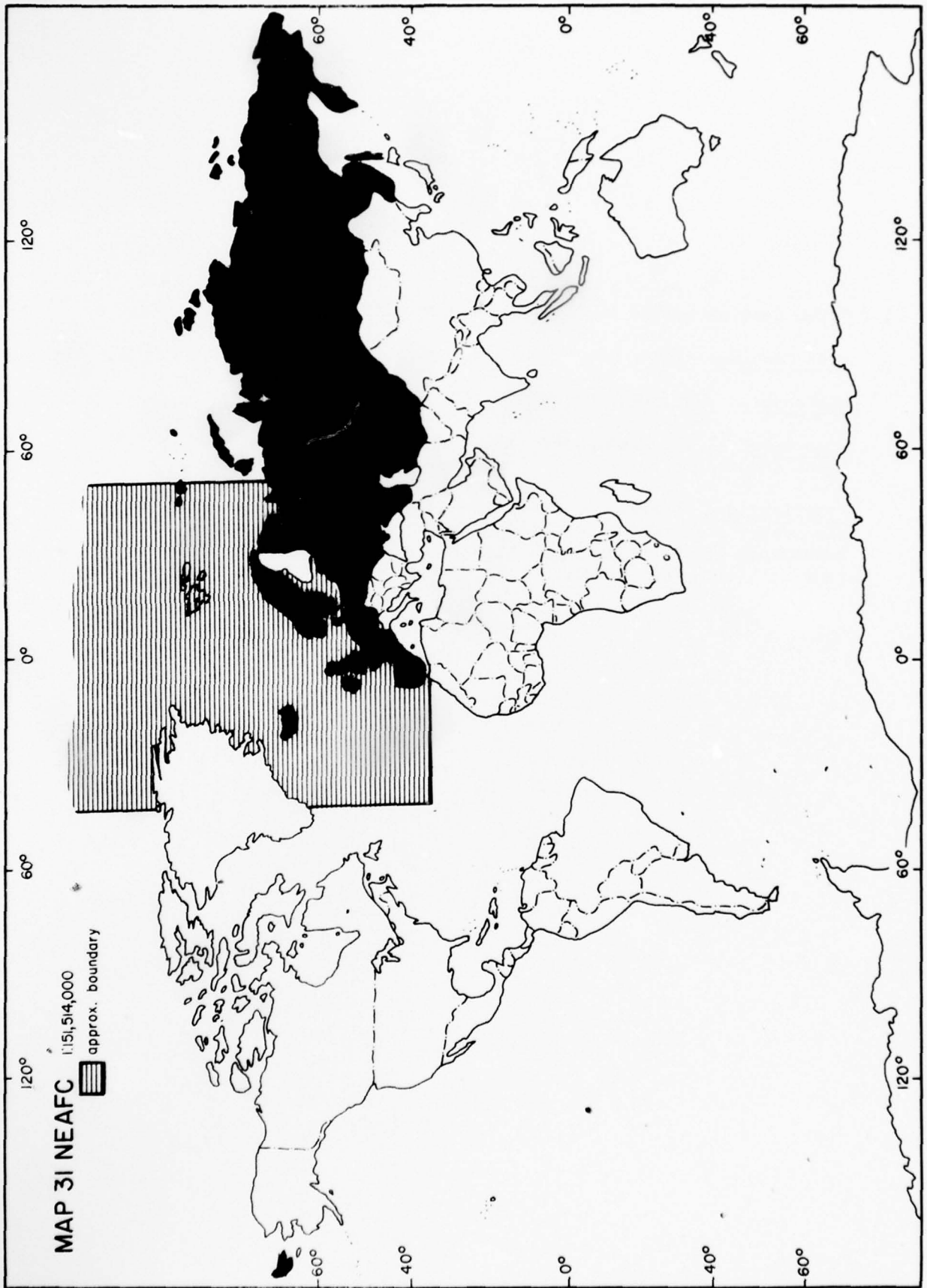
21. Mixed Commission for Black Sea Fisheries (MCBSF)

Area Covered: Black Sea

Membership: Bulgaria, Romania, U.S.S.R.

Structure: A recommendatory body, limited in membership to the Black Sea states.

Functions and Powers: Coordinates national fisheries research of the member states, develops industrial fishing techniques, and recommends conservation measures particularly with respect to minimum fish size regulations.



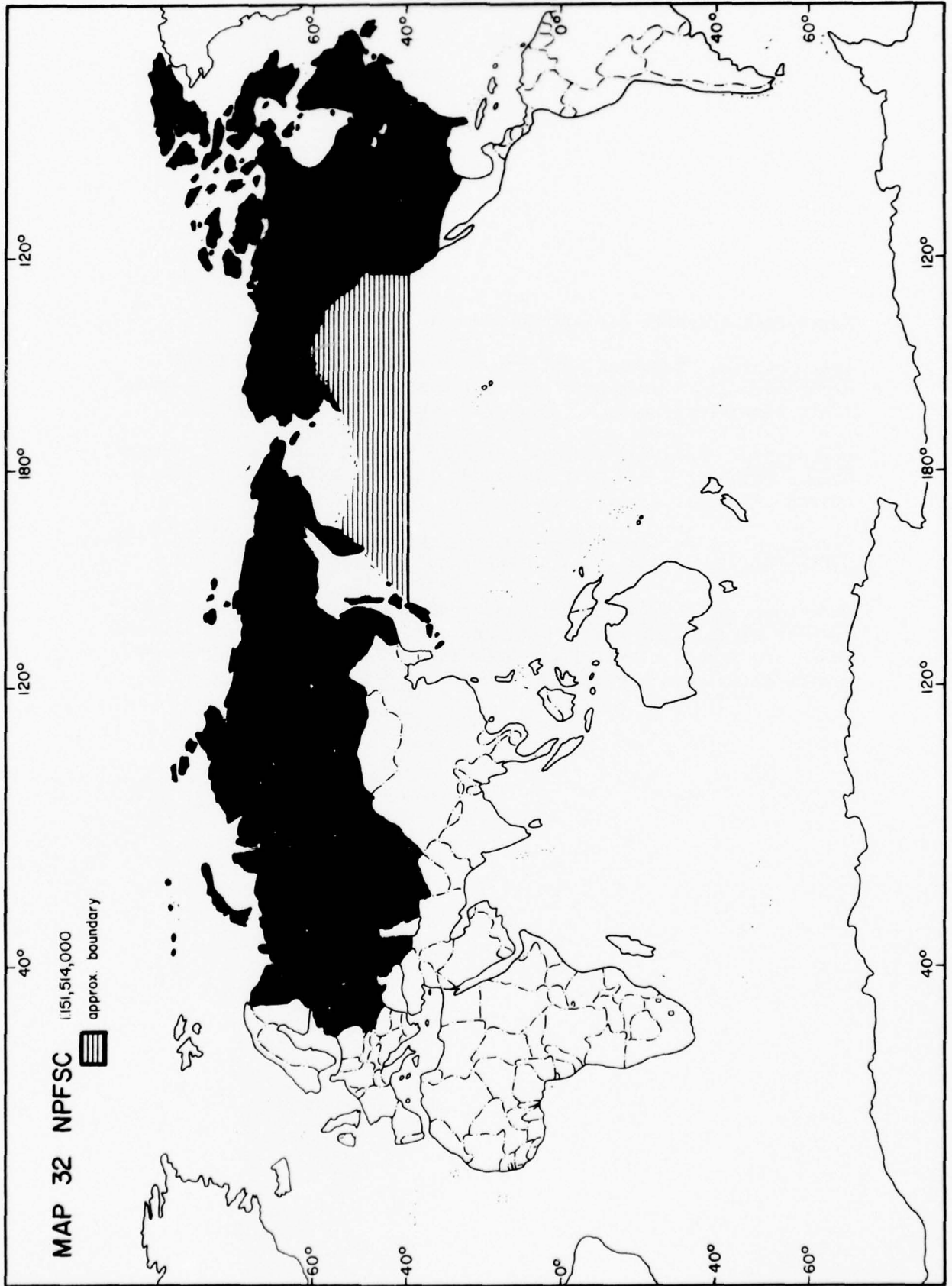
22. North-East Atlantic Fisheries Commission (NEAFC)

Area Covered: Northeast Atlantic and Arctic oceans and their dependent seas. Western limit approximately 42°W. Long., southern limit approximately 36°N. Lat., eastern limit, 51°E. Long.

Membership: Belgium, Denmark, France, Federal Republic of Germany, German Democratic Republic, Iceland, Ireland, Netherlands, Norway, Poland, Portugal, Spain, Sweden, U.K., U.S.S.R.

Structure: A recommendatory body, with membership open to all states giving notice of adherence to the 1959 Convention.

Functions and Powers: Recommends conservation measures with respect to mesh sizes, size limitation, gear control, closed areas and seasons, and amount of total catch or fishing effort. Fisheries research activities are handled by ICES.



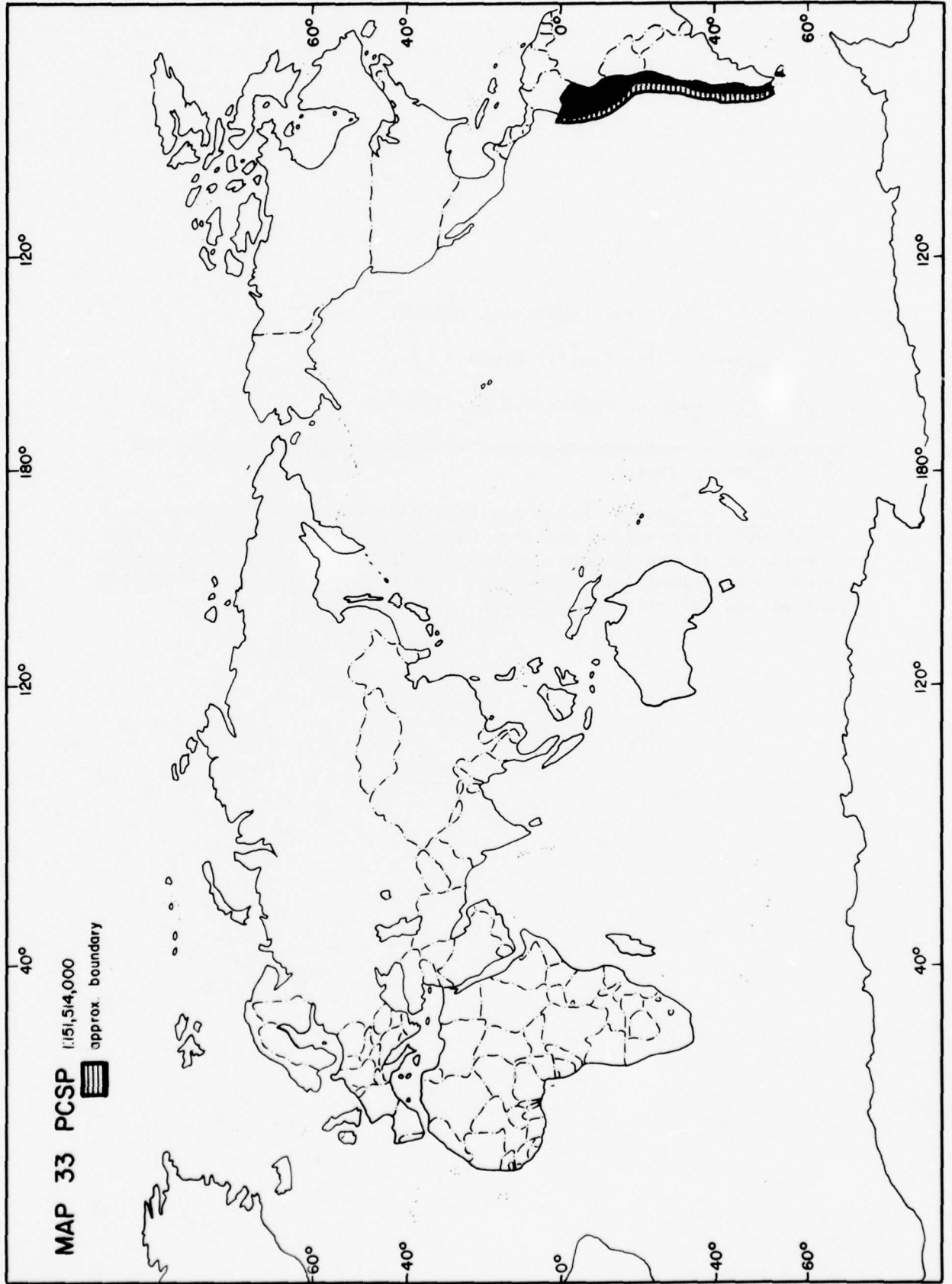
23. North Pacific Fur Seal Commission (NPFSC)

Area Covered: North Pacific Ocean

Membership: Canada, Japan, U.S.A., U.S.S.R.

Structure: A recommendatory body with membership limited to the four signatory states.

Functions and Powers: Formulates and coordinates research programs; recommends conservation measures with respect to size, sex and age composition of the seasonal commercial kill from a herd; recommends methods of sealing; determines the number of seals to be taken each year at sea for research purposes.



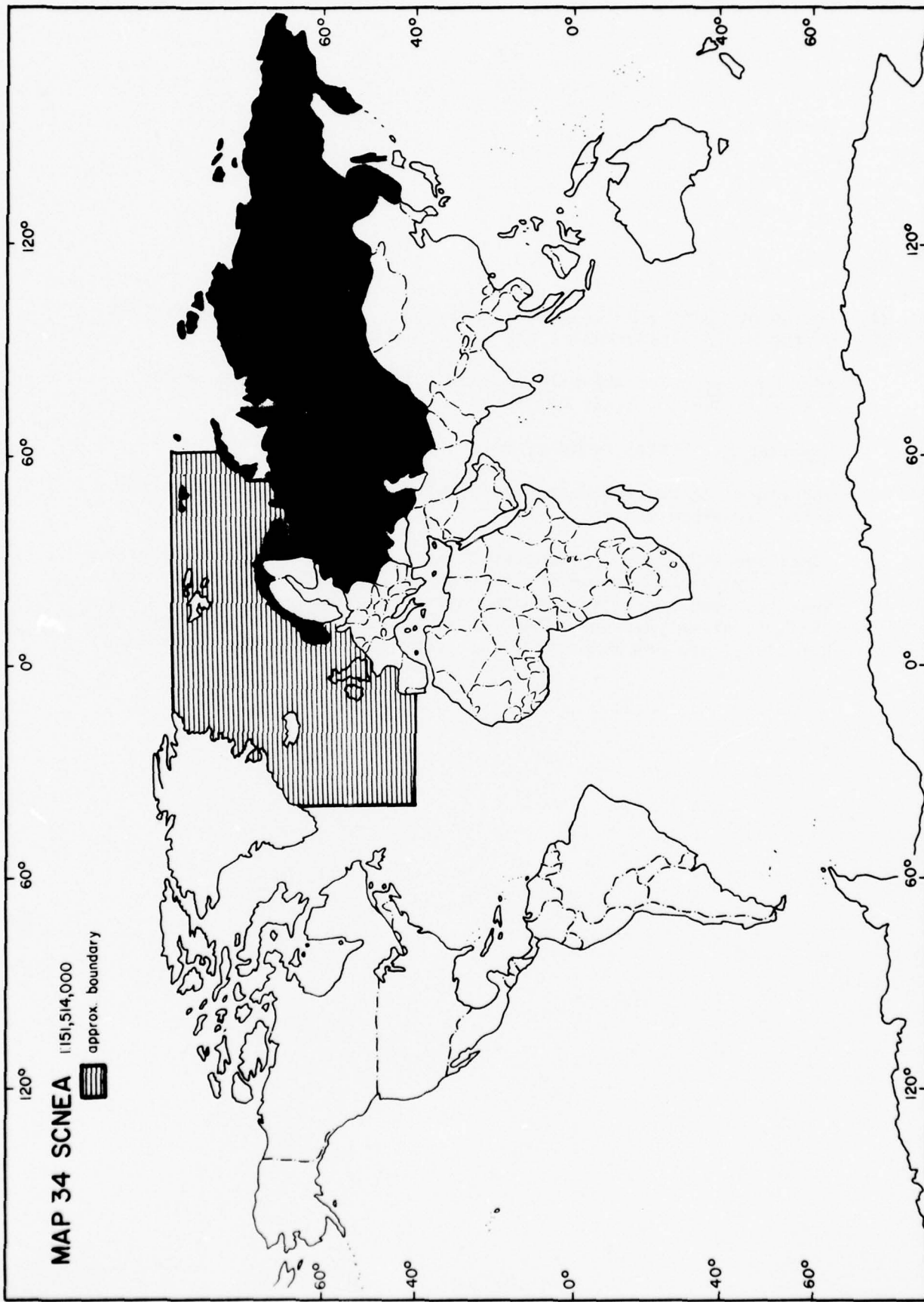
24. Permanent Commission of the Conference on the Use and Conservation of the Marine Resources of the South Pacific (PCSP)

Area Covered: The 200-mile fisheries zones of the three member states in the Southeast Pacific.

Membership: Chile, Ecuador, Peru

Structure: A recommendatory body, with membership limited to the three signatory states.

Functions and Powers: Promotes fisheries research in the member states; recommends conservation measures, including protection of species, open and closed seasons and areas, and gear control. Special attention paid to whales, tunas and anchovies. The three member states are not members of the International Whaling Commission.



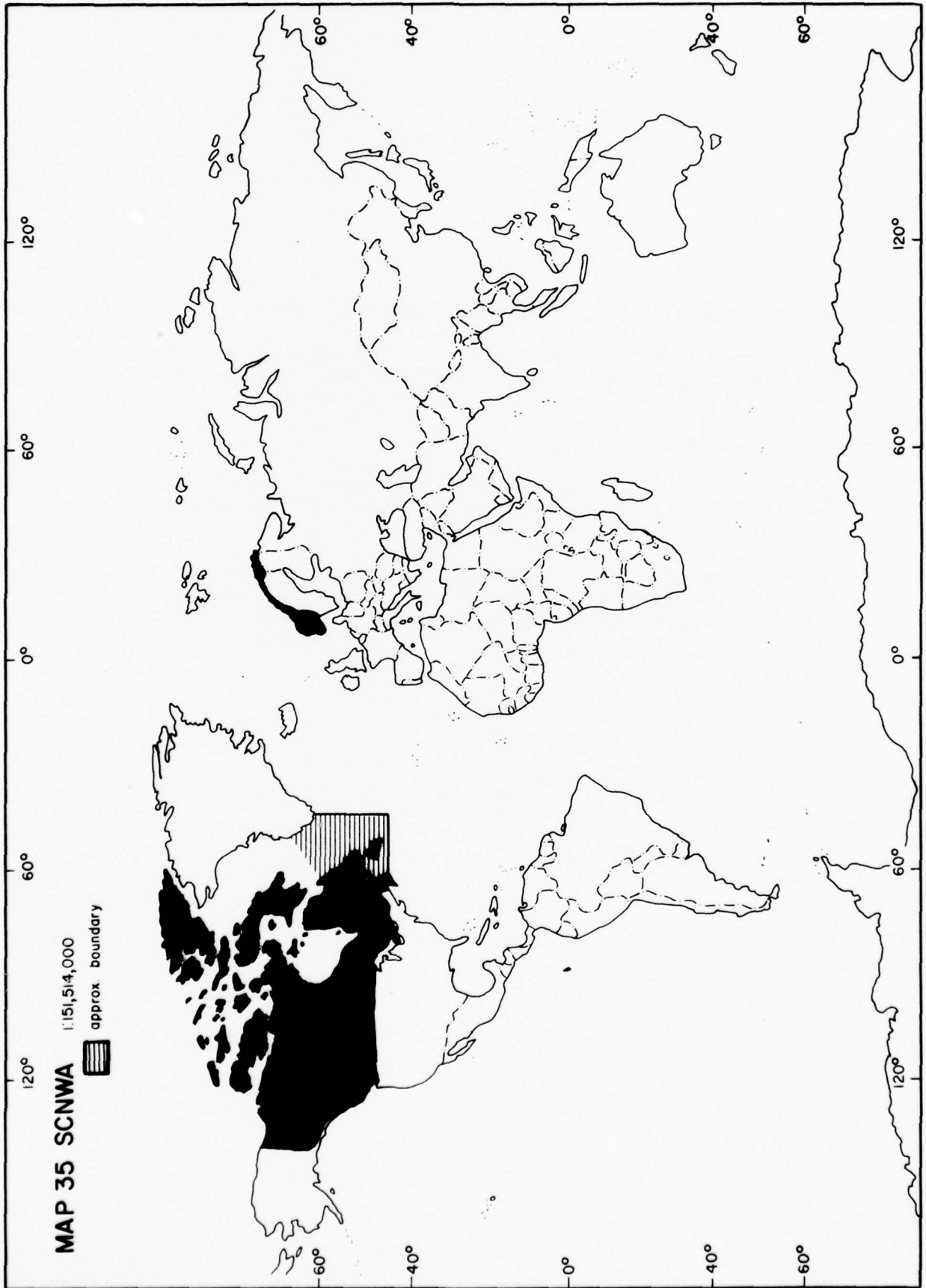
25. Sealing Commission for the Northeast Atlantic (SCNEA)

Area Covered: Northeastern Atlantic east of Cape Farewell, Greenland, including the Greenland and Norwegian seas the Denmark Strait and the area of Jan Mayen Island, and the Barents Sea.

Membership: Norway, U.S.S.R.

Structure: A recommendatory body, with membership open to states acceding to the 1957 International Agreement, with the consent of the contracting parties.

Functions and Powers: Recommends scientific research efforts with respect to stocks of seals, as well as conservation measures including closed seasons and areas, and total catch quotas.



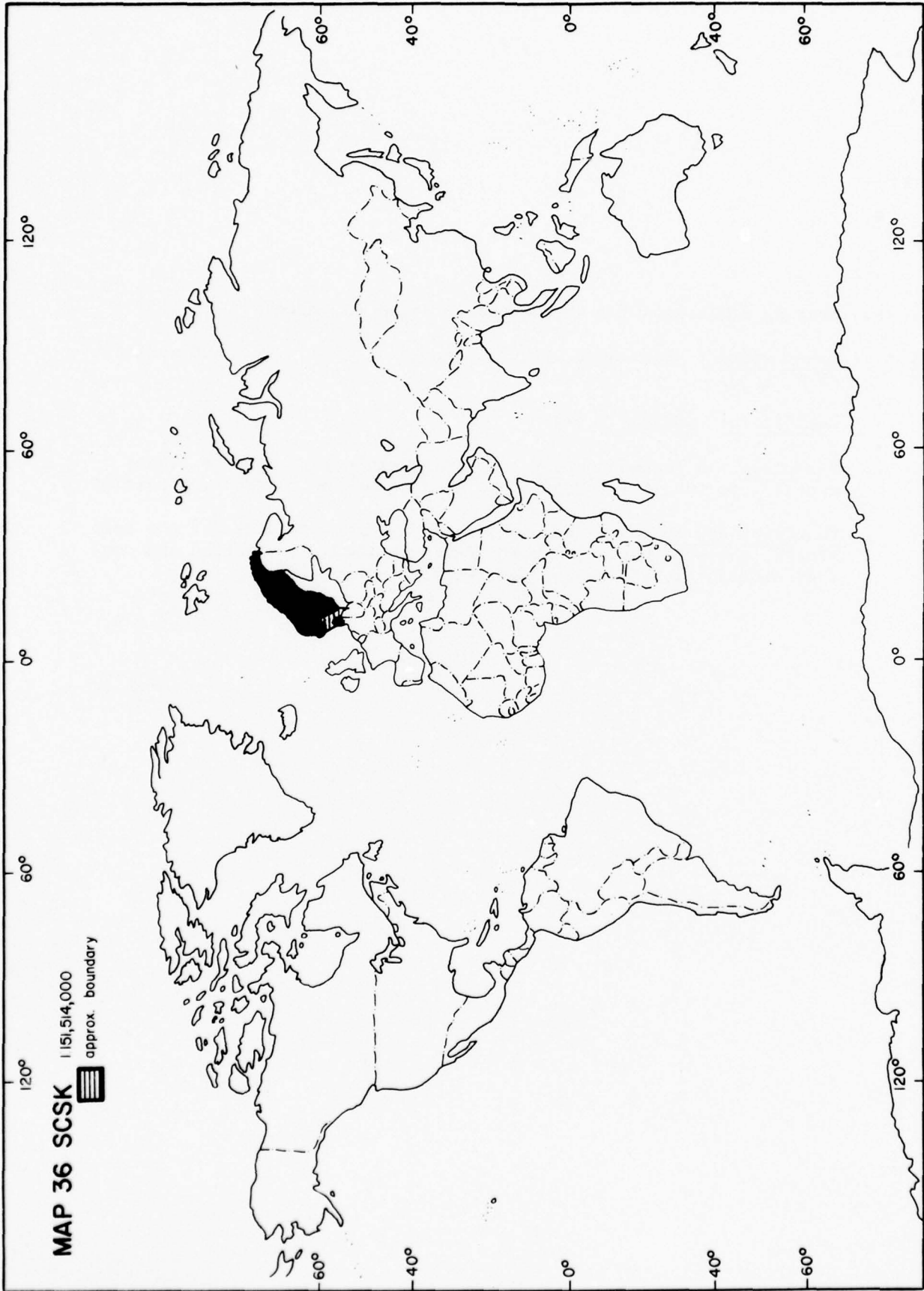
26. Sealing Commission for the Northwest Atlantic (SCNWA)

Area Covered: Northwest Atlantic, north of 45°N. Lat., and west of 45°W. Long.

Membership: Canada, Norway

Structure: A recommendatory body, with membership open to states acceding to the 1971 Agreement if invited by the contracting parties.

Functions and Powers: Recommends conservation measures for the seal stocks, national quotas, humane hunting methods, inspection and control procedures, and scientific research activities.



27. Shellfish Commission for the Skagerrak-Kattegat (SCSK)

Area Covered: Skagerrak and Kattegat waters, bounded on the west by a line from Lindesnes Light to Hanstholm Light, and on the east by 13°E. Long.

Membership: Denmark, Norway, Sweden

Structure: A recommendatory body, with membership limited to the three signatory states.

Functions and Powers: Coordinates scientific research in the three countries, and recommends conservation measures with respect to deep-sea prawns, European lobsters, and Norway lobsters and crabs.

II. Scientific Research

A. IOC-Sponsored

28. Co-Operative Study of the Kuroshio and Adjacent Regions (CSK)

Area Covered: The Kuroshio Current System and adjacent regions, including the South China Sea

Membership: China, France, Japan, Republic of Korea, Philippines, Thailand, U.K. (Hong Kong), U.S.S.R., Rep. of Vietnam

Structure: Co-ordinated by the IOC International Coordination Group for CSK. The International Co-ordinator is: Dr. K. Wadati, Japanese National Commission for UNESCO, Kasumigaseki, Tokyo, Japan. A Regional Kuroshio Data Center (KDC) is maintained in affiliation with the Japanese Oceanographic Data Center.

Functions: To investigate the physical, chemical and biological structure of the Kuroshio Current System and its seasonal, annual and multi-annual variability. Pollution studies in the South China Sea have been proposed.

29. Co-Operative Investigations in the Mediterranean (CIM) (IOC/ICSEM/GFCM/FAO)

Area Covered: Mediterranean Sea

Membership: Austria, Belgium, France, Egypt, FRG, Israel, Italy, Lebanon, Malta, Monaco, Morocco, Romania, Spain, Switzerland, Tunisia, U.K., U.S.S.R.

Structure: Co-sponsored by IOC, the International Commission for Scientific Exploration of the Mediterranean (ICSEM), and the General Fisheries Council for the Mediterranean of FAO (GFCM/FAO). CIM is co-ordinated by a Group for Technical Co-ordination (GTC) composed of members from the 3 Secretariats, and sessions of International and National Co-ordinators. The International Co-ordinator is: Dr. J. Joseph, Operational Unit of CIM, 16 Bld. de Suisse, Monte Carlo, Principality of Monaco. The operational unit is staffed by member country scientists who prepare relevant information to be distributed to participating countries.

Functions: To conduct studies of the physical and chemical oceanography, marine geology and geophysics, marine biology and fisheries resources, and marine pollution of the region.

30. Co-Operative Investigations of the Northern Part of the Eastern Central Atlantic (CINECA) (IOC/ICES/CECAF of FAO)

Area Covered: The Atlantic Ocean, between the latitudes of Gibraltar and Dakar, and extending off the African coast approximately to the meridian 25 degrees West.

Membership: France, FRG, Rep. of Korea, Mauritania, Morocco, Norway, Poland, Portugal, Senegal, Spain, U.S.S.R., U.S.A.

Structure: CINECA regional activities are co-ordinated by the Joint ICES/IOC/FAO (CECAF) International Co-ordinating Group for the Planning and Execution of CINECA. The International Co-ordinator is Mr. R. Letaconnou, Institut Scientifique et Technique des Pêches Maritimes, La Noë, Route de la Jonelière F-44037, Nantes Cedex, France.

Functions: To compile data on the region; monitor environmental and biological parameters (including fisheries) in the region; conduct surveys to provide synoptic pictures of these environmental and biological parameters, including acoustic surveys and exploratory fishing; to provide training, education and assistance to developing countries in the region.

31. Southern Oceans Survey (SOC)

Area Covered: South Atlantic, South Pacific, and South Indian oceans

Membership: Argentina, Australia, Belgium, Brazil, Chile, France, Japan, New Zealand, Norway, South Africa, U.K., U.S.A., U.S.S.R.

Structure: SOC activities are co-ordinated by the IOC International Co-ordination Group for the Southern Oceans.

Functions: To co-ordinate oceanographic cruises in the Southern Oceans; to encourage the evaluation of existing oceanographic data from the region with a view to fostering studies that will provide information not previously reported; to develop plans for a comprehensive study of the Southern Oceans.

32. Regional Investigation of the El Niño Phenomenon (ERFEN) (IDOE/FAO/WMO)

Area Covered: East Pacific and the west coast of Latin America

Membership: Chile, Ecuador, Peru, U.S.A.

Structure: Co-sponsored by IDOE, FAO, and WMO

Functions: To conduct regional studies of the upwelling phenomena off the west coast of Latin America. 1975 field studies off the

coasts of Central and South America confirmed earlier predictions regarding the onset of El Nino in the East Tropical Pacific. Regional activity in the North and Central West Indian Ocean is envisioned.

33. IDOE: Environmental Forecasting Program

33a. Investigation of the Subtropical Convergence in the Southwest Atlantic Ocean

Area Covered: Southwest Atlantic

Membership: Argentina, Brazil, Uruguay

Functions: To investigate the physical and chemical properties and processes that affect water masses; to investigate the presence of oceanic fronts; to investigate oceanic upwellings and their relation to general circulation of the region. Regional activity is envisioned.

33b. Investigation of the Equatorial Undercurrent of the Western Pacific

Area Covered: West Pacific

Membership: Australia, France

Functions: To investigate the origins and dynamics of the equatorial undercurrent. Regional activity is envisioned.

33c. Sea Surface Current Project

Area Covered: Southwest Pacific, East Indian Ocean

Membership: Australia, France, U.S.A.

Functions: To track free-drifting buoys from ECOLE satellites in the Pacific and Indian oceans.

33d. North Pacific Experiment (NORPAX)

Area Covered: North Pacific

Membership: Australia, Canada, France, FRG, Japan, U.K., U.S.A.

Functions: To investigate abnormal sea surface temperatures and their interactions with similar disturbances in the atmosphere.

33e. International Southern Ocean Studies (ISOS)

Area Covered: The southern parts of the Atlantic, Pacific, and Indian Oceans

Membership: Argentina, Australia, Canada, Chile, Denmark, Japan, U.K., U.S.A., U.S.S.R.

Functions: To investigate the long-term, large-scale variability of dynamic processes in the Southern Ocean. These processes play a major role in the ocean-atmosphere interactions that are important to climate and climatic change; to provide information that can be utilized in the assessment of the biological productivity of the Southern Ocean; to investigate the potential role of the Southern Ocean in the storage and distribution of oceanic pollutants.

33f. Monsoon Circulation Experiment (MONEX)

Area Covered: Arabian Sea

Membership: India, U.S.S.R.

Functions: To investigate monsoon circulation in the Arabian Sea and to study monsoon effects on South and Southeast Asia.

33g. Joint Air-Sea Interaction Program (JASIN)

Area Covered: Northeast Atlantic

Membership: Netherlands, U.K., U.S.A.

Functions: To examine the structure of the oceanic and atmospheric boundary layers in sufficient detail so as to advance the knowledge of heat fluxes and the movement of water vapor through, between, and within these layers.

33h. Joint North Sea Wave Project (JONSWAP)

Area Covered: The island of Sylt in the German Bight

Membership: Canada, Denmark, FRG, Netherlands, U.K., U.S.A.

Functions: To investigate dynamic sea surface processes.

33i. Overflow Studies (IDOE/ICES)

Area Covered: The Norwegian and Greenland seas along the Greenland-Scotland Ridge of the North Atlantic

Membership: Canada, Denmark, France, FRG, Iceland, Norway, U.K., U.S.A., U.S.S.R.

Functions: To co-operate in regional projects investigating the overflow of water from the Norwegian and Greenland seas into the Atlantic Ocean.

33j. Mid-Ocean Dynamics Experiment and Test Area (POLYMODE)

Area Covered: 40,000 square miles in the Western North Atlantic Gulf Stream Ring

Membership: U.S.A., U.S.S.R.

Structure: POLYMODE was organized in 1973 following the merger of two separate IDOE projects, the USA Mid-Ocean Dynamics Experiment (MODE) and the USSR Test Area (POLYGON). Two-year field studies were initiated on 10-16-76 by 17 American institutions and 4 Russian institutions. Initial field work will be conducted aboard the Soviet R/V Akademic Vernadsky. American satellites will provide navigational assistance.

Functions: To investigate currents and densities of eddies in the Gulf Stream Ring, the results to be utilized in fisheries research, weather prediction and geochemical investigations.

34. IDOE: Environmental Quality Program

34a. Pollutant Transfer

Area Covered: South California Bight, Sargasso Sea, Gulf of Mexico, and the South Atlantic Ocean

Membership: U.K., U.S.A.

Functions: To investigate the rates and mechanisms by which pollutants are added to the oceans, and to investigate the means by which these pollutants are transferred from one part of the ocean to another.

34b. Geochemical Ocean Sections Study (GEOSECS)

Area Covered: The Arctic, Antarctic, Atlantic, and Pacific oceans

Membership: Belgium, Canada, France, FRG, India, Italy, Japan, U.K., U.S.A.

