

ANNUAL REPORT OF THE
MARINE MAMMAL COMMISSION, CALENDAR YEAR 1979

A REPORT TO CONGRESS

Marine Mammal Commission
1625 I Street, N.W.
Washington, D.C. 20006

CONTENTS

	<u>Page</u>
I. Introduction.....	1
Background.....	1
Personnel.....	1
Funding.....	2
II. Research and Studies Program.....	3
Survey of Federally-Funded Marine Mammal Research.....	3
Research Program Reviews, Workshops, and Planning Meetings.....	4
Commission-Sponsored Research and Study Projects.....	5
III. Management of Marine Mammals by the State of Alaska.....	11
IV. Incidental Take of Marine Mammals in the Course of Commercial Fishing Operations: the Tuna- Porpoise Issue.....	16
The 1979 Fishing Season.....	16
Research.....	17
Cooperative Dedicated Vessel Research Program.....	17
Research Planning.....	17
Aerial Surveys.....	18
Workshop on the Status of Porpoise Stocks.....	18
V. Marine Mammal-Fisheries Interactions.....	21
Marine Mammal-Caused Gear Damage, Fish Damage, and Fish Loss.....	21
Competition for Fish and Shellfish Resources....	24
VI. Endangered, Threatened, and Depleted Species.....	26
West Indian Manatee (<u>Trichechus manatus</u>).....	26
Hawaiian Monk Seal (<u>Monachus schauinslandi</u>).....	33
California Sea Otter (<u>Enhydra lutris</u>).....	39
Bowhead Whale (<u>Balaena mysticetus</u>).....	42
Eskimo Whaling During 1979.....	42
Actions by the IWC During 1979.....	43
Meetings of Panels of Experts and the Technical Committee Working Group on Subsistence/Aboriginal Whaling...	43
Meeting of the Scientific Committee...	44
Meeting of the IWC.....	45
Determination of Need.....	46
Research Planning and Coordination.....	46

*of contents list
other pages, missing*

CHAPTER I

INTRODUCTION

Background

This, the seventh Annual Report of the Marine Mammal Commission, is submitted to the Congress pursuant to Section 204 of the Marine Mammal Protection Act of 1972. The Report describes the Commission's activities from 1 January through 31 December 1979.

The Marine Mammal Commission was established under Title II of the Marine Mammal Protection Act. It is an independent agency of the Executive Branch with responsibility for developing, reviewing, and making recommendations on actions and policies of all Federal agencies with respect to marine mammal protection and conservation.

Personnel

Through most of 1979, the three Presidentially-appointed Commissioners were Dr. Douglas G. Chapman (Chairman), Seattle, Washington; Dr. Richard A. Cooley, Santa Cruz, California; and Dr. Donald B. Siniff, Minneapolis, Minnesota. In mid-November, Dr. Murray L. Johnson, Tacoma, Washington, replaced Dr. Cooley, who had completed his term of service.

The Commission's senior staff members are John R. Twiss, Jr., Executive Director; Robert Eisenbud, General Counsel; Robert J. Hofman, Scientific Program Director; and JoAnn Lashley, Administrative Officer. The nine-member Committee of Scientific Advisors on Marine Mammals is composed of scientists knowledgeable in marine ecology and marine mammal affairs. Its members, appointed by the Chairman, were, at the end of 1979: Dr. Daniel B. Botkin, University of California, Santa Barbara; Dr. Paul K. Dayton, Scripps Institution of Oceanography; Dr. L. Lee Eberhardt, Pacific Northwest Laboratory, Battelle Memorial Institute; Dr. Joseph R. Geraci, University of Guelph; Dr. Gerald L. Kooyman, Scripps Institution of Oceanography; Dr. Daniel K. Odell, University of Miami; Mr. John H. Prescott (Chairman of the Committee), New England Aquarium; Dr. Katherine Ralls, Smithsonian Institution; and Dr. Robert B. Weeden, University of Alaska. During 1979, Dr. Tim D. Smith and Mr. Karl W. Kenyon completed their terms of service on the Committee.

Funding

The Marine Mammal Commission, operational for less than six months in fiscal year (FY) 1974, was appropriated \$412,000 for that year, \$750,000 for FY 75, \$900,000 for FY 76, \$1,000,000 for FY 77, \$900,000 for FY 78, and \$702,000 for FY 79. In FY 80, the Commission was appropriated \$940,000, \$300,000 of which was to be equally divided among activities to further the protection and conservation of the West Indian manatee, the Hawaiian monk seal, the East Coast cetaceans and pinnipeds.

These and other activities of the Commission are discussed in the body of the Report.

CHAPTER II

RESEARCH AND STUDIES PROGRAM

The Marine Mammal Protection Act requires the Commission to conduct a continuing review of research programs conducted or proposed to be conducted under the authority of the Act and to undertake or cause to be undertaken such other studies as it deems necessary or desirable in connection with marine mammal protection and conservation. To accomplish this, the Commission: conducts an annual survey of Federally-funded marine mammal research; reviews and recommends steps that should be taken to eliminate duplication and improve the marine mammal research programs conducted or supported by the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, and other Federal agencies; convenes meetings and workshops to identify research needs and priorities as well as to review, plan, and coordinate marine mammal research; and contracts for studies to help define and develop solutions to domestic and international problems affecting marine mammal and habitat conservation so as to complement the other agencies' activities which are either underway or contemplated.

Survey of Federally-Funded Marine Mammal Research

Research, directly or indirectly relevant to the conservation and protection of marine mammals and their habitats, is conducted or supported by a broad range of Federal departments and agencies. To determine the precise nature of this research, how it can be used to facilitate the conservation and protection of marine mammals, and whether any of it is duplicative, the Commission annually requests and reviews information on the marine mammal research projects being conducted, supported, or planned by other parts of the Federal Government.

In 1979, the Commission requested information from twenty-six different Federal departments and agencies, sixteen of which turned out to be conducting or supporting research related to the conservation and protection of marine mammals. The organizations so identified were the Army Corps of Engineers, the Bureau of Land Management, the Center for Disease Control, the Department of Agriculture, the Department of State, the National Institutes of Health, the National Marine Fisheries Service, the National Park Service, the National Science Foundation, the National Sea

Grant Program, the Naval Ocean Systems Center, the Office of Naval Research, the Smithsonian Institution, the U.S. Air Force, the U.S. Fish and Wildlife Service, and the U.S. Geological Survey.

The 1979 survey information is still being compiled and analyzed, but it is clear that the National Marine Fisheries Service, the Bureau of Land Management, and the Fish and Wildlife Service have the largest and most diverse marine mammal programs. It also is clear that several programs could and should be integrated, coordinated, refocused, and, as necessary, expanded or diminished to meet information needs more economically. For example, a better program and substantial cost savings might be realized by integrating the bowhead whale research being conducted and/or supported by the National Marine Fisheries Service and the Bureau of Land Management. Also, expanded research efforts are needed to determine what can and should be done to facilitate recovery of the West Indian manatee, the Hawaiian monk seal, the California sea otter, and other threatened or endangered species of marine mammals.

The Commission has advised the agencies of duplicative efforts and other identified problems, and has recommended that certain steps be taken to eliminate duplication and correct problems (see Chapters VI and XI for more complete discussions of certain research issues).

Research Program Reviews, Workshops, and Planning Meetings

In 1979, the Commission, in consultation with its Committee of Scientific Advisors, reviewed, commented upon, and/or made recommendations concerning: the overall scope of Federally-funded marine mammal research; the National Marine Fisheries Service's tuna-porpoise, Hawaiian monk seal, North Pacific fur seal, and bottlenose dolphin research programs; the bowhead whale research programs being conducted and/or supported by the National Marine Fisheries Service and the Bureau of Land Management; the Bureau of Land Management's Outer Continental Shelf Environmental Studies Program; and the Fish and Wildlife Service's manatee and sea otter research programs. The Commission also convened or participated in meetings and workshops to: better define the nature and scope of research programs needed to determine what more can be done to prevent the decline and encourage the recovery of Hawaiian monk seals and the West Indian manatee; identify research programs needed to assess and mitigate human-related threats to cetaceans and pinnipeds along the East and Gulf Coasts of the United States; determine actions, including research, that may be needed to protect humpback

whales and their habitat in Glacier Bay, Alaska, and the Hawaiian Islands; identify research needs and the optimal U.S. research program relative to the conservation and protection of living resources, including whales and seals, in the oceans surrounding Antarctica; evaluate on-going research being supported by the U.S. Air Force to determine how noise from launching and recovering the Space Shuttle at Vandenberg Air Force Base, California, might affect pinnipeds and birds on the California Channel Islands; and help the States of Washington and Oregon develop a program for assessing the nature and extent of marine mammal-fishery conflicts in the Columbia River. Details of these activities, and the recommendations resulting therefrom, are provided elsewhere in this report.

Commission-Sponsored Research and Study Projects

The Departments of Commerce and the Interior have primary responsibility, under the authority of the Act, for acquiring the biological and ecological data needed to protect and conserve marine mammals and the ecosystems of which they are a part. This responsibility has been delegated to the National Marine Fisheries Service and the U.S. Fish and Wildlife Service.

The Commission, as noted earlier, convenes workshops and contracts for research and studies to identify and evaluate threats to marine mammal populations and to supplement research conducted by the line agencies. Since it was established, the Commission has contracted for more than 275 projects ranging in amounts from several hundred dollars to \$128,000. The average contract cost has been about \$9,000. Total contract amounts were \$258,787 in FY 74; \$446,628 in FY 75; \$479,449 in FY 76; \$132,068 in the FY 76-77 transition quarter; \$523,504 in FY 77; \$407,678 in FY 78; and \$219,897 in FY 79. The research budget for FY 80 is approximately \$391,000, \$300,000 of which is to be equally divided among activities bearing on the protection and recovery of the West Indian manatee, the Hawaiian monk seal, and East Coast cetaceans.

Contract work undertaken by the Commission in 1979 is summarized below. Final reports on Commission studies completed in 1979 and earlier are available from the National Technical Information Service and are listed in Appendix B.

Survey of Federally-Funded Marine Mammal Research
(G. H. Waring, Southern Illinois University)

The Commission conducts an annual survey to identify marine mammal research conducted or supported by other Federal agencies. At the end of 1979, the contractor was organizing and summarizing information provided by the agencies on their FY 79 and FY 80 research programs. The completed report will be sent to the agencies for verification of the data therein. Following this, the Commission, in consultation with its Committee of Scientific Advisors, will review the information and, as appropriate, recommend actions to better develop, orient, and coordinate agency research programs. The final report will be provided to all agencies.

Analysis of Data, Models, and Procedures used to
Regulate Commercial Whaling
(William Clark, University of Washington)

Commercial whaling has been poorly regulated and has led to the depletion and near extinction of several species and populations of large whales. Although regulation has been improved substantially in recent years, there still is considerable doubt as to the reliability of data, assumptions, procedures, and models being used by the International Whaling Commission and its Scientific Committee to assess the status of exploited whale populations and to establish allowable catch levels. The purpose of this study is to review and evaluate the reliability of data, models, and procedures being used to assess the status of exploited whale populations and to establish allowable catch levels. The Commission will review the contractor's report and, as appropriate, advise the National Marine Fisheries Service and the U.S. Commissioner to the International Whaling Commission as to actions that should be taken to improve the data base and/or the models and procedures being used to estimate the status of exploited whale populations and allowable catch levels.

Review of Existing Information on the Pacific Walrus
(Francis H. Fay, University of Alaska)

The Pacific walrus, an important component of the Bering Sea ecosystem, is hunted by Eskimos for subsistence purposes. The species may also be affected adversely by offshore oil and gas development and certain fisheries in the Bering Sea. Although there has been considerable research on the biology and ecology of the species, the results of this research have never been summarized or evaluated fully.

Therefore, the Commission, with joint support from the Fish and Wildlife Service, contracted with this investigator to prepare a monograph summarizing available information on the distribution, migrations, morphology, growth, food habits, reproduction, mortality, population dynamics, and management of the species. When completed, the Fish and Wildlife Service will publish the monograph in the North American Fauna Series. It also will be reviewed by the Commission to help determine additional research or management actions that may be needed to conserve the North Pacific walrus population and/or the ecosystem of which it is a part.

The Status and Management of the Northwest Atlantic Harp Seal

(John Beddington, University of York, England)

Concern about the effects and humaneness of the annual harp seal hunt in the Northwest Atlantic was one of the major factors leading to the Marine Mammal Protection Act. The nature of the hunt and its effects on the population were not well known and, in 1976, the Commission contracted for a study to review, summarize, and evaluate available information (see Reeves, R. R., 1977 in Appendix B). The contractor noted, among other things, that there was substantial disagreement as to the reliability of data and models being used to estimate population size and allowable catch levels. Therefore, the Commission contracted with this investigator to evaluate the sources of bias and uncertainty in the data and models, and to provide the best possible estimates of both historic and present population size, age/sex composition, and productivity. A draft report is now being reviewed by the Commission and others. When completed, it will be sent to involved governments for their consideration.