Functions: To measure the spatial distribution of those chemical constituents of the ocean that contribute to the stirring, mixing, and exchange of energy and material between the atmosphere, surface waters, and deep ocean. Field surveys have been completed. The laboratory analysis of results will continue through 1977.

34c. Saronikos Gulf Pollution Study

Area Covered: Saronikos Gulf

Membership: Greece, U.S.A.

Functions: To investigate the effects of Athens waste disposal on the Saronikos Gulf.

34d. Controlled Ecosystems Pollution Experiment (CEPEX)

Area Covered: Saanich Inlet at Victoria, British Columbia

Membership: Canada, U.K., U.S.A.

Structure: CEPEX also has a laboratory phase, The Biological Effects Program.

Functions: To investigate marine communities in their natural habitats. Captured organisms are exposed to low-level concentrations of petroleum, PCB, and trace metals.

34e. Pollution/Ecology Studies

Area Covered: Atlantic Continental Shelf, from Halifax to Bermuda

Membership: Canada, FRG, U.K., U.S.A.

Functions: To conduct a variety of pollution/ecology studies such as how dissolved and suspended hydrocarbons, tarballs, and organochlorine residues affect marine organisms.

35. IDOE: Seabed Assessment Program

35a. Southeast Atlantic Margins

Area Covered: South Africa to Walvis Ridge, Angola to Sierra Leone, and Senegal to Portugal

Membership: Argentina, Brazil, Rep. of China, France, FRG, Ghana, Guatemala, Israel, Jamaica, Portugal, Senegal, Spain, Union of South Africa, U.K., U.S.A.

Functions: To identify areas off the coast of Africa where oil and gas deposits seem probable.

35b. Southwest Atlantic Margins

Area Covered: Southwest Atlantic coast of South America, from its southern tip to the Caribbean

Membership: Argentina, Brazil, U.S.A.

Functions: To investigate the processes that affect the formation of oil fields during the early stages of sea floor spreading.

35c. French-American Mid-Ocean Undersea Study (FAMOUS)

Area Covered: The mid-Atlantic Ridge of the Atlantic Ocean

Membership: Canada, France, Iceland, Portugal, U.K., U.S.A.

Functions: To investigate the relationship between metallogenesis and plate tectonics.

35d. Plate Tectonics and Metallogenesis (Nazca Plate)

Area Covered: Eastern South Pacific

Membership: Bolivia, Chile, Colombia, Ecuador, Peru, U.S.A.

Functions: To conduct geological and geophysical studies of the processes that operate along the edges of the Nazca Plate, and to investigate the relationship of these processes to extensive copper deposits in the Andes.

35e. Manganese Nodules Project

Area Covered: North Pacific

Membership: France, FRG, Japan, New Zealand, U.S.A.

Functions: To investigate the environmental conditions under which nodules form and grow, their rate of growth, and how they change over time; to develop maps showing the worldwide distribution of nodules by metallic content.

36. IDOE: *Living Resources* -- Assessment and Ecology Program

36a. Coastal Upwelling Ecosystems Analysis (CUEA)

Area Covered: Northeast Atlantic

Membership: Canada, France, FRG, Japan, Mexico, Spain, U.K., U.S.A., U.S.S.R., Venezuela

Functions: To investigate the processes and relationships between the biological aspects of marine organisms and the chemical, physical, and geological environments in which they live; to investigate coastal upwelling ecosystems so that the response of a system to change may be predicted by monitoring a few biological, physical or meteorological variables.

36b. Seagrass Ecosystem Study (SES)

Area Covered: Caribbean

Membership: Denmark, Netherlands, France, Japan, U.S.A.

Functions: To investigate the biological productivity of shallow-water seagrass ecosystems in the Caribbean.

37. LEPOR Programmes, not part of IDOE

37a. Variability of the Sea Surface Temperature and Salinity Fields of the South-West Pacific and Indian Ocean

Area Covered: Southwest Pacific and Indian oceans

Membership: Australia, France, Japan, New Zealand

Functions: To collect, analyze, and disseminate sea surface temperature and salinity data using merchant ships; to produce monthly sea surface temperature and salinity charts.

37b. Study of North Sea Pollution

Area Covered: North Sea

Membership: Belgium, Denmark, France, FRG, Netherlands, Norway, Sweden, U.K.

Functions: To work in institutes of member countries with the purpose of providing quantitative information both concerning the input of various pollutants and the level of certain toxic substances in commercially important marine organisms and in sea water. Coordinated through ICES.

37c. Studies of Organic Sedimentary Processes on Shelves, Slopes and the Deep Ocean Floor of the South-West Pacific

Area Covered: South Fiji Basin and adjacent areas

Membership: New Zealand

Functions: To study plankton in shallow water columns and in recent sediments, the latter studies helping to explain how fauna change with time and varying hydrological environments.

37d. Assessment of the Living Resources in the North Atlantic

Area Covered: North Atlantic

Membership: Canada, U.K., U.S.A., and several European countries.

Functions: To assess the living resources of the North Atlantic. Coordinated through existing regional organizations such as ICES, ICNAF and NEAFC.

37e. Fish Stock Assessment in the South Atlantic

Area Covered: South Atlantic

Membership: Poland, and at the scientist level Argentina, Indonesia and Senegal, with the assistance of FAO.

Functions: To assess stocks through hydroacoustic methods and trial catches, as well as to conduct studies on the environmental oceanographic parameters and species length, age, size, maturity and sex composition of fish.

38. International Tsunami Warning System in the Pacific (ITSU)

Area Covered: Pacific Ocean

Membership: Canada, Chile, Rep. of China, Ecuador, France, Guatemala, Japan, Korea, New Zealand, Peru, Philippines, Singapore, Thailand, U.S.A. Membership is also held by several non-IOC member countries and territories which maintain IWS stations and tide observers on Pacific Islands.

Structure: The IOC International Co-ordination Group supports the activities of the International Tsunami Information Center in Honolulu, which is operated by the National Weather Service, Pacific Region. A Soviet center is located in Yuzhno-Sakhalinsk. This station transmits data from observers located on Kamchatka and the Kuril Islands. 24 seismic stations, 53 tide stations and 52 dissemination points are maintained throughout the Pacific Region.

Functions: To detect and locate major earthquakes in the Pacific, and to determine whether or not they have generated tsunamis; to provide timely and effective tsunami information and warning to the region.

39. IOC Association for the Caribbean and Adjacent Regions (IOCARIBE)

Area Covered: The Caribbean, the Gulf of Mexico, and adjacent areas in the Atlantic Ocean

Membership: Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, France (Guadeloupe/Martinique), Guatemala, Haiti, Jamaica, Mexico, Netherlands (Antilles), Panama, Trinidad-Tobago, U.S.S.R., Venezuela

Structure: IOCARIBE is co-ordinated by the IOC Co-ordination Group in conjunction with regional agreements among member countries.

Functions: IOCARIBE priority projects include: fisheries research, pollution monitoring, the biology and culture of commercially important marine invertebrates, and the environmental geology of the Caribbean coastal region.

IOC Member Countries:

Developed Countries: Australia, Belgium, Bulgaria, Canada, Denmark, Finland, France, FRG, GDR, Iceland, Italy, Israel, Japan, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, South Africa, Spain, Sweden, U.K., Ukraine, U.S.A., U.S.S.R.

Developing Countries: Algeria, Argentina, Brazil, Cameroon, Chile, China, Colombia, Congo, Costa Rica, Cuba, Dominican Republic, Ecuador, Egypt, Fiji, Ghana, Greece, Guatemala, India, Indonesia, Iran, Iraq, Ivory Coast, Jamaica,

Jordan, Kenya, Kuwait, Lebanon, Libya, Madagascar, Malta, Mauritania, Mauritius, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Peru, Philippines, Panama, Senegal, Sierra Leone, Singapore, South Korea, Syria, Thailand, Togo, Trinidad-Tobago, Tonga, Tunisia, Turkey, Uruguay, Venezuela, Vietnam, Yugoslavia.

Least Developed Countries: Sudan, Somalia, Tanzania.

B. Independent

40. International Council for the Exploration of the Sea (ICES)

Area Covered: The North Atlantic and adjacent seas

Membership: Belgium, Canada, Denmark, Finland, France, Germany (FRG), Iceland, Ireland, Netherlands, Norway, Poland, Portugal, Spain, Sweden, U.K., U.S.A., U.S.S.R.

Structure: ICES is an intergovernmental organization established in 1906 by intergovernmental agreement, and now founded on the Convention for the International Council for the Exploration of the Sea which was entered into force on July 22, 1968. Principal organs include a Council, composed of two delegates from each member government; an Executive Bureau, composed of a President and 4 Vice-Presidents; and a Statutory Area and Subject Committee.

Functions and Powers: ICES's primary role is to promote and encourage, through intergovernmental agreement, research activities concerning the living resources of the sea; to co-ordinate programs of research and to publish or disseminate the results of these investigations; to organize pollution studies of the North Sea and the Baltic Sea; to provide scientific advice to the North-East Atlantic Fisheries Commission (NEAFC) and to the Baltic Sea Fishery Commission; to operate a Regional Data Center for its area of competence.

For more information contact ICES, Charlottenlund Slot, Charlottenlund, Denmark.

41. International Commission for the Scientific Exploration of the Mediterranean Sea (ICSEM)

Area Covered: The Mediterranean Sea and its associated tributaries

Membership: Algeria, Cyprus, Egypt, FRG, France, Greece, Israel, Italy, Monaco, Morocco, Romania, Spain, Switzerland, Syria, Tunisia, Turkey, Yugoslavia

Structure: ICSEM is an intergovernmental organization established by an agreement at Monaco in 1919. The Commission operates under a

renewable 5-year Statute. Principal organs include a Commission, composed of delegates from member governments; a Central Committee, composed of a President and 5 Vice-Presidents, and a Secretary-General. The Commission maintains intergovernmental relations with FAO (GFCM) and UNESCO's IOC.

Functions and Powers: To develop a program of research to be implemented by member countries; to publish scientific communications presented by member country scientists on such subjects as benthic ecology, lagoons and salted lakes, marine geology and geophysics, marine pollution, microbiology and biochemistry, insular areas, chemical and physical oceanography, plankton ecology, marine radioactivity, marine vertebrates and cephalopods; to participate with GFCM (of FAO) and IOC in CIM.

For further information contact: ICSEM, 16 Boulevard de Suisse, Monte Carlo, Principality of Monaco.

42. Federation of the Institutions Concerned with the Study of the Adriatic Sea (FICSAS)

Area Covered: The Adriatic Sea

Membership: Research institutions from Austria, FRG, Italy, Yugoslavia

Structure: FICSAS is a non-governmental organization whose activities are co-ordinated by member country institutions involved in the scientific study of the Adriatic Sea. FICSAS headquarters is located at the Center for Marine Research of the "Ruder Boskovic" Institute in Rovinj, Yugoslavia. The Executive Board consists of one chairman and two member scientists.

Functions: To co-ordinate research projects; to disseminate and improve methods for the exchange of information; to train and educate FICSAS scientists and scientists from developing countries; to provide laboratory facilities for FICSAS scientists; to organize biannual scientific symposia to discuss problems associated with the Adriatic Sea; to organize regional contacts through special meetings on special topics; to develop analytical services, including the production of standards and substandards.

For additional information contact: FICSAS, Center for Marine Research, "Ruder Boskovic" Institute, 52210 Rovinj, Yugoslavia, Attn: Dr. Stjepan Keckes.

III. Environmental Control

43. Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil, 1969 (in force: 9 August 1969)

Area Covered: North Sea

Membership: Belgium, Denmark, French Republic, FRG, Netherlands, Norway, Sweden, U.K., Northern Ireland

Structure: Instrument deposited with the Government of the Federal Republic of Germany.

Functions and Powers: To provide for regional and inter-regional cooperation on short notice to deal with the discharge of oil or other noxious or hazardous substances in the North Sea. To determine the extent of discharge plus methods of treatment on the sea and land. Involves warning and assisting other parties according to delimited zones of responsibility.

44. Agreement between Denmark, Finland, Norway and Sweden Concerning Co-operation in Measures to Deal with Pollution of the Sea by Oil (Nordic Agreement), 1971 (in force: 16 October 1971)

Area Covered: Northwest Europe

Membership: Denmark, Finland, Norway, Sweden

Structure: Instrument deposited with the Danish Ministry of Foreign Affairs. Competent authorities are appointed by each of the contracting states to co-operate directly in the planning and other measures required under the Agreement.

Functions and Powers: To provide for cooperation in handling significant oil pollution which threatens the coasts or related interests of one or more contracting states. Involves assistance in oil slick clean-up, warning of oil slick sightings, reporting vessel offenses within territorial or adjacent waters of contracting states and exchanging relevant information.

Replaces the Agreement of 8 December 1967: Cooperation to Ensure Compliance with the Regulations for Preventing Pollution of the Sea by Oil.

45. Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (not in force)

Area Covered: Baltic Sea area

Membership: Requires ratification by all 7 Baltic states. Signatures to date: 7 (including Denmark, Finland, German Democratic Republic, Federal Republic of Germany, Polish People's Republic, Sweden and U.S.S.R.).

Functions and Powers: A cooperative effort in protecting the waterbody and seabed of the Baltic Sea area outside internal waters. Includes protection of living resources and prevention and abatement of marine pollution. Deals in matters concerned with hazardous substances, land-based pollution, ship pollution, pleasure crafts, dumping, and exploration and exploitation of the seabed and subsoil.

46. Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden (with protocol), 1974 (not in force)

Area Covered: Northwest Europe

Membership: Requires notification to the Swedish Government by all four states that the constitutional measures necessary for the entry into force of the Convention have been implemented.

Structure: Supervisory authority appointed from each of the contracting states. Settlement of cases requires opinion of a Commission, consisting of a chairman from another contracting state, appointed jointly by the parties and three members from each of the states concerned.

Functions and Powers: Instrument is not exclusively marine or pollution, but is regional in scope. Involves use of examining authority for actual inspection of nuisance activities (on land, fresh water, sea water or air) in resolving the question of permissibility of such activities.

47. Convention for the Protection of the Mediterranean Sea against Pollution (Mediterranean Action Plan), 1976 (not in force)

1. Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft
2. Protocol on Co-operation in Combatting Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency

Area Covered: Mediterranean

Membership: The Framework Convention will enter into force when six states (bordering the Mediterranean Sea) have completed their ratification of the Convention plus one Protocol. The European Economic Community and similar regional economic groups which exercise competences in fields covered by the Convention or any Protocol, and

which contain at least one Mediterranean Sea coastal state as a member, may also sign.

Structure: Adopted as part of UNEP's Mediterranean Action Plan. Specialized U.N. bodies may be drafted in support of UNEP's present role as overall coordinator (e.g., GFCM of FAO, ICSEM, CIM, IAEA, IOC of UNESCO, WHO and WMO). The Convention establishes UNEP as responsible for all secretariat functions until such time as the Action Plan becomes self-supporting. Contracting parties are to hold ordinary meetings once every two years to keep the implementation of the Convention and Protocol(s) under review. Additional meetings are possible upon the request of the "Organization" (body responsible for carrying out secretariat functions) or by any contracting party having the support of two other contracting parties in requesting the meeting.

Functions and Powers: The Main Convention provides for individual or joint measures in combatting and abating pollution of the Mediterranean Sea and generally in protecting and enhancing the marine environment in that area. The Protocols address specific pollution problems and propose regulations, controls and/or provisions to minimize the consequences. All instruments reflect existing international arrangements concerning pollution control or provide for stricter measures as necessary in view of the special requirements of the area.

IV. Military

48. Treaty for the Prohibition of Nuclear Weapons in Latin America, 1967 (Treaty of Tlateloco)

Area Covered: Latin America

Membership: Barbados, Bolivia, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Surinam, Uruguay, Venezuela

Structure: Treaty sets up the Organization for the Prohibition of Nuclear Weapons in Latin America (OPANAL), as a sophisticated control mechanism for monitoring compliance with the Treaty provisions.

Functions and Powers: Implemented in response to U.N. General Assembly Resolution 808(IX), concerning a co-ordinated program of disarmament. Parties are to refrain (directly and indirectly) from testing, use, manufacture, production, possession or control of any nuclear weapon within their national territories.

49. Declaration of the Indian Ocean as a Zone of Peace, 1971

Area Covered: Littoral and hinterland states of the Indian Ocean plus major world powers.

Recorded Vote: In favor: Afghanistan, Algeria, Bhutan, Burma, Burundi, Cameroon, Ceylon, Chad, China, Colombia, Congo, Costa Rica, Cyprus, Egypt, El Salvador, Equatorial Guinea, Ethiopia, Ghana, Guinea, Guyana, Iceland, India, Indonesia, Iran, Japan, Jordan, Kenya, Khmer Republic, Kuwait, Laos, Lebanon, Liberia, Libya, Malaysia, Mali, Malta, Mauritania, Mexico, Morocco, Nepal, Nicaragua*, Nigeria, Pakistan, Panama, Qatar, Romania, Saudi Arabia, Somalia, Sudan, Swaziland, Sweden, Syria, Togo, Trinidad and Tobago, Tunisia, Uganda, United Republic of Tanzania, Uruguay, Yemen, Yugoslavia, Zambia.

Against: None.

Abstaining: Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Bulgaria, Byelorussia, Canada, Central African Republic, Chile, Cuba, Czechoslovakia, Dahomey, Denmark, Dominican Republic, Fiji, Finland, France, Greece, Guatemala, Haiti, Honduras, Hungary, Ireland, Israel, Italy, Ivory Coast, Jamaica, Lesotho, Luxembourg, Madagascar, Mongolia, Netherlands, New Zealand, Norway, People's Democratic Republic of Yemen, Peru, Philippines, Poland, Portugal, Rwanda, Senegal, Singapore, South Africa, Spain, Thailand, Turkey, Ukraine, U.S.S.R., United Kingdom, United States, Upper Volta, Venezuela, Zaire.

Absent: Albania, Bahrain, Barbados, Botswana, Ecuador, Gabon, Gambia, Iraq**, Malawi, Maldives, Mauritius, Niger, Oman, Paraguay, Sierra Leone, United Arab Emirates.

Structure: A U.N. General Assembly Resolution; progress made with regard to the implementation of this Declaration is to be reported to the General Assembly by the Secretary-General.

Functions and Powers: The General Assembly declares the Indian Ocean (within limits to be determined, but including the air space above and subjacent ocean floor), as a zone of peace. To ensure that warships and military aircraft do not use the Indian Ocean for any threat or use of force against littoral or hinterland states, further escalation and expansion of the military presence of littoral states is to be halted, and all bases, military installations, logistical supply facilities, the disposition of nuclear weapons and weapons of war destruction and any manifestation of great power military presence is to be eliminated and/or prohibited. Appropriate arrangements are to be made to give effect to any international agreement that may ultimately be reached for the maintenance of the Indian Ocean as a zone of peace, other than military alliances. The objective is to establish a system of universal collective security without military alliances and to strengthen international security through regional and other cooperation. The right to free and unimpeded use of the zone by the vessels of all nations will be unaffected by the implementation of this Declaration.

*Later advised the Secretariat it had intended to abstain.

**Later advised the Secretariat it had intended to vote in favor.

V. Regional Development

50. Indian Ocean Fishery Survey and Development Programme

The Indian Ocean Programme is a five-year interregional project (11/72 to 1/77), funded by the UNDP and executed by FAO. It was designed to promote development of the fishery resources of the Indian Ocean in response to the increasing demand for fish in bordering countries. The programme specifically provides for assistance in the introduction of technology and facilitation of change in the countries of the region, with emphasis on means of affecting technology transfer.

The technical staff of the programme, which consists of six professional members from various fields, is often advised by outside experts (e.g., from the FAO Department of Fisheries) in handling fisheries problems of a multidisciplinary nature.

As part of the programme, a survey was conducted to assess the fishery resources in the Indian Ocean from Somalia to Mozambique. This was carried out by a Soviet research vessel with a crew of 106, including an international team of up to 18 members. Twenty-eight African, Asian and Middle Eastern states participate in the fisheries development programme.

Special projects are encouraged through the programme. An example is the Cooperative Fishery Survey and Development Project in the gulf lying between Iran and the Arabian Peninsula and in the Gulf of Oman. Five gulf countries participate in activities that help to assess the fishery resources and to solve related problems, including gear technology, management, marketing and development of economically viable fisheries.

Membership: Bahrain, Bangladesh, Burma, Democratic Yemen, Ethiopia, India, Indonesia, Iran, Iraq, Israel, Jordan, Kenya, Kuwait, Madagascar, Malaysia, Maldives, Mauritius, Oman, Pakistan, Qatar, Republic of Korea, Saudi Arabia, Singapore, Somalia, Sri Lanka, Thailand, United Arab Emirates, United Republic of Tanzania and Yemen.

51. Development of Fisheries in the Eastern Central Atlantic

The Eastern Central Atlantic Programme is a five-year interregional project (7/73 to 4/78), funded by the UNDP and executed by FAO. It parallels efforts in the Indian Ocean activated through the Indian Ocean Fishery Survey and Development Programme (see 50). The programme also promotes fishery resources development (off the west coast of Africa) through assessment of the resources and technology transfer in all areas of the fisheries.

As in the Indian Ocean Programme, a Soviet research vessel and crew were contracted to survey the fishery resources in the Eastern Central Atlantic region, from Cameroon to Angola. Management schemes which will effectively reduce overfishing of the heavily exploited stocks, while allowing for the development of new fisheries in underutilized areas of this region, represent objectives of the research efforts undertaken through the programme.

Membership: Congo, Benin, Gabon, Gambia, Ghana, Guinea, Ivory Coast, Liberia, Mauritania, Morocco, Nigeria, Senegal, Sierra Leone, Togo, Cameroon, and Zaire.

52. Development of Fisheries in the Western Central Atlantic

The Western Central Atlantic Programme is a two and one half-year interregional project (1/75 to 7/77), funded by the UNDP and executed by FAO. It is designed to encourage development of the fishery resources in the Western Central Atlantic region as in the Indian Ocean and Eastern Central Atlantic UNDP/FAO programmes, but to a considerably smaller degree. Estimated costs of this project total nearly 25 times less the total costs of each of the other projects.

Membership: Antigua, Bahamas, Barbados, Belize, Bermuda, Brazil, British Virgin Islands, Cayman Islands, Colombia, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Saint Kitts-Nevis-Anguilla, Saint Lucia, Trinidad and Tobago, Turks and Caicos Islands, and Venezuela.

53. South China Sea Fisheries Development and Coordinating Programme (Phase II)

The South China Sea Programme is a five and one half-year (continuation) project (6/74 to 1/80), funded by the UNDP and executed by FAO. Funding is substantial for carrying out activities of this project, with estimated total investments of over \$3 million by UNDP and over \$4.5 million by government contribution. The programme represents a large-scale, integrated regional technical co-operation effort to enhance and develop the fishery resources of the South China Sea.

Membership: Cambodia, Indonesia, Malaysia, Philippines, Republic of South Vietnam, Singapore, and Thailand.

54. Caribbean Fisheries Training and Development Centre

Area Covered: Southeastern Caribbean

Membership: Barbados, Guyana, Trinidad and Tobago

Structure: Funded by UNDP, and administered by FAO, the Centre is located in Trinidad, and is an important education and training institution.

Functions and Powers: The Centre trains fishing captains, as well as technical personnel, in the fields of fish handling, processing, and marketing, and fish plant operation and management. Participants in the programs come from the member states; it is anticipated that other Caribbean countries may soon participate in the Centre's activities.

55. Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Off-Shore Areas (CCOP)

Area Covered: East Asia

Membership: Indonesia, Japan, Democratic Kampuchea, Malaysia, Philippines, Republic of Korea, Republic of South Vietnam, Singapore, Thailand, and the Trust Territory of the Pacific Islands. In addition, several developed countries outside Asia cooperate with CCOP: Australia, France, Federal Republic of Germany, Netherlands, U.K., U.S.A., and U.S.S.R.

Structure: CCOP is a special Committee of the Economic and Social Commission for Asia and the Pacific. The Technical Advisory Group (TAG) consists of experts from both the member and cooperating countries, selected by the Committee. The secretariat is provided by the UNDP project on "Technical Support for Regional Off-Shore Prospecting in East Asia."

Functions and Powers: To coordinate and advise the planning and implementation of assessment activities, training programmes and exchange of technology throughout all phases of marine mineral resources development. Particular objectives, both of this Committee and of UNDP's project on "Technical Support for Regional Off-Shore Prospecting in East Asia," are to assist in increasing the capabilities of developing countries to manage and develop their own off-shore mineral and energy resources, through the transfer of scientific and technical knowledge including the necessary training and guidance. The Technical Advisory Group arranges for the necessary financial and technical support in carrying out the objectives.

56. Committee for Co-ordination of Joint Prospecting for Mineral Resources in South Pacific Off-Shore Areas (CCOP/SOPAC)

Area Covered: South Pacific

Membership: Cook Islands, Fiji, Gilbert Islands, New Zealand, Papua New Guinea, Solomon Islands, Tonga and Western Samoa. Tuvalu is a potential member.

Structure: CCOP/SOPAC is a special Committee of the Economic and Social Commission for the South Pacific. The Technical Advisory Group consists of experts in the fields relating to marine prospecting which are provided by supporting and member governments.

Functions and Powers: To coordinate and advise the planning, implementation and review of assessment activities, training programmes, and technology transfer mechanisms associated with all phases of marine mineral and energy resource development. Considerable international, regional and subregional cooperation is involved in publicizing the potentials of the region for offshore mineral and energy resources and in the collection, analysis and exchange of pertinent scientific and technical information. The Technical Advisory Group arranges for the necessary financial and technical support in carrying out the objectives.

Others

57. Antarctic Treaty, 1959

Area Covered: Antarctica (area south of 60° South Latitude; including ice shelves; excluding high seas)

Membership: Original: Argentina, Australia, Belgium, Chile, French Republic, Japan, New Zealand, Norway, Union of South Africa, Soviet Union, U.K., U.S.A. Acceded later: Czechoslovakia, Denmark, Netherlands, Poland, Rumania.

Structure: Representatives of each contracting party are appointed to attend meetings at regular intervals to keep the objectives and provisions of the Treaty under continual review. Observers may be appointed to carry out inspection of any or all areas of Antarctica and shall be nationals of the contracting parties which designate them.

Functions and Powers: To ensure that Antarctica is used for peaceful purposes only. Military measures and manoeuvres plus nuclear explosions and radioactive waste disposal are prohibited, except military personnel and equipment may be used for scientific research or other peaceful purposes. Inspections of any or all areas including stations or installations may be carried out at any time by designated nationals of contracting parties. Advance notice of expeditions, stations to be occupied and use of military personnel or equipment is required, plus reports of scientific findings subsequent to such expeditions are to be issued to all contracting parties. The Treaty also provides for measures regarding preservation and conservation of living resources in Antarctica and questions relating to the exercise of jurisdiction over any areas in Antarctica. Disputes between contracting parties over interpretation or application of the Treaty shall be resolved among themselves through peaceful means of their own choice (e.g., negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, others), but shall be referred, by consent in each case, to the International Court of Justice when initial efforts fail to resolve a dispute.

Recommendations of Consultative Meetings I-VI covered the following general subject matters: facilitate exchange of scientific information, personnel, and data, with particular support of all activities of the Scientific Committee on Antarctic Research (SCAR); implement "Agreed Measures for the Conservation of Antarctic Fauna and Flora" including designation of "Specially Protected Areas" and "Specially Protected Species"; the Convention for the Conservation of Antarctic Seals was considered to be outside the framework of the Antarctic Treaty and was therefore drafted in its final form through informal meetings between all interested delegations, including non-Treaty nations.

58. European Agreement for the Prevention of Broadcasts Transmitted from Stations Outside National Territories, 1965 (in force: 19 October 1967)

Area Covered: Principally the member states of the Council of Europe.

Membership: any member of the Council of Europe and any member or associate member of the International Telecommunication Union which is not a member of the Council of Europe may accede to this Agreement (the latter, subject to the prior agreement of the Committee of Ministers). Present membership (including states that have signed with reservation): Belgium, Denmark, France, Sweden, and United Kingdom of Great Britain and Northern Ireland have ratified without reservation and the Agreement is in force for these states. Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, and Norway have signed with reservation in respect of ratification or acceptance. The Agreement is not in force for these states, as no reservation may be made to the provisions of the Agreement.

Structure: Adopted under the auspices of the Council of Europe. Most responsibility and authority is designated to the Secretary-General.

Functions and Powers: Through, and in accordance with, domestic law, contracting parties may prohibit the establishment and use of broadcasting stations on board ships, aircraft or any other floating or airborne objects outside national territories. Harmful interference to any radio-communication service operating under the authority of a contracting party in accordance with the radio regulations is also considered a punishable offense. Contracting parties have authority to apply the provisions of the Agreement (according to appropriate domestic law) to (1) nationals, having committed a broadcasting offense on its territory, ships or aircraft, or outside national territories on any ships, aircraft or any other floating or airborne object; and (2) non-nationals, having committed a broadcasting offense on its territory, ships or aircraft, or on board any floating or airborne object under its jurisdiction. Contracting parties are not prevented from treating as a punishable offense, an act involving use of broadcasting stations installed or maintained

on objects affixed to or supported by the seabed. The Agreement is to remain in force indefinitely; however, a six-month notice of denunciation is provided.

59. Statement of Indonesia, Malaysia and Singapore on the Malacca Straits, 16 November 1971

Indonesia, Malaysia and Singapore agreed to cooperate on the safety of navigation in the Straits of Malacca and Singapore. The governments of the Republic of Indonesia and Malaysia agreed that the two straits are not international, although recognizing their use under the principle of innocent passage for international shipping. The government of Singapore has acknowledged the position of the two governments.

Global Conventions with Regional Implications

International Convention for the Prevention of Pollution of the Sea by Oil, 1954 as Amended [OILPOL (Amended) 1954]

	Date of Entry into Force
Main Convention:	26 May 1958
Amendments:	
April 1962	18 May and 28 June 1967
October 1969	not in force
October 1971	not in force

Adopted by resolutions of the IMCO Assembly. Require ratification by two-thirds of states parties to the main convention. As of 1 January, 1976, 27 and 16 ratifications were recorded for the 1969 and 1971 Amendments, respectively.

Area Covered: global

Membership: Signatories as of 1 January 1971 include: Algeria, Australia, Belgium, Canada, Denmark, Dominican Republic, Finland, France, Federal Republic of Germany, Ghana, Greece, Iceland, Ireland, Italy, Ivory Coast, Japan, Jordan, Kuwait, Lebanon, Liberia, Madagascar (Malagasy Republic), Mexico, Monaco, Morocco, Netherlands, Nigeria, Norway, Panama, Philippines, Poland, Portugal, Yemen, Soviet Union, Spain, Sweden, Switzerland, Syria, United Arab Republic, United Kingdom, Venezuela.

Structure: Adopted under the auspices of the United Kingdom, until establishment of IMCO in 1958.

Functions and Powers (as amended): Prohibits oil discharge from ships within 100 miles of coast (150 miles for Australia) and prohibits new ships greater than 20,000 tons from discharging outside the prohibited zones. This Convention will be superceded by the International Convention for the Prevention of Pollution from Ships of 1973 when the latter enters into force. Enforcement is by the state of registry. Penalties for unlawful discharge within and outside territorial waters provided by states.

International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (in force: 6 May 1975)

Area Covered: global

Membership: United States: 22 original ratifications; the following (17) are signatory states: Belgium, Cameroon, Republic of China, Federal Repub-

lic of Germany, France, Ghana, Guatemala, Iceland, Italy, Ivory Coast, Republic of Korea, Republic of Malagasy, Monaco, Poland, Portugal, Switzerland, United Kingdom of Great Britain and Northern Ireland.

Structure: Adopted under the auspices of IMCO.

Functions and Powers: To protect the sea and coastline interests of states against maritime casualties resulting in danger of oil pollution, without affecting the principle of freedom of the high seas. The Convention permits coastal states to resort to self-help in maritime pollution emergencies. Signatory states may take such measures, proportionate to actual or threatened damage, as may be necessary to protect their own interests from oil pollution damage following a maritime casualty. No action may be taken against any warship or any ship owned by the state and used only on government non-commercial service.

Related: Protocol Relating to Intervention on the High Seas in Cases of Maritime Pollution by Substances Other than Oil, 1973 (not in force).

Requires 15 ratifications by states party to the main Convention. Signatures to date: 10. Ratifications to date: none.

International Convention on Civil Liability for Oil Pollution Damage, 1969 (in force: 19 June 1975)

Area Covered: global

Membership: United States: 18 signatories include: Belgium, Cameroon, Republic of China, Federal Republic of Germany, France, Ghana, Guatemala, Iceland, Indonesia, Italy, Ivory Coast, Monaco, Republic of Malagasy, Poland, Portugal, Switzerland, United Kingdom of Great Britain and Northern Ireland, Yugoslavia.

Structure: Adopted under the auspices of IMCO.

Functions and Powers: Established international rules and procedures for determining questions of liability and ensuring that adequate compensation is available to signatory states that suffer damage to their territory or territorial sea, caused by pollution from discharge of oil from ships. Liability applies to the shipowner.

Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material, 1971 (in force: 30 August 1975)

Area Covered: global

Membership: Brazil, France, Federal Republic of Germany, Italy, Portugal, Sweden, United Kingdom, Yugoslavia.

Structure: Adopted under the auspices of IMCO.

Functions and Powers: To ensure that the operator of a nuclear installation will be exclusively liable for damage caused by a nuclear incident occurring in the course of maritime carriage of nuclear material; unless already liable under the Paris or Vienna Conventions.

International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (not in force)

Area Covered: global

Membership: Requires 17 ratifications (8 states of which must import not less than 750 million tons of oil annually and which have ratified the Civil Liability Convention). Signatures to date: 17. Ratifications to date: 6.

Structure: Adopted under the auspices of IMCO. Executive Committee to be established, comprising one-third of the number of Assembly Members.

Functions and Powers: Assure full compensation to victims of oil pollution incidents but relieve shipowners of additional financial burdens imposed on them by the Civil Liability Convention of 1969, i.e., to extent that the protection afforded by the Liability Convention is inadequate, "The Fund" may assume some of the burden.

International Convention for the Prevention of Pollution from Ships, 1973 (not in force)

Area Covered: global

Membership: Requires 15 ratifications (the combined merchant fleets of which constitute not less than 50 percent of gross tonnage of the world's merchant shipping). Signatures to date: 16. Ratifications to date: 2.

Structure: Adopted under the auspices of IMCO.