Interrelationships among Marine Mammals, Fish, Birds, and other Components of the Bering Sea Ecosystem
(North Pacific Fishery Management Council)

Available data, theory, and models concerning the interrelationships between fish stocks, marine mammals, marine birds, and other components of the Bering Sea ecosystem were not considered fully in developing the Fishery Management Plan for the Groundfish Fishery in the Bering Sea/Aleutian Islands. The North Pacific Fishery Management Council, which developed the Plan, is aware of its deficiencies and, with the assistance of the Commission, the National Marine Fisheries Service, and others, is endeavoring to correct them (see Chapter V of this report). Available funds are insufficient to compile and fully evaluate all of the

relevant data and, to supplement the Council's on-going efforts, the Commission has transferred funds to the Council to assist in compiling and evaluating information on the relationships between marine mammals and exploited fish stocks. This supplemental funding should expedite the development of the data base and models needed to conserve both fishery and marine mammal resources.

Marine Mammals on the Farallon Islands
(D. G. Ainley & H. R. Huber, Point Reyes Bird Observatory)

The California sea lion, the northern elephant seal, and the harbor seal have recently re-established breeding populations on the Farallon Islands. At the same time, the number of Steller sea lions on the islands has decreased rapidly. These circumstances offer a unique opportunity to determine how populations interact and re-establish themselves after depletion, and the Commission has been supporting the investigation since 1974. The contractor's periodic surveys and observations, not only of the pinnipeds but also the cetaceans found on or in the vicinity of the islands, are providing valuable insights into the demography and dynamics of both pinniped and cetacean populations. In 1978, the Commission and the National Marine Fisheries Service jointly supported the work. The Commission recommended that the Service provide full support in 1979, but the Service was unable to do so and joint funding was continued.

Analysis of Data on Gray Whales in Laguna San Ignacio,
Baja California, Mexico
(S. L. Swartz, Cetacean Research Associates)

In 1977, the investigator began a study of gray whales in Laguna San Ignacio, Baja California, Mexico, under contract to the Commission. Since then, the project has been continued with funding from other sources. The funding has been insufficient, however, to allow the investigator to fully analyze and report the data which were collected. Therefore, in 1979, the Commission contracted with the investigator to accomplish this. The report will include data on: the number and distribution of whales and various kinds of ships or boats in the Lagoon; the behavior and seasonal movements of individually recognizable whales; and the effects of "whale-watching" and other vessel activities on the behavior and movements of the whales. The report will be reviewed by the Commission, in consultation with its Committee of Scientific Advisors, to determine whether additional research or management efforts may be needed to protect the whales or the calving/breeding lagoons.

Hawaiian Monk Seals on Laysan Island
(B. W. and P. A. Johnson)

The Hawaiian monk seal, Monachus schauinslandi, is an endangered species whose range is limited to the Leeward Hawaiian Islands and the waters surrounding them. Although the National Marine Fisheries Service and the U.S. Fish and Wildlife Service had initiated research to determine actions necessary to prevent the extinction and encourage the recovery of the species, neither agency had programmed sufficient funds to support all of the necessary research (see Chapter VI of this report). Therefore, in 1977, following consultation with the agencies, the Commission provided support to begin an in-depth study of the demographic parameters, activity patterns, and behavior of monk seals on Laysan Island. The study provided useful information and improved methods for estimating population size and age/sex composition, and was continued in 1978. In 1979, the Commission recommended that the National Marine Fisheries Service assume responsibility for continuing the study but, although the Service agreed to do so, it was unable to provide full support. The Commission and the State of Hawaii, feeling that the studies should be continued for at least another year, provided funds to the Service to assist in supporting the study in 1979.

Evaluation of On-going Efforts to Radio-Tag and Track
Gray Whales
(B. R. Mate, Oregon State University)

Reliable information on distribution patterns and movements is necessary to identify habitats which are essential to the survival of large whales and other marine mammals. Although tracking radio-tagged animals is likely to be the most economical method for acquiring this information, there has been little progress in developing safe and reliable methods for radio-tagging large whales. This investigator has developed a unique method for attaching radio transmitters to large whales and, with funding from the Bureau of Land Management, has conducted tagging/tracking experiments on gray whales in San Ignacio Lagoon, Baja California, Mexico. One of the radio-tagged whales was recontacted off the coast of California, suggesting that the attachment problem may have been solved. The Commission therefore contracted with the investigator to provide a report describing the study and on-going efforts to locate and observe the radio-tagged whales. The report was reviewed by the Commission, in consultation with its Committee of Scientific Advisors, and used as a basis for advising the Bureau of Land Management and the National Marine Fisheries Service as to further studies that seem necessary to develop safe and reliable methods for radio-tagging large whales.

Investigation of the Sperm Whale Stranding at Florence,
Oregon

(B. R. Mate, Oregon State University)

On 16 June 1979, forty-one sperm whales became stranded on a beach near Florence, Oregon. Such strandings, the cause or causes of which are unknown, provide a unique opportunity to collect biological information. Therefore, the Commission contracted with the investigator to make arrangements for collecting skulls and other parts from the stranded whales. Parts were collected and analyzed and the results of the investigation were reported and discussed at the Marine Mammal Conference held in Seattle, Washington in October 1979.

Workshop on East and Gulf Coast Cetaceans and Pinnipeds
(New England Aquarium)

More than thirty species of cetaceans and pinnipeds, including six endangered species of large whales, are known to occur in waters along the East and Gulf Coasts of the United States. Relatively little is known about the status or trends of these species, or how they are being affected by offshore oil and gas development, coastal zone development, sport or commercial fisheries, whale-watching, or other human activities. Congress, in recognition of this fact, appropriated \$100,000 to the Commission in FY 80 to identify and initiate necessary research. As a result, the Commission convened a group of experts to: compile and summarize available information on species' status and trends; better define human-related threats to the species; and, identify research being conducted or planned. The experts, who met on 25-26 September 1979, included representatives of the Commission, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, the Smithsonian Institution, State governments, Canada's Department of the Environment, the academic community, and public interest groups. The report, now being reviewed by the Commission, will be used to develop a plan for investing the \$100,000 appropriated for East Coast cetaceans and pinnipeds.

CHAPTER III
MANAGEMENT OF MARINE MAMMALS
BY THE STATE OF ALASKA

Under the Act, the Secretaries of Commerce and the Interior, in consultation with the Commission, may waive the moratorium on the taking of marine mammals, promulgate regulations to govern permitted taking, and return management to a state if such a waiver and return of management is determined to be consistent with the goals and provisions of the Act.

On 31 January 1973, the State of Alaska submitted a request to the Secretaries of Commerce and the Interior for a waiver of the moratorium and return of management of nine species of marine mammals -- polar bear, sea otter, Steller sea lion, bearded seal, harbor seal, ribbon seal, ringed seal, beluga whale, and walrus. Although such a return of management to a state is generally consistent with the policies and provisions of the Act, delays in the course of proceedings relating to this request and disagreements with respect to a variety of procedural and substantive issues have impaired efforts to respond to the request and the issues remained unresolved at the end of 1979. Summaries of the events and the Commission's activities and recommendations relating to this matter through 1978 are presented in the Commission's previous Annual Reports. The discussion which follows briefly summarizes that background and the status of the situation in 1979.

Factors giving rise to many of the difficulties associated with the request by the State of Alaska may be summarized as follows: the State's request sought a waiver as well as a return of management for nine species of marine mammals and, as a result, required formal hearings before an administrative law judge on the status of the populations and effects of proposed takings as well as a consideration of the State's proposed laws and regulations that would govern such taking; the Act requires that decisions on the waiver be based upon "the record" adduced at the formal hearings; the proposed waiver of the moratorium to allow taking of marine mammals required compliance with the provisions of the National Environmental Policy Act; the State's request

was the first such request under the Act and neither the Federal nor the State officials were yet familiar with the procedural or substantive requirements of the Marine Mammal Protection Act or the National Environmental Policy Act; in addition to the lack of experience and familiarity with the applicable law and procedures, many of the Federal officials and interested public were not familiar with the atypical nature and extent of the complex and difficult marine mammal management issues in Alaska; the State sought a waiver and return of management of nine species of marine mammals, and, under the Act, some (Steller sea lion, bearded seal, harbor seal, ribbon seal, ringed seal, and beluga whale) were subject to the jurisdiction of the Secretary of Commerce, while others (polar bear, sea otter, and walrus) were subject to the jurisdiction of the Secretary of the Interior; and this bifurcation of jurisdiction required consideration and decisions by two separate agencies and compounded the problems.

Although these difficulties delayed action on the State's request, the Commission had hoped, until recently, that most of the issues had been or could be resolved and that effective Federal-State management efforts consistent with the Act could finally be implemented. The waiver of the moratorium and return of management of walrus was approved by the Director of the Fish and Wildlife Service in December 1975, subject to certain changes being made in the State's laws and regulations. The State submitted modified laws and regulations which were approved by the Director in April 1976 and the State resumed management of walrus with quotas and other measures applicable to the taking of walrus by natives and non-natives. The waiver of the moratorium and return of management of the other species was approved in January 1979, again subject to certain changes being made in the State's laws and regulations before it could be effected and subject to a further condition that a scientific workshop be convened to continue the evaluation of data and research efforts relating to the affected marine mammal populations. Representatives of the Commission and its Committee of Scientific Advisors participated in that scientific workshop which was convened on 11-13 January 1979. The workshop participants considered, among other things, the need for an aerial survey of walrus in 1980, which had been the subject of Commission recommendations as discussed in its previous Annual Report, and they unanimously recommended that the Fish and Wildlife Service carry out as comprehensive a survey as possible within funding constraints. In addition to the workshop, while representatives of the State of

Alaska expressed disagreement with some aspects of the January 1979 conditional decision to waive the moratorium and return management, they indicated a desire to work with Federal officials to resolve the problems and meetings to discuss and develop a mutually acceptable resolution of issues relating to the language of the decision and to draft the necessary modifications of laws and regulations appeared to be progressing well.

Unfortunately, this apparent progress in resolving most of the issues relating to the waiver and return of management was slowed, if not stopped, by difficulties associated with the "native exemption" clause set forth in Section 101(b) of the Act. In April 1979, U.S. District Court Judge Harold Greene issued an order denying the Federal government's motion to dismiss a lawsuit brought by Alaskan natives (People of Togiak v. United States) challenging the authority of the Director of the Fish and Wildlife Service to delegate to the State the authority to regulate the taking of walrus. In its opinion explaining why it had denied the government's motion, the Court expressed its view that the "native exemption" clause in the Act constituted a Congressionally-mandated permit allowing Alaskan natives to hunt non-depleted walrus in a non-wasteful manner for subsistence and native handicrafts purposes and that inconsistent laws and regulations of the State attempting to limit taking by natives in that manner and for those purposes were pre-empted.

Although the Court's statement about the native exemption was not a final decision and no final decision had been issued by the end of 1979, it appeared that the implications of the Court's interpretation of the native exemption clause, if it were confirmed in a final decision, would have serious impacts upon the management program for walrus as well as other species such as beluga whales, polar bears, and seals which are also taken by natives. In addition to the objections raised by the State to the impropriety of establishing different management programs for natives and non-natives based upon racial or ethnic considerations, there appeared to be several serious practical problems that would need to be resolved in order to implement effective management programs. These include problems such as how to define "subsistence", "native handicrafts", and "wasteful" so as to allow managers to determine, in advance, how many animals will be taken; how to permit non-natives to take any portion of a quota that is not needed for subsistence and handicrafts purposes; and how to enforce the regime against those natives who take animals wastefully or for purposes other than those

allowed by the exemption. It would also be necessary to determine whether it would be possible to establish, by regulation or other means, any effective limitation relating to such factors as age, sex, or reproductive condition of animals that can be taken or seasons during which they may be taken, in order to prevent the affected population from being depleted, rather than waiting to impose restrictions on taking by natives until the population is depleted.

The State's walrus program, which had been approved by the Director of the Fish and Wildlife Service, included limits in the form of quotas and other regulatory measures applicable to the taking of non-depleted walrus by native Alaskans and, as such, were not limited to insuring that the taking by natives was non-wasteful and for subsistence and handicrafts purposes. In anticipation of the likely impacts of Judge Greene's statement concerning the native exemption clause and the problems discussed above, the State advised the Fish and Wildlife Service in June 1979 of its intent to return management of walrus to the Fish and Wildlife Service, effective 1 July, unless there were satisfactory resolution of issues relating to the waiver and the legal authority to regulate native taking. On 27 June, the Alaska Board of Game adopted emergency regulations that effectively terminated most of the State's walrus management and law enforcement activities. In response and in recognition of the fact that there was no longer a State management program in effect to govern taking of walrus under the waiver, the Director of the Fish and Wildlife Service, after consultation with the Commission, published notice on 2 August 1979 of his decision to disapprove Alaska's walrus regulations and to suspend the waiver of the moratorium on taking walrus until effective regulations to control taking were implemented.