Functions and Powers: Upon entry into force, this Convention will supersede the International Convention for the Prevention of Pollution of the Sea by Oil, 1954. It will set the maximum permissible quantity of oil which may be discharged by new oil tankers at 1/30,000 the cargo-carrying capacity (cut from the earlier 1/15,000 quantity). The "load on top" system plus sewage and garbage disposal will be regulated. It provides for the prevention of all forms of ship-generated pollution, whether accidental or deliberate. The flag state will be required to prosecute all violations of its vessels wherever they occur.

Convention on the Liability of Operators of Nuclear Ships, 1962 (not in force)

Area Covered: global

Membership: Requires 2 ratifications, including 1 by a state operating a nuclear ship. Signatures to date: 17. Ratifications to date: 6 (none of these operates a nuclear ship).

Structure: Adopted under the auspices of the UN, IAEA and IMCO.

Functions and Powers: Establishes uniform rules concerning liability of operators of nuclear ships, i.e., the maximum liability for a single nuclear incident is 1500 million francs (\$100,000,000). Recognizes the rights of coastal states to exclude nuclear-powered ships from its territorial seas and ports, but does not provide for measures to prevent pollution from radioactive materials released deliberately or accidentally from nuclear-powered vessels.

Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (Oslo Convention), 1972 (in force: 7 April 1974)

Area Covered: Northern Atlantic and Arctic, but excluding the Baltic and Mediterranean and dependent seas. Involves countries of Northwestern Europe.

Membership: Signatory states include: Belgium, Denmark, Finland, France, Germany, Iceland, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom

Structure: Commission composed of representatives of each of the contracting parties.

Functions and Powers: To take all possible steps to prevent pollution of the sea by substances liable to create hazards to human health, harm living resources and marine life, damage amenities or interfere with other legitimate uses of the sea. Two lists of substances were established. Dumping of substances from the "black list" is prohibited, while dumping of "grey list" substances requires specific permits and regulations.

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention), 1972 (in force: 30 August 1975)

Area Covered: global

Membership: Includes 21 ratifying parties.

Structure: The Government of the United Kingdom of Great Britain and Northern Ireland is the depository, performing Secretariat duties prior

to designation of an organization by the contracting parties, which will assume Secretariat duties. Consultative meetings of the contracting parties are to convene not less frequently than once every two years, plus special meetings may be called at any time on the request of two-thirds of the parties.

Functions and Powers: To establish similar regulations controlling the disposal of wastes and other matter at sea in all contracting states. Dumping permits and records plus enforcement of regulations are the responsibility of each party, however, parties are also to act collectively in regulating ocean dumping. Dumping of any materials listed in Annex I (including oil and highly radioactive and toxic materials) is prohibited, while substances listed in Annex II require permits for dumping.

Convention for the Prevention of Marine Pollution from Land-based Sources (Paris Convention), 1974 (not in force)

Area Covered: Northern Atlantic and Arctic, but excluding the Baltic and Mediterranean and dependent seas.

Membership: Requires 7 ratifications. Signatures to date: 10. Ratifications to date: none.

Structure: Commission composed of representatives of each of the contracting parties.

Functions and Powers: Will adopt individual and joint measures plus promote cooperation at regional or sub-regional levels, to prevent and combat pollution of the sea from land-based sources.

Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Underwater, 1963 (in force: 1964)

Area Covered: global

Membership: 106 as of 1974. Only 2 major countries are not party to the agreement: France and the People's Republic of China.

Structure: Adopted under the auspices of the UN and IAEA.

Functions and Powers: Essentially a disarmament measure. As an environmental protection agreement, it prohibits states party to the treaty from carrying out nuclear explosions in any environment, if such explosions cause radioactive debris to be present outside the territorial limits of the state under whose jurisdiction or control such explosion is conducted.

Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof

Area Covered: Seabed and ocean floor beyond 12-mile offshore zone.

Membership: Ratification or accession deposited by: Afghanistan, Australia, Austria, Belgium, Botswana, Bulgaria, Byelorussian Soviet Socialist Rep., Canada,¹ Republic of China, Cyprus, Czechoslovakia, Denmark, Dominican Republic, Finland, German Democratic Republic, Federated Republic of Germany,² Ghana, Hungary, Iceland, India,³ Iran, Iraq,³ Ireland, Italy,³ Ivory Coast, Japan, Jordan, Laos, Lesotho, Malaysia, Malta, Mauritius, Mongolia, Morocco, Nepal, Netherlands,⁴ New Zealand, Nicaragua, Niger, Norway, Panama, Poland, Portugal, Qatar, Romania,³ Rwanda, Saudi Arabia, Singapore, South Africa, Swaziland, Sweden, Switzerland, Togo, Tunisia, Turkey, Ukrainian Soviet Socialist Republic, U.K.,⁵ U.S.A., U.S.S.R., Yugoslavia, and Zambia.

Structure: Parties to the Treaty agree not to emplant or emplace on the seabed and the ocean floor and in the subsoil thereof beyond the outer limit of the 12-mile zone any nuclear weapons or any other types of weapons of mass destruction as well as structures, launching installations or any other facilities specifically designed for storing, testing or using such weapons.

Functions and Powers: The Treaty provides for reciprocal verifications of compliance by parties to the Treaty through the observation of the activities of other parties on the seabed and ocean floor and in the subsoil thereof beyond the 12-mile zone.

¹With declaration.

²Applicable to Land Berlin.

³With statement.

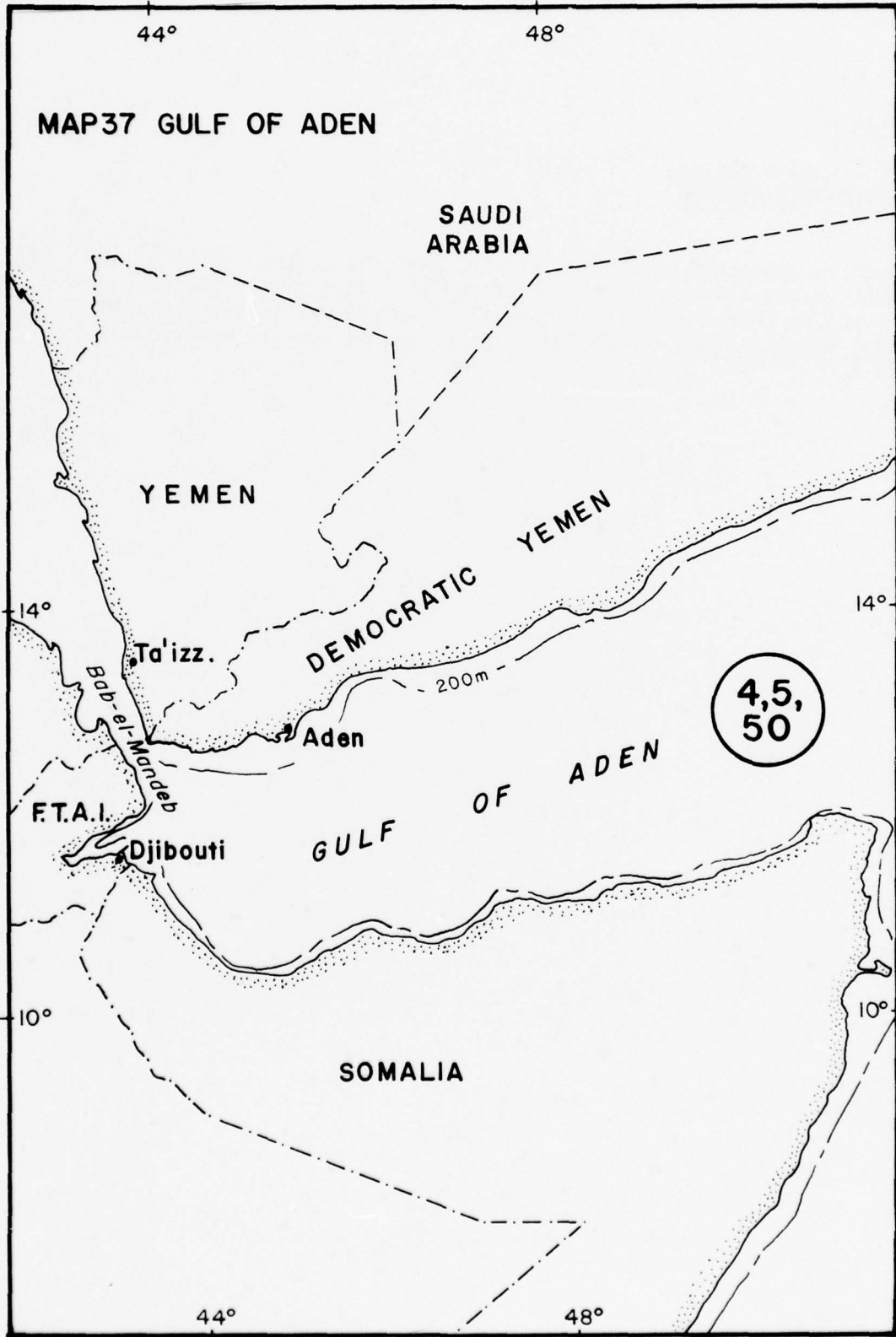
⁴Extended to Netherlands Antilles.

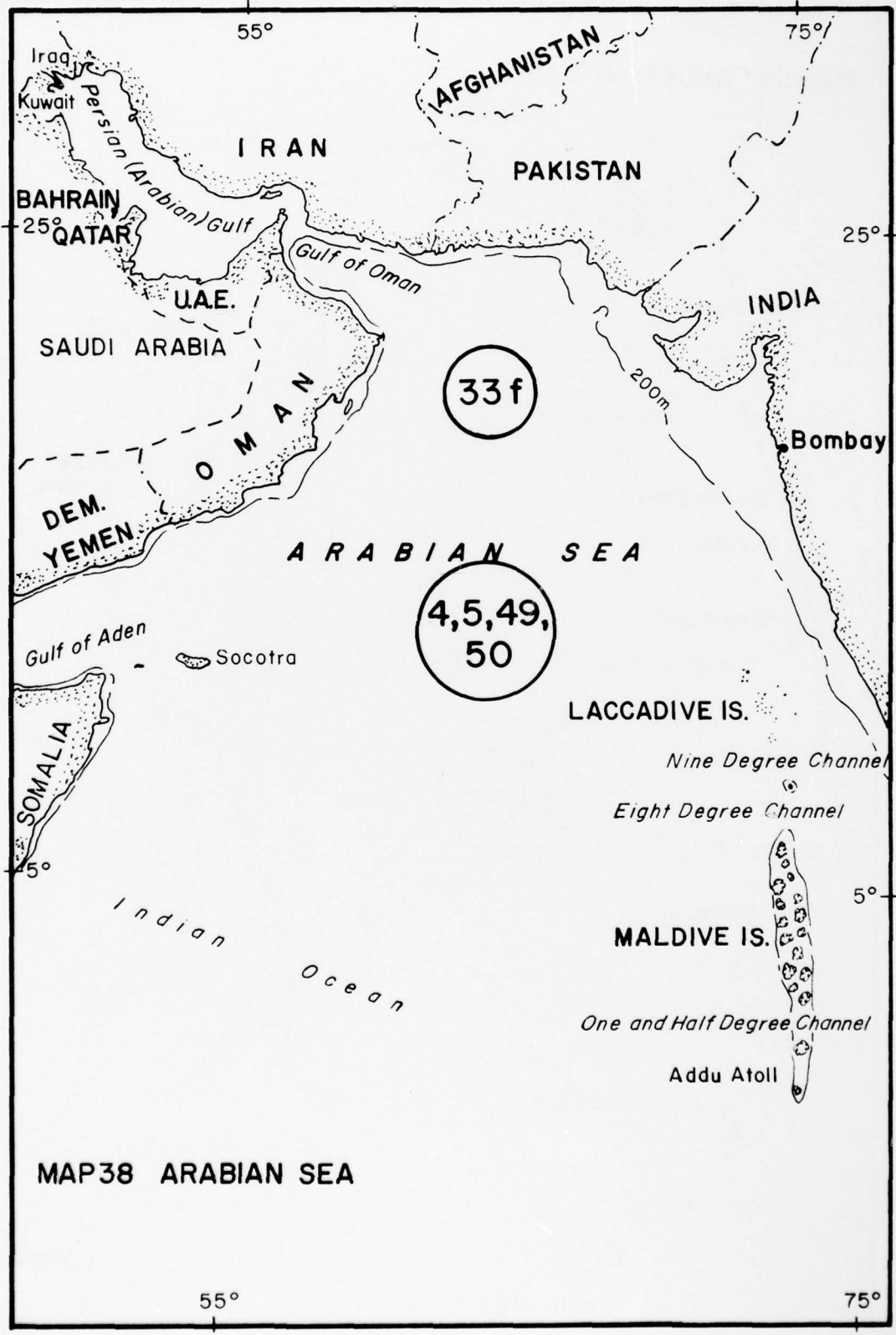
⁵Extended to Antigua, Brunei, Dominica, St. Christopher-Nevis-Anguilla, St. Lucia, St. Vincent, Solomon Islands and territories under the territorial sovereignty of the U.K.

APPENDIX B

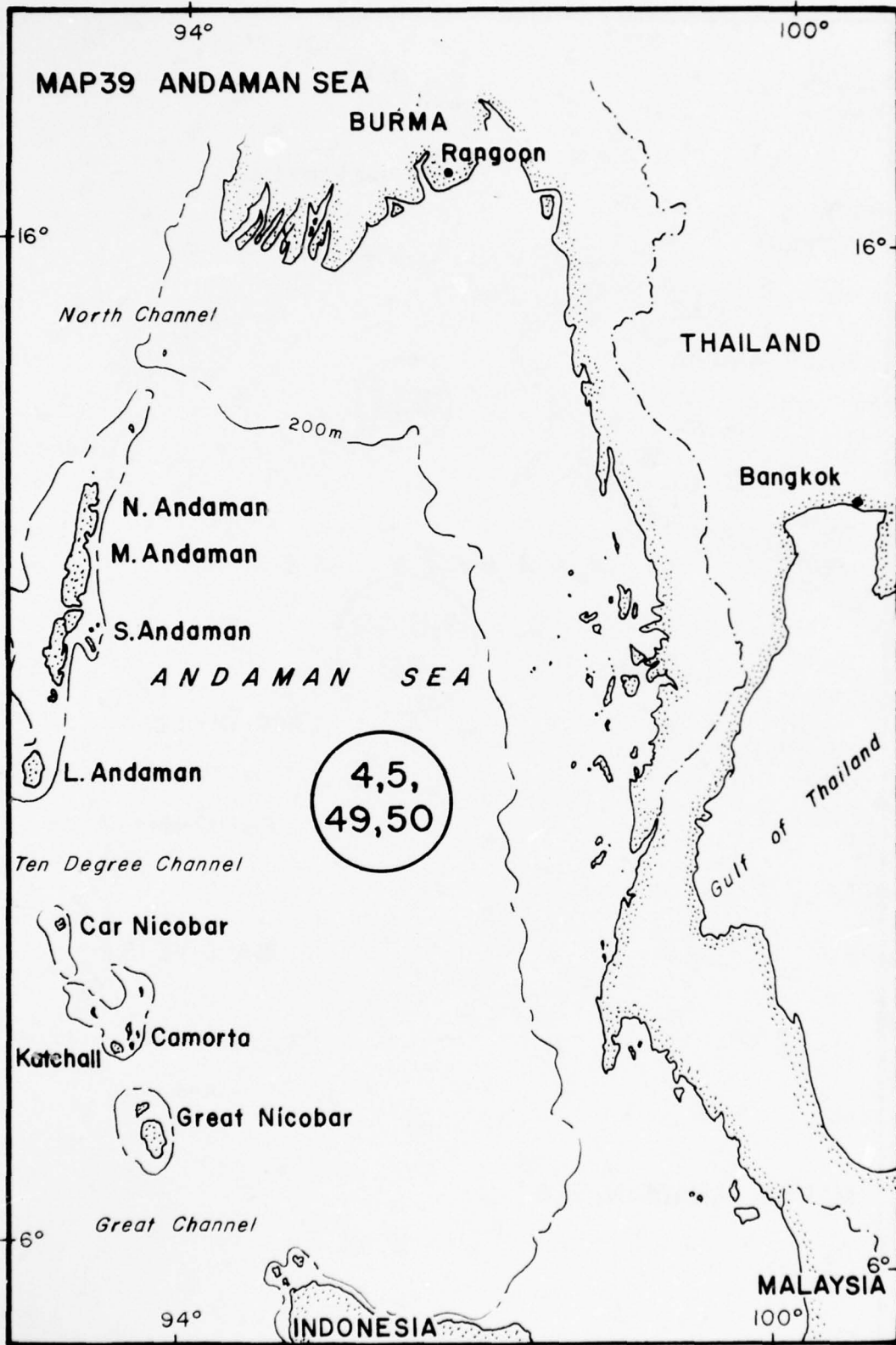
PHYSICAL MARINE REGIONS
AND ASSOCIATED SYSTEMS

The numbers appearing on the map of each physical region indicate the relevant regional arrangements associated with that area. The numbers correspond to those identifying specific arrangements in the Table of Regional Organizations, appearing on page 161, at the beginning of Appendix A.

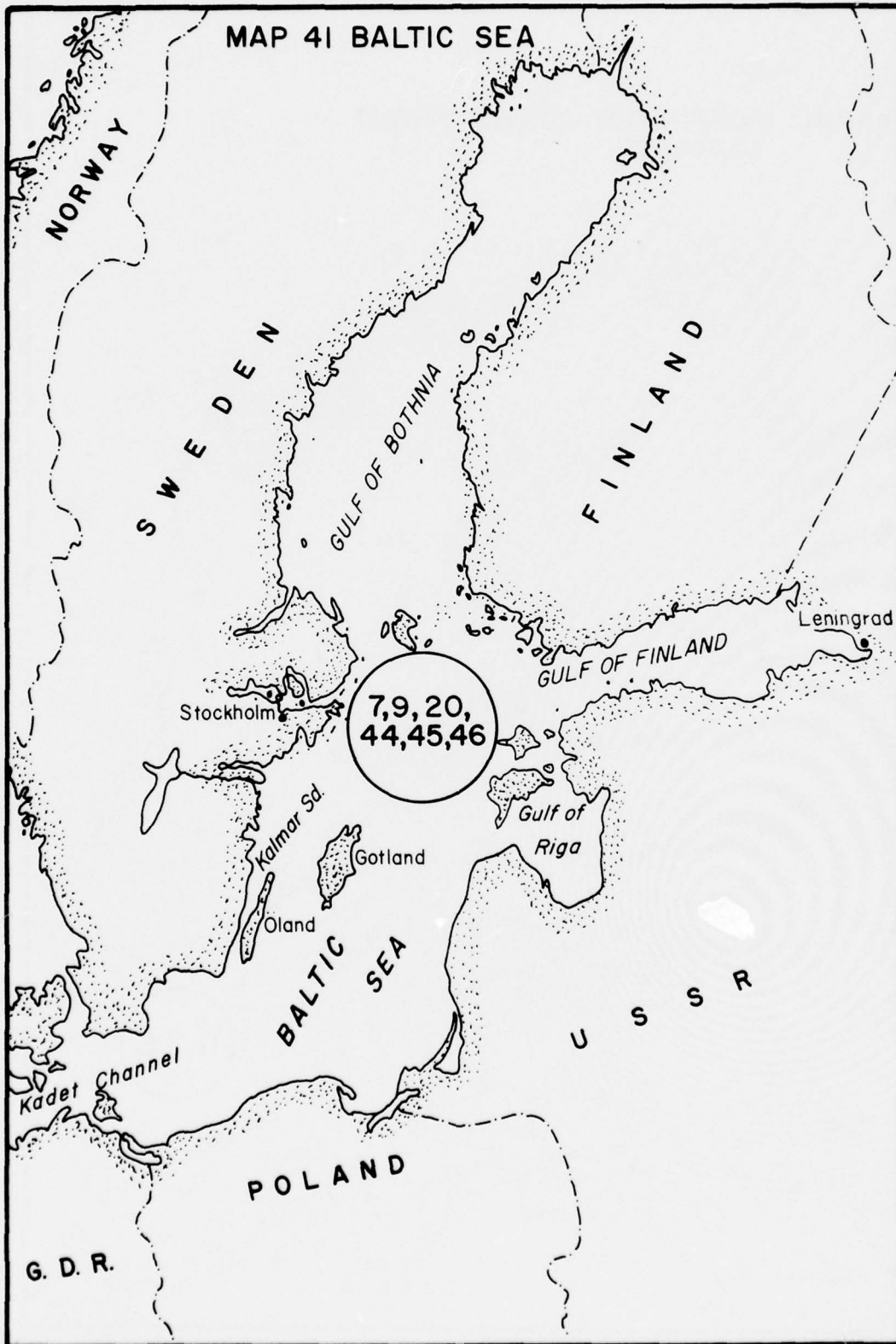


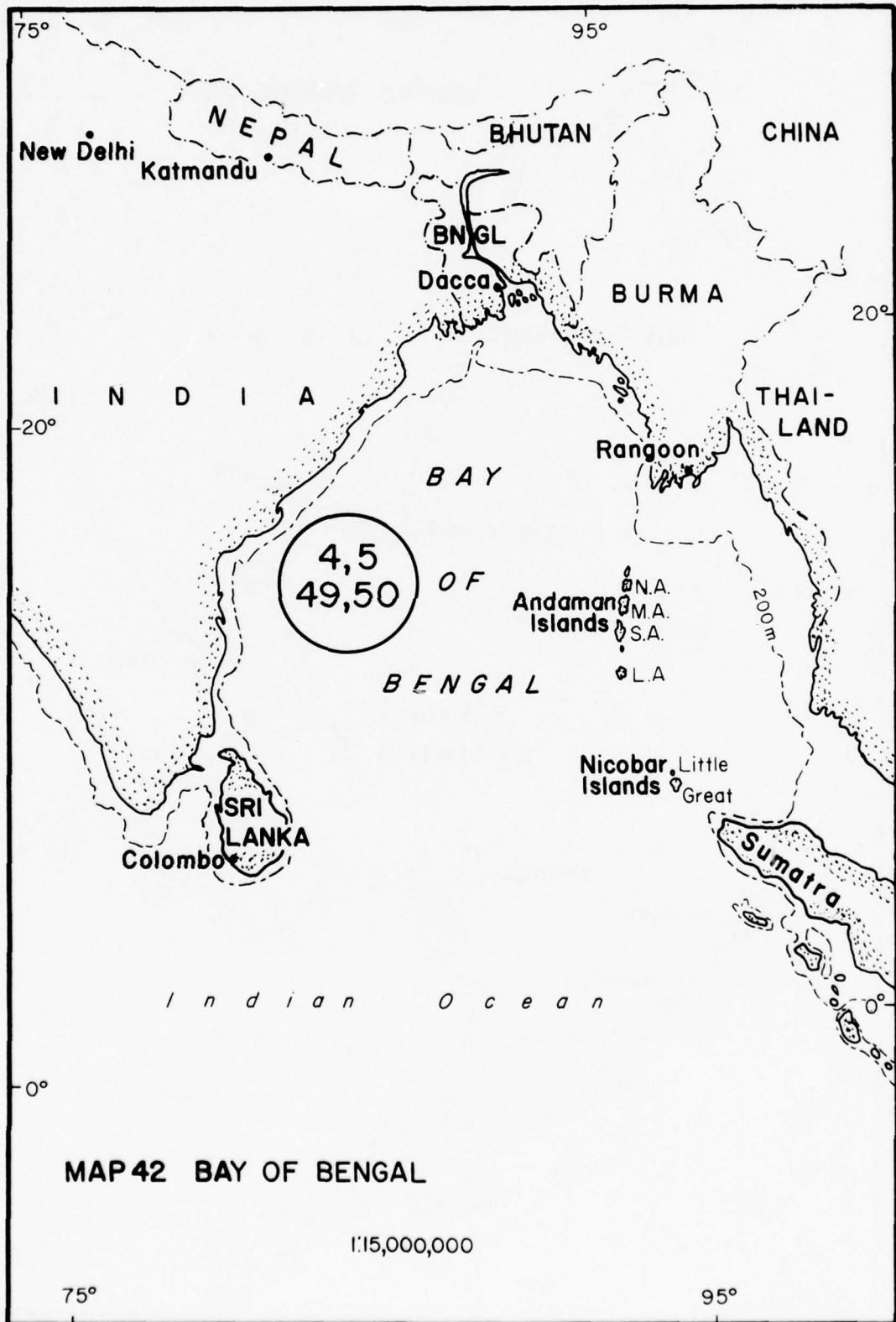


MAP38 ARABIAN SEA







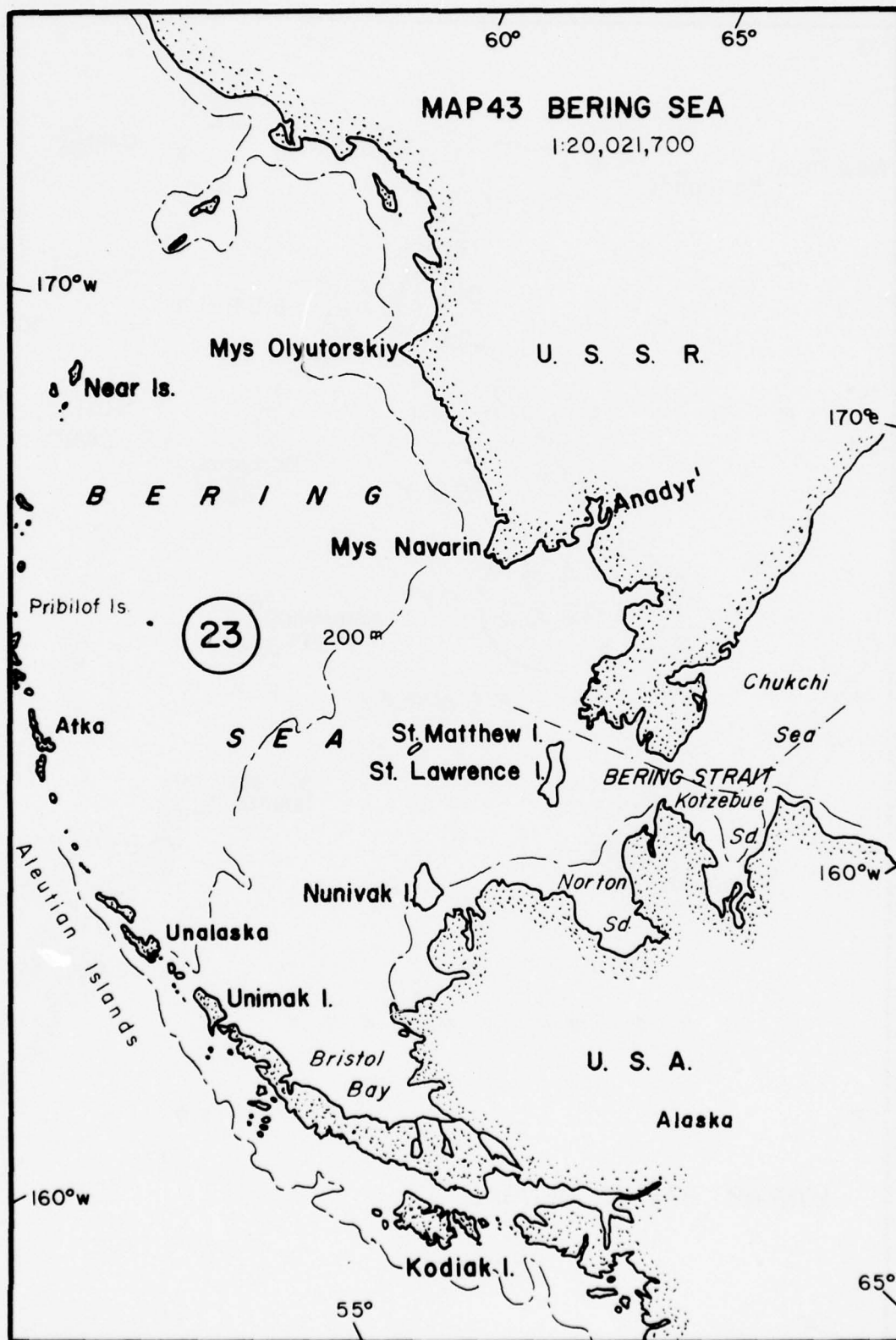


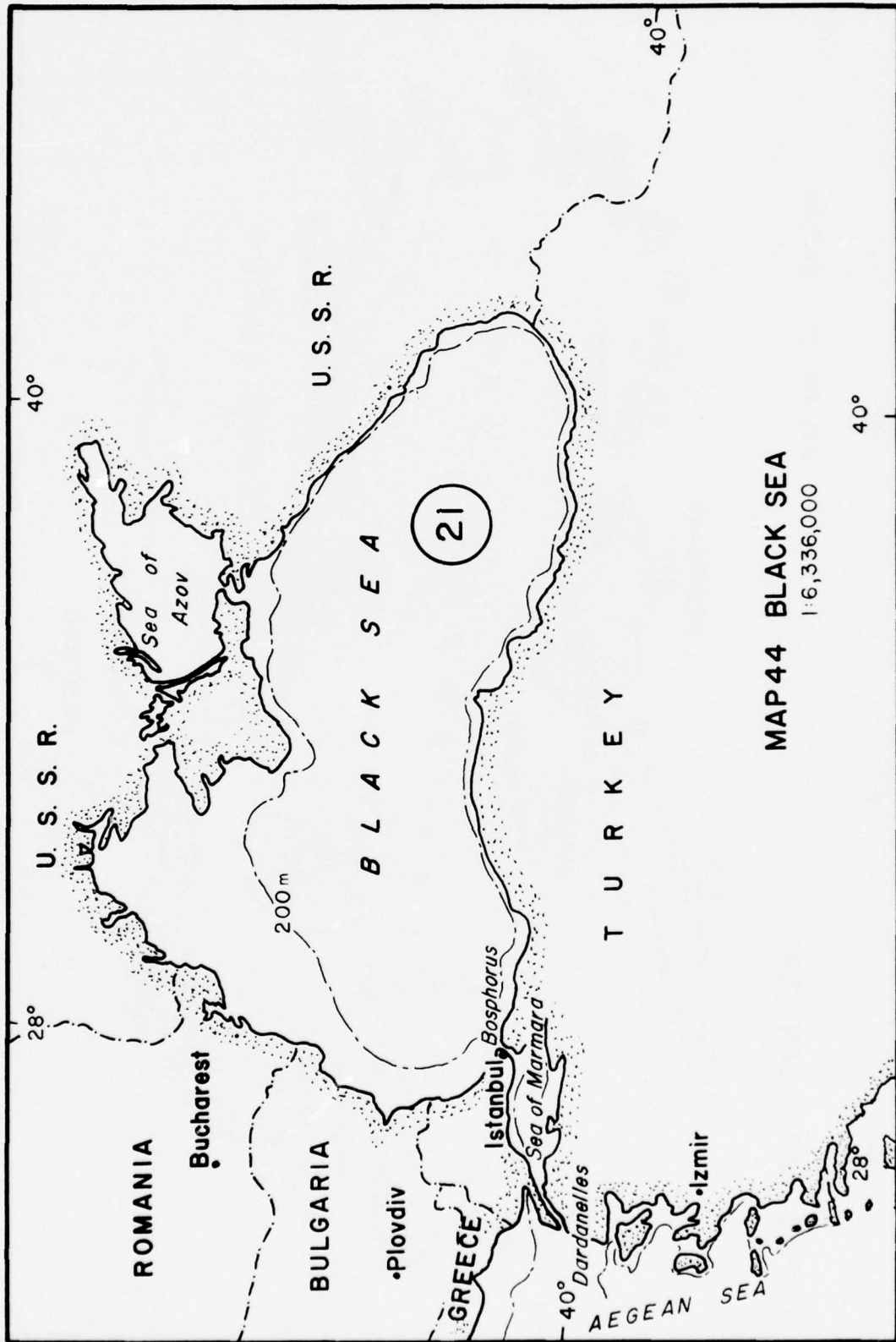
MAP 42 BAY OF BENGAL

1:15,000,000

75°

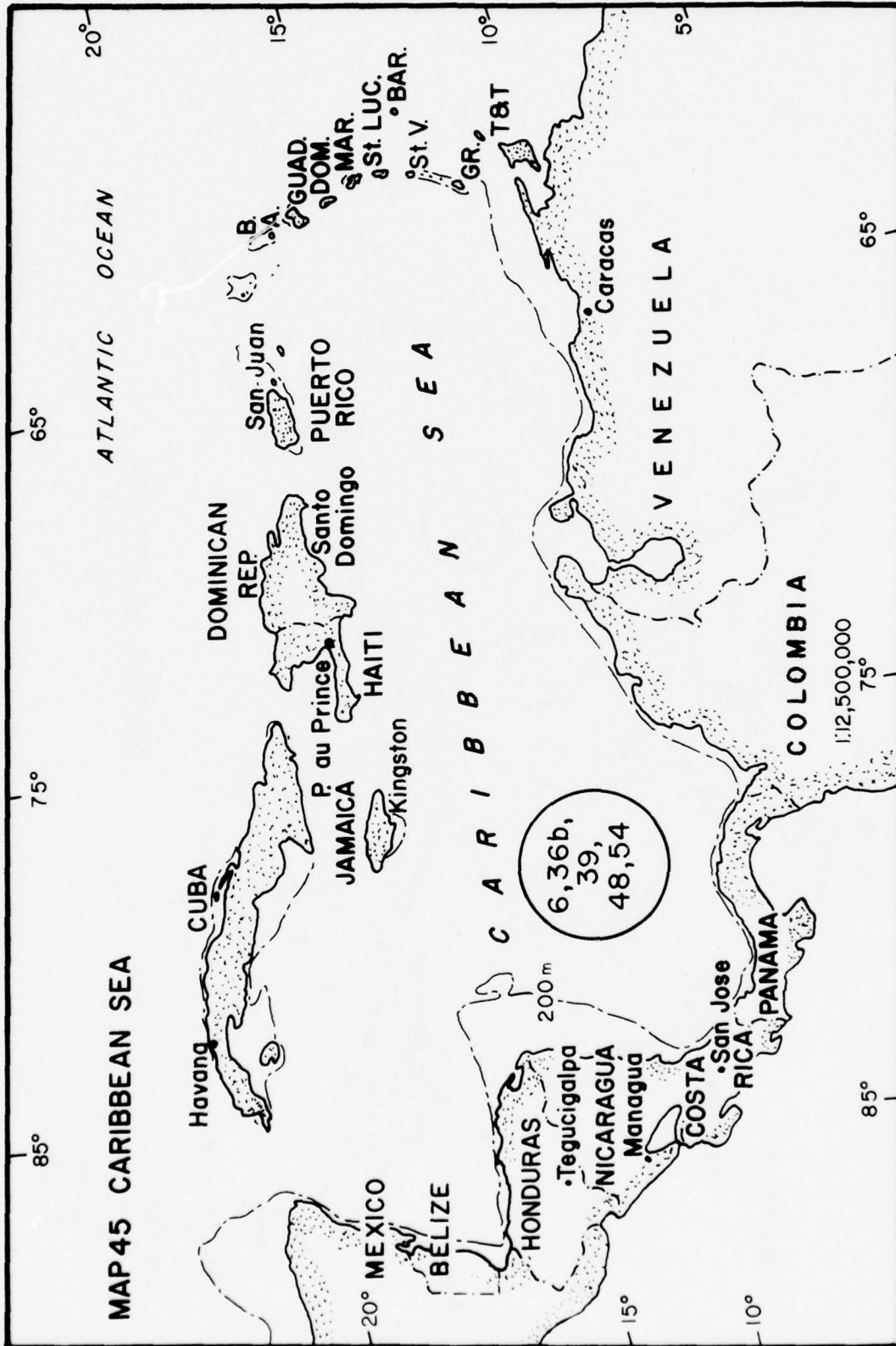
95°

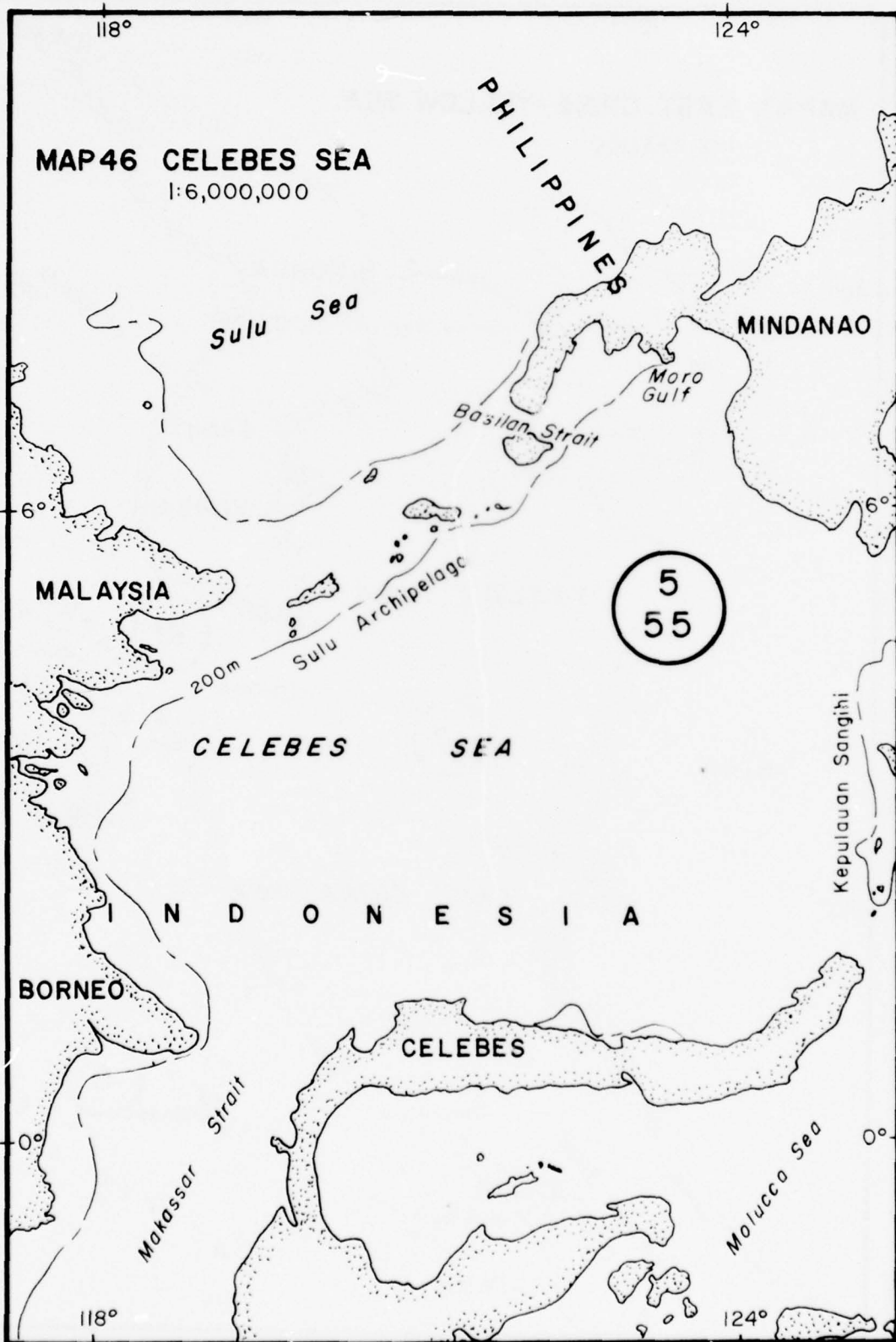


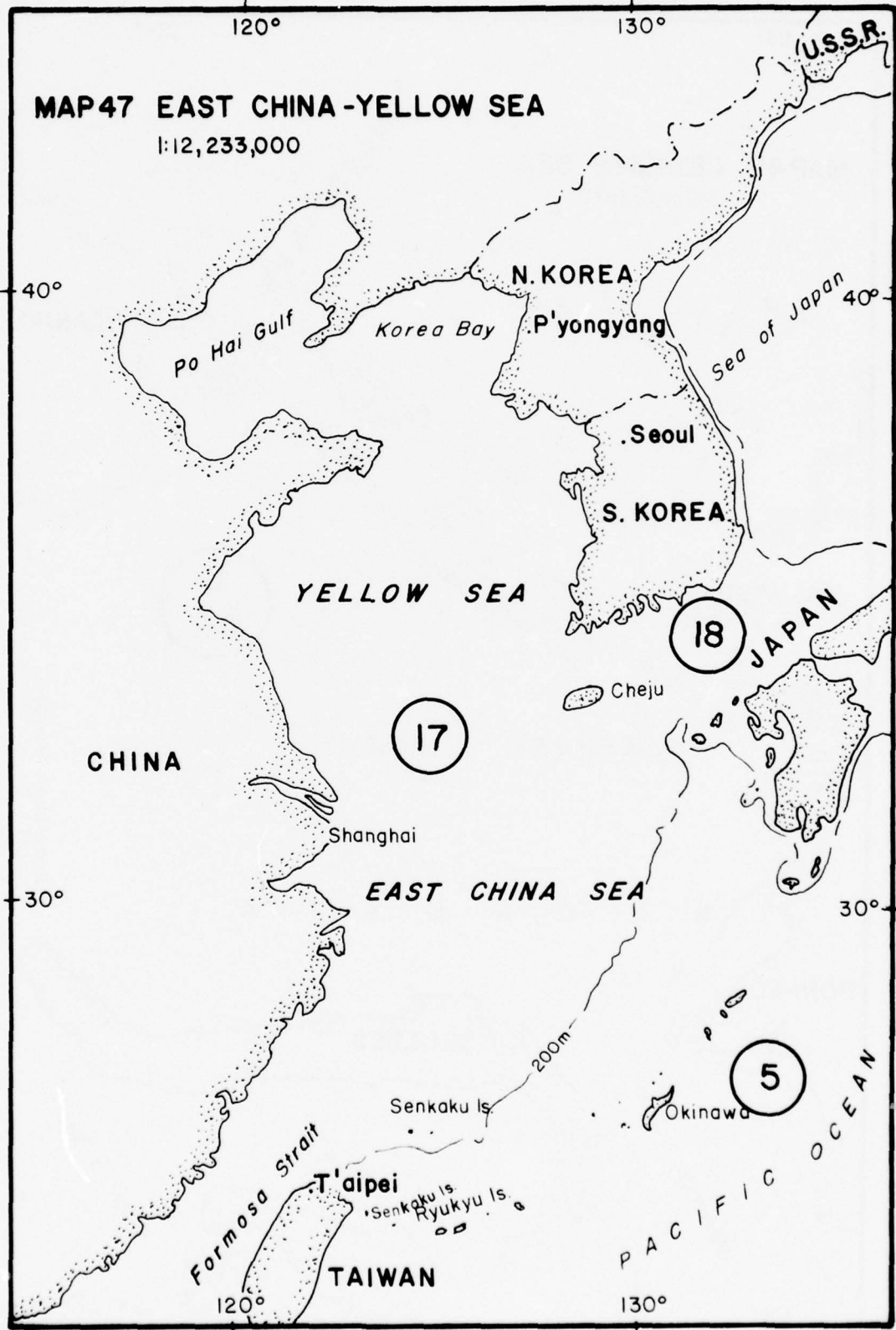


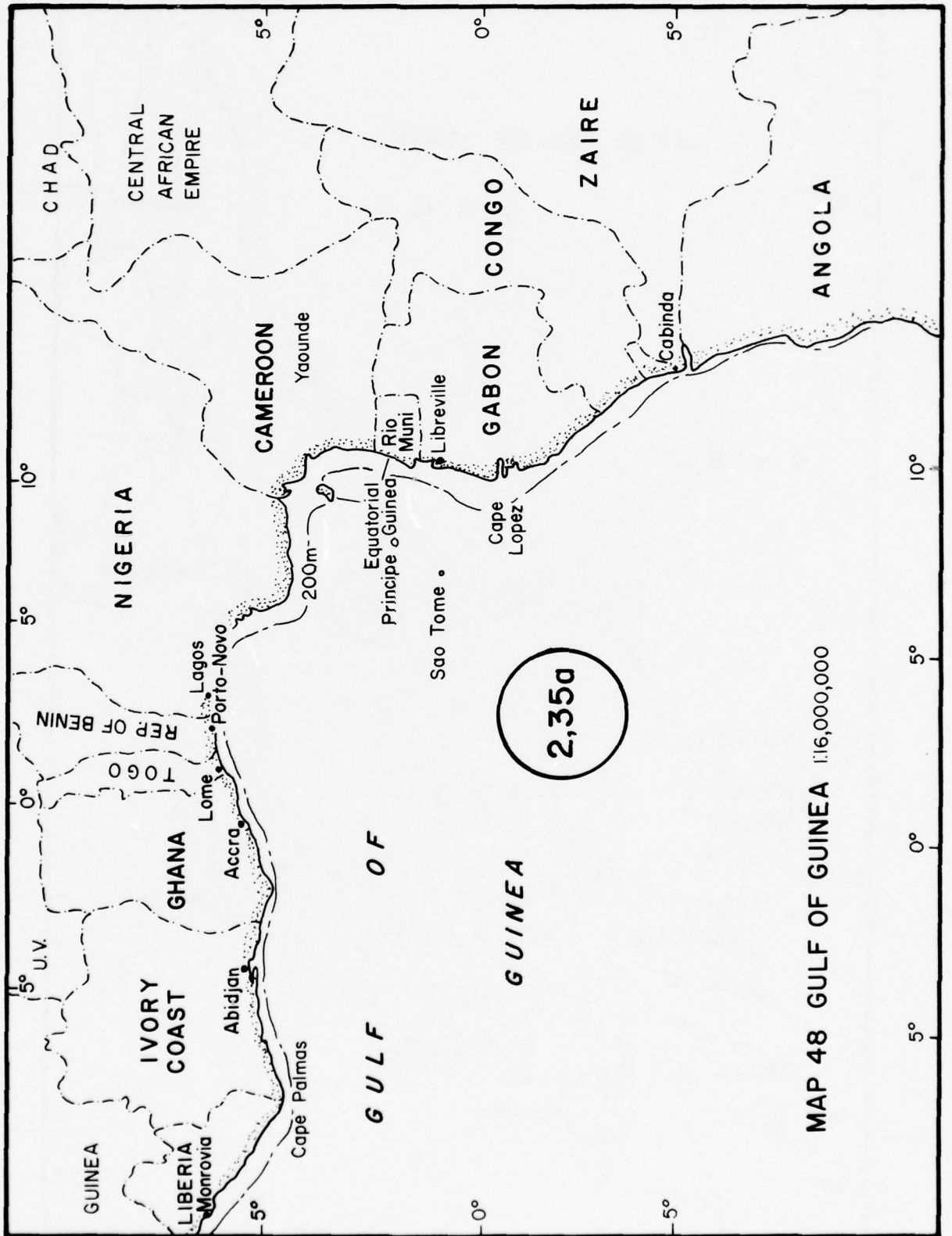
MAP 44 BLACK SEA

1:6,336,000

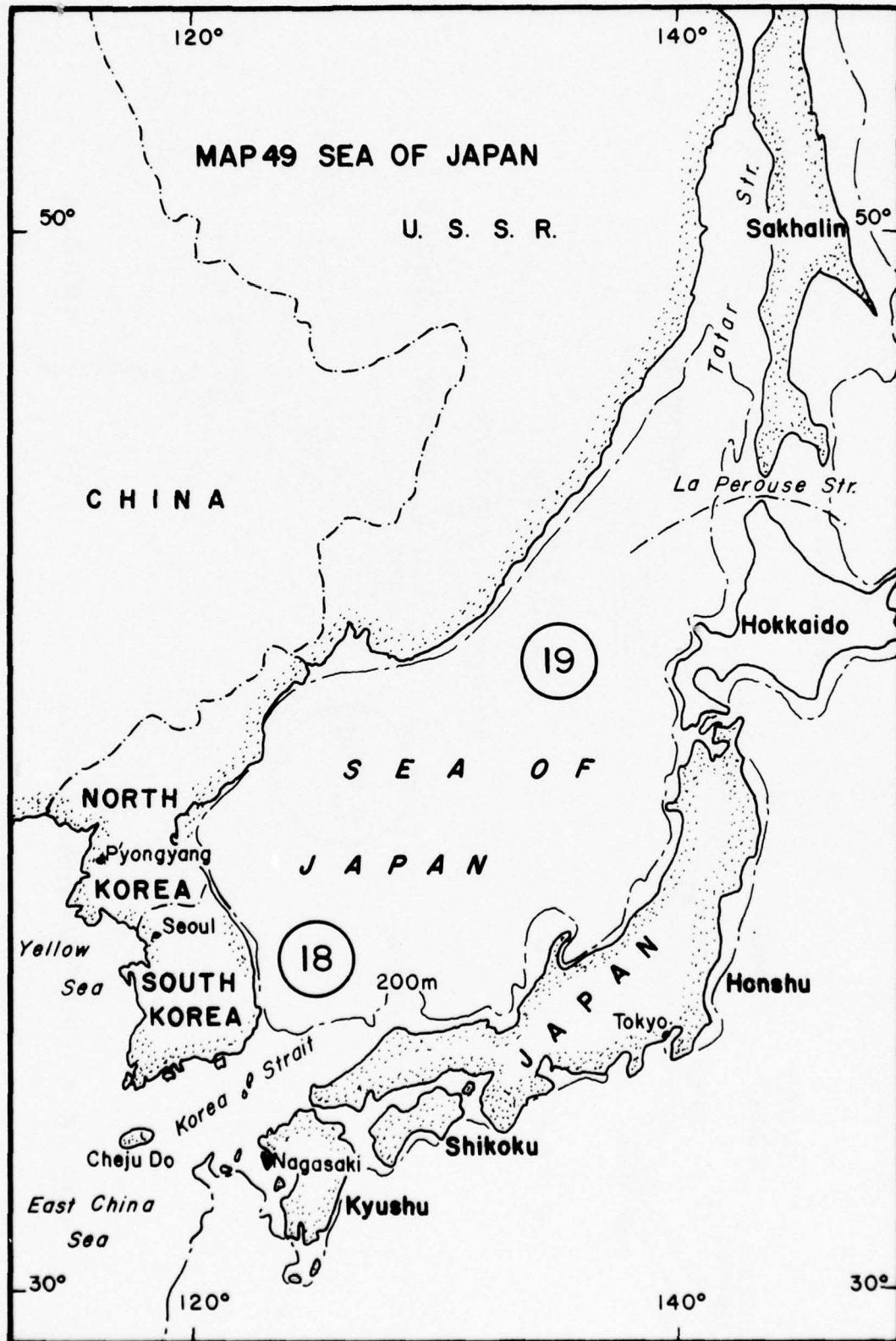


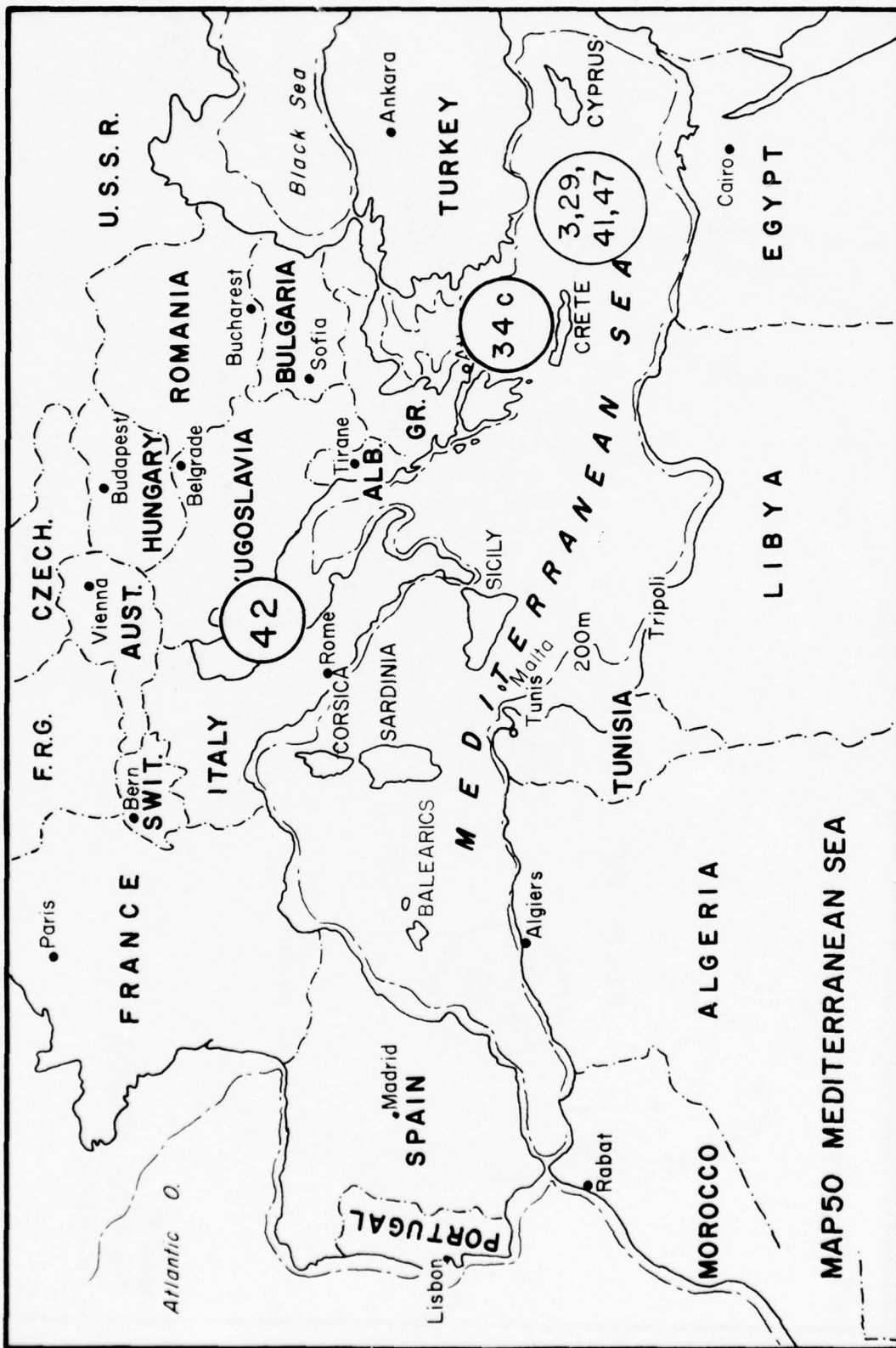




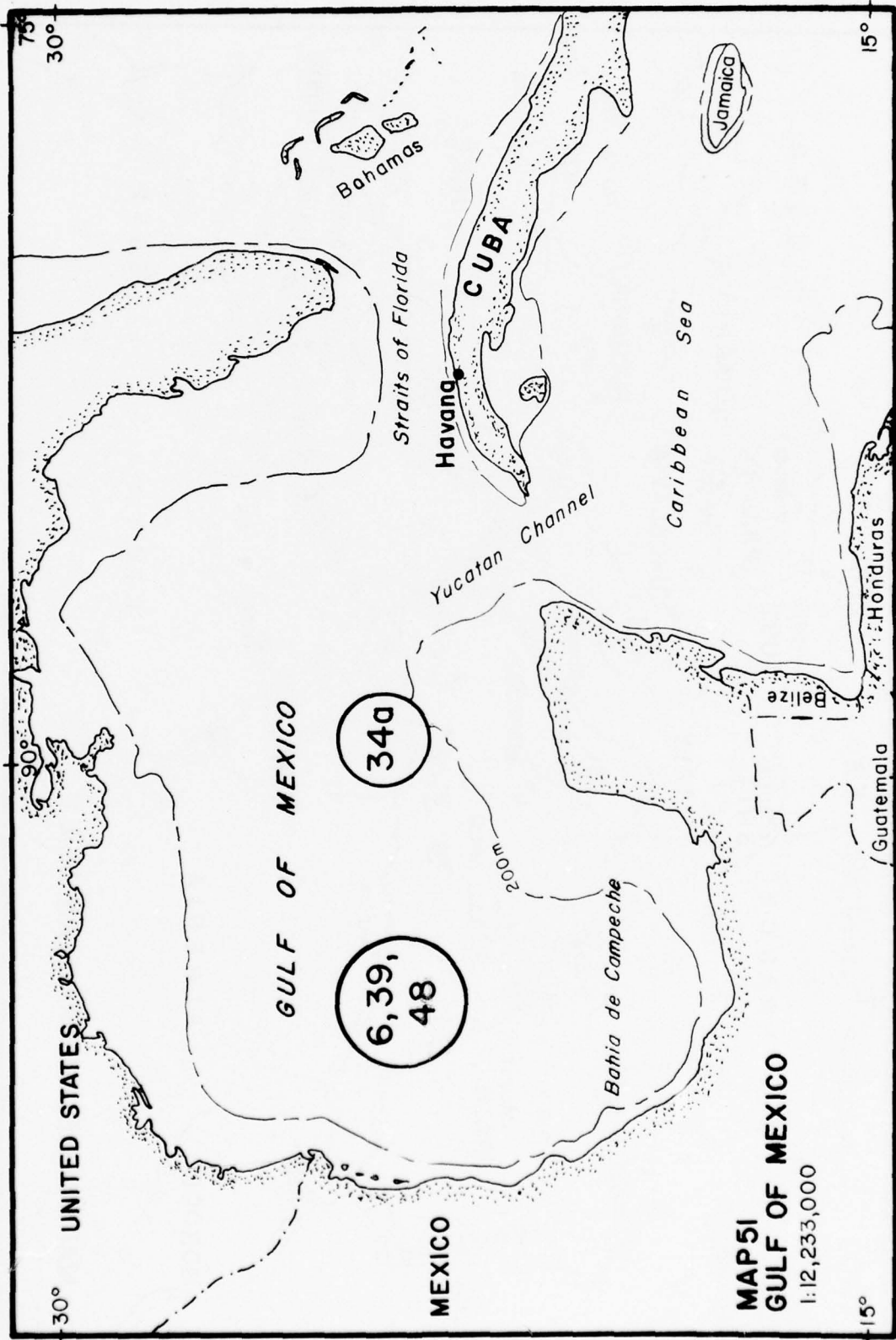


MAP 48 GULF OF GUINEA 1:16,000,000

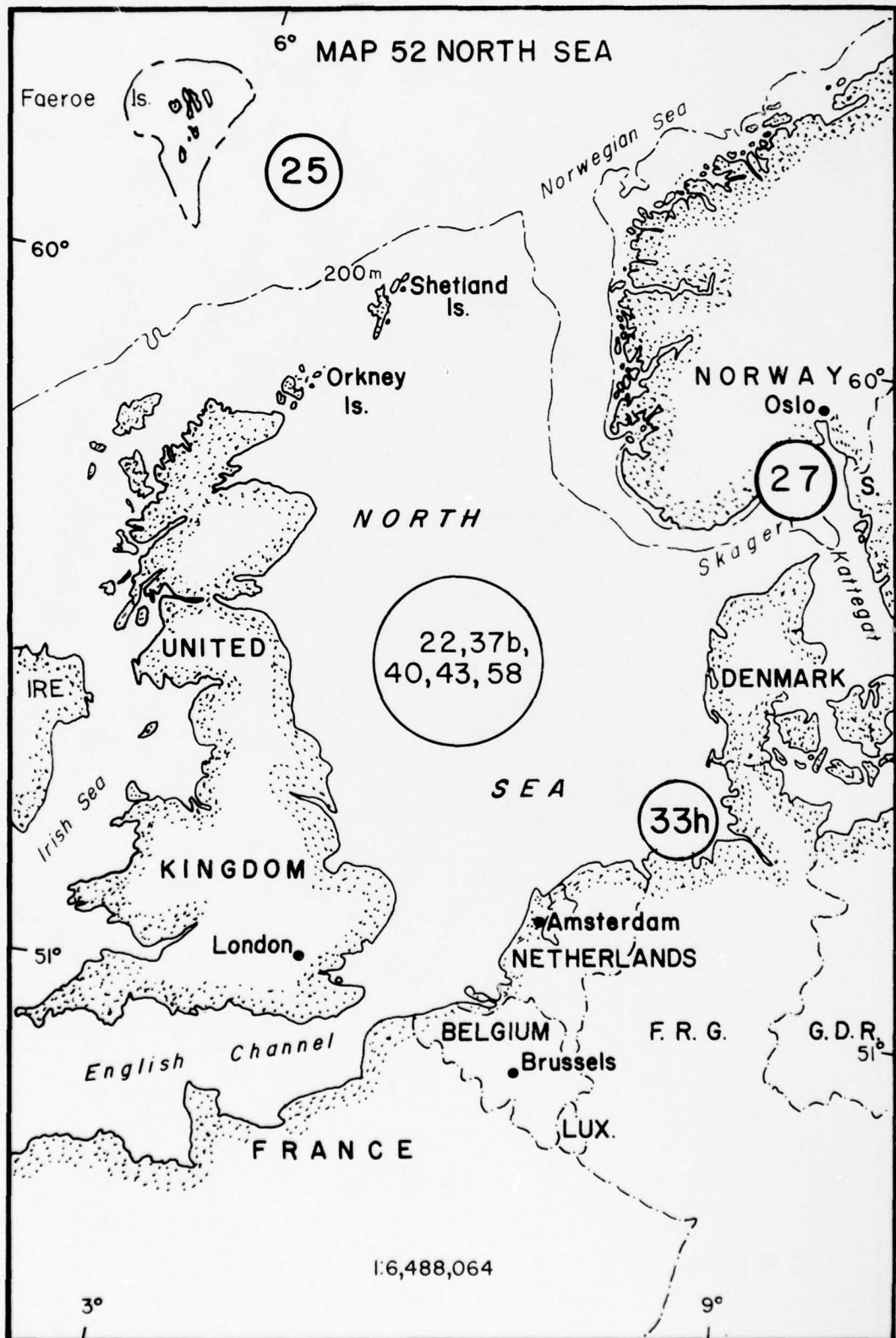


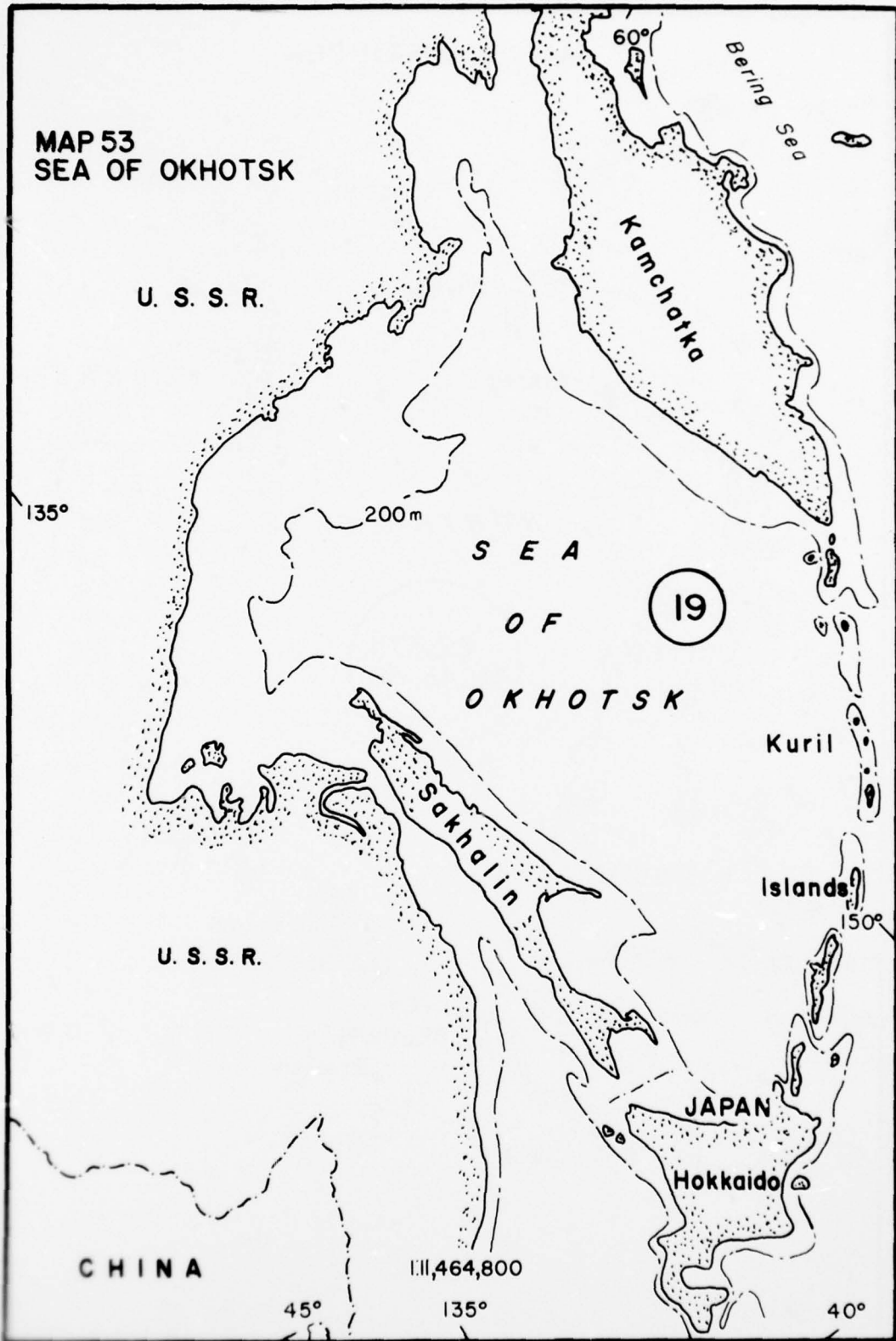


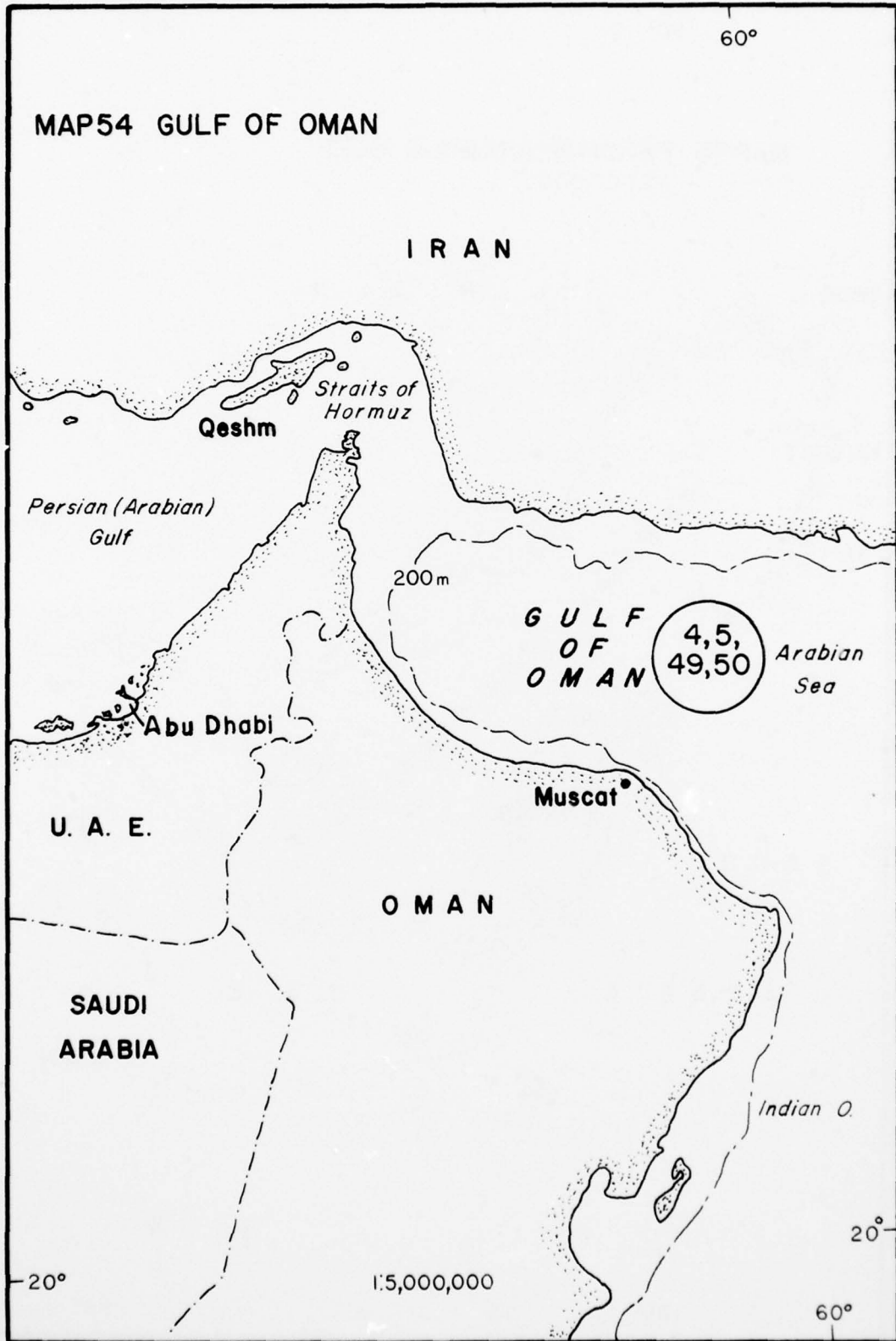
MAP50 MEDITERRANEAN SEA



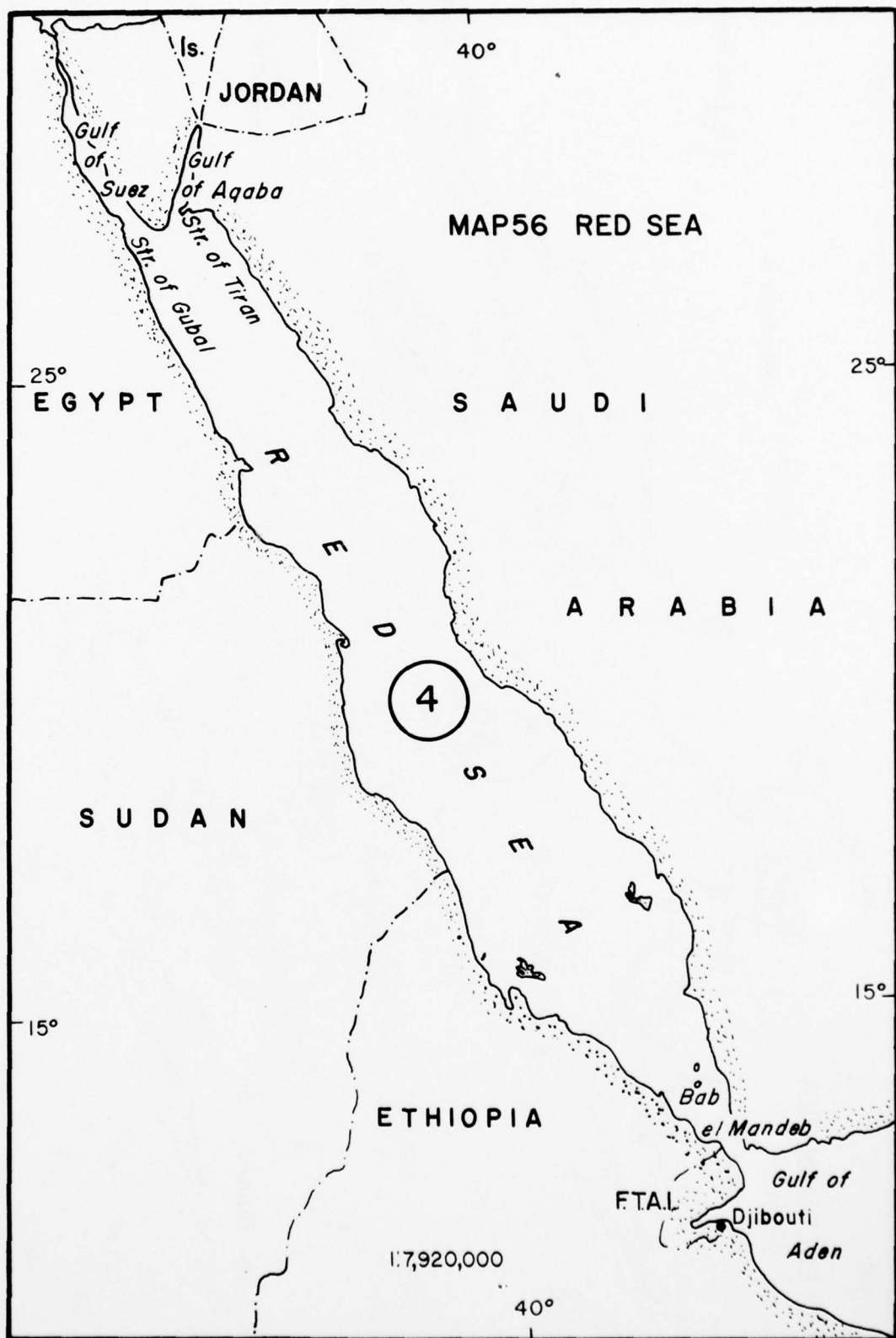
MAP 51
GULF OF MEXICO
1:12,233,000