The effect of this series of actions was to return responsibility for managing walrus to the Fish and Wildlife Service with a moratorium on all but native taking under the native exemption. In recognition of the need to continue monitoring the harvest of walrus by natives, the Commission wrote to the Fish and Wildlife Service on 30 October 1979 noting the need to make the necessary logistical and funding arrangements for the conduct of a well-designed and coordinated harvest monitoring and sampling program. The Commission recommended that the Service commit funds for the support of such a program and make arrangements for its design and conduct and, for this purpose, that it explore the feasibility of providing funds to the Eskimo Walrus Commission to design

and conduct the program in consultation with and with the assistance of representatives of the State of Alaska and the Service. In addition, the Commission noted that the broader and more difficult walrus management issues also warranted attention and that some fundamental decisions needed to be made to resolve the problems relating to walrus and other species in Alaska. The Commission suggested that the Service convene a meeting of interested persons in Alaska to discuss these issues frankly and in sufficient detail to provide a basis for the necessary decisions and actions.

By the end of 1979, no response to the Commission's 30 October letter had been received from the Service. Efforts to implement the January 1979 decisions to waive the moratorium and return management of the other species had been deferred until the questions relating to the native exemption clause were resolved, and the Commission was unaware of any plans or schedules for action to address these problems. The Commission will continue to consult with the Federal and State agencies and will continue to pursue means of resolving the difficulties with respect to this matter in 1980.

CHAPTER IV

INCIDENTAL TAKE OF MARINE MAMMALS IN THE COURSE OF COMMERCIAL FISHING OPERATIONS: THE TUNA-PORPOISE ISSUE

The Marine Mammal Protection Act directs the Secretary of Commerce, in consultation with the Commission, to develop regulations governing the incidental taking of marine mammals by persons subject to the jurisdiction of the United States and to seek to develop effective international arrangements, through the Secretary of State, for the purpose of reducing the incidental taking of marine mammals to insignificant levels approaching a zero mortality and serious injury rate.

Although incidental taking of marine mammals occurs in the course of several fisheries and involves several different species of marine mammals, the "tuna-porpoise" issue involving the incidental mortality and serious injury of porpoises entrapped in the purse seine nets used by commercial yellowfin tuna fishermen has been the subject of the most intense concern, attention, and controversy since passage of the Act.

A detailed discussion of the Commission's activities and an historical summary of efforts to resolve the problem are presented in the Commission's Annual Reports for Calendar Years 1976, 1977, and 1978. During 1979, the Commission continued to devote efforts to this aspect of incidental taking of marine mammals, with particular attention to research planning and population assessment, as described below.

The 1979 Fishing Season

As discussed in the Commission's Annual Report for Calendar Year 1977, final regulations governing the 1978-1980 fishing seasons were published by the National Marine Fisheries Service in the Federal Register on 23 December 1977. These regulations established declining incidental take quotas of 51,945 animals in 1978, 41,610 in 1979, and 31,150 in 1980. The data available at the end of 1979 indicate that, as in 1978, the U.S. fishing fleet maintained the total porpoise mortality level well below the upper limits established by the quotas and that the total incidental porpoise mortality associated with U.S. commercial yellowfin tuna fishing in 1979 was 18,549 animals. This number, approximately the same as that for the 1978 fishing season, constitutes a substantial reduction from the mortality levels for 1977 and previous years. For reference, figures for the estimated porpoise mortality associated with the U.S. tuna fishing vessels since passage of the Act are set forth below:

<u>Year</u>	<u>Estimated Kill</u>
1972	306,000
1973	196,556
1974	139,882
1975	156,955
1976	104,218
1977	24,045
1978	18,558
1979	18,549

Research

During 1979, the Commission met and consulted with other interested parties to plan and evaluate research efforts designed to reduce the incidental mortality and serious injury and to assess the status of the affected porpoise populations. Several aspects of these efforts are discussed below.

Cooperative Dedicated Vessel Research Program

As described in the Commission's Annual Report for Calendar Year 1978, the cooperative dedicated vessel research program was conducted during 1978 pursuant to the terms of an agreement among the Marine Mammal Commission, the National Marine Fisheries Service, and the United States Tuna Foundation (representing all segments of the tuna industry) for the purposes of refining and developing fishing gear and/or practices so as to further reduce the incidental mortality and serious injury of porpoises and to provide additional demographic and biological data needed to assist in assessing the impacted porpoise populations. Five cruises were conducted during 1978 aboard the M/V Queen Mary, a tuna purse seiner chartered and made available to the parties to the agreement by the United States Tuna Foundation.

During 1979, the dedicated vessel Program Manager, under the terms of a contract with the Commission, reviewed and incorporated the reports on the five cruises into a summary report and evaluation for consideration by the Program Board, composed of representatives of the parties to the agreement. That report describes the results of research efforts on porpoise mortality reduction, alternative fishing methods, stock assessment, and behavior, and contains recommendations for further research. It notes that the results of the program provided tools and techniques for significant breakthroughs in stock assessment and behavioral research and that the results of the mortality reduction research will be useful in further refining methods to reduce porpoise mortality. The Program Manager's report will be available in January 1980.

Research Planning

As the Commission noted in its Annual Report for Calendar Year 1978, it was agreed at the end of 1978 that while the

cooperative efforts in the course of the dedicated vessel program had yielded significant results and demonstrated the utility of the "dedicated vessel" concept, it would not be cost-effective to continue to utilize a single dedicated research vessel and that it appeared desirable to utilize several different vessels to resolve vessel-specific and vessel class-specific problems as part of an agreed comprehensive research program.

In order to foster the development of such a research program, the Commission, by letter of 29 March 1979, repeated its previous recommendations to the National Marine Fisheries Service that it reassess data needs relating to the tuna-porpoise issue, develop a proposal for cooperative government/industry research, circulate the proposal for review and comment, and convene a group of appropriate government/industry representatives to agree upon a cooperative, goal-oriented research plan. By letter of 7 June 1979, the Commission restated its previous recommendations to the Service concerning efforts to resolve difficulties associated with the estimation of the average porpoise school size, cooperative government/industry research efforts, satellite-linked radio tracking, and mark/recapture studies. Finally, on 13 November, the Commission recommended that the Service arrange for an opportunity for representatives of the Commission to meet with representatives of the Service at the Southwest Fisheries Center in La Jolla, California as soon as possible to discuss the tuna-porpoise research program.

Although it was agreed that coordinated government/industry research and evaluation was necessary, the recommended detailed proposals and consultations were not accomplished because of the need for representatives of the Service to prepare for and participate in the Status of Porpoise Stocks Workshop (discussed below) and to evaluate the results of the Workshop and develop recommendations for action with respect to the quotas for 1980 and thereafter. A meeting between representatives of the Commission and the Service to discuss the Service's tuna-porpoise research program is scheduled for early 1980.

Aerial Surveys

The National Marine Fisheries Service conducted an aerial survey of porpoise in the Eastern Tropical Pacific Ocean in April 1979 to supplement data collected during aerial and ship-board surveys in 1974 and 1977. Representatives of the Commission and its Committee of Scientific Advisors consulted with representatives of the Service both before and after the survey to discuss plans for its conduct and met with representatives of the Service and other interested parties in June to discuss methods of analysis of the data collected.

Workshop on the Status of Porpoise Stocks

As noted above, the regulations published by the National Marine Fisheries Service in December 1977 set declining quotas

for the 1978, 1979, and 1980 fishing seasons. In order to develop and evaluate the best scientific information available concerning the status of the affected porpoise populations for consideration in the course of hearings to develop regulations and quotas for the 1981 and subsequent fishing seasons, the National Marine Fisheries Service convened a workshop of experts in population dynamics, with special emphasis on large mammals. Representatives of the Commission participated in the Workshop which was held in August 1979 at the Southwest Fisheries Center in La Jolla, California.

The Report on the Workshop, published in November 1979, set forth the conclusions of the participants that, among other things, the estimated abundances of the affected porpoise populations in 1979 are substantially lower for most stocks than was estimated in the 1976 Workshop and proceedings which formed the basis of the quotas for the 1978-80 fishing seasons. The Report indicated that the reduced size of stocks should not be construed to be an indication of large stock decreases between 1976 and 1979 but, rather, to be a result of a new and improved estimation procedure and better information. The Report also indicated that the participants felt that the revised assessments represent a substantial improvement over previous work and should form the basis of further management decisions with respect to these stocks.

In this regard, a particularly significant conclusion of the participants was that the present abundance of the northern offshore spotted dolphin population is only between 34 and 55 percent of its initial, pre-exploitation level, depending upon which of several alternative assumptions are made, and that the present level is below what the participants felt was the lower bound of the range of optimum sustainable population levels. The significance of these conclusions results from the fact that if the northern offshore spotted population is found to be below optimum levels, it is "depleted" under the provisions of the Marine Mammal Protection Act as they have been interpreted. As such, no incidental taking of animals from this depleted population would be permissible and amendment of the current regulations and quotas for the 1980 season would be necessary in order to prohibit the taking of northern offshore spotted dolphins. The regulations for the 1980 fishing season permitted the U.S. fleet to kill up to 21,300 offshore spotted dolphins (including both the northern and southern populations) and it is estimated that approximately 70 percent of the yellowfin tuna taken in recent years has been caught principally in association with the northern offshore spotted dolphin population.

In light of the importance of these conclusions, the National Marine Fisheries Service, after consultation with the Commission, published an Advance Notice of Proposed Rulemaking (44 Federal Register 67194, 23 November 1979) indicating its intent to reconsider the existing regulations governing the incidental taking of porpoise and to consider the regulatory regime that would be

appropriate beyond 1980. The Advance Notice set forth a tentative rulemaking schedule calling for an announcement of a formal administrative hearing and availability of a draft environmental impact statement on the proposed action on 18 January 1980, commencement of the formal hearing on 18 February 1980, and a final decision by the Administrator of the National Oceanic and Atmospheric Administration by 1 July 1980. The Notice indicated that the Service had determined that a formal hearing before an administrative law judge was the best means of reviewing the conclusions of the Workshop Report and other relevant information and affording full due process rights to all interested parties.

The Commission will continue to consult with the National Marine Fisheries Service and other interested parties and will participate in the formal administrative hearing in the course of its continued efforts to contribute to a resolution of the tuna-porpoise issue.

CHAPTER V

MARINE MAMMAL-FISHERIES INTERACTIONS

Marine mammals interact with sport and commercial fisheries in a number of ways. They are taken incidentally in fisheries such as the yellowfin tuna purse seine fishery, are responsible for gear damage and loss of or damage to fish caught in fisheries such as the North Pacific salmon gillnet fishery and, in areas such as the Bering Sea, compete with fishermen for fish such as pollock. Commission overview and actions with respect to the incidental take of marine mammals during commercial tuna fishing operations have been discussed in the previous chapter. The following discussions describe Commission efforts to identify and deal with problems concerning marine mammal-caused gear damage, fish damage and fish loss, and competition between marine mammals and fishermen for the same fish resources.

Marine Mammal-Caused Gear Damage, Fish Damage, and Fish Loss

Prior to passage of the Marine Mammal Protection Act, sport hunting, bounty hunting, and various forms of harassment were used to control the distribution, abundance, and/or behavior of certain marine mammals so as to eliminate or reduce gear damage, fish damage, and fish loss caused by marine mammals. The Act imposed a moratorium on such taking and, in recent years, there have been reports that populations of harbor seals and other marine mammals are increasing and that there has been a corresponding increase in the amount of damage caused by marine mammals. Most of the reports of increasing marine mammal populations, gear damage, etc. have been from Oregon, Washington, and Alaska.

In December 1977, the Commission convened a workshop to gather and review information concerning the nature and extent of marine mammal-fishery conflicts in these three states (see p. 9, Commission's Annual Report for 1977). After reviewing and discussing available information, workshop participants concluded that available information was insufficient to determine the precise nature and extent of the problem and that a comprehensive, goal-oriented research program was needed to better define the problem and to determine what, if any, remedial measures might be needed to reduce the incidental take of marine mammals or marine mammal-caused gear damage, fish damage, etc. to insignificant levels. They noted that conflicts appeared to be particularly severe on the Columbia River and in the Copper River Delta/Prince

William Sound area of Alaska, and recommended, among other things, that appropriate methodology be developed and that studies be initiated to determine the levels of incidental take, gear damage, etc. on the Columbia River and in the Copper River Delta.