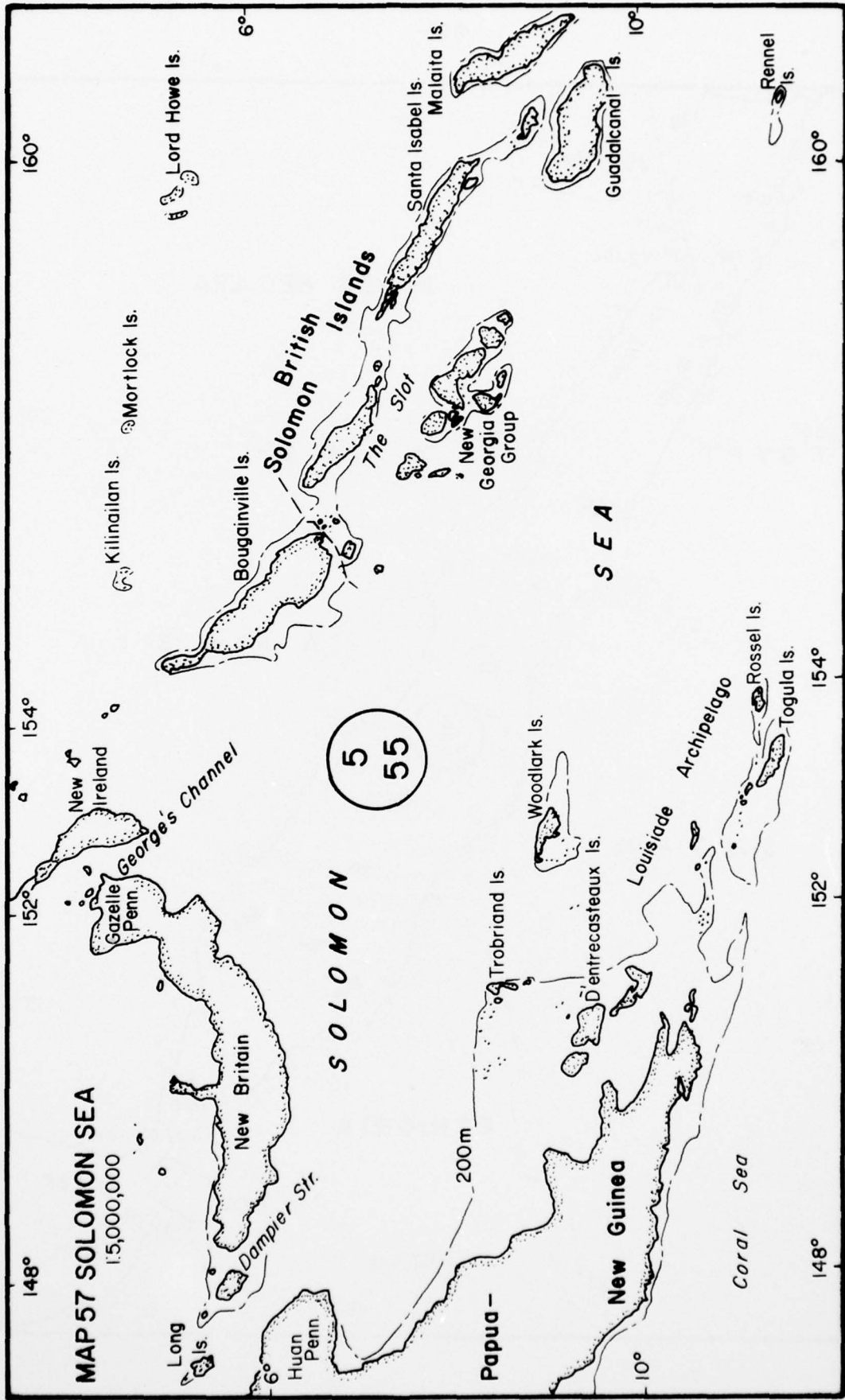


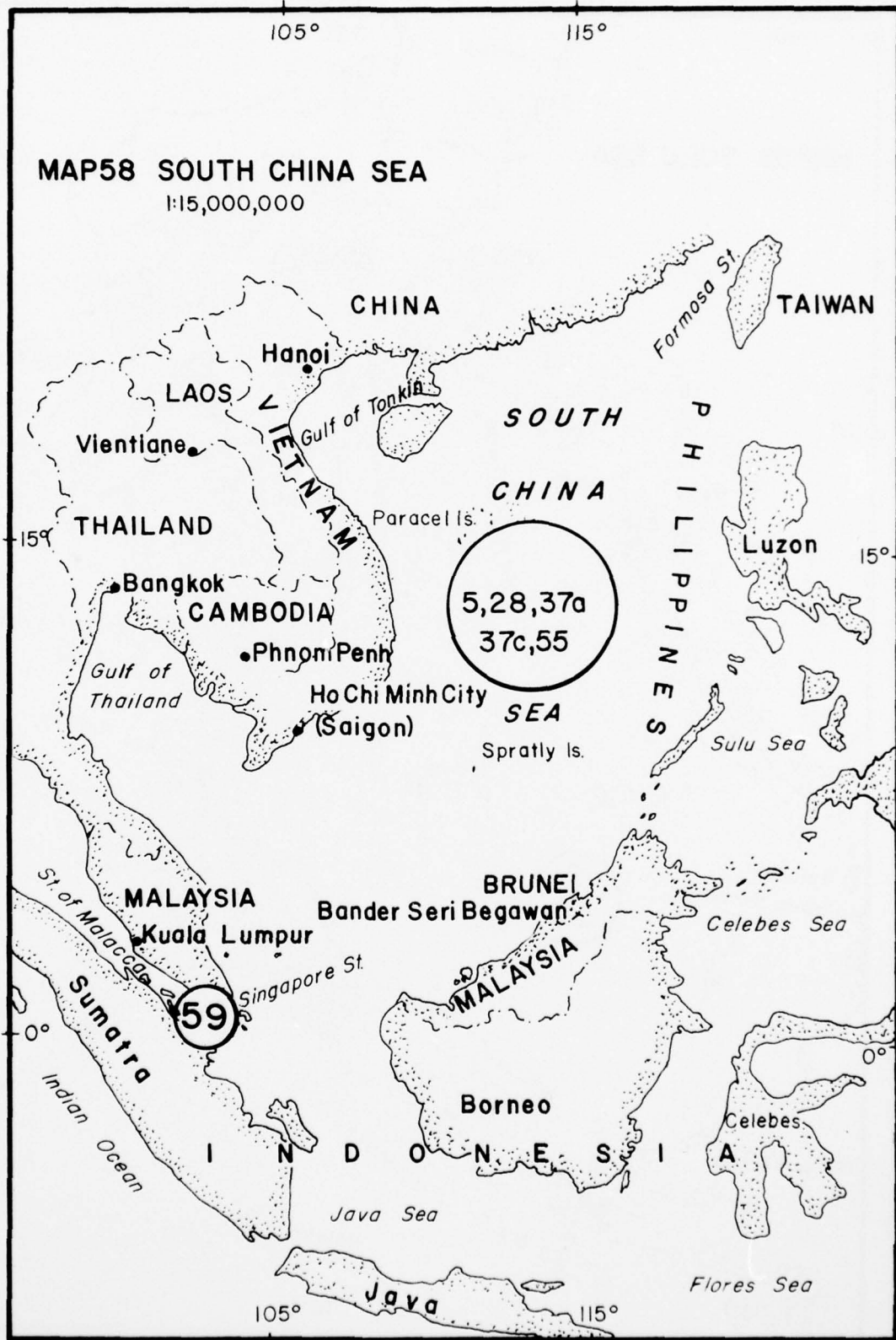


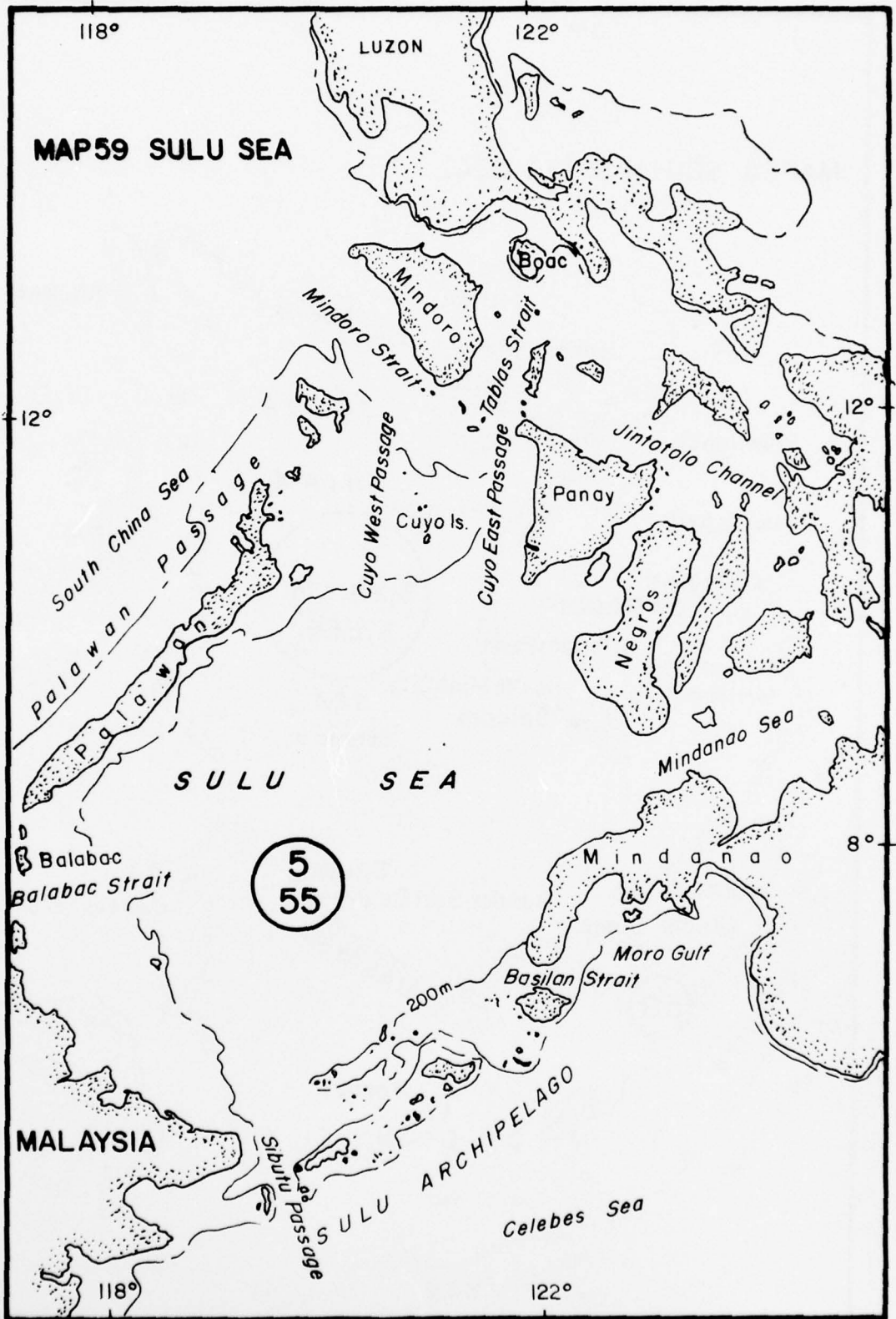


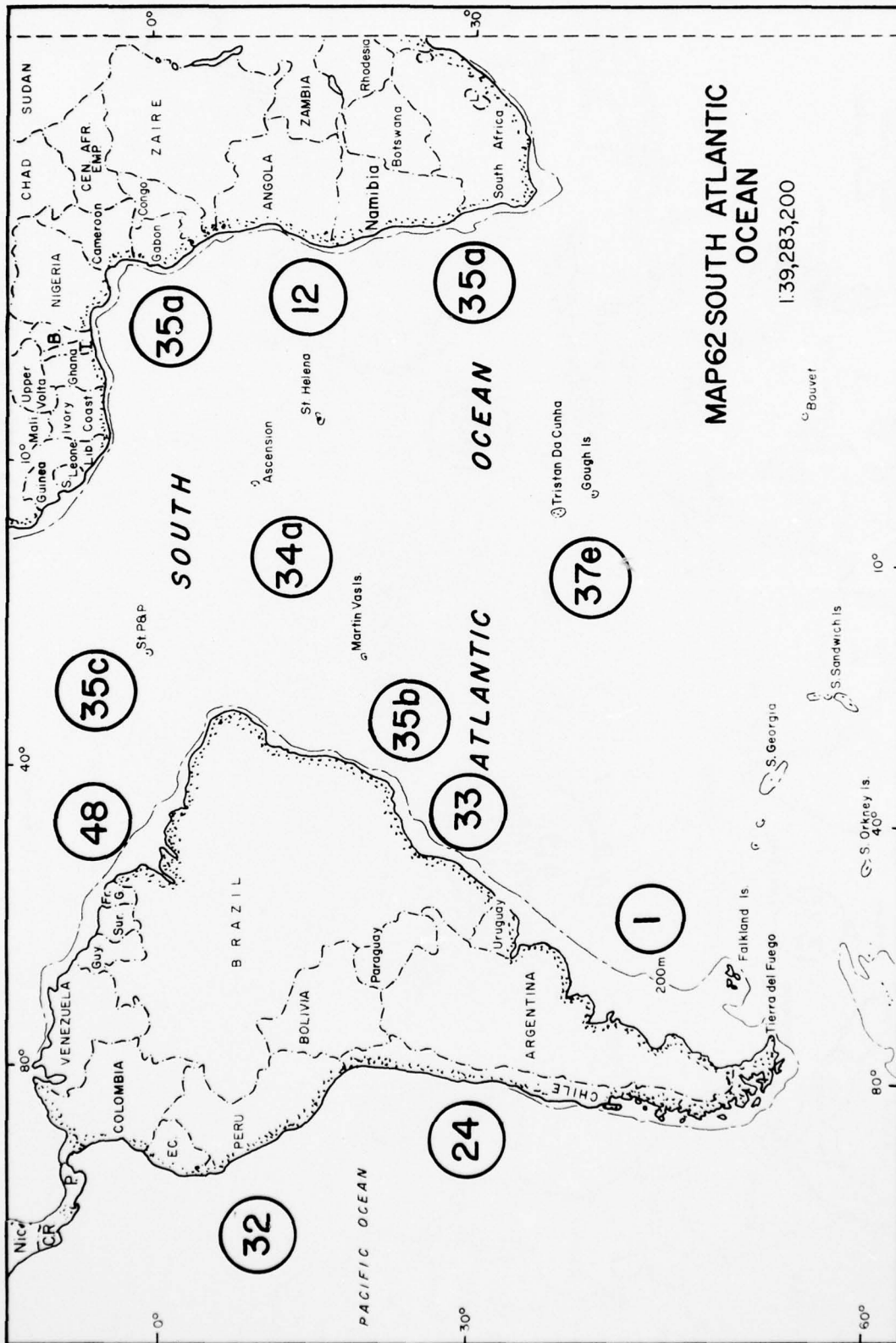












MAP 62 SOUTH ATLANTIC OCEAN

1:39,283,200

c Bouvet

c S. Sandwich Is.

c S. Orkney Is.

60°

10°

30°

40°

80°

0°

30°

35a

34a

48

32

33

35b

37e

1

12

35a

OCEAN

ATLANTIC

PACIFIC OCEAN

SOUTH

ANGOLA

ZAMBIA

Namibia

Botswana

South Africa

Rhodesia

CHAD

SUDAN

NIGERIA

CEN. AFR. EMP.

ZAIRE

ANGOLA

Namibia

Botswana

South Africa

Rhodesia

CHAD

SUDAN

NIGERIA

CEN. AFR. EMP.

ZAIRE

ANGOLA

Namibia

Botswana

South Africa

Rhodesia

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CEN. AFR. EMP.

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Namibia

Botswana

South Africa

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CEN. AFR. EMP.