To follow up on the workshop recommendations, the Commission subsequently provided funds for a meeting to begin development of a comprehensive plan for the Columbia River project, and contracted for a study to determine how harbor seals and other marine mammals affect and are affected by the salmon fishery in the Copper River Delta/Prince William Sound area of Alaska (see pp. 11-12, Commission's Annual Report for 1978). The planning meeting for the Columbia River project was convened in Olympia, Washington on 17 March 1978. Specific information needs and research projects were discussed at this meeting and, following the meeting, the Washington and Oregon Departments of Fish and Game developed and submitted a research proposal to the National Marine Fisheries Service for funding consideration.

The research proposal and a related application for a scientific research permit were forwarded from the Service to the Commission for review and comment in late March 1979. Neither the proposal nor the permit application was judged adequate. By letter of 3 May 1979, the Commission recommended that the National Marine Fisheries Service not fund the proposal, but encourage the States to submit a more detailed and better justified proposal and to withdraw or request suspension of consideration of the permit application pending revision and resubmission of the research proposal. The Service so advised the States. The permit application was subsequently withdrawn (44 F.R. 19222, 222797) and, at the end of 1979, the States were revising the proposal and expected to complete and submit the revision to the National Marine Fisheries Service in January 1980. If the revised proposal is submitted as scheduled, and approved, funding presumably will be provided and the program will be underway by late February 1980.

The Commission-sponsored research project in the Copper River Delta/Prince William Sound area of Alaska has been completed, and a draft report has been submitted and reviewed by the Commission. Among other things, the draft report notes that: substantial fish loss, fish damage, and gear damage apparently are caused by marine mammals, particularly harbor seals and Steller sea lions; substantial numbers of marine mammals, particularly harbor porpoise, harbor seals, and Steller sea lions, are taken incidentally during the

course of fishing operations; levels of incidental take and marine mammal-caused gear damage and fish damage vary from location to location and by season and time of day; deterrent devices, such as "seal bombs", appear to be effective in driving away marine mammals that are actually or potentially interfering with fishing operations; rates of incidental take, gear damage, and fish damage could be substantially reduced if fishermen used deterrent devices and avoided long-term sets (especially overnight sets when nets are unattended) and fishing at certain times and in certain places; and the nature and extent of incidental take is difficult to determine precisely because most of the fishermen are operating without "incidental take" permits and are reluctant to report or discuss catches.

The Commission had hoped that it and/or the National Marine Fisheries Service would be able to continue the study in the Copper River Delta/Prince William Sound area but neither agency had sufficient funds to do so in 1979. The Commission also had planned to convene workshops to assess the nature and extent of marine mammal-fishery interactions in New England, Florida, and Hawaii (see p. 9, Commission's Annual Report for 1977), but, because of funding and staff limitations, was only able to organize and convene a general workshop on East Coast cetaceans and pinnipeds (see Chapter II).

The participants at the "East Coast" workshop concluded that available information was insufficient to judge both the nature and extent of marine mammal-fishery conflicts along the East and Gulf coasts and what, if any, remedial measures might be needed to reduce the incidental take of marine mammals or to reduce marine mammal-caused gear damage, fish damage, and fish loss. They noted, as did participants in the December 1977 workshop, that many fishermen were not obtaining "incidental take" permits or reporting incidental take, and that lack of reliable information on the nature and extent of incidental take could be attributed, in part, to the permit requirement and procedure. They recommended that a comprehensive research program be undertaken to assess the nature and extent of marine mammal-fishery conflicts and that the National Marine Fisheries Service re-evaluate permit procedures and modify the procedures, as necessary, to assure that marine mammals taken during commercial fishing operations are reported and subsequently made available to researchers for study.

The Commission has suggested to the National Marine Fisheries Service a possible solution to the permit problem that would provide flexibility and increased coordination with state officials and has advised the Service that it should plan and implement a research program to assess the nature and extent of marine mammal-fishery interactions along the East and Gulf coasts of the United States.

Competition for Fish and Shellfish Resources

Since marine mammals and fishermen compete for some of the same fish and shellfish resources, the Commission believes that marine mammals and fisheries must be managed cooperatively in order to obtain and maintain optimum sustainable populations of both marine mammals and fish resources. The Commission also believes that the Fishery Conservation and Management Act (FCMA) and the Marine Mammal Protection Act (MMPA) provide the opportunity for such cooperative management but that the fishery management plans, developed thus far pursuant to the FCMA, have failed to adequately consider the intents and provisions of either the MMPA or the FCMA.

Because of its concern that marine mammals were not being adequately considered in the development of fishery management plans, the Commission contracted for a study in September 1978 to identify and evaluate actions taken by the National Marine Fisheries Service and the various Fishery Management Councils to implement the Fishery Conservation and Management Act. After gathering and reviewing relevant information, the contractor tentatively concluded that, as a general rule, marine mammals were not being considered in the development of fishery management plans and that the Marine Mammal Commission should take steps to encourage the development of more ecosystem-oriented fishery management plans.

Concurrent with receipt of the contractor's preliminary views on the subject, the Commission, in consultation with its Committee of Scientific Advisors, reviewed and commented on the Fishery Management Plan and Draft Environmental Impact Statement for the Groundfish Fishery in the Bering Sea/Aleutian Islands area. While noting the difficulty of the task, the Commission's comments, transmitted by letter of 18 January 1979 to the North Pacific Fishery Management Council, pointed out that available data and theory had not been utilized fully in developing the Plan. The Commission recommended that available data and theory be re-evaluated to better identify uncertainties associated with the lack of knowledge or understanding of the dynamics of the Bering Sea ecosystem and that the allowable catch levels be adjusted, as necessary, to reflect the degree of uncertainty concerning the possible first- and second-order impacts of multi-species harvesting on target species, dependent species, associated species, and the ecosystem(s) of which they are a part.

The Director of the North Pacific Fishery Management Council agreed with the Commission that available information and theory were not reflected fully in the draft fishery management plan and it was agreed that the Commission and

the North Pacific Fishery Management Council would work together to develop an approach to the problem. At the Commission's suggestion, a steering group, consisting of representatives of the North Pacific Fishery Management Council, the National Marine Fisheries Service, and the Commission was constituted to discuss and develop a plan for approaching the problem.

The first meeting of the steering group took place in Seattle, Washington on 6 August 1979. As a result of the meeting, it was agreed that: 1) the ultimate goal is to develop standard procedures and models for assessing the interrelationships between target and non-target fish populations, marine mammal populations, bird populations, and other ecosystem components; 2) efforts should be focused, at least initially, on the Bering Sea ecosystem; 3) appropriate fishery management agencies and industry groups should be canvassed to identify what, when, and where new fisheries are likely to develop in the Bering Sea; 4) available information on the species' composition, status, food habits, and food requirements of marine mammals and birds of the Bering Sea should be compiled and evaluated and that a request for proposals should be developed and used to solicit proposals relevant to this task; and 5) a symposium or workshop should be held to assess the adequacy of existing data, procedures, and models with particular emphasis on the Bering Sea ecosystem.

Since the 6 August meeting, a survey of Alaskan fishermen and fishing interests has been initiated, a request for proposals concerning the feeding habits and food requirements of marine mammals in the Bering Sea has been drafted, a tentative agenda and plan for a symposium/workshop on ecosystem models and their application to fishery management has been developed, and the Commission has transferred \$12,500 to the North Pacific Fishery Management Council to help cover the cost of these efforts. As a result of these actions, the request for proposals should be issued in the near future and the symposium/workshop on ecosystem management should be organized and convened by the National Marine Fisheries Service in late April 1980.

CHAPTER VI

ENDANGERED, THREATENED, AND DEPLETED SPECIES

The Commission reviews the status of marine mammal populations and makes recommendations for appropriate actions and designations under the Marine Mammal Protection Act and the Endangered Species Act.

In 1979, the Commission devoted particular attention to the West Indian manatee, Hawaiian monk seal, humpback whale, California sea otter, and bowhead whale.

West Indian Manatee (*Trichechus manatus*)

Along with the Hawaiian monk seal, the right whale, and the bowhead whale, the West Indian manatee is among the most endangered of marine mammals inhabiting coastal waters of the United States. The population in Florida is thought to be about 1,000 and evidence suggests that it continues to decline. The observed mortality was 99 animals in 1977, 79 animals in 1978, and 72 animals in 1979, and this mortality is certainly but a portion of the total actual mortality. If the population is only 1,000 animals and the present levels of mortality continue, the Florida manatee population will soon become extinct.

Examples of human-related factors lessening the species' chances for survival in the Southeastern United States include accidental death or serious injury resulting from collisions with the hulls or propellers of boats and barges, entrapment in water level control gates, entanglement in fishing gear, and loss of habitat due to coastal development. If efforts are not sufficiently vigorous to save the manatee in Florida and Puerto Rico, it will signal the loss of a species throughout a significant portion of its range entirely as a result of man's activities.

Since 1976, the Commission has actively urged the Fish and Wildlife Service to improve its management practices and intensify its research and management activities so as to adequately protect and encourage the recovery of the West

Indian manatee. Some of the actions taken, described at length in earlier Annual Reports, are noted below in brief.

After writing the Service in 1976 recommending a funding increase in the Service's sirenian program and the convening of a manatee workshop, the Commission and its Scientific Advisors met with Service representatives, manatee researchers, and other interested parties in Florida in January 1977 to examine the manatee situation -- a meeting at which the need for prompt and effective research and conservation efforts was clearly described. In early 1978, the Commission convened a similar meeting to review, among other matters, progress that had been made towards resolving described problems. As a result of the meeting and subsequent discussions with the Service and others, the Commission concluded that there appeared to be no centralized authority in the Service for directing efforts to ensure the protection and recovery of the manatee; that questions relating to jurisdiction, legal authority, and exercise of that authority appeared to be continuing unresolved; and that the recovery team appeared to be inactive. On 8 March 1978, the Commission wrote the Service expressing these concerns and noting that the Service appeared to be taking little affirmative action to resolve problems threatening the manatee. The letter recommended that the Service immediately develop a strategy and schedule for attacking the various problems confronting the manatee and that a senior member of the Service's staff be assigned responsibility to oversee the effort. The letter also presented a list and description of specific issues to be considered in developing the strategy.

During the six months which followed, several significant steps were taken. In late March, the Fish and Wildlife Service, the Florida Department of Natural Resources, the Florida Audubon Society, and Sea World of Florida co-sponsored a West Indian manatee workshop at which certain mortality problems were described and several management recommendations developed. In early May, the Service responded to the Commission's March letter providing information on a number of points raised in the 8 March letter including the fact that the West Indian manatee recovery team had been re-organized and re-activated. On 28 June, the Service published proposed boating regulations for the Merritt Island National Wildlife Refuge in an effort to reduce boat-caused manatee mortalities. The Commission subsequently commented on the proposed regulations on 1 August 1978 expressing support for the effort, citing the need for similar efforts elsewhere, and raising questions with respect to the regulations' clarity and enforceability. In July, the State of Florida

enacted the Florida Manatee Sanctuary Act to provide, among other things, authority to regulate boats in certain areas where manatees congregate in winter months. The State also initiated an active manatee awareness campaign and education program. Finally, the Commission and its Committee of Scientific Advisors on Marine Mammals conducted, throughout this six-month period, a careful review of the manatee management situation and contracted for a report on the biological and human aspects of manatee protection and recovery (see Wray, P., 1978 in Appendix B).

Having completed its intensive review in consultation with the Committee of Scientific Advisors, the Commission, wrote the Service on 23 August 1978, noting that although encouraged by recent actions initiated by the Service and others, it remained concerned that the total problem was not being attacked with the urgency that the Commission believed critical. Further, in light of high mortality rates in 1977 and 1978, the letter noted that it was more important than ever to immediately and directly attack the problems causing mortality. After raising several questions and concerns relative to Federal/State coordination, enforcement, legal authorities, critical habitats, protection of manatees in Puerto Rico, recovery team activities, and other points, the Commission invited Service representatives to attend a September 1978 meeting to discuss the situation and address certain questions related to manatee management and research. The information provided by the Service during the meeting failed to convince the Commission and Committee that the Fish and Wildlife Service was taking effective action to protect and encourage the species' recovery, and, on 9 November, the Commission wrote the Assistant Secretary for Fish and Wildlife recommending that an intensive evaluation of the Service's manatee program be conducted as an initial emphasis of a broader review of the Department's overall marine mammal protection and conservation program.

In short, at the end of 1978, although some progress had been made, manatee mortality remained alarmingly high and all appropriate actions had not been and were not being taken by the Fish and Wildlife Service to cope with the matter.

In mid-January 1979, the Commission received from the Fish and Wildlife Service a preliminary draft manatee recovery plan for review and comment. After a review of the preliminary document by the Commission's staff, the Commission's Scientific Program Director suggested to the Service by memorandum of 29 January that the plan appeared to stress research rather

than management concerns and that circulation of the draft in its present form might result in unconstructive criticism which could delay completion and approval of the plan. Offering specific comments on the plan's contents and organization, it was suggested to the Service that it rewrite the plan before circulating it for technical review and comment.

On 23 January, the Fish and Wildlife Service published proposed rules on procedures for designating "Manatee Protection Areas" (50 CFR 17). Under the regulations for designating manatee protection areas, localized restrictions could be established for certain waterborne activities considered hazardous to manatees. After reviewing the proposed rules, the Commission in consultation with its Committee of Scientific Advisors on Marine Mammals, submitted comments on 22 February 1979 recommending that the Service: (1) add language incorporating Service regulations relating to the National Wildlife Refuge Systems, particularly the Merritt Island National Wildlife Refuge; (2) clarify language concerning the regulations' applicability to Puerto Rico and the U.S. Virgin Islands as well as Florida and its relationship to state and territorial laws and regulations; and (3) establish a section entitled "Permits and Exceptions" and include provisions to allow certain waterborne activities such as manatee aid or salvage, enforcement, and waterway maintenance. The final regulations published by the Service on 22 October 1979 reflected the Commission's concerns.

On 21 March 1979, the Commission appeared before the Senate Appropriations Committee which expressed a keen interest in and understanding of the manatee problem. The Committee requested that the Commission provide an outline of how additional funds might be usefully invested in helping to resolve the problems and this was done. Accordingly, in response to questions raised during and after the 21 March 1979 hearings before the Senate Appropriations Committee on how the Commission might constructively influence the manatee situation were additional funds made available, the Commission described and made known to both the Senate and House Appropriations Committees its general views on priority needs.

On 17 and 18 May 1979, Service representatives again met with the Commission and its Committee of Scientific Advisors to discuss activities related to the recovery of the manatee. The meeting was disappointing and questions posed in correspondence the preceding August continued to remain unanswered. The meeting further strengthened the Commission's conviction that many of the serious problems

were management-related and that adequate progress was still not being made. As a result, alternative ways of addressing the issues more directly were discussed, and it was agreed that the Commission's Executive Director would go to Florida early in the forthcoming winter season, when manatees would be congregated near warm water sources and particularly susceptible to human impacts, to undertake an on-site evaluation of the situation and discuss problems with many of the interested parties.

In April, the Commission received a copy of the revised technical draft manatee recovery plan for review and comment. It considered the document in consultation with its Committee of Scientific Advisors and submitted detailed comments to the Service on 25 July 1979. Finding the document to be a good beginning but in need of additional work before becoming really useful, the Commission recommended that the plan's content, format, and process for updating be revised to precisely identify specific actions and schedules, as well as resources, that the Service would commit to protect and encourage recovery of the manatee. To achieve the necessary specificity to provide clear direction for actions and to provide a plan amenable to periodic amendment and revision, the Commission recommended that appendices be included to describe: (1) the Service's organizational responsibilities including names, addresses, and duties of involved personnel; (2) the recovery team including names of members, team functions, and the Service's personnel and funding commitments to the team; and (3) specific task implementation plans detailing commitments for each recovery plan objective and task.

The appendix containing specific implementation plans was considered particularly important since the technical draft recovery plan did not include sufficiently detailed information to determine what specific actions would be undertaken, when, by whom, how, or with what resources. To clarify these matters and provide a clear sense of direction, the Commission recommended that the specific implementation plans detail and provide a task-by-task rationale for actions that would be taken to: minimize human-caused mortality and injury; identify and protect manatee habitats of special biological importance; assess and monitor population and habitat status; and minimize harassment and disturbance. Further, the Commission recommended that each implementation plan include, among other information: (1) a title reflecting the goal; (2) a brief description of the problems to be addressed; (3) appropriate background information; (4) a

description of the information needs and/or actions necessary to accomplish the purpose; (5) for each action, rationales indicating why that action is deemed the most appropriate means of solving the problems; (6) target initiation and completion dates; (7) estimates of personnel, financial, and logistic requirements for task performance; and (8) personnel, financial, and logistic support commitments by the Fish and Wildlife Service and other Federal and State agencies, organizations, and individuals. To illustrate the format and content of the envisioned specific implementation plan appendix, the Commission prepared and included a sample task plan.

Recommendations were also made to: re-order project objectives and tasks to better reflect the state of knowledge about manatees and the priorities for action; develop specific implementation plan appendices for actions relating to protection and recovery of manatees in Puerto Rico and the U.S. Virgin Islands; and provide for cooperative efforts with other nations in which manatees are found.

In late summer, the Commission learned that it was to receive a special Congressional research appropriation of \$100,000 in Fiscal Year 1980 for work on the West Indian manatee. Accordingly, the Commission and its Committee of Scientific Advisors immediately organized and convened an inter-agency planning meeting composed of representatives from relevant State agencies in Florida, the Fish and Wildlife Service, the scientific community, and environmental organizations to further describe research needs and other activities on which the appropriation could most profitably be invested. Meeting participants identified the following studies as among the most urgently needed: (1) development of a comprehensive research and management plan for the Crystal River area; (2) identification of essential manatee habitats outside of known winter refugia; (3) research to assess and characterize habitat areas identified as essential; (4) use of improved marking and tracking technology to document manatee movements and habitat use patterns; (5) improvement of techniques to age manatees for population studies; (6) research on physiological ecology; (7) assessment of the various types of incidental mortality and the extent thereof; and (8) identification of manatee vocal patterns.

In mid-November, the Commission received the draft revised West Indian manatee recovery plan for staff review, and comments were given the Service on 27 November. It was noted that although the revised draft did not yet include

the specific implementation plans recommended in the Commission's 25 July comments, the plan represented a substantial improvement over the earlier technical draft.

Also in mid-November, the Commission made known its decision to hold the annual meeting of the Commission and its Committee of Scientific Advisors in Tampa, Florida in late February. Invitations were issued to appropriate Federal agencies, State agencies, and other interested persons in November and December to give all participants adequate time to prepare for a thorough review of manatee issues and protection efforts. The meeting site was chosen to allow maximum participation by members of the public, representatives of all involved agencies -- both State and Federal, and representatives of interested environmental groups. A full day of the meeting was set aside for manatee discussions.

In December, the Commission's Executive Director went to Florida to re-evaluate the entire situation. He met with Federal and State research and management officials from a number of agencies as well as representatives of the scientific community, industry, and environmental groups. Additional information was collected with respect to research and management activities appropriate for funding from the Commission's special appropriation; a much better understanding of Federal/State and governmental/non-governmental working relationships was gained; and arrangements were discussed for the participation of agencies and individuals in the Commission's upcoming meeting. As a result of discussions, it became clear that: (1) management-related actions were perhaps even more urgently needed than additional research if one were ever to be able to make good use of the research already done and to be done; (2) the Fish and Wildlife Service needed an informed, competent, full-time manatee program coordinator/facilitator who could be expected to have and maintain good relationships with all interested parties; (3) the manatee program coordinator would be needed to maintain an on-site overview of manatee-related activities and to facilitate the development and implementation of the Service's manatee recovery activities; and (4) the Florida Department of Natural Resources had the interest, ability, competence, and enthusiasm necessary to undertake critically needed regulatory, enforcement, and educational activities and should be assisted in doing this.

In late December 1979, having reviewed the information developed at the Commission's September manatee research review and planning meeting and in light of the additional information collected by the Executive Director, the Commission tentatively determined that consideration should be given

and consultations undertaken with respect to investing the \$100,000 manatee appropriation in some of the following areas: (1) establishment in the Fish and Wildlife Service of a full-time manatee program coordinator to overview, facilitate, and report on research and management activities undertaken to protect and conserve the manatee; (2) first year support of a Florida Manatee Advisory Committee to advise the Executive Director of the Florida Department of Natural Resources on relevant research and management activities; (3) support of regional seminars for State enforcement personnel on key legal and biological issues pertaining to manatee protection; (4) supplemental support for the Florida Department of Natural Resources' manatee information and education program; (5) such supplemental support as might be necessary and possible for Federal and State programs to assess and monitor human-caused manatee mortalities and injuries, essential manatee habitats, and manatee populations; (6) development of methods and procedures for assessing manatee distribution and abundance, marking and tracking, and salvage/necropsy; (7) development of site-specific research and management plans for Crystal River, Riviera Beach/Hobe Sound, Blue Spring, and other areas in Florida; (8) characterization of feeding habits, food preferences, and feeding areas of manatees in Florida; (9) feasibility studies of manatee detection/repulsion systems; (10) assessment of manatee distribution, movements, and feeding areas relative to grass beds in the Riviera Beach/Hobe Sound area in Florida; and (11) studies concerning the physiological ecology of manatees.

At the end of 1979, the Commission remained concerned that Federal progress in addressing the broad range of manatee problems was proceeding at an unacceptably slow pace. It found cause for optimism, however, in the very positive and constructive attitude of the State of Florida.

Hawaiian Monk Seal (*Monachus schauinslandi*)

The Hawaiian monk seal (*Monachus schauinslandi*) is in grave danger of extinction. Furthermore, it may be the only member of the genus *Monachus* with a chance for surviving the 20th century. Of its congeners, the Caribbean species (*Monachus tropicalis*) is in all probability extinct, and the few remaining members of the Mediterranean species (*Monachus monachus*) live in areas subject to increasing disturbance and pollution. Thus, the fate of the genus may depend upon the ability of the United States to protect the Hawaiian species.

The Hawaiian monk seal inhabits a limited area on or around the coral atolls and islets of the Leeward Hawaiian Islands. Surveys conducted since the late 1950's indicate that there has been a substantial decrease in the population. While fewer than 700 seals were counted in 1977, 1,200 were seen in 1958. Furthermore, in 1978, 50 to 60 seals died on or near Laysan Island, perhaps as a result of ciguatoxin poisoning. Threats to the species include: disturbance and harassment by persons living on or visiting the Islands; commercial fishing in adjacent reef and open ocean feeding areas; disease; natural and man-made toxic substances; and shark predation.

The National Marine Fisheries Service has lead agency responsibility for protecting the monk seal and its habitat. Since a portion of the species range occurs in the Hawaiian Islands National Wildlife Refuge, the U.S. Fish and Wildlife Service also has certain responsibilities relative to the protection of the species and its habitat. Neither agency has developed an effective program for protecting and encouraging the recovery of the monk seal, and, in recent years, the Commission has recommended a number of research and management actions, including the designation of critical habitat and the constitution of a monk seal recovery team, to facilitate protection and recovery of the species. These recommendations are described in detail in the Commission's previous Annual Reports.

In September 1978, the Commission and its Committee of Scientific Advisors met in Honolulu to review and solicit comments on ongoing and planned efforts to protect the species and its habitat. Honolulu was chosen to allow local scientists and State officials, as well as Federal officials, to fully participate in the review. At the meeting, the Commission learned that: the National Marine Fisheries Service had no plans to constitute a recovery team or to develop a recovery plan; representatives of the State of Hawaii and the National Marine Fisheries Service had differing views with respect to the actions needed to protect and encourage the recovery of the species; and, while the analyses had not been completed, the National Marine Fisheries Service was doubtful that it would be able to determine the cause of the recent monk seal "die-off" on Laysan Island.

The Commission's Committee of Scientific Advisors, gravely concerned about the National Marine Fisheries Service's continued failure to develop and implement a comprehensive research/management plan, recommended that the Commission convene a group of experts to develop a comprehensive, goal-oriented research plan for the species. The Commission, acting on the Committee's recommendation,

convened a research/planning meeting (18-19 October 1978) of participants from State agencies in Hawaii, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the academic community. The participants reviewed available information on the biology and ecology of the monk seal, discussed information needs, and established an ad hoc group to develop a five-year research plan for the Hawaiian monk seal.

On 31 January 1979, the ad hoc group sent the Commission a draft report entitled "A Five-Year Research Plan for the Hawaiian Monk Seal - Results of an 18-19 October 1978 Research Planning Meeting". The report, noting that available information on the biology and ecology of the Hawaiian monk seal and the cause or causes of the observed population decline was insufficient to precisely describe actions needed to prevent further decline and encourage the species' recovery, outlined a five-year research plan designed to: (1) document trends in population size and productivity through a census and long-term mark/recapture program; (2) identify habitats of special significance by documenting known pupping and haul-out sites and by determining habitat-use patterns with the aid of acoustic and/or radio-tracking techniques; (3) investigate factors that might be affecting the survival or productivity of the species, including human disturbance, disease, shark predation, competition with fisheries for fish resources, and incidental take or injury during fishing operations; and (4) study captive animals so that a self-sustaining captive breeding population could be established if such measures become necessary.