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ZAIRE

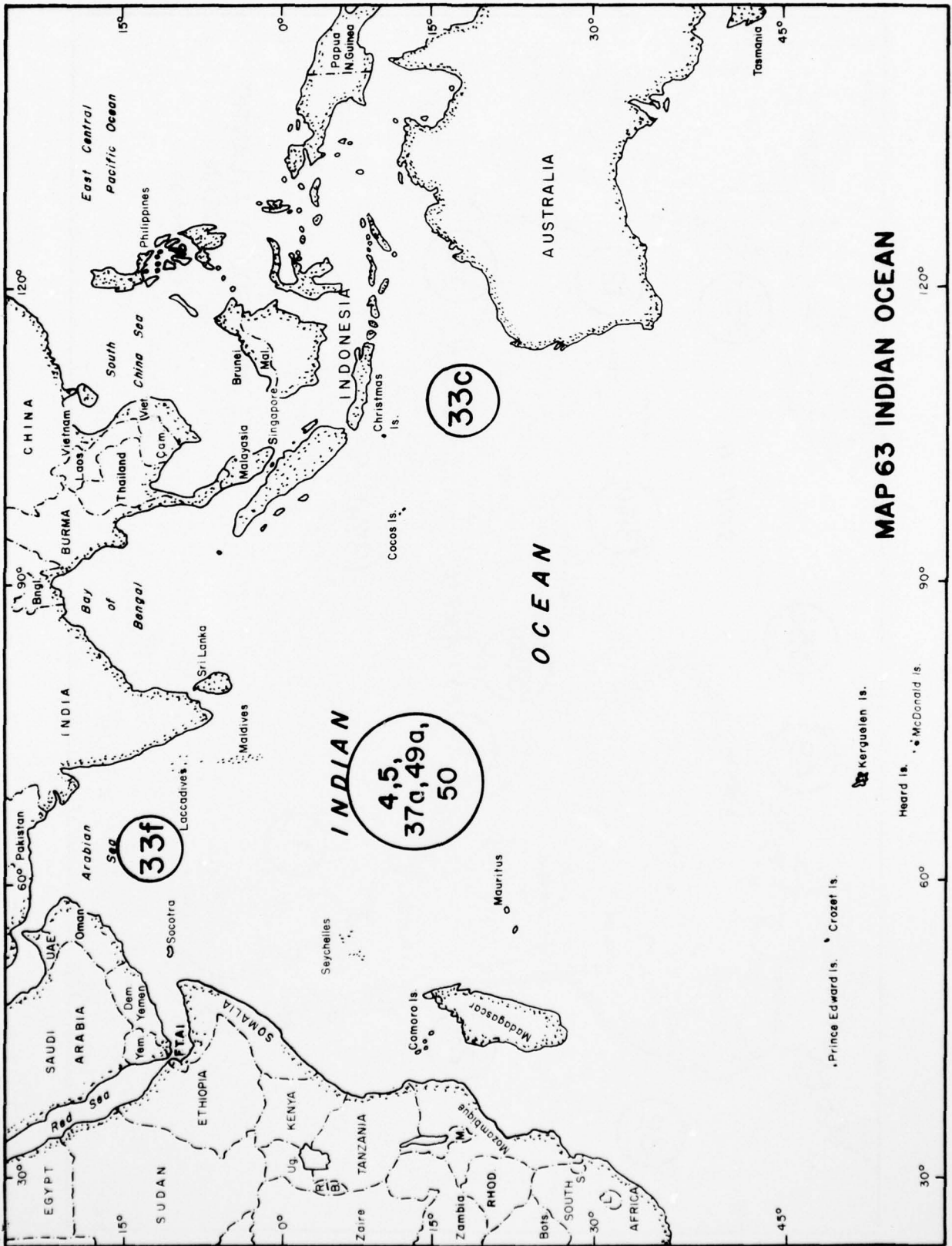
ANGOLA

Namibia

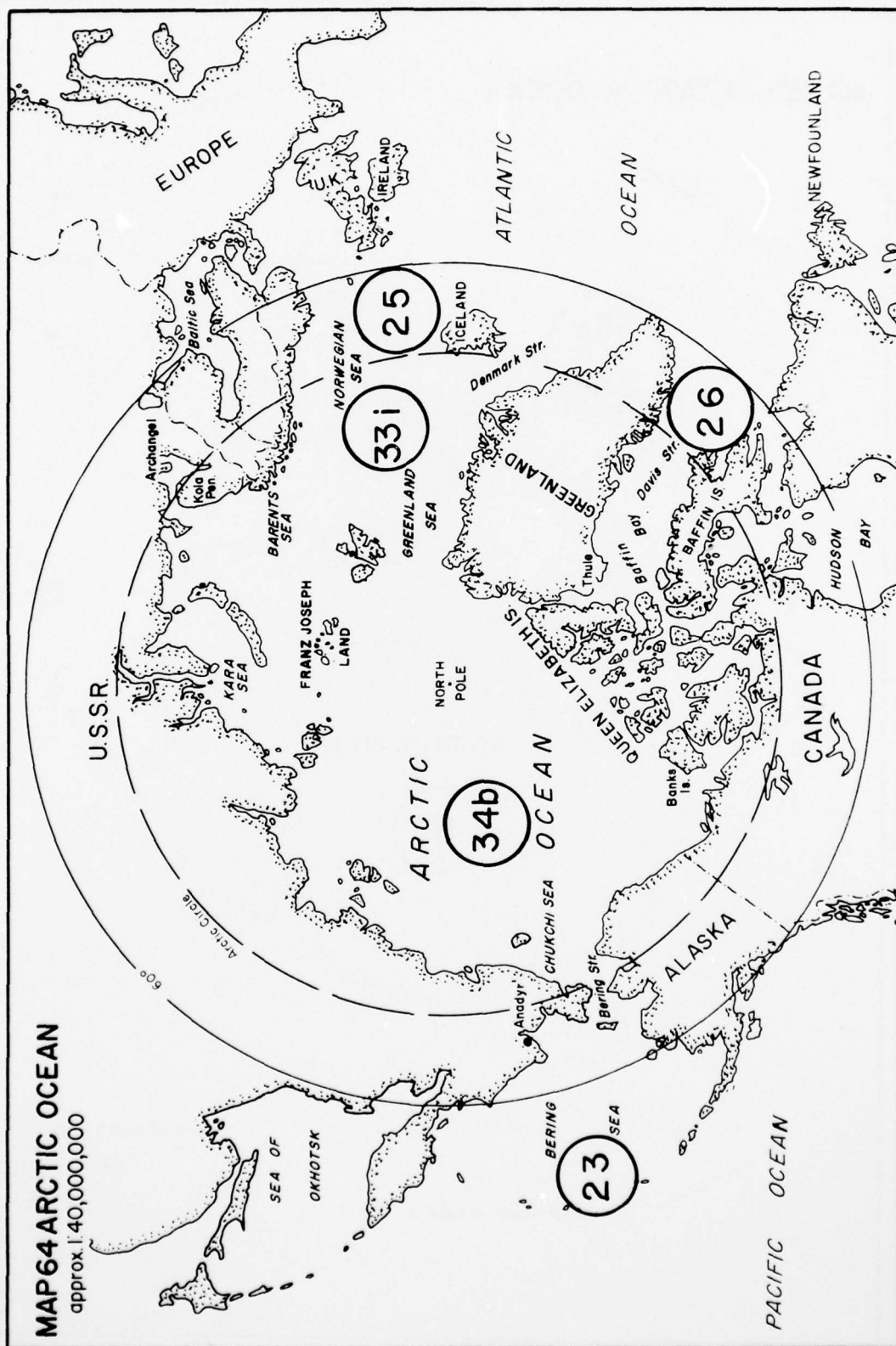
Botswana

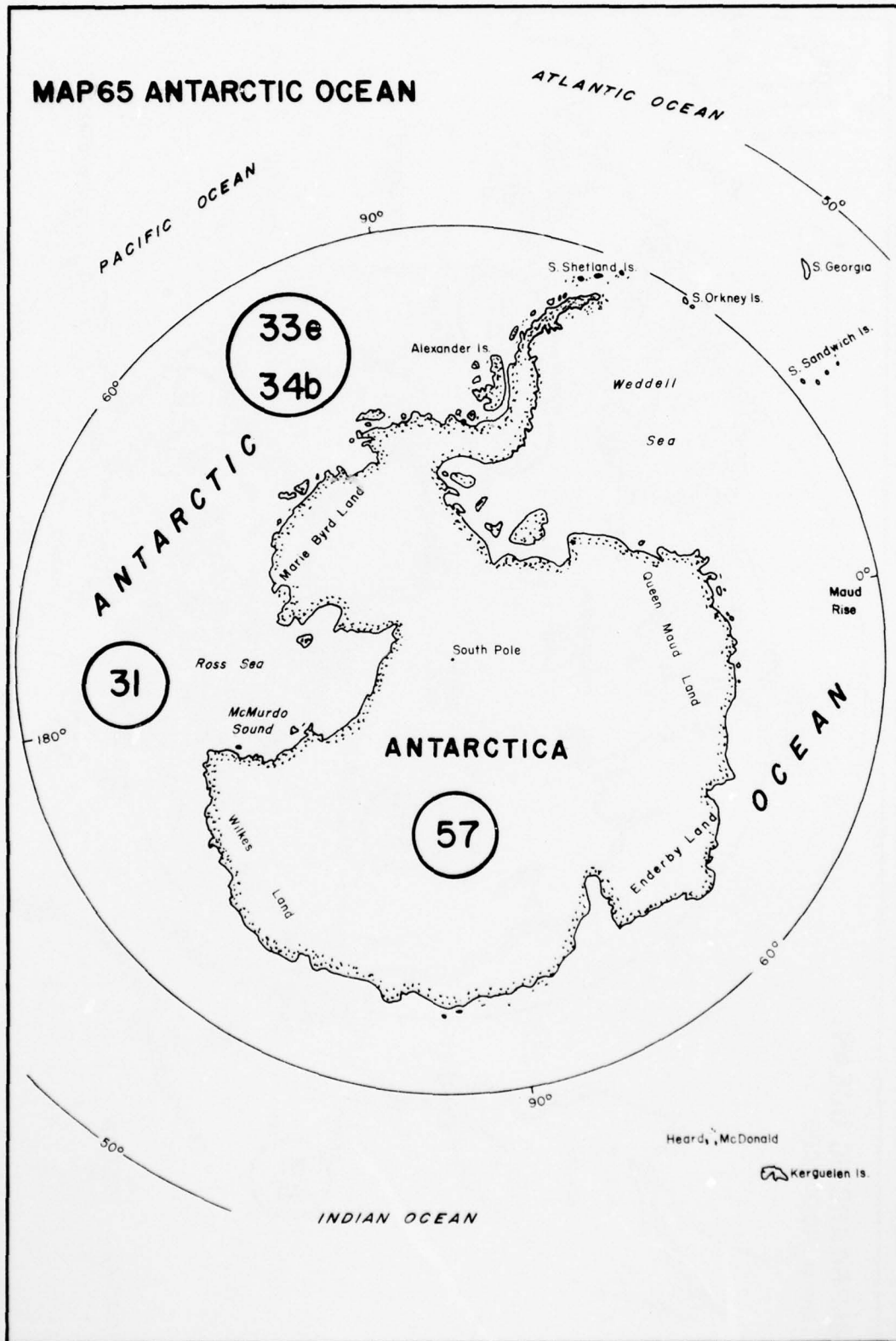
South Africa

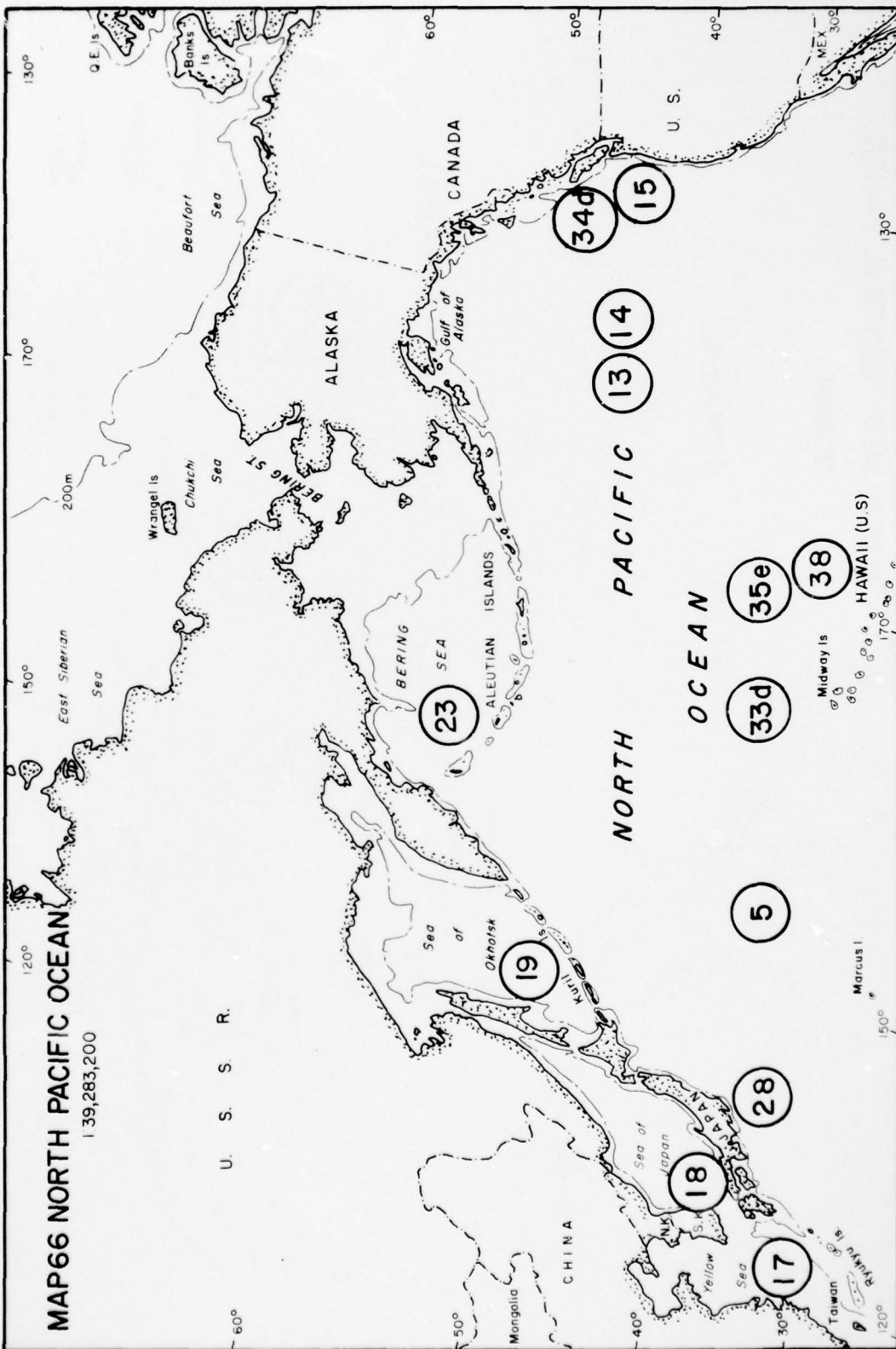
Rhodesia



MAP 63 INDIAN OCEAN







AD-A041 518

RHODE ISLAND UNIV KINGSTON
REGIONAL ARRANGEMENTS IN OCEAN AFFAIRS.(U)
MAY 77 L M ALEXANDER

F/G 5/4

N00014-75-C-1165
NL

UNCLASSIFIED

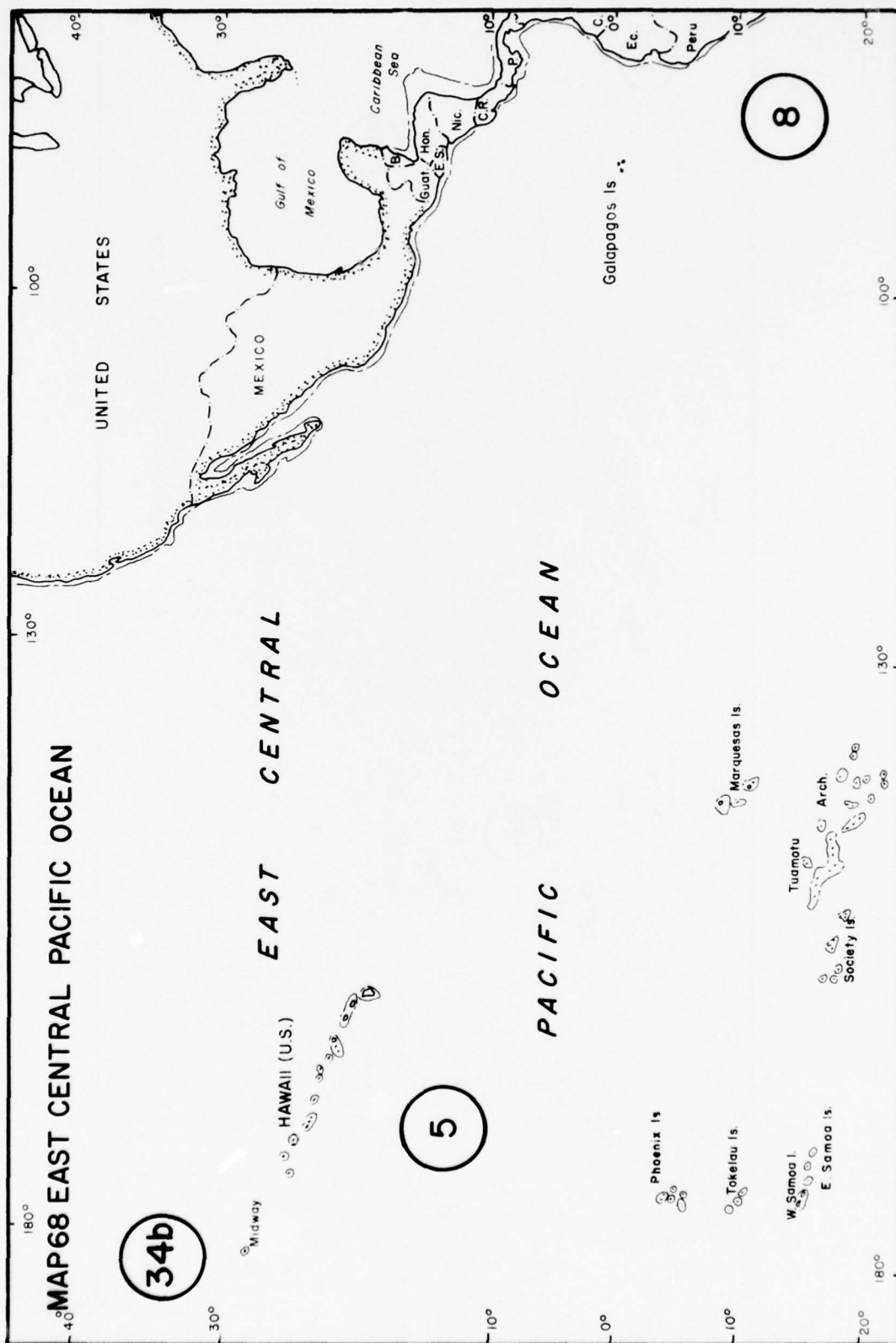
4 OF 4

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7-77

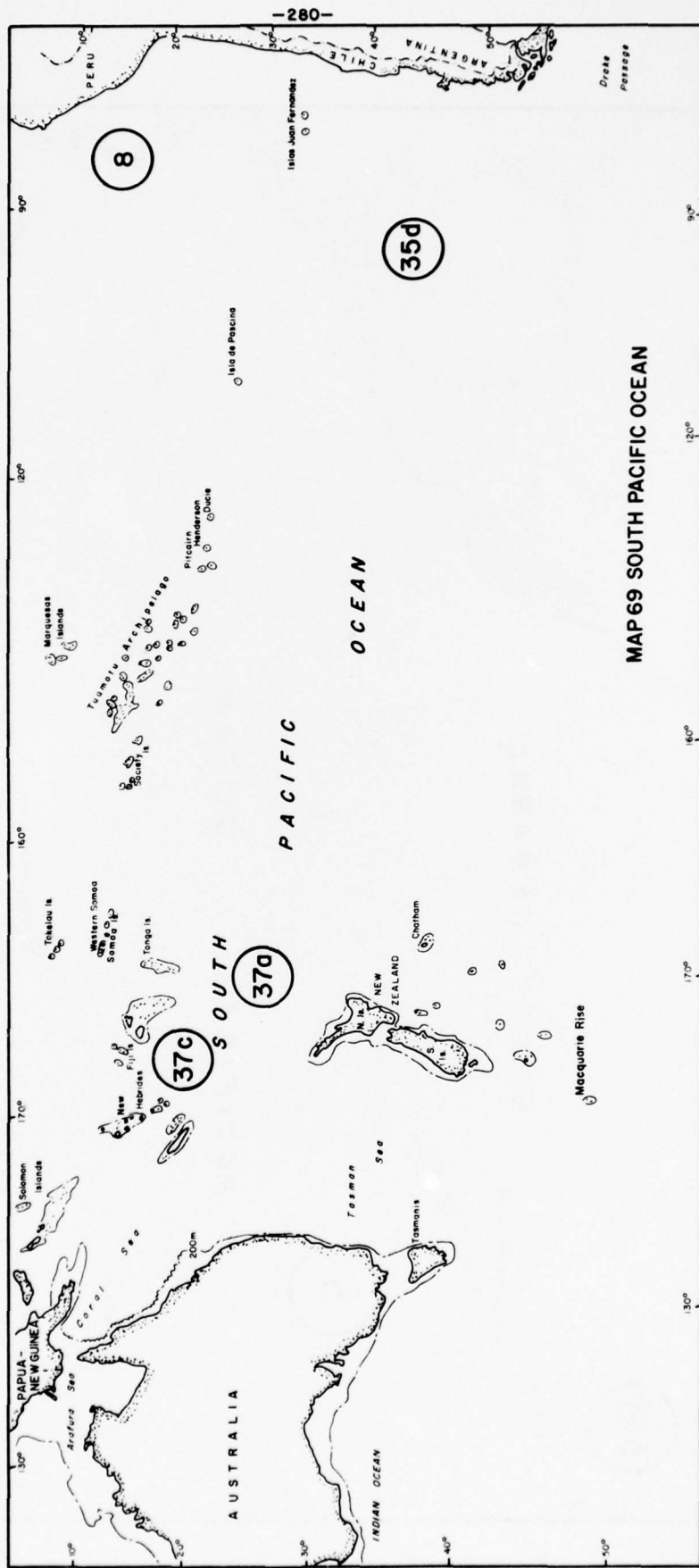


MAP 68 EAST CENTRAL PACIFIC OCEAN

34b

5

8



MAP 69 SOUTH PACIFIC OCEAN

APPENDIX C

CASE STUDIES OF REGIONAL ACTION: THE CARIBBEAN SEA/GULF OF MEXICO AND THE MEDITERRANEAN SEA

Throughout this Report there have been repeated references to the variety of institutional mechanisms associated with marine regional arrangements, and with the inadequacies and the problems associated with the establishment and maintenance of such mechanisms. In this Appendix, consideration is given, in considerable detail, to marine regional institutions in the Caribbean/Gulf of Mexico area, and in the Mediterranean. Although no attempt is made to correlate or compare the experiences in the two areas, it will be evident that in both cases, progress has been slow, participation by littoral states often disappointing, and the impacts of the regional organizations somewhat weak. Although these results do not compare well with marine regional systems in the North Atlantic and its adjacent seas, it must be remembered that the Caribbean/Gulf of Mexico and the Mediterranean are bordered by both developed and developing states, and that neither has, up to now, had a history of strong non-marine coordinated action among its member states.

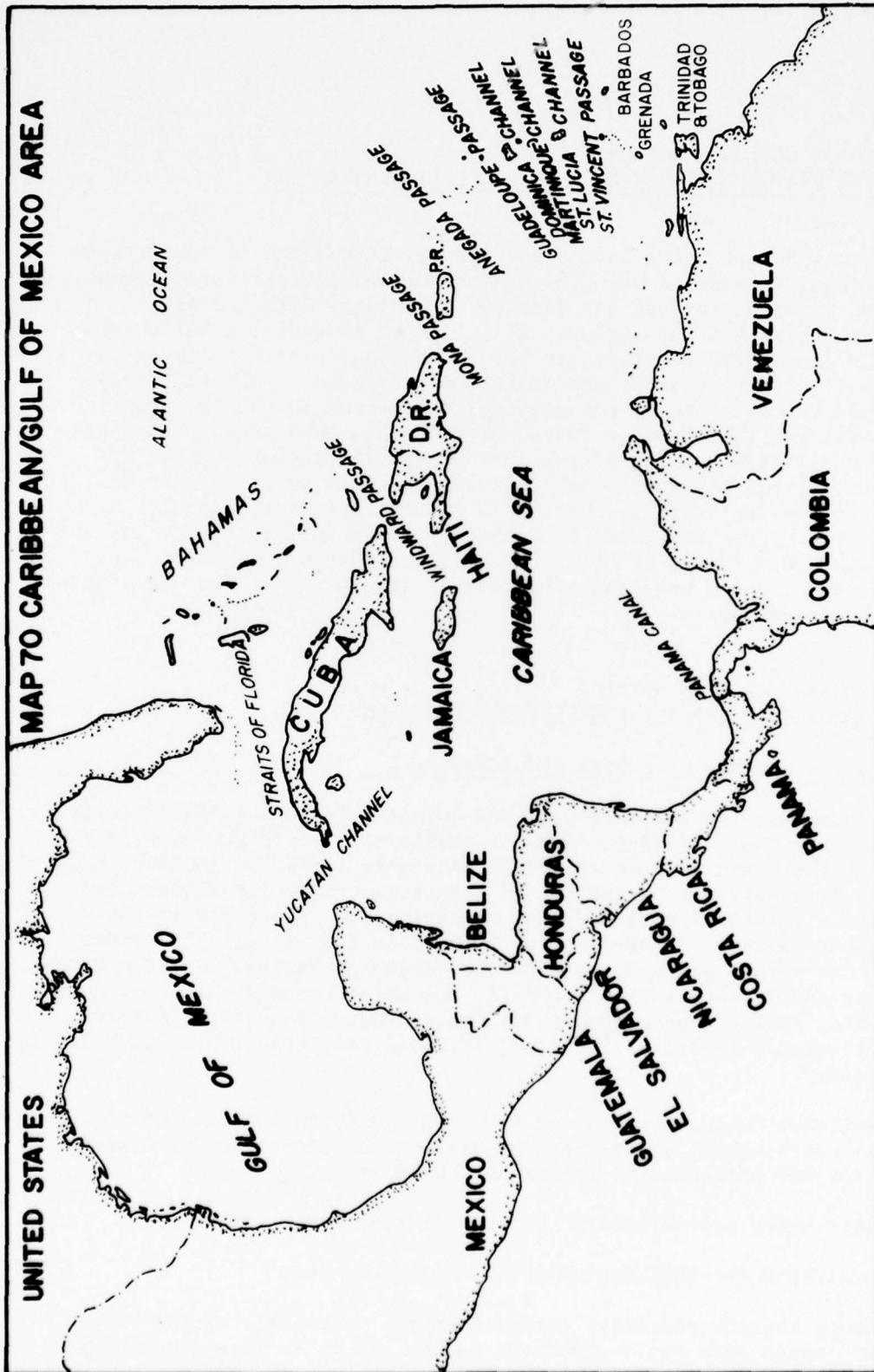
THE CARIBBEAN SEA/GULF OF MEXICO: REGIONAL COOPERATION IN MARINE SCIENTIFIC RESEARCH

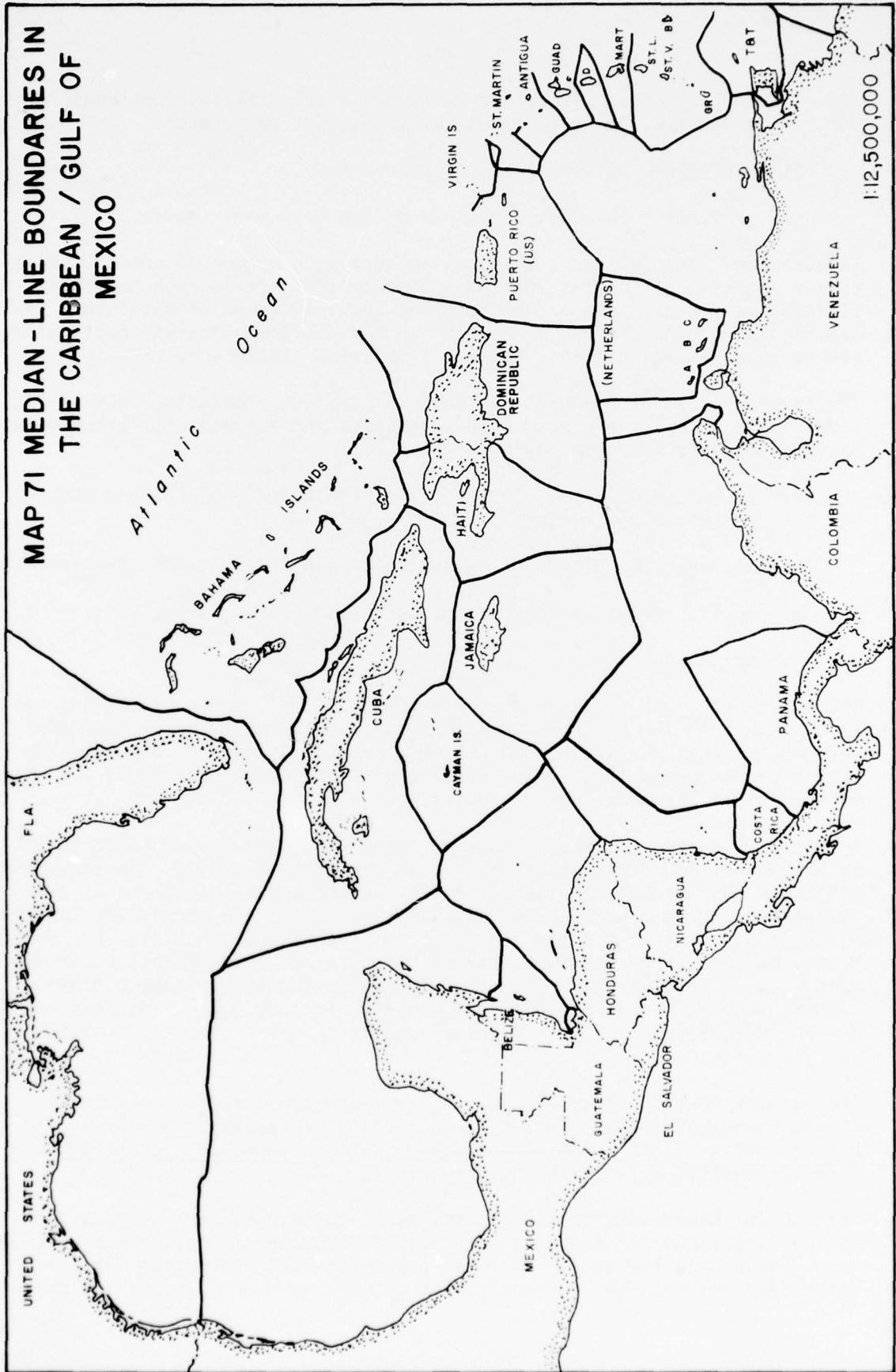
IOC Association for the Caribbean and Adjacent Regions

The IOC Association for the Caribbean and Adjacent Regions (IOCARIBE) was established as a new subsidiary body for marine science cooperation in the Caribbean at the Ninth Session of the IOC Assembly in 1976. IOCARIBE represents the first attempt by the IOC to transform one of its Cooperative Investigations (CICAR) into a regional mechanism for scientific research on a permanent basis.¹ Membership in IOCARIBE is open to all IOC member countries both within and from outside the Caribbean Region. Sixteen countries are presently represented: Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, France (Guadeloupe/Martinique), Guatemala, Haiti, Jamaica, Mexico, Netherlands (Antilles), Panama, Trinidad and Tobago, U.S.A., U.S.S.R., and Venezuela.²

The International Coordination Group (ICG) for IOCARIBE consists of an International Coordinator, as well as National Coordinators from each member country. The ICG performs the following functions:

1. determines the scientific program of the body;
2. evaluates the implementation of these programs;
3. keeps the IOC regularly informed of the activities of the body, and makes such recommendations to the IOC as it deems appropriate;





4. appoints the officers of the body, elects the International Coordinator, and determines their terms of reference;
5. determines its own rules of procedure;
6. performs such other functions as the body may require.³

In addition, IOCARIBE has a Regional Secretary, a member of the IOC Secretariat who assists the International Coordinator. It is expected that IOCARIBE will establish and maintain working relationships with other research organizations which are active in the Caribbean Region, particularly the Western Central Atlantic Fishery Commission (WECAFC) of FAO.

The first session of IOCARIBE was held in Caracas, Venezuela, July 19-23, 1976. Nine priority projects were identified and subsequently grouped into the following four categories:

1. scientific programs in support of fisheries projects and marine pollution monitoring;
2. biology and culture of commercially important marine invertebrates;
3. environmental geology of the Caribbean coastal area;
4. marine pollution.⁴

The degree to which IOCARIBE can effectively address these priority areas is dependent on the Association's ability to overcome the organizational and program implementation problems that severely hindered the operation of its predecessor, CICAR. An assessment of the CICAR program of IOC will be helpful in illustrating this point.

A cooperative study of the Caribbean region was initially proposed in 1967 by the Netherlands delegation to the IOC Assembly of UNESCO. Subsequently, the Fifth IOC Assembly declared the "Co-operative Investigations of the Caribbean and Adjacent Regions (CICAR)" an official IOC program.⁵ The field phase of CICAR was initiated in 1970. This phase spanned a six-year period, during which over 40 research vessels belonging to 10 different countries participated in CICAR activities.⁶ Membership in CICAR included Brazil, Colombia, Cuba, Federal Republic of Germany, France, Guatemala, Jamaica, Mexico, Netherlands, Panama, Trinidad and Tobago, U.K., U.S.A., U.S.S.R., and Venezuela.

The International Coordination Group for CICAR consisted of an International Coordinator and a full-time Operations Coordinator who worked in the following areas: information dissemination, communications, organization, scientific activities and data exchange.⁷

The ICG for CICAR also included National Coordinators, representing each of the interested IOC member countries. The National Coordinators of CICAR were responsible for acting as focal points in their countries for all matters concerning the cooperative investigations; coordinating the indi-

vidual national projects which were part of the overall CICAR work program; and representing their countries at all meetings of the ICG.⁸

The National Coordinators were instrumental in determining the degree of participation by a country in the CICAR program. In addition to the National Coordinators, there were Subject Leaders, each of whom represented a particular field of expertise in marine science. The role of the Subject Leaders was to determine the content of the CICAR scientific program. Finally, there were the CICAR Workshops and Symposia, which were important components of the decision-making process. These projects were usually jointly sponsored by UNESCO/IOC and FAO. The Workshops and Symposia represented important mechanisms for formulating new scientific programs and for assessing both the accomplishments and failures of existing programs, oftentimes providing the basis for more formal ICG decisions.

CICAR Objectives. When the IOC adopted the CICAR program in 1967, it did so without establishing specific objectives. Four years later, after the CICAR field phase had been in operation for a number of months, the objectives were spelled out as follows:

1. to contribute to the development of scientific research in the CICAR region;
2. to secure the maximum participation of the region's coastal countries;
3. to implement, rapidly and effectively, research projects with well-defined scientific and economic objectives;
4. to achieve a better scientific understanding of the region;
5. to establish a basis for further international coordination in the CICAR region.⁹

The CICAR Field Phase. In January 1970, the CICAR field phase commenced. Its basic components included CICAR Survey Months, Data Exchange, a Regional Sorting Centre, Training, Education and Mutual Assistance, and a Scientific Research Program.¹⁰

The purpose of the CICAR Survey Months (CSM's) was to improve the synoptical coverage of the Caribbean region through multi-country cooperation in conducting general physical-chemical, chemical, meteorological and biological surveys. The Data Exchange component of the CICAR field phase consisted of a Regional Centre for CICAR data, located in Washington, D.C., at the U.S. National Oceanographic Data Centre (NODC). This Centre would subsequently feed CICAR data into the world data exchange system through the World Data Centre-A (WDC-A) in Washington.

The effectiveness of the Data Exchange component was dependent on the regular submission of CICARDI forms by each research vessel conducting CICAR-related activities. Marine scientists could submit these forms directly to the NODC, through National Coordinators, or through National Data Centres.

The third component of the CICAR field phase, the Sorting Centre, was located in Mexico and staffed by two biologists, several technicians, one secretary, and a Mexican director. UNESCO provided an International Curator to assist the director in the operation of the Centre. The primary function of the Sorting Centre was the pre-classification of zooplankton samples. The fourth component of the CICAR field phase, TEMA, was designated as a major IOC priority area in the Caribbean region. Although not initially intended to be included as a CICAR objective, it became clearly essential in view of the disparities that existed in marine science capabilities among the countries in the region. Indeed, one of the most critical problems in the Caribbean region today remains the scarcity of qualified scientists.¹¹ The final component of the field phase, the CICAR Scientific Research Program, consisted of a variety of research topics related to bathymetry, ocean circulation, tides, meteorology, upwelling phenomena, geology and geophysics, fishery resources, and marine biology.¹²

Program Assessment. From the start, CICAR was plagued with organizational problems. The primary causal agent of these problems was poor communication between the ICG, its National Coordinators, and the Subject Leaders. Circular letters from the IOC, the International Coordinator, and the Operations Coordinator, specifically intended as a mechanism for mitigating organizational problems, were irregularly distributed. Additionally, CICAR newsletters were poorly circulated and CICAR questionnaires generated a chronic low-level response.¹³ Thus, while the organizational structure of CICAR suggested a strong emphasis on regional communications, this objective was never realized in practice.

Fulfillment of CICAR Objectives. CICAR was initially envisioned as a cooperative, multi-vessel investigation in which every variety of scientific activity and investigation within the Caribbean would be represented. The most successful, cooperative work conducted under CICAR was synoptic in nature, stressing general oceanographic and meteorological surveys rather than solving particular scientific problems of regional concern. Regional cooperation in research related to marine biology, pollution, fisheries, upwelling phenomena, and air-sea interactions were less successful, rarely proceeding beyond the discussion and recommendation stages at the ICG sessions.¹⁴

The CICAR Research Program was basically local in structure, a synthesis of member countries' national research programs. Generally these programs required neither a significant amount of additional scientific effort, nor regional cooperation.¹⁵ The deterioration of the CICAR Scientific Program into a loosely defined conglomeration of member countries' national programs was probably a result of the vague and ambiguous nature of the CICAR objectives that were adopted at the 1971 Trinidad and Tobago Session. The national character of the CICAR Research Program placed a tremendous burden on CICAR's decision-making resources, and constantly undermined the cohesiveness of the other CICAR programs.

The success of the synoptic CICAR Survey Months (CSM's) program was dependent on both the marine science capabilities of member countries and the extent to which these countries could adjust the schedules of their research vessels in order to collect the data. There was a reasonable commitment on

the part of CICAR members to attain this latter objective.¹⁶ The disparities in marine science capabilities among the countries in the region prevented, however, greater participation in the CSM program.

The effectiveness of the Data Exchange effort was limited, due to inconsistent return of both CICARDI forms and data to the NODC. Where smaller National Data Centres were utilized, few data dissemination procedures had been established.¹⁷ Thus, while the development of a data exchange system within the Caribbean region must be viewed as a positive achievement, it is also clear that maximum utilization of this system was not realized with CICAR.

The Sorting Centre represented the Mexican contribution to CICAR. Its utilization by member countries is best illustrated by the origins of all samples received and processed between May 1972 and March 1974.

Table 1.¹⁸

<u>Country</u>	<u>Number of Samples Received and Processed</u>
Mexico	727
U.S.A.	68
Cuba	21
U.S.S.R.	12
Netherlands	<u>8</u>
Total	836

Clearly, the Sorting Centre was not well utilized by member countries of CICAR. The reasons for the underutilization of this resource are not clear. It may be that scientists preferred to analyze their samples in their own country. However, it should be noted that the Centre was established before it was known how many scientists were actually taking samples in the region.¹⁹ Other problems that restricted the Centre's effectiveness included an absence of standardization of sampling methodology, utilization of the Centre by scientists from outside the region, and poor communications in providing member countries information concerning the Centre's capabilities. In sum, the Centre's experience paralleled that of the Data Exchange Program. While the establishment of a Regional Sorting Centre must be recognized as a positive CICAR achievement, the unit also failed to achieve its full operational potential.

Finally, and as indicated previously, a critical problem that faces the Caribbean community is the shortage of qualified scientific personnel. Funding, for special CICAR TEMA projects to mitigate this shortage was a major problem and CICAR was able to achieve little in this area beyond the adoption of recommendations.²⁰

The Value of CICAR. The preceding analysis of the CICAR program raises legitimate questions concerning the value of continuing marine science re-

search efforts under a permanent Regional Association like IOCARIBE. However, despite major organizational and communication problems that limited the effectiveness of CICAR as a regional cooperative investigation, several positive achievements should be noted. With the implementation of CICAR, the Caribbean region witnessed a rapid expansion of marine science activities. Oftentimes, this expansion led to the development of national marine science infrastructures. Simply by joining CICAR, member country scientists could legitimately press for national oceanographic commissions and institutions which would act as a stimulus to the development of greater national marine science capabilities.²¹ Additionally, the CICAR program stimulated the development of a network of personal relationships within the region, which provided an access route to the international scientific community. Such a network would be difficult to maintain in the absence of a cooperative structure to replace CICAR.

In sum, the CICAR effort provided the basis for future cooperation in Caribbean marine sciences on three levels -- interpersonal, interinstitutional, and intergovernmental. It is not surprising, therefore, that IOCARIBE has retained the basic form of its predecessor. The CICAR experience will prove of little value, however, if IOCARIBE fails to incorporate within its program more ambitious, yet realistic objectives. These might include:

1. the establishment of regional research priorities vs. problems that are local (national) in scope;
2. a shift in research philosophy from that of the cooperative multi-ship investigations and general surveys typified by CICAR, to one on international cooperation to solve specific scientific problems of regional concern;
3. greater emphasis on living and non-living resource-related research, and less "fundamental" research. A general criticism of CICAR is that it tended to emphasize "blue-water" research of little interest to the countries in the region.²²

Much of this deep-water research in the region has been conducted by the U.S., U.S.S.R., U.K., and the Netherlands. The less-developed coastal countries of the region are primarily interested in the continental shelf and shoreline research programs that emphasize resource assessment, developmental utilization and minimization of pollution by the effects of growth and change.²³ Non-living resource-related research should be directed towards learning more about the occurrences of hydrocarbons or extractable mineral ores in the region. Living resources research should concentrate on fisheries development and aquaculture, supplemented by research related to reef productivity, estuarine and lagunal processes, mangroves, algae and seagrass processing, and pollution. It should be emphasized that research without development is a luxury that only a few countries can afford.

4. greater emphasis on TEMA programs, with funding obtained from outside the region (FAO, UNESCO, UNDP) and from within the region through intra-regional cooperation;

5. development of a more efficient communications system and information centers for exchange, rather than having all countries build up a broad range of technological capabilities. Strengthening the controls on the implementation of data exchange procedures would represent a positive contribution towards the realization of this objective. The establishment of small NODCs would both facilitate and improve the flow of data to the regional NODC in Washington, D.C.;
6. an increase in the use, internationally, of the Regional Sorting Centre in Mexico;
7. operation of a regional research vessel in the Caribbean. This may be a difficult objective to realize, since many member countries would probably prefer to invest in the development of their own R/V capabilities.²⁴

Perhaps the most critical need within IOCARIBE is the development of an organizational structure which will, in the long term, reflect on the common needs and priorities of member countries.

Regional Cooperation in Fisheries

Historically, fisheries management and development in the Caribbean region has been plagued with disorganization. For the past 25 years, UNDP and FAO have provided some assistance to most of the countries of the Western Central Atlantic region in the development and management of fisheries.²⁵ UNDP research and development programs in the region have, for the most part, emphasized continental shelf work, and have done little for those countries which have primarily artisanal fisheries. CICAR, despite its achievements in fostering international cooperation in scientific research, fell short of its expectations in the area of fisheries research and development.

Western Central Atlantic Fisheries Commission (WECAFC)

WECAFC was established by Resolution 4/61 of the 61st Session of the FAO Council in November 1973. The Commission's area of competence includes all marine waters of the Western Central Atlantic "from a point on the coast of South America at 5°00' N latitude in a northerly direction along this coast past the Atlantic entry to the Panama Canal; thence continue along the coasts of Central and North America to a point on this coast at 35°00' N latitude; thence due east along this parallel to 42°00' W longitude; thence due north along this meridian to 36°00' N latitude; thence due east along this parallel to 40°00' W longitude; thence due south along this meridian to 5°00' N latitude; then due west along this parallel to the original point at 5°00' N latitude on the coast of South America."²⁶ (See map of WECAFC area in Appendix A.) This boundary is identical with that of the FAO Statistical Area 31.

Membership in WECAFC is open to all FAO member countries and associate members which notify the Director-General of the organization of their desire to be considered as members. There are presently 23 member countries in the Commission. These include Brazil, Colombia, Cuba, France, Guatemala, Guinea, Guyana, Haiti, Italy, Jamaica, Japan, Republic of Korea, Netherlands, Nicaragua, Poland, Senegal, Spain, Togo, Trinidad and Tobago, U.K., U.S.A., Venezuela, and Zaire.²⁷ Mexico (one of the big four fishing countries in the region), Barbados, Dominican Republic, and Honduras are not represented on the Commission.

The WECAFC officers consist of a Chairman, and a maximum of three Vice-Chairmen, all of whom are elected by Commission members at the end of each session. The Director-General of the FAO appoints from among this staff a Secretary who is administratively responsible to him. Each member country of the Commission appoints a Representative who has responsibilities related to marine fisheries research and development. The Commission may also establish such subsidiary bodies as it deems necessary for the accomplishment of its task, and to deal with specific problems arising in a subdivision of its area of competence. The Commission adopts at each session a Report which is transmitted by the Director-General to member countries and associate members, and to interested international organizations. Any conclusions and recommendations involving policy programs with financial implications must be brought to the attention of the conference by the Director-General.²⁸

WECAFC Objectives. WECAFC objectives, as defined in the statutes adopted by Resolution 4161 of the 61st Session of the FAO Council are:

1. to promote and assist in the collection of national statistics and biological data relating to fisheries in general, and the shrimp fisheries in particular; and to provide for the compilation and dissemination of these data on a regional basis;
2. to facilitate the coordination of national research programmes and to promote, where appropriate, the standardization of research methods;
3. to promote the interchange of information; relating to the fisheries of the region;
4. to promote and coordinate, on a national and regional basis, studies of the effect of the environment and of pollution on fisheries, and studies of appropriate methods of control and improvement;
5. to promote and assist in the development of aquaculture and stock improvement;
6. to encourage education and training through the establishment or improvement of national and regional institutions and by the organization of training centres and seminars;

7. to assist member governments in establishing rational policies for the development and utilization of the resources consistent with national objectives and the conservation and improvement of the resources;
8. to promote and coordinate international aid to further the achievement of the objectives referred to in the preceding subparagraphs.

The first WECAFC Session, held at Port of Spain, Trinidad (October 1975), was attended by 12 member countries.²⁹ Priority areas designed for discussion were, first, a review of the existing knowledge of the region's fisheries resources; second, an analysis of the region's statistical needs, and, third, consideration of the possibilities for fisheries development in the region.³⁰

A Working Party on the Assessment of Fisheries Resources was established to assess the reef, coastal, pelagic, and trawl resources. While it was generally recognized that emphasis should be placed on the development of the shrimp and spiny lobster fisheries, it was agreed that more information must be gathered for unutilized finfish in the region as a basis for fisheries development. There is evidently a large by-catch from the shrimp fishery that suggests that stocks of unutilized fish species are large.³¹

A Working Party on Fisheries Statistics was also established by the Commission at the first session. Biological management of the fisheries resources is dependent on the acquisition of better data than is now available. With the exception of Puerto Rico, statistics programs for the artisanal fisheries that are important to the region are lacking. Colombia, for example, collects data for the few companies that control national fisheries production, but artisanal fisheries are not well-represented in the statistical data. A major goal of WECAFC is to disseminate statistics and resource information. The U.S. has collected extensive exploratory fisheries survey data in the region, which it will transmit to WECAFC once the Commission has developed its management capabilities.³²

Objectives identified by the Commission in the area of fisheries development included (1) improvement of post-harvesting facilities and techniques leading to wider marketing opportunities for small-scale fishing communities; (2) priority assistance to small-scale fishermen; (3) better government attitudes towards fisheries development; and (4) greater employment, food, and cash income.³³

Most countries in the region have placed high priorities on getting more fish to their national markets. There has been little awareness of the efficiency and effectiveness of markets and marketing in a regional context. At the same time, artisanal fishermen in the region have been squeezed out by industrial-level fisheries.³⁴ Shrimp and other high-value export items have replaced traditional fisheries, oftentimes using science and technology as a medium for exploitation.