The Commission reviewed the report in consultation with its Committee of Scientific Advisors and concluded that, while the report identified and, in most cases, justified the general categories of needed research, it did not identify research priorities, logistic requirements, or support personnel requirements. Nor did the report clearly indicate how research findings would be translated into management actions. The Commission also concluded that the primary research objective should be to: determine the cause or causes of the observed population decline; identify actions needed to increase monk seal survival and/or productivity; develop information required to reliably predict the effect of proposed human activities (e.g., commercial fishing, shipping, and tourism) on the population and its habitat; and monitor the population to determine the effectiveness of conservation measures. The Commission also determined that priority should be afforded to: recovering and examining Hawaiian monk seal carcasses to determine the

cause of death; developing a contingency plan for responding in the event of another monk seal "die-off" such as occurred at Laysan Island in 1978; continuing the study of monk seals on Laysan Island 1/; and compiling and evaluating available information concerning fisheries development and ciguatoxin poisoning, the possible benefits of a shark control program, marking and tagging studies, and captive maintenance.

By letter of 6 April 1979, the Commission forwarded its critique and a copy of the draft five-year research plan to the National Marine Fisheries Service. Citing the Service's failure to act on previous recommendations to constitute a recovery team, prepare a recovery plan, and designate critical habitat for the Hawaiian monk seal, the Commission recommended that the Service: immediately appoint a monk seal recovery team; develop a comprehensive, five-year research plan building upon the draft research plan and associated critique; promptly develop a comprehensive recovery plan; and identify and initiate high priority research without waiting for completion of the recovery plan. The letter also requested that the Commission be advised as to: the funds which the Service had budgeted or intended to budget for monk seal-related activities in fiscal years 1979-83; the specific monk seal-related research which the Service planned to conduct or support in fiscal years 1979-83; when the recovery team would be established and who would be appointed as members; the time table for developing the recovery plan; and what provisions were being made to involve representatives of the State of Hawaii, the Fish and Wildlife Service, and the academic community in the development, implementation, and up-dating of the recovery plan.

By letter of 4 May 1979, the National Marine Fisheries Service responded to the Commission's 6 April letter noting that: it was shifting lead responsibility for the monk seal from the National Marine Mammal Laboratory to the Southwest Regional Office and the Southwest Fisheries Center; the Service had a \$50,000 budget for monk seal-related activities in FY 79 but, because of budget cuts, funding would be reduced to zero in FY 80; it intended to seek a substantial

1/ On 22 February 1979, the Commission recommended that the Service provide funds to continue the monk seal study on Laysan Island during the 1979 field season. The Commission also offered to transfer up to \$10,000 to the Service to help defray the cost of the study.

funding increase for monk seal-related activities in the 1981 budget request; a draft environmental impact statement on critical habitat designation would be released for public review in mid-May; and, while the Service agreed with the Commission's recommendations concerning the development of a five-year research plan and immediate support of high priority research, it was delaying action until the recovery team had been appointed, met, and provided advice.

In May 1979, the Commission and its Committee of Scientific Advisors met in San Diego, California with representatives of the Service who advised the Commission that: the Draft Environmental Impact Statement concerning critical habitat designation was now expected to be distributed for public review on or about 15 June 1979; the Final Environmental Impact Statement, including proposed rules and regulations for critical habitat designation, would be released on or about 1 September 1979; there was little likelihood that the Service would reprogram funds for monk seal-related activities in fiscal year 1980; sufficient funds were available to convene the recovery team and the Service was in the process of selecting the team; the Southwest Fisheries Center would provide staff assistance with liaison and the operational workings of the recovery team; an advisory group, possibly including commercial fishermen, environmentalists, community representatives, the Navy, the Coast Guard and others, would be established to assist the recovery team with its work; preparation of the recovery plan was expected to begin in July 1979 and be completed within twelve months; several of the seal carcasses collected during the 1978 "die-off" on Laysan Island have tested positively for ciguatera poisoning, suggesting that ciguatera may have been the cause of the die-off; and, although responsibility for the monk seal had been transferred to the Southwest Region and the Southwest Fisheries Center, the Marine Mammal Laboratory of the Northwest and Alaska Fisheries Center, in cooperation with the Fish and Wildlife Service's National Wildlife Laboratory, plans to conduct a radio-tagging study on Kure Atoll as well as a pathological study to better determine the effects and possible treatment of ciguatera poisoning. The Commission also learned that the Service was having difficulty hiring a qualified biologist to lead the recovery team and that it had made no attempt to develop a contingency plan for responding to another "die-off" such as occurred on Laysan Island in 1978.

By letter of 17 May 1979, the Service advised the Commission that, in response to the Commission's 22 February 1979 recommendation, it had contracted for the continuation of the monk seal study on Laysan Island and that the State

of Hawaii had contributed \$2,500 to support the study. Referencing the Commission's 22 February letter, the Service asked if the Commission would consider transferring \$10,000 to the Service to help defray the cost of the study. The Commission viewed the Service's request as a positive step forward, and, on 1 June 1979, sent a proposed agreement to accomplish the transfer of funds. The agreement was signed on 25 June 1979.

In light of the positive steps which apparently were being taken by the Service, the Commission advised the Service, by letter of 12 June 1979, that it was encouraged by the Service's efforts to establish a recovery team, develop a long- and short-term research plan, provide immediate support for high priority research projects, and develop a comprehensive recovery plan. As a matter in need of immediate attention, however, the Commission noted that the critically endangered status of the Hawaiian monk seal warranted a reordering of funding priorities in the fiscal year 1980 budget. Accordingly, the Commission offered to assist the Service in reviewing and establishing research priorities. Finally, the Commission also questioned the advisability of delaying critically needed research until a recovery team leader had been selected.

The Service's 1 August 1979 response to the Commission's 12 June letter noted that: although the budget had been reduced, monk seal research would continue; the Service had committed staff time to evaluation of the monk seal program; support would be sought for high priority research; the delay in hiring a researcher to head the recovery team would not necessarily mean that critically needed research would not be undertaken concurrent with the development of the recovery plan; further research would depend upon locating additional funds; and the Commission's concern about the need to take immediate action was shared by the Service.

In late summer 1979, the Commission was notified that it would receive a special Congressional appropriation of \$100,000 for research on the Hawaiian monk seal in fiscal year 1980. The Commission immediately convened a broadly representative group of experts on 30 August 1979 to provide advice on how best to allocate the funds. Meeting participants, including representatives of the Commission, the Hawaii Department of Fish and Game, the National Marine Fisheries Service, the Fish and Wildlife Service, and the academic community, reviewed the research plan developed as a result of a Commission-sponsored meeting in October 1978 and identified priority research tasks.

Their report was used to develop a preliminary plan for investing the \$100,000 and this plan was forwarded to the National Marine Fisheries Service on 27 December 1979 for review and comment. At the same time, the Commission requested additional information on the Service's research program, and asked if the Service would be willing to undertake certain research tasks if funds were provided by the Commission. The Commission also forwarded the preliminary plan to the U.S. Fish and Wildlife Service for its review and comment.

The plan will be put in final form at the next meeting of the Commission and its Committee of Scientific Advisors on 21 and 22 February 1980, and implementation of the plan should provide the basis for developing the long-term research program needed to protect and encourage recovery of the species. The Commission also expects that the National Marine Fisheries Service will appoint and convene a Monk Seal Recovery Team, prepare a Monk Seal Recovery Plan, and release a Draft Environmental Impact Statement on the designation of critical habitat for the Hawaiian monk seal early in 1980.

California Sea Otter (*Enhydra lutris*)

The California sea otter, designated as "threatened" under the Endangered Species Act by the Fish and Wildlife Service in consultation with the Commission in January 1977, is confined to a relatively small segment of the central California coastline compared to its former range. It is considered to be particularly threatened by a potential large oil spill. Additional management issues result from the fact that sea otters eat abalone and other shellfish that are of commercial and recreational importance and there is, therefore, a potential conflict between sea otters and such fisheries.

At its May 1979 meeting, the Commission and its Committee of Scientific Advisors on Marine Mammals discussed issues relating to the California sea otter with representatives of the Fish and Wildlife Service, the State of California, and interested members of the public. The discussion focused on three general questions: what was being done to remove the threats to the California sea otter; what was being done to determine the nature and extent of the conflict between California sea otters and fisheries and to resolve any identified conflicts; and what was the process for gathering the necessary information, making the decisions, and taking appropriate actions to meet the preceding objectives. During the discussion, representatives of the Fish and Wildlife Service indicated that: the sea otter problem had

been treated as a low priority issue within the Service; it was now being afforded higher priority; and efforts would soon be undertaken to develop a recovery plan but decisions concerning the timing, content, and responsibility for development of the recovery plan had not yet been made.

Based upon the discussions at its meeting, the Commission wrote to the Director of the Fish and Wildlife Service on 23 August 1979 summarizing the results of those discussions and noting that it appeared that little had been done to achieve the goals of the Endangered Species Act and Marine Mammal Protection Act as they related to California sea otters and that neither these goals nor the process for achieving them were well-understood by the various agencies, organizations, and persons interested in resolving the sea otter problem. The Commission noted that the various aspects of the sea otter problem did not fall within the responsibility of any one program of the Service and it therefore requested the names of the key Service personnel involved in relevant planning and decision-making. The Commission also suggested that it would be desirable to assign one individual responsibility for overall direction and coordination of the Service's efforts relating to California sea otters and that the Service prepare and distribute periodic information reports describing the Service's recent efforts and progress achieved as well as its plans for the immediate future.

With respect to the recovery plan, the Commission requested in its letter information concerning who was or would be preparing the plan and the schedule for completion of the draft and final texts. The Commission also expressed the view that certain aspects of recovery plans and the process for amending and implementing them should be standardized and it therefore recommended that the comments and recommendations in this regard set forth in its letter of 25 July 1979 on the West Indian Manatee Recovery Plan (discussed earlier in this chapter) be adopted in developing the recovery plan for California sea otters. In addition, the Commission noted that the recovery plan should be designed to restore the sea otter population to optimum sustainable population levels and it noted that to do so will require the resolution of certain fundamental issues concerning sea otter/fishery conflicts as well as the potential adverse impacts of human activities on sea otters which the Service had not yet addressed.

The Commission noted in its letter that the sea otter issue offers an ideal opportunity to develop and implement an ecosystem-oriented management strategy and that well-

conceived, intensive efforts should be devoted to development of such a strategy as soon as possible. For this purpose, the Commission recommended that the Service undertake efforts to assemble and integrate the substantial amount of information relevant to sea otters, fishery resources and activities, habitat, and human activities that is available but not yet synthesized, and present it in a useful form which identifies available options for actions and information needs. The Commission noted that the objective of these efforts should be to develop a data base in visual and textual form to which all interested parties could refer and upon which they could all agree. The Commission urged the Service to set this as an immediate priority task so that efforts could be focused on evaluating the information and reaching agreement as to actions needed to resolve issues that have been the subject of prolonged, but thus far inconclusive and unproductive, debate.

In a further effort to catalyze action and to reach consensus on the questions that need to be answered, how to answer them most effectively and efficiently, and on the process by which to resolve those issues, the Commission convened a meeting with representatives of the Service, the California Department of Fish and Game, and the State's Sea Otter Scientific Advisory Committee on 13 December 1979 in California. Participants at the meeting agreed, among other things, that: a number of studies and other efforts could and should be undertaken; the Fish and Wildlife Service should be urged to develop a detailed description of certain actions to be undertaken, including the compilation and presentation of available information; actions to resolve the sea otter issue should not be delayed until completion of the Service's California sea otter recovery plan; the involved agencies should designate a principal contact person to facilitate planning and coordination of activities; and additional meetings of the group in the future would be desirable.

Although preliminary discussion of some of the points raised in the 23 August letter was undertaken at the 13 December meeting, a full response to the 23 August letter had not been received by the end of 1979.

Bowhead Whale (Balaena mysticetus)

Over-exploitation by commercial whalers reduced the bowhead whale to extremely low levels throughout its range. It has been totally protected from commercial whaling for more than 40 years, and it is listed as both "endangered" under the Endangered Species Act and "depleted" under the Marine Mammal Protection Act.

Although commercial exploitation of the Bering Sea population of bowheads did not begin until the mid-19th century, they have been hunted for subsistence purposes by Eskimos for centuries. Reported increases in the numbers of bowhead whales landed, killed but lost, and struck but lost by Alaskan Eskimos during the mid-1970's, however, led to increasing concern about the adverse impact of unregulated Eskimo hunting on the endangered bowhead population. This concern led to a decision by the International Whaling Commission (IWC) in June 1977 to ban the taking of bowhead whales for subsistence by all its member nations' people, including Alaskan Eskimos. Subsequently, in December 1977 and June 1978, the IWC modified the total ban in recognition of the subsistence and cultural dependence of Alaskan Eskimos upon bowheads, and established limited quotas for subsistence hunting during 1978 and 1979. Detailed discussions of the activities of the Commission and others with respect to this matter during 1977 and 1978 are presented in the Commission's Annual Reports for Calendar Years 1977 and 1978.

During 1979, the bowhead whale issue continued to be the subject of international and domestic efforts to meet the subsistence and cultural needs of Alaskan Eskimos while protecting this endangered population. These efforts, including actions by the IWC, research on the status and trends of the bowhead population and the potential adverse impacts of human activities, and determinations of the needs of Alaskan Eskimos for bowhead whales, are discussed below.