The southwest Caribbean is an area of particular concern. The shrimp industry in this region is heavily exploited by foreign capital; for example, a major foreign shrimp fleet is located in Port of Spain, Trinidad. This

operation lacks both social or economic advantage locally, yet has been used to mask the lack of fisheries development here, while giving local government officials and planners the impression of making progress.³⁵ The traditional bias towards capital-intensive development and high technology application has done little to mitigate unemployment in the region; in some areas unemployment averages 20 to 30 percent.³⁶ Emphasis must be placed on the development of unutilized finfish to produce wider benefits through local consumption. Also, labor-intensive methods of development (vs. capital-intensive), should receive greater consideration.

Fisheries development within a given region or country is often determined by national government attitudes, and within the Caribbean region disparities exist. Many of the Caribbean countries have negligible plans and aspirations for fisheries development; even those states which depend on their artisanal fishermen for local food supplies. Only Brazil, Cuba, and Mexico have major fisheries development as a national goal. Colombia, Venezuela, and the larger Caribbean islands have modest plans which still emphasize local exploitation in lieu of management as a basis for fisheries development.³⁷

With more than 30 countries bordering the Western Central Atlantic region, uniformity in fisheries policy and program development has been, and will continue to be, difficult if not impossible to achieve.³⁸ Yet the Caribbean/Gulf region is closely linked by its marine species complexes. The entire WECAFC region, from Northeast Brazil through the Caribbean to the Gulf of Mexico is served by a common ocean current system that disperses planktonic species to fisheries of considerable economic importance. Whether or not fisheries development can be realized on a broad regional basis, or whether efforts will continue to concentrate in localized patterns, will be determined in large measure by the WECAFC program.

Regional Arrangements in the Caribbean and LOS

Regional cooperation in fisheries management and development, scientific research, and other marine-related activity areas have important implications for countries located both within and outside of the Caribbean region. In order to begin to minimize and resolve conflicts between the national aims of developed countries like the U.S. and those of developing coastal countries, it will be necessary for each country in the region to develop a national organization with special responsibilities and powers to cooperate in marine affairs.

In the Caribbean region, the greatest beneficiaries of the 200-mile economic zone will be Venezuela and Colombia. Venezuela has approximately 1,100 miles of Caribbean coastline (excluding islands) and will exercise jurisdiction over one-fifth of the Caribbean Sea's 750,000 square miles. Colombia, with approximately 600 miles of Caribbean coastline, will exercise jurisdiction over one-tenth of the Caribbean area. The Caribbean islands, with small coastlines, and with economic zones abutting on one another, will be at a tremendous disadvantage; for example, Cuba, with 846 miles of Caribbean coastline will be zone-locked with Jamaica, Haiti, Mexico's Yucatan

Peninsula, the Cayman Islands, Florida, and the Bahamas. Barbados, with 20 miles of Caribbean coastline will be zone-locked with St. Lucia, St. Vincent, Grenadines, Grenada, and Tobago. Trinidad and Tobago will be shelf-locked with Venezuela on the Gulf of Paria, and zone-locked with Grenada on the Caribbean Sea.³⁹ Both Jamaica and Haiti stand to lose considerably. The Netherlands Antilles is located in what Venezuela claims to be its internal waters.⁴⁰

Other Regional Arrangements in the Caribbean

The history of Caribbean development reflects the interests and activities both of the countries of the region and of outside powers; with the result that a variety of languages and cultures are represented there, and there are still a number of dependent territories belonging to different mother countries. Despite these differences, a number of steps have been taken in recent decades to coordinate the interests of the countries bordering on, or located within, the Caribbean Sea.

In 1960, a General Treaty of Central American Integration was signed at Managua, by El Salvador, Guatemala, Honduras, and Nicaragua, establishing a Central American Common Market. Two years later, Costa Rica became a member, leaving out only Panama of the mainland states between Mexico and Colombia. Among the outcomes of this Treaty was the establishment of a Central American Bank for Economic Integration.

Five years later a Caribbean Free Trade Association (CARIFTA) was established by the governments of Antigua, Barbados, and Guyana; other countries which subsequently joined CARIFTA included Trinidad and Tobago, Grenada, Jamaica, St. Lucia, St. Vincent, Dominica, Montserrat, Belize, and St. Kitts-Nevis-Anguilla. In 1969, under the aegis of CARIFTA, the Caribbean Development Bank was founded.

The primary aim of CARIFTA was the establishment first of a free trade area, and then of a Caribbean customs union. Despite the difficulties inherent in the countries' development experiences, and the relative lack of trade existing among them, they agreed in 1972 to the formation of the Caribbean Community and Common Market (CARICOM), which began operations in July 1974. Membership in CARICOM (which replaces CARIFTA) includes Barbados, Guyana, Jamaica, Trinidad and Tobago, Surinam, Haiti, Belize, Dominica, Grenada, Montserrat, St. Lucia, and St. Vincent.

The Caribbean Community and Common Market has two basic purposes:

1. to promote the economic development of each member country of the region;
2. to enhance the effective sovereignty of member countries of the region and to enhance the self-determination of each member country's people.

In order to achieve these purposes, CARICOM is active in three areas:

1. economic integration, as represented by the Caribbean Common Market;
2. operation of common services and the pursuit of functional cooperation in non-economic areas;
3. coordination of the foreign policies of the independent countries.⁴¹

THE MEDITERRANEAN SEA: A CASE STUDY OF REGIONAL COOPERATION

Official concern over environmental conditions in the Mediterranean Basin preceded the 1972 United Nations Conference on the Problems of Human Environment.⁴² This Stockholm session made public the scale of environmental deterioration throughout the world and generated international action in the form of guidelines for dealing with general problems of the environment.⁴³ In the Mediterranean concerted efforts were initiated in 1971 with a draft paper entitled, "Note on Advisability of a Regional Agreement on the Control of Marine Pollution in the Mediterranean."⁴⁴ The concept of a regional arrangement for this area was based on the threatened nature of the Mediterranean because of its high pollution levels. In addition, it became evident that some of the mechanisms established through international legal regimes to deal with global marine pollution problems did not apply to the Mediterranean Basin. Effective management of pollution in this sea would have required extensive supplementation or reconstruction of existing global conventions to suit the special nature of its physical environment and to satisfy the fundamental interests of bordering developed and developing countries. It was in the context of the above factors that the Action Plan for the Mediterranean evolved.

The Mediterranean Action Plan is a cooperative program, sponsored by UNEP, for protecting the marine environment. Although its primary focus is on marine pollution, the Plan also affects regional cooperation in related fields, such as scientific research; development and management of the fisheries and other resources; optimization of all uses of the Basin in general; and legal instruments for implementing plans to protect inter-community interests.

In this section, the final framework and objective of the Mediterranean Action Plan will be examined. Particular consideration will be given to the viability of such a regional approach. Included also is a synopsis of the activities of specialized intergovernmental agencies that contribute directly to the operation of the Action Plan. Most of these are scientific or environmental organizations.

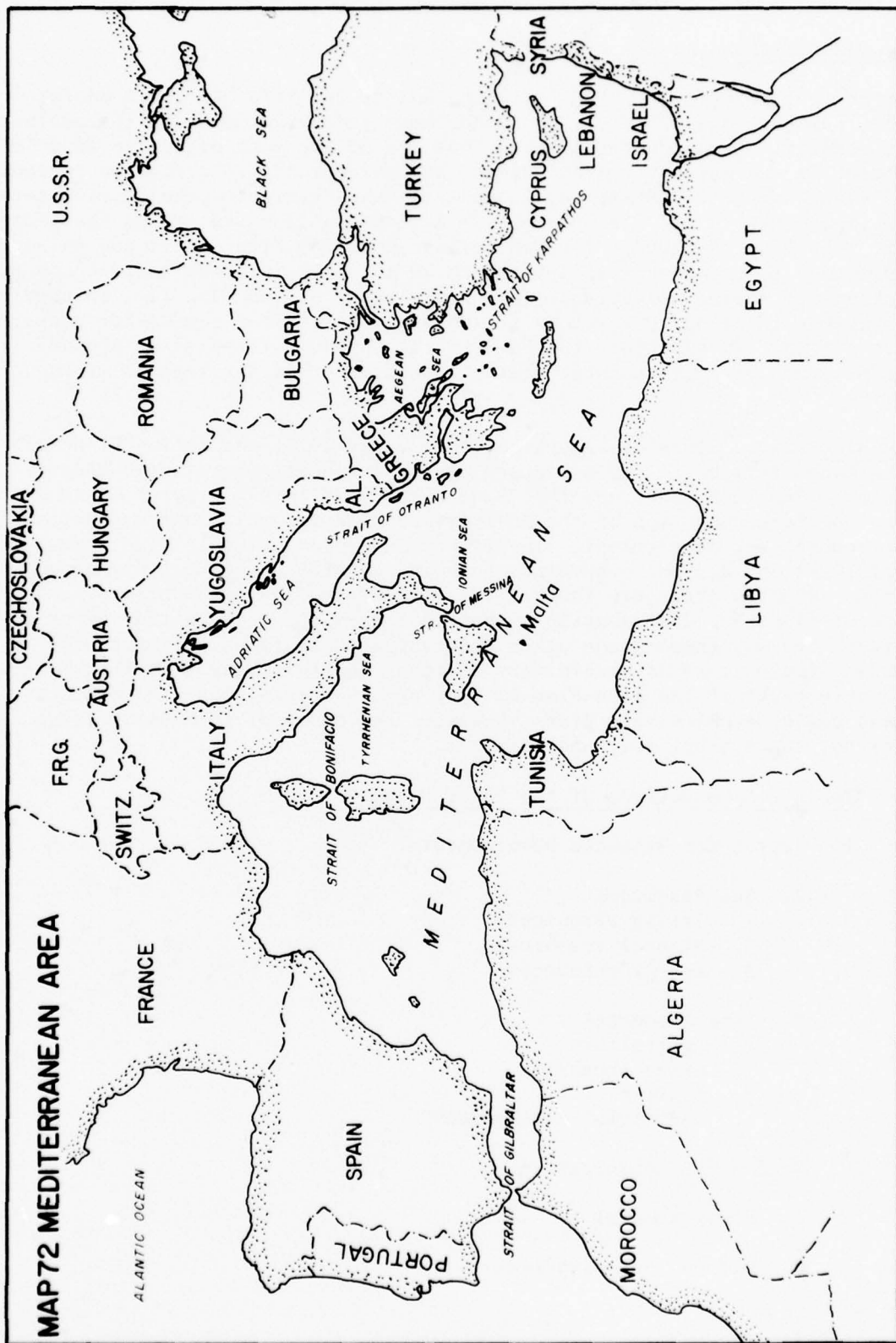
The Mediterranean Action Plan

A principal activity of UNEP,⁴⁵ rising out of the 1972 Stockholm Conference, has been the preservation, management and enhancement of the marine environment. Based on the premise that one of the most effective means of protecting the marine environment is through coordinated action in regional bodies of water, the Governing Council of UNEP instigated the development and implementation of a comprehensive Action Plan for protecting the Mediterranean environment.⁴⁶ The Mediterranean Action Plan, as it now exists, represents four years of effort toward an interdisciplinary approach to the problems of marine pollution. The significance of the Plan lies in part in its effect in bringing together the coastal states of a region for cooperative action. In addition, the Plan, it is hoped, will serve as a model for programs of environmental protection in other marine regions of the world.

The Blue Plan. Since its adoption in February 1975, the Action Plan has occasioned related and even broader regional undertakings in the Mediterranean. One such endeavor, the "Blue Plan," outlines a program of study on the long-term evolution of the Mediterranean in its relations both with environment and development. In its working document, this Plan examines historical and current conditions both in and around the Mediterranean Basin. Problem areas are identified, further studies are outlined, and general plans for distributing responsibilities and coordinating efforts between the governments and other relevant organizations are proposed. Pending the outcome of preliminary studies, the following list illustrates the objectives of the Blue Plan as they are now perceived. These action areas could become viable plans; however, the order at this early stage does not suggest priority undertakings.

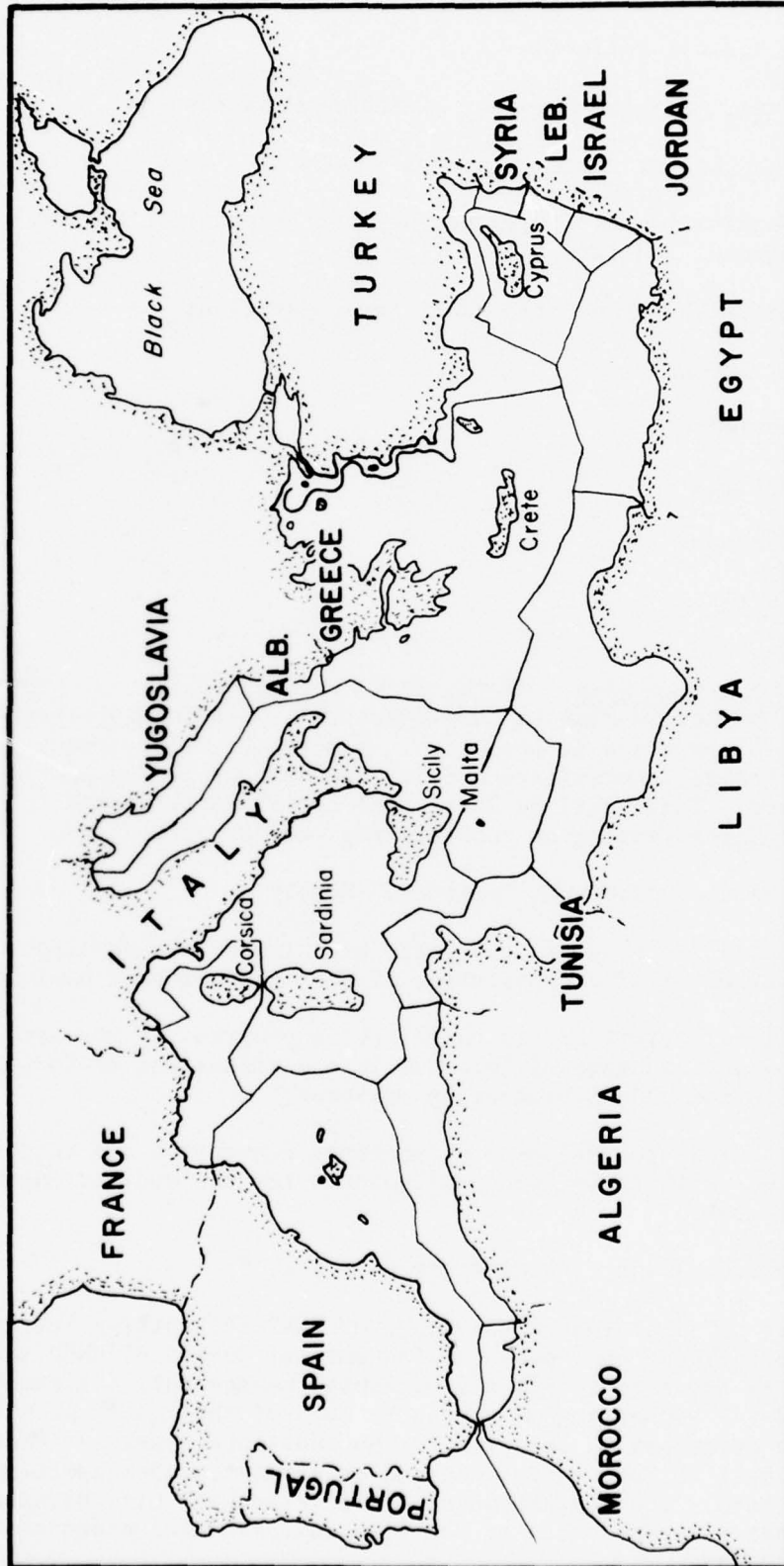
Table 2. Objectives of the "Blue Plan."⁴⁷

- I. Action for Balanced Development
 - A. Sea Resources
 - 1. living resources
 - 2. mineral resources
 - 3. energy resources
 - B. Land Resources
 - 1. agriculture
 - 2. urban expansion
 - 3. tourism
 - 4. industrial development
- II. Action for Conservation
 - A. Environmental
 - B. Nature and Aesthetics



MAP 72 MEDITERRANEAN AREA

MAP 73 MEDIAN-LINE BOUNDARIES IN THE MEDITERRANEAN



III. Action against Pollution

- A. Legal, Administrative or Statutory Measures
- B. Financial or Fiscal Measures
- C. Coordination of Activities between Responsible National, Regional and International Organs
- D. Execution of Specific Short-term Operations

IV. General Action

- A. Knowledge
- B. Research
- C. Transport
- D. Health

Objectives of the Action Plan. Of the 18 Mediterranean coastal states, 17 participate in the Action Plan to some degree.⁴⁸ Only the government of Albania refuses cooperation at this time. Numerous outside organs -- United Nations bodies, specialized and intergovernmental organizations -- are also involved. These will be identified later, in reference to their actual role in administrating or coordinating various activities.

The Plan contains four principal "actions," namely:

1. Integrated Planning: to integrate planning of the development and management of the resources of the Mediterranean Basin;
2. Scientific Activities: to coordinate a program for research, monitoring and exchange of information and assessment of the state of pollution and of protective measures;
3. Legal Action: to implement a framework convention and related protocols with their technical annexes for the Mediterranean environment;
4. Institutional and financial arrangements.⁴⁹

These objectives parallel functional tasks of UNEP for working internationally in the field of environment. Fundamental duties of UNEP include: (1) environmental assessment; (2) environmental management; (3) environmental law; and (4) supporting measures.⁵⁰ Each of the Plan's principal actions will be described in relation to the functional tasks of UNEP. Some actions relate to both assessment and management, and supporting measures underlie both. The Mediterranean Action Plan will also be examined in terms of other relevant parts of the Plan and essential elements of a regional arrangement.

Environmental management, particularly that which involves decisions at the national level by Mediterranean governments should be based on information on the current environmental situation and the expected development of the whole eco-region. Thus, the assessment, which is covered first, is not an end in itself, but contributes to better management of the environment.

Environmental Assessment. As an early step in the implementation process, a UNEP-sponsored workshop was convened in Monaco in September 1974, by the IOC, GFCM, and the International Commission for the Scientific Exploration of the Mediterranean Sea (ICSEM). This meeting, attended by 40 scientists of the Mediterranean research centers, defined the pollution of coastal waters as the main environmental problem in the Mediterranean Sea and attributed the pollution problem to the general lack of adequate systems for the treatment and disposal of domestic waste, to the input of pesticides and petroleum hydrocarbons, and to the presence of pathogenic microorganisms.⁵¹ The workshop reviewed the information on current subregional programs⁵² as well as the research and monitoring facilities in the Mediterranean.

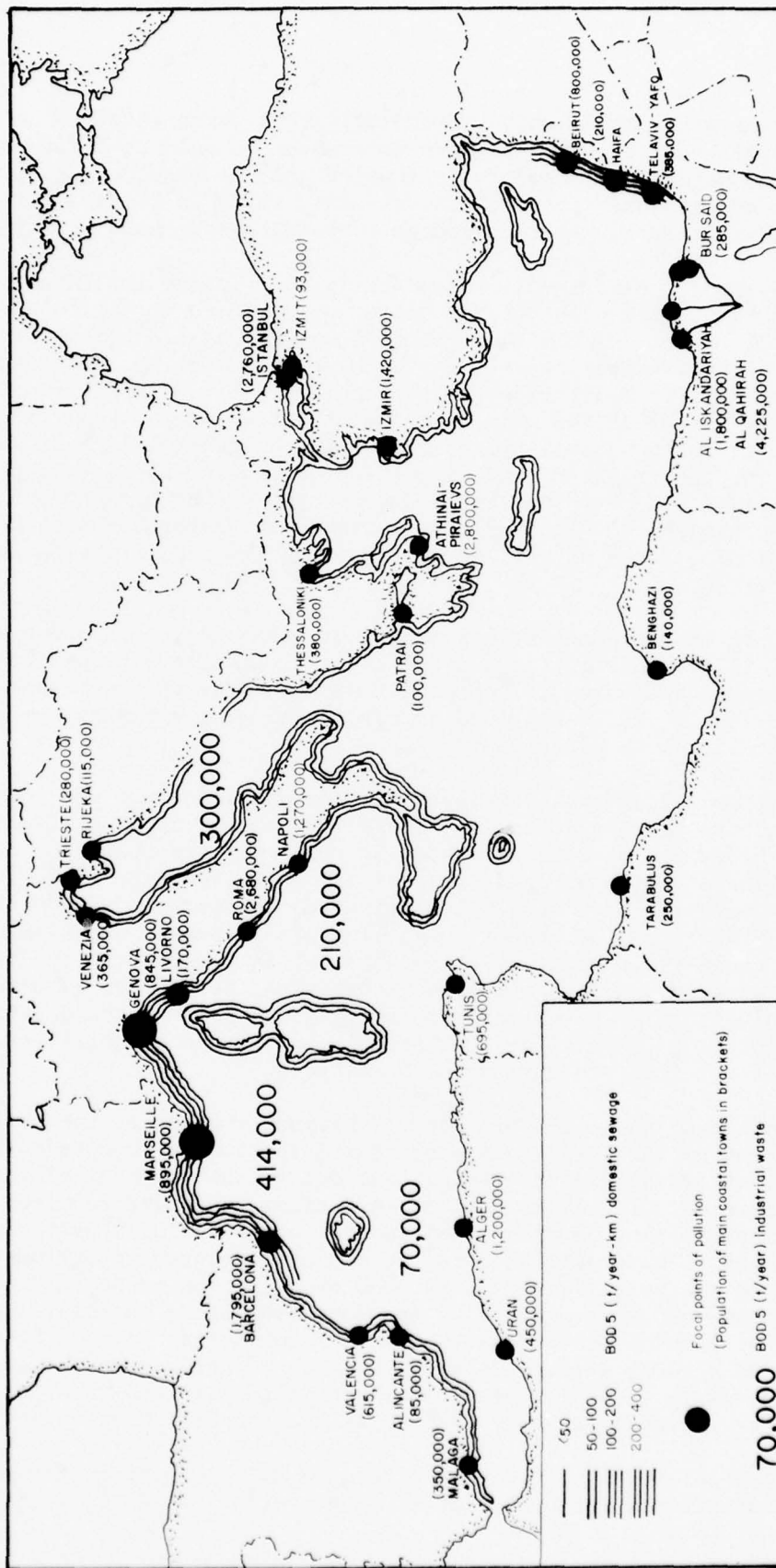
Based on the recommendations from the Monaco workshop, and a subsequent feasibility study on the capabilities of existing national research institutions conducted by IOC on behalf of UNEP, the Intergovernmental Meeting (Barcelona I, 1975) approved a Coordinated Mediterranean Pollution Monitoring and Research programme.

Operational documents for seven pilot projects have since been drawn up and actual work has been implemented by UNEP in close collaboration with the relevant U.N. bodies. The pilot projects are generally concerned with baseline studies and monitoring of various pollutants (e.g., oil, petroleum hydrocarbons, heavy metals, chlorinated hydrocarbons, and microbiological contaminants). The effects of pollutants on marine organisms and on marine communities and ecosystems, coastal transport problems of pollutants, and sanitary quality of beaches and coastal waters are also researched. All pilot projects include a monitoring and/or research program, equipment acquisition, intercalibration studies and training facilities. Consultant's services are envisaged as required.⁵³

Execution of the pilot projects is primarily based on the activities of existing national institutions. Participation in the projects is open to all institutions in the region, subject to the approval of their national authorities. Immediate actions were taken, whenever required, to develop the capabilities of these institutions so as to fully participate in the projects. These actions entail a training program, distribution of sophisticated analytical instruments, the organization of an intercalibration exercise, and other services. Because monitoring in coastal waters may be done by coastal states while high-seas monitoring may be the cooperative task of several states, intercalibration of methods and reference procedures is necessary to facilitate comparison of results and incorporation into a central regional network. Monaco is the intercalibration center.⁵⁴

Substantial funds are available through UNEP to support the participation of the national research centers in the pilot projects, particularly those

MAP 74 MEDITERRANEAN: POLLUTION BY SEWAGE & INDUSTRIAL WASTE



of developing countries. Presently, 14 nations have nominated research institutions within their countries. Several countries have designated a number of research centers for the programme, and will eventually handle parts of all seven pilot projects. UNEP is also funding \$2.5 million over a two-year period for on-the-job training in research and monitoring. The funds are handled through specialized agencies (e.g., IOC, FAO) as UNEP is a coordinating, rather than an executing, body. Also available to participants are several technical guidelines, under preparation, and a Directory of the Mediterranean Marine Research Centres, describing more than 100 institutions in the region.⁵⁵

The results of the two-year pilot projects will be reviewed in 1977 at which time a decision must be made whether or not to establish them on a more permanent basis. Should they become permanent, evaluated information on the state of pollution of the sea would be supplied to the Mediterranean governments continuously.⁵⁶

A project was recently initiated by UNEP on Pollutants from Land-based Sources in the Mediterranean, linking environmental assessment, management, and law in the region. The project will be executed in close cooperation with the governments of the region and with a number of specialized UN organizations [e.g., ECE, FAO, IAEA, UNESCO, United Nations Industrial Development Organization (UNIDO), and WHO]. The objective would be to provide the governments of the Mediterranean coastal states with appropriate information on pollution inputs from major land-based sources, plus an inventory of land-based discharges into the sea. Only the government of Libya has not consented to support this effort. One drawback in implementing the project may be the potential cost to governments -- unlike the projects in operation which impose only minimal costs to participating states.

Projects to investigate the input of airborne pollutants into the Mediterranean and the effects of pollutants on fisheries resources are in the planning stage.⁵⁷

Intergovernmental Agencies

Special mention should be made of the major intergovernmental agencies operating to coordinate and carry out assessment and management of marine resources in the Mediterranean Basin. Most of those bodies existed prior to adoption of the Mediterranean Action Plan -- working groups or other arrangements were generally formed within existing organizations to accommodate the particular needs of the Action Plan.

The General Fisheries Council for the Mediterranean (GFCM) has been particularly active in the region. Since its effective date (1952), the Council has served broad oceanographic functions including assessment, development and management of the living resources, plus protection of these resources from the effects of pollutants.

The expertise of GFCM was first drafted for UNEP's developing Action Plan, during the September 1974 International Workshop on Marine Pollution in the Mediterranean. The Council assumed responsibility for coordinating four of

seven pilot projects selected to deal with pollution problems in the Basin. The FAO (GFCM)/UNEP Expert Consultation on the Joint Coordinated Project on Pollution in the Mediterranean, which followed during the summer of 1975, prepared an Operational Document to serve as a frame for the cooperation of Mediterranean research centres, and as a scientific outline for the projects. These projects were discussed in general earlier in this section.

As a major portion of the Action Plan addressed the marine pollution problem, both from the preventive and the combatant standpoints, the GFCM has contributed greatly to the information needed in setting pollution standards and implementing the measures required for control. The Council has identified six main sources of pollution common to most oceans, but emphasizes their significance relative to the unique hydrographic nature of this semi-enclosed sea. These sources are:

1. the loading and unloading of oil and its transportation at sea;
2. the discharge of oily water from ships' engines;
3. the effluents or leakages from refineries and storage tanks;
4. the loss of oil from motors and engines in industrial enterprises along the coasts;
5. the exploration and exploitation of sub-marine oil fields;
6. the evaporation of hydrocarbons and their atmospheric transport of the oceans.

With regard to oil pollution resulting from maritime traffic, GFCM's work toward pollution management is particularly important because only 11 Mediterranean countries became party to the International Convention for the Prevention of Pollution of the Sea by Oil (1954) and its 1962 amendments. (These include Algeria, France, Greece, Israel, Italy, Lebanon, Monaco, Morocco, Spain, Syria, and Egypt.) Regional efforts directed at handling pollution problems specific to the Mediterranean have effectively encouraged participation by all but the one coastal state, Albania.

GFCM has compiled valuable data concerned with pollution resulting from maritime traffic in the Mediterranean Sea. Maps number 74 and 75 illustrate general findings and denotes permitted areas of oil discharge by vessels. In addition, detailed information by country, under the following sub-headings, may be found in FAO's Studies and Reviews of the General Fisheries Council for the Mediterranean publication, entitled, "The State of Marine Pollution in the Mediterranean and Legislative Controls," (Rome, September 1972). The sub-headings are: (1) general characteristics of the transportation of crude oil in the Mediterranean; (2) focal points of oil pollution in coastal areas; (3) stations for de-gassing and discharging oil residues; (4) pollution originating from oil processing industries; (5) methods and means of action in case of accidental oil spillage; (6) actual state of pollution by oil; and (7) effects of oil pollution on the living resources.

The pollution studies coordinated by the Council provide baseline data from which their ultimate objectives may then be realized, namely, to promote the development, conservation, rational management, and best utilization of living marine resources. Thus, concurrent with and complementary to pollution research, GFCM also reviews all aspects of these resources, including the fisheries that operate to exploit them. Appropriate measures are recommended for conservation and for implementing the promulgated regulations.

Another noteworthy regional organization which has undertaken a number of activities aimed at coordinating scientific research in the Mediterranean is ICSEM. Although the main areas of interest are many, the Commission has concentrated its recent efforts primarily toward pollution research and monitoring. ICSEM is not intricately involved in UNEP's Action Plan. However, the work of scientists and scientific institutions in the participating countries of ICSEM cannot be regarded as irrelevant to the Action Plan. This is particularly evident in ICSEM's relations with GFCM, an organization which is directly responsible to UNEP through its implementation of four pilot projects. Both organizations operate only through the participation of existing, qualified institutions nominated by the individual governments. The efforts of several institutions and/or experts from various Mediterranean governments are often coordinated under ICSEM. Major advantages in operating within the framework of such a scientific coordinating body include intercalibrating the techniques for collecting and the methods of recording data, minimizing the possibility of overlapping research, and maximizing the exchange of technology, gear, and information.

The interdependence of scientific organizations in the Mediterranean is particularly evident in the formation of the Co-operative Investigations in the Mediterranean (CIM). This is a product of the joint IOC/FAO (GFCM)/ICSEM International Coordination Group which has appointed a specialized panel to handle the technical coordination of CIM. The emphasis of CIM's program concerns oceanography and renewable aquatic resources, whereas pollution interests are only peripheral. Like ICSEM, CIM has no direct connection to the Mediterranean Action Plan, but cannot be discounted by virtue of its indirect contributions.

It has been recognized that the International Coordinator and the Operational Unit of CIM have encountered difficulties in performing their tasks. The ICG for CIM, however, has identified major problem areas and has recommended remedial actions because the interest in continuing the CIM program seems to warrant such reorganizational measures. The scientific programs of CIM will be reviewed over the next year with priority to be given to environmental work, to the proposals made by the International Workshop on Marine Pollution in the Mediterranean (Monaco, September 1974), and to the follow-up action taken on this, particularly by UNEP at the intergovernmental meeting in Barcelona. Also, the ICG has recommended that the three organizations which sponsor CIM (IOC, GFCM, and ICSEM), work out an appropriate definition of their reciprocal relations in order that CIM may effectively coordinate oceanographic research activities in the Mediterranean, through optimum utilization of the special potential of each organization.

The ICG for CIM has encouraged member states to adopt, as a subregional project of CIM, certain activities which would support the objectives of the Federation of Institutions Concerned with the Study of the Adriatic Sea (FICSAS). The aim would be to provide an official framework within CIM for close and efficient collaboration in the fields of research, monitoring, training, education, and mutual assistance relevant to the Adriatic Sea.

Since FICSAS, formed in February 1972, is a voluntary coordinating organization of institutions involved in the scientific study of the Adriatic Sea, representation by CIM would be particularly valuable. The objectives of FICSAS are similar to most other scientific coordinating bodies, but differ primarily in their application to a smaller, subregional area.⁵⁸

Environmental Management and Law

The purpose of environmental management is to assist governments in making decisions about long-term policies, and to improve their ability to make rational choices among alternative actions in a variety of different environments. In the Mediterranean, this purpose ideally requires participation by all littoral states that depend on the sea's resources. Primary incentives for adhering to a long-term management plan would be the resource benefits realized through coordinated action, reinforced by customary obligations, and legal commitments to act in the regional interest in relation to all uses of the "common heritage" resources.

The concept that well-defined physical regions, in need of environmental management, offer logical sites for development of regional cooperation and planning, does not, however, address the question of how the Mediterranean, as a semi-enclosed sea, should be treated within the broader context of international law. The current status of international legal controls for marine pollution for example, and the actual implementation by Mediterranean coastal nations of relevant instruments, leave a number of important gaps in substantive coverage. Increased participation in existing international conventions would not, in itself, be sufficient to ensure adequate protection of the Mediterranean environment.