Eskimo Whaling during 1979

As discussed in the Commission's previous Annual Report, the IWC at its meeting in June 1978 established a limited quota for bowhead whales that allowed Alaskan Eskimos to either land up to 18 whales or strike up to 27 whales (including those landed), whichever comes first, in 1979. By the end of the year, 12 whales had been landed and a total of 27 whales, including the 12 landed, had been struck. For reference, the estimated numbers of bowhead whales taken by Alaskan Eskimos and the applicable quotas since 1976 are set forth below:

<u>YEAR</u>	<u>IWC QUOTA</u>	<u>WHALES TAKEN</u>
1976	No quota established	48 landed and a total of 91 struck (48 landed + 8 known killed but lost + 35 struck and lost)
1977	No quota established	29 landed and a total of 108 struck (29 landed + 79 struck and lost)
1978	14 landed or 20 struck, whichever comes first	12 landed and a total of 18 struck (12 landed + 6 struck and lost)
1979	12 landed or 27 struck, whichever comes first	12 landed and a total of 27 struck (12 landed + 15 struck and lost)

Actions by the IWC During 1979

Meetings of Panels of Experts and the Technical Committee Working Group on Subsistence/Aboriginal Whaling

As discussed in the Commission's previous Annual Report, the IWC adopted a Resolution at its 30th annual meeting in June 1978 calling upon a working group of its Technical Committee to examine the subsistence/aboriginal whaling problem and to develop proposals for a regime for the aboriginal bowhead hunt in Alaska and, if possible, a regime or regimes for other aboriginal whaling as well.

In order to prepare relevant background information and advice for consideration by the Technical Committee Working Group, panel meetings of experts on wildlife science, nutrition, and cultural anthropology were convened in Seattle, Washington on 5-9 February 1979. The panels of experts devoted particular attention and effort to the Eskimo bowhead hunt in Alaska and concluded, among other things that: in strictly biological terms, the only safe course is to provide complete protection from hunting for bowhead whales until the population has made a satisfactory recovery; in nutritional terms, the Alaskan Eskimos have no unusual nutritional requirements that could not be satisfied by a well-balanced diet of other food sources and any risk to the survival of the bowhead whale that may result from the continuation of aboriginal whaling cannot be justified on nutritional grounds; any quotas or other changes relating to the bowhead hunt that are forced upon the Eskimos will have a significant impact upon their cultural well-being; and any such quotas or other controls should be developed and introduced in

consultation and close cooperation with the Eskimo communities to the fullest extent possible.

The reports of the panels of experts were considered at the meeting of the Technical Committee Working Group on Subsistence/Aboriginal Whaling which was convened in Washington, D.C. on 3-5 April 1979. The Working Group concentrated most of its efforts on the bowhead whale problem and recommended an amendment of the Schedule and a Resolution which would have established quotas for 1980 and 1981 of up to 20 whales landed or 27 struck, whichever occurs first, and a regime by which the needs of Eskimos for bowhead whales would be determined, research and management programs would be adopted by the United States, and quotas would be set for 1982 and thereafter.

Meeting of the Scientific Committee

At its meeting in late June and early July 1979, the Scientific Committee's Subcommittee on Protected Species reviewed the information submitted by the United States on the conduct and results of its bowhead whale research program in 1979 as well as other information and analyses relating to the Bering Sea population of bowhead whales. The Subcommittee noted that as a result of unsafe ice and unfavorable weather conditions, efforts to observe whales during the spring 1979 census had been possible during only 39 percent of the period between 15 April and 30 May, as compared to 86.7 percent coverage during the 1978 census. The Subcommittee noted that analyses indicated that it was necessary to obtain at least 86 percent coverage in order to yield a statistically reliable estimate of abundance based upon sightings and, under these circumstances, accepted as the best estimate of current population size the figure of 2,264 whales which was based upon the results of the 1978 census.

The Subcommittee also noted its continuing concern about the small number of calves seen in the course of census efforts and indicated that a correction for the number of calves that may have been missed in 1978 and 1979 suggested that the total number of calves may be as low as 2.5 percent - 3.5 percent of the total population, i.e., only 57-79 calves in the population of 2,264 whales. It noted that if these estimates of gross recruitment were correct and if, as it appeared, the Alaskan Eskimo hunt has killed an average of 45 sexually immature whales during the period 1973-1978 (assuming 50 percent of the animals struck and lost subsequently died), then a very high proportion of the net recruitment to the adult population had been removed over these years and, as a result of the reduction in recruitment, the population can be expected to decline even in the absence of any kills. In light of these considerations, the Subcommittee expressed the view that the safest course for the survival of the bowhead population is to reduce the take in the Alaskan Eskimo hunt to zero.

The Scientific Committee adopted the report of its Subcommittee on Protected Species and recommended to the IWC again, for the fourth consecutive time, that from a biological point of view the only safe course is for the kill of bowheads from the Bering Sea stock to be zero. It noted that if the present estimates of gross recruitment, based upon the observed number of calves, are accepted, the population will decline even in the absence of catches, and it therefore recommended that every effort be made to confirm or improve the validity of the estimate of gross recruitment.

Meeting of the IWC

The members of the IWC considered the bowhead whale issue at their meeting in July 1979 with reference to the reports of the Technical Committee Working Group and the Scientific Committee. By majority vote, the Technical Committee adopted a proposal to allow a catch in 1980 of 18 landed or 27 struck, whichever occurs first. In plenary session, a proposed amendment by Australia, seconded by New Zealand, to set the quota at zero was defeated by a vote of 6 in favor and 8 against with 9 abstentions. The Technical Committee's recommendation for a quota of 18 landed or 27 struck also failed to receive the necessary three-fourths majority support with a vote of 13 in favor, 5 against, and 5 abstentions. The United States, emphasizing the need to achieve a balance between the interests of the affected whales and Eskimos as additional information is gathered and evaluated, proposed a quota for 1980 of 18 landed or 26 struck and this proposal, seconded by the Republic of Korea, was adopted by a vote of 12 in favor and 4 against, with 7 abstentions.

In addition to the Schedule amendment setting a quota for 1980, the IWC also adopted a Resolution incorporating most of the principles developed by the Technical Committee Working Group but deferring implementation of the subsistence/aboriginal whaling regime until completion of scientific analysis and until such time as the stock will not be subjected to undue risk. The Resolution called upon the United States to determine and document annually to the IWC the needs of the Eskimos for bowhead whales based upon the following factors: (1) importance of the bowhead in the traditional diet; (2) possible adverse effects of shifts to non-native foods; (3) availability and acceptability of other food sources; (4) historical take; (5) the integrative functions of the bowhead hunt in contemporary Eskimo society, and the risk to the community identity from an imposed restriction of native harvesting of the bowhead; and (6) to the extent possible, ecological considerations. The IWC also endorsed the recommendation of the Scientific Committee that efforts to confirm the validity of the estimate of the the gross recruitment rate be pursued.

Determination of Need

On 30 November 1979, Under Secretary of the Interior James Joseph wrote to the Marine Mammal Commission noting that the Resolution adopted by the IWC at its meeting in July 1979 called upon the United States to annually document the six factors relating to needs of Alaskan Eskimos for bowhead whales and that the development of this annual documentation will require a study for the formulation of baseline data. Under Secretary Joseph indicated in his letter that the Department of the Interior would assume the role of leading the development of this study and invited representatives of the Commission to join with representatives of other interested federal agencies, the State of Alaska, and the Alaska Eskimo Whaling Commission in an advisory committee to assist the Department in planning the study, identifying possible study participants, and providing advice during the conduct of the study.

The Commission responded by letter of 11 December 1979 indicating that representatives of the Commission would be pleased to serve on the advisory committee. The Commission noted that the Department's study must be designed to determine the need of Alaskan Eskimos for bowheads and that it must be available for the next meeting of the IWC in July 1980. Noting that the determination and documentation of need will not be an easy task, the Commission requested as much information as possible concerning the Department's proposed outline, schedule, and plans for funds and personnel to be devoted to the study so that the Commission could be of as much help as possible in contributing to the success of the effort.

Research Planning and Coordination

Under the provisions of the Marine Mammal Protection Act and the Endangered Species Act, the National Marine Fisheries Service conducts biological research relating to the status and trends of the bowhead whale population as well as the potential impacts of human activities on the population and its habitat. With respect to the potential adverse impacts of outer continental shelf oil and gas development activities, the Department of the Interior's Bureau of Land Management has responsibility under the Outer Continental Shelf Lands Act for developing information to predict, detect, and mitigate adverse impacts on bowhead whales and their habitat and it is required by Section 7 of the Endangered Species Act to consult with the National Marine Fisheries Service concerning the potential adverse impacts of those activities. The Commission's efforts during 1977 and 1978 to review the various biological research activities conducted pursuant to these authorities and to assist in the development of an effective, coordinated bowhead whale research program are discussed in detail in its Annual Reports for Calendar Years 1977 and 1978. Its activities with respect to this matter in 1979 are summarized below.

As discussed in the Commission's previous Annual Report, representatives of the Commission and the National Marine Fisheries Service met with representatives of the Bureau of Land Management on 30 December 1978 to discuss the Bureau's existing and proposed research commitments and its on-going efforts to coordinate its research activities with those of the National Marine Fisheries Service. The Bureau's bowhead whale research program had not yet been finalized at that time and it was agreed that the Bureau would finalize and transmit its plan to the Commission for review and comment before committing any additional funds to bowhead whale research efforts.

By 5 March 1979, the Commission had not received the Bureau's bowhead whale research plan and it therefore wrote the Bureau indicating that the plan had not been received and that the Commission was concerned that the Bureau may have invested funds in bowhead whale research that was not well-conceived, planned, or justified. Based upon this concern, the Commission repeated its recommendation transmitted by letter of 20 November 1978 that the Bureau defer investing funds in bowhead whale research until it had been determined that the research plan was well-conceived and well-justified.

In response to its letter of 5 March, the Commission received copies of a revised research proposal entitled "Project Whales" that had been submitted to the Bureau by the Naval Arctic Research Laboratory (NARL) in response to a request by the Bureau. The Commission's preliminary review of the proposal indicated that: the proposal was not fully responsive to the work statement that had been prepared by the Bureau; the Bureau's work statement was not fully responsive to the recommendations made by the National Marine Fisheries Service pursuant to Section 7 of the Endangered Species Act; the National Marine Fisheries Service's recommendations were not as detailed and as well-justified as would have been desirable; the research program proposed by NARL would not provide all of the information needed to determine how oil and gas development activities might affect bowhead whales; parts of the NARL proposal were duplicative of work being conducted or planned by the National Marine Fisheries Service; and all of the information needed to determine how oil and gas development activities might affect bowhead whales would not be available in advance of the lease sale which was scheduled for December 1979. Based upon this preliminary review, the Commission recommended by letter of 22 March 1979 that the Bureau: postpone the Beaufort Sea lease sale until there was sufficient information to be confident that the proposed action would not have an adverse impact on the bowhead whale; not fund the "Project Whales" proposal as written; and initiate further consultations with the National Marine Fisheries Service pursuant to Section 7 of the Endangered Species Act to determine information and research needs more precisely.

By letter of 23 March 1979, the Bureau requested the Commission's comments on the Draft Environmental Impact Statement on the Proposed Federal/State Oil and Gas Lease Sale in the Beaufort Sea. By letter of 26 March 1979, the Bureau also provided additional information about its plans and funding commitments for bowhead whale research in fiscal year 1979, indicating that: the Bureau intended to commit a total of \$425,000 for endangered whale research in FY 1979; in early February, the Bureau had signed an interagency agreement with the Naval Ocean Systems Center to provide personnel and equipment for a field study to be conducted in the spring of 1979; and, in April 1979, the Bureau expected to sign an interagency agreement with the Office of Naval Research for the conduct of the field study and to award a contract to the Alaska Eskimo Whaling Commission to obtain unrecorded information on the bowhead whale.

Representatives of the Commission, the National Marine Fisheries Service, and the Bureau of Land Management met again, in early April, to review the agencies' research plans and to determine how they might be better coordinated. During this meeting, the Commission's representative noted that both agencies were planning to collect biological specimens from bowhead whales taken by Alaskan Eskimo subsistence hunters and that cooperation and coordination of research could and should be facilitated by the development of a written interagency agreement concerning this and other aspects of their bowhead whale research programs. It was agreed that a written interagency agreement would be desirable and that representatives of the Bureau's Alaska OCS Office and the Service's National Marine Mammal Laboratory should meet as soon as possible to discuss and agree upon points to be included in such an interagency agreement. Representatives of the Bureau and the Service subsequently met in Seattle, Washington and, on 13 April 1979, a draft letter of agreement concerning coordination of the agencies' bowhead whale research programs was transmitted for consideration by the respective agencies in Washington, D.C. The final text of the letter of agreement was signed by representatives of both agencies and entered into force on 26 June 1979.