Efficient management of the environment requires cooperation between states even with the coming extension of exclusive coastal states' rights in the economic zone.⁵⁹ While extension of exclusive rights essentially transfers the conservation problem from international to national responsibility, protection from pollution still requires cooperation with other states. Regional agreement among Mediterranean riparian states is also supported from the legal standpoints of conservation and supplementation of global conventions, insofar as they apply to the area. Regional law would provide the means for avoiding the worst effects of legal chaos in the Mediterranean. Leaving it to individual countries to take their own measurements and determine their own pollution control regulations (as international conventions often sanction), is no guarantee that the interests of other states will not be damaged.⁶⁰

The presence of United States and Soviet warships in the Mediterranean Sea has led to concerns over the environmental impacts of potential nuclear accidents. Implicit in the arms control proposals⁶¹ for the Mediterranean is the recognition that the interests of the littoral states of the area must be considered by the negotiators. Such proposals must also take into account the Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Underwater (1963).⁶²

Various international agreements deal with nuclear power and marine pollution by radioactive wastes; most, however, have yet to enter into force.⁶³ Disinterest by non-nuclear countries, and discord among nations possessing nuclear weapons, ships and/or land facilities, are factors in the prolonged ratification processes involved. Attitudes of non-support are evident in the limited participation by certain Mediterranean countries (e.g., France, Italy and Yugoslavia) in the functional Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material.⁶⁴

So far as safe disposal of radioactive wastes is concerned, no international controls exist. Only through the periodic issuance of guidelines and regulations by the IAEA are individual states even "obligated" to control discharge from their own facilities.⁶⁵

Legal Aspects of the Mediterranean Action Plan. Intergovernmental consultations began in 1973 at FAO concerning guidelines to be taken into account in the negotiation of an international framework convention for the protection of the Mediterranean Sea. A convention and two protocols were subsequently drafted at the Barcelona I Conference in January 1975, and revised by UNEP and FAO, together with legal experts from Mediterranean governments. Although invited, the governments of Albania and Cyprus did not attend this first intergovernmental meeting.⁶⁶

Sixteen governments attended the second Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region on the Protection of the Mediterranean Sea (Barcelona II, February 1976). Again, Albania did not participate, Syria left before the end, and Algeria failed to attend probably due to its territorial dispute with Morocco and Mauritania. Since Barcelona II, a total of 14 governments, plus the EEC, have signed the Framework Convention (originally accepted by all 16 states). The non-signatory parties include Libya, Syria, Algeria, and Albania.⁶⁷

The legal component of the Action Plan, the Framework Convention, consists of the following elements:

- Convention for the Protection of the Mediterranean Sea against Pollution
- Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft (This protocol was signed by only 11 governments.)
- Protocol concerning Cooperation in Combatting Pollution of the Mediterranean Sea by Oil and other Harmful Substances in Cases of Emergency

Through the main Convention, the governments define the area and the meaning of "pollution," and set forth general undertakings "individually or jointly...to abate and combat pollution of the Mediterranean Sea area and protect and enhance the marine environment in that area."⁶⁸ Most articles specify obligations to develop additional protocols, procedures, or other arrangements. However, contracting states agree to meet every two years, or more frequently if necessary, to keep the implementation of the Convention under review. This format reflects the preference of a majority of delegates to adhere to the basic plan without being bound to those parts which are deemed unacceptable. Also, this would serve to hasten the conclusion of those provisions which are most urgently needed.

The following list contains comments made by various governments of the regions on the draft instruments of the Action Plan.

Draft Convention.⁶⁹

- existing conventions do not cover all aspects of marine pollution in the Mediterranean (i.e., the burning of wastes at sea)
- should the same limits be applied to the Mediterranean as appear in the 1973 IMCO Convention for the Prevention of Pollution from Ships
- "applicable protocols" should be defined and determination made on whether the corresponding article should impose any form of obligation on contracting parties with regard to measures provided for in protocols
- delete or adapt specified portions in conformance with the Helsinki Convention
- should secretariat functions be centralized in a single body, relative to institutional and financial arrangements⁷⁰
- distinguish between the administrative and executive functions of the secretariat
- extend the scope of cooperation in pollution emergencies
- particular priority should be given to the needs of developing countries regarding technical assistance
- legal techniques and procedures should be reviewed by the working group of experts

Draft Protocols.

I. Prevention of Pollution by Dumping

- provision should be made for stricter measures as necessary in view of the special requirements of the area, while maintaining conformity to the general provisions of the 1972 London Dumping Convention

- "harmful substances" and "ships" should be defined in detail
- the distinction between "critical" and "urgent" situations should be clarified
- an examination should be made of the jurisdictional implications of the provisions for issuing of dumping permits by the parties, to ships operating under their authority
- the protocol provisions, to ships and aircraft entitled to sovereign immunity, should be more restrictive than those of the 1972 London Convention
- contents of annexes should be stricter than those of the 1972 London Convention.

II. Combatting Pollution by Oil

- sources of the protocol should include the Bonn Agreement, the Helsinki Convention, and the Neuilly Draft
- proposals for regional operational centers should be considered
- a division of the *Mediterranean* into two basins should not be accepted.

It is difficult, at this early stage, to project the impact of the Framework Convention on the future of the Action Plan and on regional cooperation to manage the resources of the Mediterranean. The success of the Action Plan package must be measured to some extent on a continuum, based on the schedule for implementing additional protocols, and on the ability of existing agreements to operate smoothly. Evidence of the sincere efforts on the part of the Action Plan leaders to produce viable results may be seen in the fact that all comments to the draft instruments listed above were either incorporated into the final text, or were handled through other appropriate arrangements. Also instructive is the prevailing optimism among most Mediterranean countries not only in terms of the coordinated attack on pollution problems, but also of concerted action toward fisheries and other marine resource management issues.

In support of the Action Plan the individual governments of the Mediterranean regions have carried out the following:

- set up procedures for the adoption of additional protocols and for the amendment of the Convention or Protocols
- invited treaty participation by the EEC and any other comparable regional groups
- agreed to cooperate in developing procedures to ensure compliance
- set forth procedures for the settlement of disputes and for arbitration (These are already outlined in detail in Annex A to the Convention.)

- agreed to cooperate in formulating procedures to determine the liability and compensation for damage resulting from pollution
- called upon the Executive Director, pending the entry into force of the Framework Convention, "to make such interim arrangements as may be required for the achievement of the objectives of this Convention and to continue to convene working groups of experts to prepare additional protocols..."⁷¹
- recommended the adoption of an efficient maritime communications system
- drafted objectives and functions for a regional oil-combatting center on Malta plus several subregional centers.

Fourteen signatory states are presently engaged in a process of internal ratification. The Framework Convention will enter into effect when six states have completed their ratification of the Convention plus one Protocol.⁷² In view of the progress of the Action Plan, and of the imminent implementation of additional provisions, the principal weakness of the Plan lies in the fact that four states have not yet signed the agreements. Full cooperation by the majority of eligible governments may in itself provoke the endorsement of dissenting countries, such as Albania, or at least counter-balance contrary activities.

The integrative forces, which are largely responsible for the degree of cooperation among Mediterranean coastal states, and the mutual benefits which are realized through continued cooperation, mark the Mediterranean Action Plan as a viable regional arrangement. The following list summarizes the major cohesive elements and mutual advantages to the Plan:

- elimination of overlapping research and conservation measures
- pooling of personnel, equipment, technology, and facilities to spread costs and eliminate competition among governments for outside funds
- integrative and interdisciplinary approaches to the development of the sea and its dependent community
- predictability of programs through the conclusion of legal agreements
- filling in of gaps left by inadequate international legal control systems
- eventual self-supporting character of the Action Plan, so that UNEP is free to help mitigate pollution problems through regional action in other parts of the world, such as the Caribbean and Indian Ocean.

Footnotes

¹See Appendix A. Other Cooperative Investigations of IOC include CIM, SOC, CINECA, and El Niño.

²UNESCO, International Marine Science Newsletter, 13 (September 1976), p. 4.

³IOC, "Progress in Marine Research in the Caribbean and Adjacent Regions," CICAR-II Symposium, Caracas, Venezuela, July 12-16, 1976, Annex pp. 9-10.

⁴UNESCO, op. cit., p. 4.

⁵Resolution VII of the IOC Assembly, October 1967.

⁶IOC, op. cit., p. 242.

⁷International Coordination Group (ICG) for CICAR, First Session, Curaçao, Netherlands Antilles, November 25-26, 1968.

⁸Albert W. Koers, CICAR: Past, Present, and Future (University of Utrecht, Netherlands: October 1974), p. 24.

⁹International Coordination Group for CICAR, Fourth Session, Trinidad and Tobago, March 29-April 3, 1971.

¹⁰Koers, op. cit., p. 5.

¹¹Ibid., p. 11.

¹²Atlantic Oceanographic and Meteorological Laboratories and the National Oceanographic Data Center, Preliminary Bibliography of Published Results of Marine Research by U.S. Scientists in the CICAR Area, 1968-1975 (Washington, D.C.: U.S. Department of Commerce (NOAA), May 1976).

¹³Koers, op. cit., p. 33.

¹⁴Ibid., p. 13.

¹⁵Ibid.

¹⁶Ibid., p. 6.

¹⁷Ibid., p. 10.

¹⁸Ibid.

¹⁹Ibid.

²⁰Ibid., p. 11.

²¹CICAR, Inventory of Marine Science Institutes in the Caribbean and Adjacent Regions, 1974.

²²Ocean Policy Committee, "Conclusions and Recommendations of the Marine Technical Assistance Group Based on Studies and Deliberations Culminating in the Exploratory Workshop on Marine Technical Assistance Needs and Problems of Countries in the Gulf of Mexico/Caribbean Region," NAS/NRC, Commission on International Relations, Miami, Florida, September 8-10, 1975, p. 4.

²³Ibid., p. 2.

²⁴Koers, op. cit., p. 46.

²⁵IOC, op. cit., p. 52.

²⁶FAO, Western Central Atlantic Fishery Commission: Statutes and Rules of Procedure, 1976, p. 1.

²⁷Philip M. Roedel, "The Western Central Atlantic Fishery Commission (WECAFC): Its Implications and Impact," presented at the 28th Annual Meeting of the Gulf and Caribbean Fisheries Institute, Bal Harbour, Florida, October 27, 1975, p. 11.

²⁸FAO, op. cit., p. 2.

²⁹Brazil, Colombia, Cuba, France, Italy, South Korea, Netherlands, Poland, Spain, Trinidad and Tobago, U.K., U.S.A. Observers present from the Bahamas, Canada, and the U.S.S.R. Significantly absent from the session was the region's number two producer, Venezuela.

³⁰In 1975, UNDP established the International Project for the Development of Fisheries in the Western Central Atlantic. The FAO Executive Committee acts as consultants and project coordinators. The project will concentrate on priority areas designated at the first WECAFC session.

³¹Ocean Policy Committee, op. cit., p. 10, 2-10 pounds of bycatch per pound of shrimp landed.

³²Harvey R. Bullis, Jr., "Report on Fishery Biology, Statistics, Management Needs, and Problems in the Gulf and Caribbean Region," October 10, 1975, p. 5.

³³Roedel, op. cit.

³⁴John Liston, "Suggestions and Comments on Conclusions and Recommendations of the Ocean Policy Committee, Miami Workshop, February 6, 1976."

³⁵Bullis, op. cit., p. 8.

³⁶Ibid., p. 9.

³⁷Ibid., p. 7. Venezuela is establishing a National Institute of Fisheries to develop major programs in exploratory fishing and gear technology.

³⁸Fourteen continental countries from Brazil to the U.S., and 20 island or island group countries.

³⁹Trinidad and Tobago anticipate problems with Venezuela relative to fishing rights and oil rights on the continental shelf, and fishing rights in the Gulf of Paria.

⁴⁰The jurisdictional problems of the Netherlands Antilles, lying offshore of Venezuela, will be exacerbated when partitioning of the seabed is undertaken.

⁴¹William G. Demas, "Some Thoughts on the Caribbean Community," Georgetown, Guyana, August 31, 1974 (revised September 18, 1974).

⁴²Records of national legislation for Mediterranean countries extend back to the pre-1900's. Primary concerns of these times focused on protection of internal waters, as reflected in various rules prohibiting dumping. Ritchie-Calder, Pollution of the Mediterranean Sea (Berne: Herbert Long, 1972).

⁴³Branco Sambraillo, "Preservation of Marine Environment with Special Reference to the Mediterranean and Adriatic Seas." In Gamble and Pontecorvo, eds., Law of the Sea: The Emerging Regime of the Oceans (Cambridge, Mass.: Ballinger Publishing Co., 1974), pp. 333-343.

⁴⁴The paper was drafted during a session of the Intergovernmental Group of Experts of the UN on Sea Pollution, held in London, 1971.

⁴⁵UNEP was established as an intergovernmental body of the United Nations with the adoption on 15 December 1972 of the United Nations General Assembly Resolution 2297(XXVII). Its Governing Council is composed of 58 member states. United Nations, Annotated Directory of Intergovernmental Organizations Concerned with Ocean Affairs, prepared by the Secretary-General (A/Conf.62/L.14), 1976, pp. 78-80.

⁴⁶UN Doc. A/Conf.62/L.14.

⁴⁷Blue Plan, January 1976 (Nairobi: United Nations Environment Programme, 1976).

⁴⁸Algeria, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libyan Arab Republic, Tunisia, Turkey, and Yugoslavia are actively involved. Efforts are in progress to solicit Albania's support. See UNEP Doc. UNEP/WG.2/5, p. 2; Keckes, interview.

⁴⁹UNEP Doc. UNEP/WG.2/5, p. 1.

⁵⁰UN, Directory, pp. 78-80.

⁵¹UNEP Doc. UNEP/WG.2/3, p. 1.

⁵²The Joint Adriatic Programme is an example of subregional participation. However, Dr. Keckes indicates there are presently no UNEP funds for subregional programs. The Adriatic Sea would be an area of major concern as it is a main source of pollution to the Mediterranean Sea. UNEP Doc. UNEP/WG.2/3.

⁵³The seven pilot projects and their responsible organizations include:
FAO(GFCM)/UNEP Expert Consultation

1. Baseline studies and monitoring of metals, particularly mercury, in marine organisms
2. Baseline studies and monitoring of DDT, PCB's and other chlorinated hydrocarbons in marine organisms
3. Research on the effects of pollutants on marine organisms and their populations
4. Research on the effects of pollutants on marine communities and ecosystems

IOC/WMO/UNEP Expert Consultation

5. Baseline studies and monitoring of oil and petroleum hydrocarbons in marine waters
6. Problems of coastal transport of pollutants

WHO/UNEP Expert Consultation

7. Coastal water quality control

See UN Documents: Pollution in the Mediterranean: Report of the FAO(GFCM)/UNEP Expert Consultation on the Joint Coordinated Project on Pollution in the Mediterranean, 1975; UNESCO IOC/MPPP/3; WHO EHE/76.1; UNEP/WG.2/Inf.6.

⁵⁴See UN Documents: UNESCO IOC/MPPP/3; WHO EHE/76.1; UNEP/WG.2/Inf.6; and see also Keckes, interview.

⁵⁵Ibid.

⁵⁶Ibid.

⁵⁷Peter S. Thatcher, "The Protection of the Mediterranean Sea Against Pollution," Statement to the Second Conference of Mediterranean Towns (Yugoslavia, 27 October 1976).

⁵⁸UNESCO, European Subregional Co-operation in Oceanography. Report of a working group sponsored by the UNESCO Scientific Co-operation Bureau for Europe and the Division of Marine Sciences, Trieste, Italy, 3-5 July 1974. UNESCO Technical Papers in Marine Science, 22 (UNESCO, 1975).

⁵⁹Albert W. Koers, International Regulation of Marine Fisheries: A Study of Regional Fisheries Organizations (London: Fishing News (Books) Ltd., 1973).

⁶⁰Mark W. Janis, "The Roles of Regional Law of the Sea," San Diego Law Review, vol. 12 (1975), p. 337. See also, Sambraillo, op. cit., p. 339.

⁶¹Michael Palmer and David Thomas, "Arms Control and the Mediterranean," The World Today, vol. 27 (1971), pp. 495-502.

⁶²See Congressional Research Service, "Effects of Man's Activities on the Marine Environment"(Senate Commerce Comm., 94th Cong., 1st Sess., May 1975).

⁶³International Convention for the Safety of Life at Sea, of June 1960; Convention on Third Party Liability in the Field of Nuclear Energy, of 1960; Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, of August 1963; Treaty on the Prohibition of the Emplacement

of Nuclear Weapons, and other Weapons of Mass Destruction on the Seabed and Ocean Floor and on the Subsoil Thereof, of 1971. Congressional Research Service, "Effects of Man's Activities," pp. 38-39.

⁶⁴However, liability for damage caused by a nuclear incident at sea is insured of the operator of the nuclear installation involved, only if liability is not already determined under the Paris or Vienna Conventions. See "Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material," International Legal Materials, vol. 11 (1972), p. 277.

⁶⁵See Congressional Research Service, "Effects of Man's Activities," op. cit., p. 39; Waldichuk, "International Approach," op. cit., p. 220.

⁶⁶UN Doc. UNEP/WG.2/5. See also, Thatcher, statement, n. 57; Keckes, interview, n. 54.

⁶⁷Ibid.

⁶⁸Convention for the Protection of the Mediterranean Sea Against Pollution, final text attached to "Closing Remarks of Peter S. Thatcher, Acting Secretary-General of the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region on the Protection of the Mediterranean Sea" (Barcelona, 1976).

⁶⁹Ibid. See also, UN Doc. UNEP/WG.2/5.

⁷⁰UNEP was, in fact, designated Secretariat, in the final text of the Convention.

⁷¹See "Resolutions Adopted by the Conference" (UNEP, 1976).

⁷²Ibid.

APPENDIX D

SEMINAR ON REGIONALISM

A one-day seminar on the subject of regionalism in the oceans was held on June 21, 1976, at the University of Rhode Island. Its purpose was to discuss research topics and methodologies in the general area of marine regionalism. The seminar was arranged in conjunction with an Office of Naval Research Grant (N0014-75-C-1165).

The participants included:

Lewis Alexander	University of Rhode Island
William Burke	University of Washington
Francis Christy	Resources for the Future
Edgar Gold	Dalhousie University
Michael Hardy	European Economic Community
Robert Hodgson	Department of State
Edward Miles	University of Washington
Myron Nordquist	University of Virginia

This summary of the tape recordings of the seminar focuses on four general subject areas: (1) the definition of regions, with particular emphasis on marine-related phenomena; (2) the utility of a marine regional approach; (3) regionalism and the law of the sea; and (4) suggestions for future actions.

Definition

The initial discussion of the seminar was on whether a general survey of the overall question of regionalism in the marine environment was, in effect, a useful one. There was some feeling that it was not; that what is really important are the patterns of relationships with respect to marine activities out of which evolve policy problems. The focus of problem solving may be at the regional level; alternatively, it may be at a unilateral, bilateral, or global scale. Regionalism is but one part of a spectrum of alternatives. According to this line of reasoning there is little sense in singling out marine regions and regional phenomena as abstract subjects of study because of the impossibility of agreement on a precise definition of region, and because the regional issue is not in itself a basic one with respect to ocean activities. Also, there is such great diversity of conditions with respect to marine regional arrangements and to the problems they are intended to resolve that generalizations as to the nature and functioning of these systems are so broad as to be almost useless.

Countering this point of view were other expressions to the effect (1) that within the world ocean there are certain well-defined regional units, such as the Arctic Ocean or some of the semi-enclosed seas, which would seem to lend themselves as sites for various types of regional arrangements; (2) that the incidence of regional approaches to problem solving in the oceans seems

to be increasing -- particularly in such activity areas as fisheries, pollution control, and science -- and that certain commonalities exist among the experiences of such organizations; and (3) that regionalism is becoming an increasingly popular approach which is being suggested as an alternative to other levels of problem solving. While there are many cases, particularly in the Single Negotiating Texts, where "regional" has become something of a "buzz" word, it should be worthwhile to analyze the concept in its various forms in order to get some idea of its potential opportunities and limitations.

When it came to a definition of regions, the difficulty of finding a suitable, all-inclusive description was reflected in the responses of the participants. Following are some representative statements:

"You basically end up with two types of definitions, one based on physical characteristics and another based essentially on patterns of activity. The latter is the more important one because the policy significance comes out of patterns of activity, framed, perhaps, within the physical relationships; that is, the physical relationships may determine in part how people in that part of the world perceive their interests."

"The definition of 'region' is on the one hand something which is less than universal and on the other hand involves two or more states...(it is) a non-universal solution for particular states' problems which involves a more integrated and complex system (that would be possible through unilateral or bilateral action) but which is also one a world organization cannot deal with... But it is a definition which varies widely according to different functions, and is very difficult to use."

"In the context used in the Single Negotiating Texts there appears to be some sort of concept of regionalism that is not necessarily adjacency, but at least a localism."

"Regionalism doesn't determine very much and it is irrelevant. The level of participation in regional systems doesn't have anything to do with the physical area. You must get down to specific situations in talking about regions. You can't just talk about regions generally. It may make some sense to talk in terms of areas with respect to specific activities, but not to raise the question of what is a region in an abstract sense."

"The world can be represented as a series of multi-dimensional matrices in which one co-ordinate is a region. And that co-ordinate by itself doesn't determine very much in terms of actual behavior."

"Regionalism comes not simply because of geographic location but also because there are some economic incentives, some policy issues, some problems created which mankind or the states have to resolve."

The differentiation between regions as physical entities and regions as multi-state operational units received considerable attention. So too did the relative importance (or lack thereof) of the geographic element in the regional policy process. One participant noted:

"Location is one ingredient, and I would not say the primary one... I am not saying location is not important or that environmental conditions don't have a share in shaping the emergence and development of policy problems. But what I am saying is that it doesn't make sense to make this the determining factor in the consideration of policy problems."

Clearly several of the discussants became enmeshed in the familiar "environmental determinism" issue, for which there is no resolution. If it is useless to attempt a definition of "regions" in the abstract, it is of even less value to ask how much the physical environment affects policy problems.

No attention was paid by the discussants to the concept of subregions, nor to the possible utility of arriving at some consensus as to what the principal physical, or geographical, regions of the world ocean might be. The conclusions of at least most of the discussants seemed to be that the term "region" is largely a relative one whose connotation depends on the particular use to which it is being put. There appeared to be no sense in seeking to qualify the definition further, or to try to generalize on the perceptions decision-makers have of the regional concept with respect to ocean affairs. As one participant put it:

"The test of the utility of the regional concept is the development of a set of propositions which relate regional characteristics to specific behavior patterns. You are searching for a universal definition and treatment of regionalism and that I think is impossible."

The Utility of a Marine Regional Approach

From the discussion it was apparent that all or most of the participants felt it was difficult to talk about marine regional issues without, first, some reference to specific activities, and, second, some guidelines as to what specific aspects of regional issues were of particular importance. Regional systems for fisheries, for example, might have little in common with pollution control arrangements, even though both were in the same general geographic area. Suggestions were made for an increase in regional case studies, such as those now being carried out for the North Pacific, the North Sea, and the Caribbean. From the detailed data accumulated through such studies much could be learned about the comparative aspects of marine regional experiences.

So far as guidelines are concerned, quite a number were mentioned. In studying a specific regional activity, the researcher would want to know what countries are involved, how they define their interests in the issue, how capabilities are distributed, and how benefits and costs are divided up, what the organizational arrangements are and how effectively they op-

erate, what are the alternative ways of handling the management problem, what the observable trends in regional management are in the foreseeable future, and finally what unanticipated conditions might conceivably have some impact on future activities of the regional system.

One topic which was considered was that of transferability among regional arrangements. Could the knowledge gained through one set of experiences be usefully applied to other situations?

The general consensus was negative. The diversity of conditions associated with marine regional systems, the relative newness of most regional organizations, and the factor of change over time in the forms and functions of regional arrangements would all tend to mitigate against viable transfer operations. Also, many of the current regional systems were seen as empty in any real operational sense. It was suggested that in time (perhaps a decade or more) transferability might be possible in some situations, and that it might then prove to be easier to effect transferability with respect to non-resource related arrangements than in the case of resource-related systems.

On the issue of transferability there was some divergence among the discussants. Several persons felt that within particular use categories, such as fisheries, comparative studies might even now be useful on the experiences from one to another. "If there were some kind of document pointing out certain conditions which are likely to emerge from ad hoc approaches to the solution of fisheries problems, as well as the costs and benefits associated with that kind of approach, it might be useful to some of the regional fishery commissions."

No attempts were made to go into such aspects of marine regionalism as forms of organizational structure, criteria of operational viability, the interaction between marine regional activities and other types of relationships among member states, and the potential impacts of marine regional systems on international power relationships, or the national interests of particular countries, or on the physical conditions of the maritime areas to which particular arrangements apply. Here, as in the case of definitions, there seemed to be a feeling that far too many variables were involved with respect to these topics to permit the conclusion of any valid generalizations.

Regionalism and the Law of the Sea

Regions as they are referred to in the LOS negotiations received considerable attention at the seminar. Although the term appears often in the Single Negotiating Texts, there apparently was little consistency in its forms of use and often it was included in articles without serious thought having been given as to how the region might function. Two statements emphasize this: "the function of fuzziness in the Single Texts is that you agree to leave these issues to future negotiations." "Everyone makes a token nod of the head towards regional arrangements, meaning you can go on to think about it yourselves...that is what regionalism means quite often in the Single Texts."

But some incidences of use did have potential implications:

"In the LOS negotiations, regionalism has both negative and positive impacts. Negatively it is used as a term to make clear that certain states aren't to be involved (in a regional activity), and positively it seems to me that there are two elements. One is geographic proximity, which may be as big as the African continent; and the other relates to outsiders who have special interests in the region and who want to participate in regional systems there. When you say 'regionalism' in the LOS context you are concerned primarily with some kind of regulatory or control aspect, and fuzzy as it all is, it still has a common theme of participation -- by those who are close enough to want a piece of the action, as well as by outsiders with an interest in the region."

"Within the last regular conference you are beginning to hear of the idea of regions in the sense of economic regions of the UN. They were talking in the context of continental regions. Unfortunately the United States is a member of three of the four UN economic regions."

"You could use regionalism to compensate for some of the deficiencies that are going to come out of the LOS treaty. Take for example science. It might be convenient if scientists wishing to do research in the Caribbean were able to go to a regional structure of some kind and get consent from perhaps six or eight countries, and have on board the research vessel one scientist representing all the countries."

There may be some value in seeing what regional structures and functions might be used, even outside a formal treaty, as a means for more effective ocean uses.

The issue of possible exclusionary regimes in enclosed and semi-enclosed seas was also noted. The Revised SNT says that states bordering such seas "should" coordinate their activities there, rather than "shall" coordinate as in the first SNT. And as one discussant put it, "the more you talk about exclusionary regimes, the more likely it is they will occur."

Suggestions for Future Action

The participants in the seminar voiced a number of suggestions for further research and activities pertaining to marine regionalism. These included:

- an analysis of each of the physical marine regions of the world in terms of the patterns of activities there, the policy problem requiring resolution, and alternative arrangements for handling the problems. Attention should be given to the various "guidelines" noted on page 317. A comprehensive survey of this type would be both time-consuming and expensive.

- an inventory of existing marine regional arrangements patterned according to types of activity
- preparation of a map, or series of maps, of the world oceans, showing the areal coverage of the various regional arrangements included in the inventory; and the participating states
- an inventory of research activities currently being carried out in the area of marine regional activities
- the convening of another seminar, which includes among the participants researchers identified from the above survey, to further examine needs and opportunities in marine regional research.

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45°

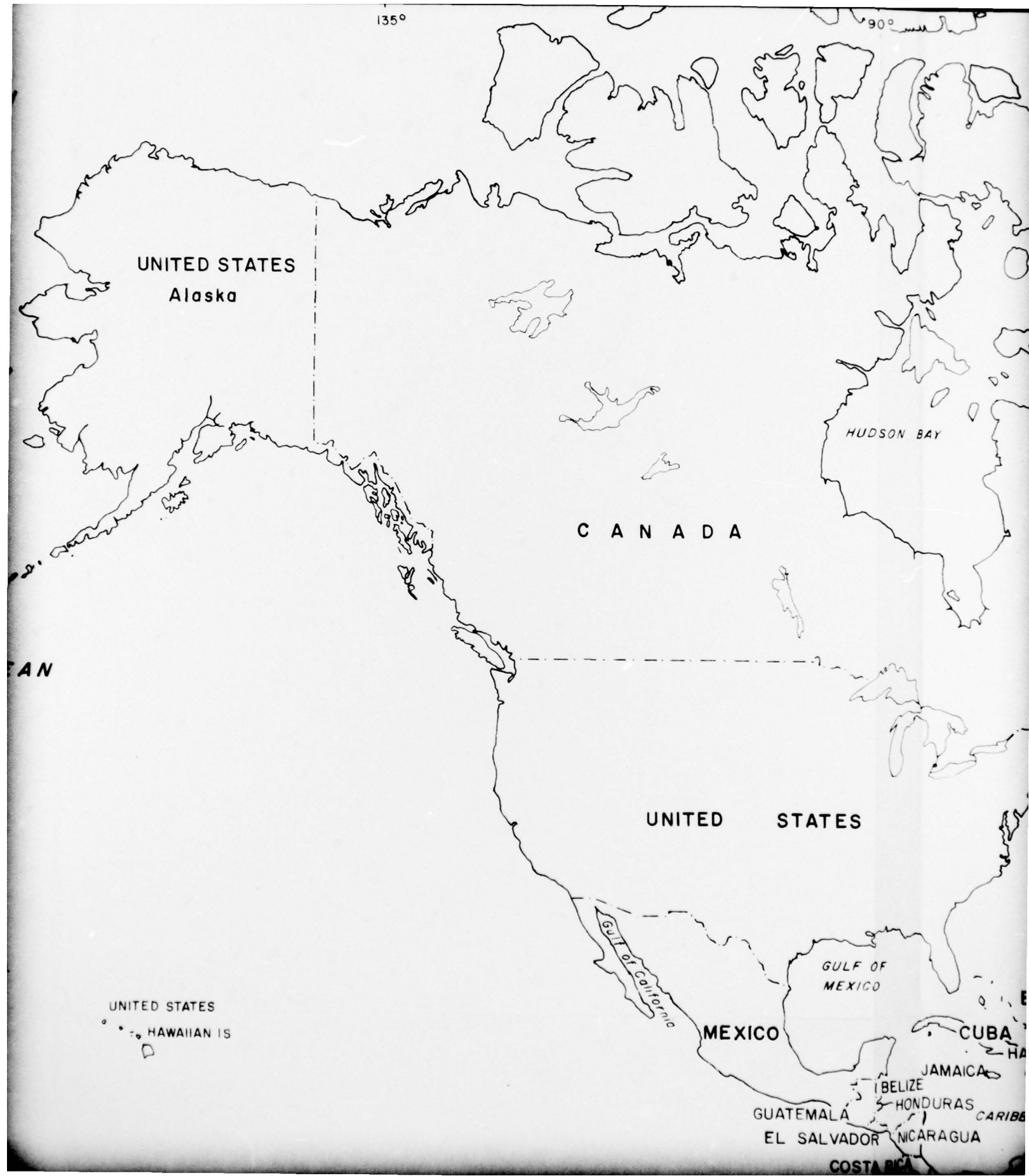
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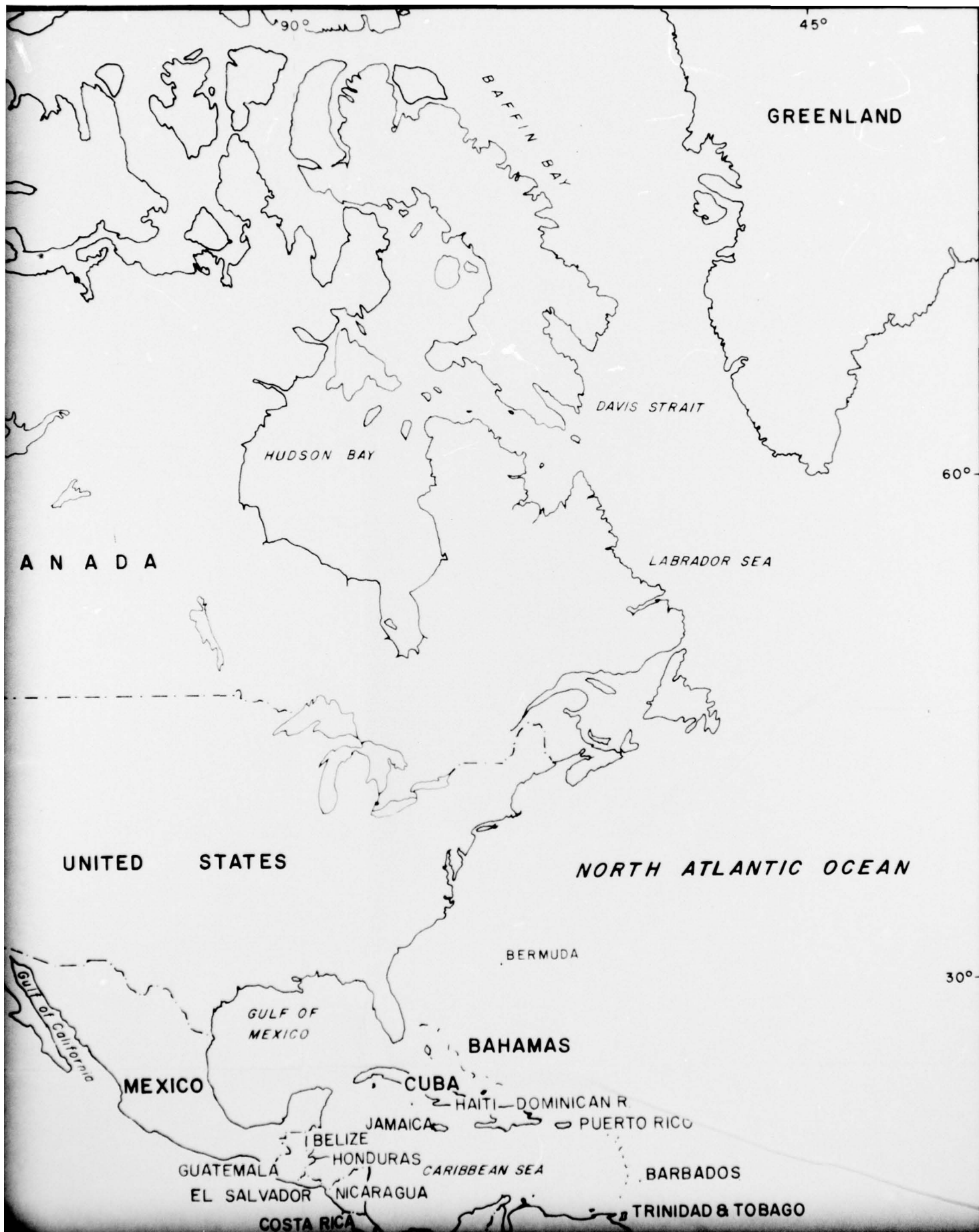
13

UNION OF SOVIET SOCIALIST REPUBLICS











SOUTH ATLANTIC OCEAN

30°

0°

30°

0°

45°

1



UNITED STATES

MIDWAY IS.

UNITED STATES

HAWAIIAN IS

Gulf of California

GULF OF MEXICO

MEXICO

GUATEMALA

EL SALVADOR

COSTA RICA

PANAMA

PHOENIX IS.

CHRISTMAS IS.

GALAPAGOS IS.

CENTRAL PACIFIC OCEAN

TOKELAU IS.

W. SAMOA IS

SAMOA IS

MARQUESAS IS.

TUAMOTU ARCH

TAHITI

SOCIETY IS.

TONGA

HENDERSON IS.

PITCAIRN IS.

EASTER IS.

SALA Y GOMEZ

SOUTH PACIFIC OCEAN

ISLANDS

135°

90°