By letter of 11 June 1979 to the Bureau, the Commission transmitted its detailed comments on the Draft Environmental Impact Statement for the Proposed Federal/State Oil and Gas Lease Sale in the Beaufort Sea (discussed in Chapter XI) and further comments on the related research proposal by the Naval Arctic Research Laboratory. In its comments on the research proposal, the Commission noted that: the proposal was a compendium of more or less independent proposals dealing with a variety of subjects; the methods for collecting and analyzing data were not described in sufficient detail to judge the quantity and quality of information that likely would be forthcoming if the study were funded; much of the proposed work constituted "basic" biological research and was not designed specifically to provide the information needed to predict how offshore oil and gas development activities

might affect bowhead whales; and some elements of the proposed work were duplicative of that being conducted and planned by the National Marine Fisheries Service. Shortly thereafter, by letter of 13 June 1979, the Commission transmitted to the National Marine Fisheries Service its detailed comments on the "threshold examination" concerning the possible effects of the proposed Beaufort Sea lease sale on bowhead whales which had been prepared and transmitted to the Bureau by the Service pursuant to Section 7 of the Endangered Species Act. The Commission noted that the Service had correctly determined that available information was insufficient to predict possible first- or second-order impacts of the proposed action on bowhead whales and that additional research would be needed before such a determination could be made, but that the Service had failed to identify the specific information needs and to advise the Bureau that there was virtually no possibility that all of the information needed could be obtained before the lease sale scheduled for December 1979. Based upon these considerations, the Commission recommended in its letters of 11 and 13 June that the Bureau postpone the Beaufort Sea lease sale and that the Bureau and the Service consult to: identify the specific information needs; determine and describe the most cost-effective methods for obtaining the needed information; and implement a coordinated research program to obtain, analyze, and evaluate that information.

Although the National Marine Fisheries Service and the Bureau of Land Management both concurred with the Commission's view that further consultations were needed, neither agency was able to effectively and promptly follow-up on the Commission's recommendations. Therefore, the Commission, in consultation with the Bureau of Land Management and the National Marine Fisheries Service, organized and convened a meeting in Seattle, Washington on 15-17 August to review and develop plans for cetacean research in the Beaufort Sea and other offshore Alaska areas. The meeting was attended by representatives of the Commission, the Bureau of Land Management, the National Marine Fisheries Service, the Fish and Wildlife Service, the State of Alaska, and the Alaska Eskimo Whaling Commission. The participants at the meeting identified the nature and extent of needed research and it was agreed that representatives of the National Marine Fisheries Service and the Bureau of Land Management would draft and circulate multi-year research plans for review and comment.

Pursuant to the agreement reached during the 15-17 August meeting, representatives of the Bureau prepared a multi-year research plan for bowhead whales and, by letter of 5 October 1979, transmitted it to the National Marine Fisheries Service with a request that the Service "consider formally endorsing the plan". The Commission also received a copy of the plan and, by letter of 25 October 1979, advised the Bureau that, while the plan was basically sound, the research program outlined in the plan would not provide all of the information needed to predict, mitigate, and/or monitor the possible first- or second-order effects of offshore oil and gas development activities on bowhead whales.

The Commission also advised the Bureau that the program plan should be expanded to provide for annual or more frequent program reviews and, as appropriate, for follow-up studies to detect effects on bowhead whales if it were determined that the proposed Beaufort Sea lease sale would not pose an unacceptable risk to bowhead whales and if the lease sale were conducted.

On 8 November 1979, the National Marine Fisheries Service transmitted its proposed fiscal year 1980 bowhead whale research plan to the Commission for review and comment. By letter of 14 November, the Commission requested that the Service provide additional information concerning the budget and arrangements that had been made to coordinate the Service's program with the program being supported by the Bureau of Land Management. The letter also noted that several of the studies being planned by the Service appeared to be similar to studies being planned by the Bureau and suggested that further consultations be held with the Bureau to insure that both programs were well-conceived and coordinated.

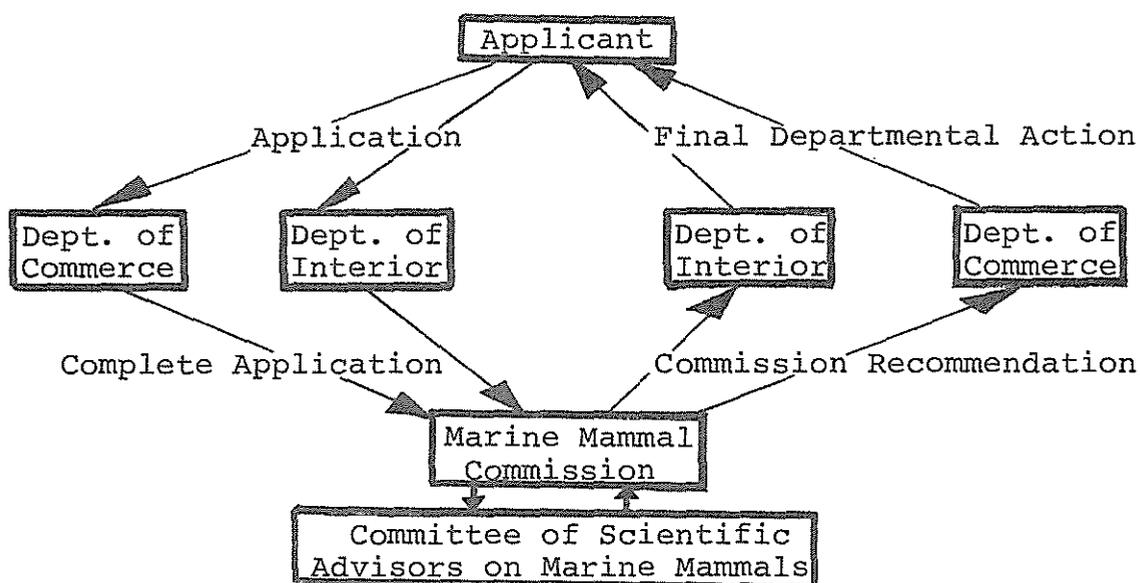
On 16 November 1979, the Commission received a copy of the National Marine Fisheries Service's response to the Bureau's 5 October letter requesting that the Service consider formally endorsing the Bureau's multi-year research plan. The Service's response noted that it endorsed the major objectives of the Bureau's plan but that it was unable to comment on specific elements of the plan because it did not include budget information or descriptions of the methods that would be used to collect and analyze data. The Service's response also noted that several of the studies being planned by the Bureau were similar to studies being planned by the Service, and urged that the Service and the Bureau formalize a new letter of agreement "with regard to (1) studies to be conducted by each agency concerning biological parts, and (2) remuneration for those parts to appropriate Eskimo whalers".

On 20 November 1979, the Commission wrote to both agencies and requested that it be advised as to what steps were being taken to finalize a new letter of agreement and to coordinate their research programs. By letter dated 30 November 1979, the Bureau advised the Commission that it and the Service had agreed to modify the existing letter of agreement, rather than develop a new letter of agreement, and that representatives of the two agencies planned to meet in February 1980 to coordinate the two research programs.

CHAPTER VII

PERMIT PROCESS

The Marine Mammal Protection Act places a moratorium, with certain exceptions, on the taking and importing of marine mammals and marine mammal products. One exception is the provision for the issuance of permits by either the Secretary of Commerce or the Secretary of the Interior, depending upon the species of animal involved, for the taking of marine mammals for purposes of scientific research or public display. Prior to the issuance of a permit, the application is reviewed by the Commission in consultation with its Committee of Scientific Advisors on Marine Mammals. The following is a schematic representation of this permit review process.



Application Review

The permit application and review process involves three stages: 1) receipt and initial review of the application at the Department, publication of a notice of receipt of application in the Federal Register, and transmittal to the Commission; 2) review of the application by the Commission and transmittal of its recommendation to the Department; and 3) final processing by the Department, including consideration of all comments and recommendations of the Commission and the public, resulting in the approval or denial of the application. The total review time (initial receipt of application until final Departmental action) depends on many factors including: the sufficiency of the information provided by the applicant; special actions, such as inspecting an applicant's marine mammal holding facilities, that may be warranted before reaching a decision; and the efficiency and thoroughness of those responsible for review.

During 1979, the Commission made recommendations on 28 applications submitted to the Department of Commerce and 5 applications submitted to the Department of the Interior. The Commission's average review time for complete applications was 30 days (median, 30 days). Not included in the preceding statistics are recommendations on two applications (one per Department) which were still awaiting final Departmental action and two applications which were under Commission review at year's end.

The Commission, in consultation with its Committee of Scientific Advisors, also made recommendations on five requests to modify permits and one request to modify and proceed with the next phase of authorized activities after review of the permittee's progress reports by the Department, in consultation with the Commission. The average time required for Commission review of these matters was 22 days.

Based upon applications on which the Commission and the Departments took final action in 1979, applications submitted to the Department of Commerce were processed in an average of 73 days (median, 67 days), while those submitted to the Department of the Interior were processed in an average of 89 days (median, 110 days). These figures, when compared to 1978 calculations of 93 days for Commerce and 139 days for Interior, represent reductions in processing time of 21.5 percent and 36 percent, respectively, in 1979. If calculated from the date of receipt of a complete application, the average processing times for the Departments were 62 and 55 days, respectively.

Improvements in the Administration of the Permit Process

As noted in the Commission's previous Annual Report, the Department of Commerce developed and implemented several useful improvements in the permit process during 1978, including instructions to permit applicants, a "collector of record system", and computerization of permit data to help in identifying problems in the permit system, monitoring compliance with permit requirements, and monitoring the number of animals removed from specific marine mammal populations. These efforts to improve the administration of the permit system were continued during 1979 and resulted in a further reduction in the permit processing time, as noted above, and facilitation of the permit process for both the applicants and reviewers.

Unlike the Department of Commerce, the Department of the Interior had not developed instructions to permit applicants, a "collector of record" system, or computer or other capabilities to monitor permit activities and the problems with the Department of the Interior's administration of the permit system, noted in the Commission's previous Annual Report, remained unresolved through the spring of 1979.

On 9 May 1979, the Commission wrote to the Fish and Wildlife Service noting that: the problems affecting the Service's administration of the permit system remained unresolved and the Commission's recommendations for changes and improvements had not been adopted; permit applications transmitted by the Service to the Commission for review invariably demanded an inappropriate and unnecessary expenditure of time, effort, and funds to resolve difficulties that could and should have been resolved by the Service; the Commission could not continue to devote such substantial resources to these activities; and it was time for the Service to assume and discharge greater responsibility for both the administrative and substantive aspects of the permit process. In an attempt to remedy some of these difficulties, the Commission proposed that the consultative process be modified to require the Service to transmit to the Commission an indication of its proposed decision on the application and reasons therefor for consideration and comment by the Commission, thereby placing the burden on the Service to conduct its own detailed analysis of the adequacy of the information and other aspects of the application and reaching its best judgment early in the process, rather than relying so heavily upon the Commission. The Commission requested that the Department of Commerce also adopt this modification of the consultative process, in order to maintain consistency in the permit process.

The Fish and Wildlife Service responded by letter of 22 June 1979 indicating that: the Service agreed that improvements continued to be needed in the permit system; the Service had delayed a revision of its regulations governing permit applications which had been recommended by the Commission because of what it felt were more pressing problems; the Service was preparing changes in the regulations which would remedy some serious deficiencies in the present regulations and which should be in effect within six months; the Service did not intend to implement the Commission's recommended change in the consultative process because it would not serve to expedite the process and could result in additional delays; and the planned revision of the regulations, including those relating to requirements for information in permit applications, should assist the Commission with the problem it had identified.

Representatives of the Commission met with representatives of the Fish and Wildlife Service and National Marine Fisheries Service on 3 July 1979 to discuss the proposed modification of the consultative process and other potential means of facilitating the permit process. Representatives of the three agencies agreed to a compromise approach pursuant to which each Service would prepare and transmit a summary analysis, in standardized checklist format, of each permit application it transmits to the Commission for review. Representatives of the Fish and Wildlife Service developed and circulated a draft checklist and the National Marine Fisheries Service and Commission submitted comments and recommendations on that draft

in late August. A final version of the checklist was distributed by the Fish and Wildlife Service in mid-December and it is expected that both Services will utilize this standard checklist in reviewing applications as well as advising applicants of the information that is needed. No action had been taken by the Fish and Wildlife Service by the end of 1979 to revise its regulations governing permit applications.

Another improvement in the administration of the permit system resulted from the implementation, on 20 December 1979, of the Department of Agriculture's Standards and Regulations Governing the Humane Handling, Care, Treatment, and Transportation of Marine Mammals (discussed in Chapter VIII). The uniform Standards, promulgated and administered by the Department of Agriculture under the Animal Welfare Act in response to the recommendations of the Commission, are now incorporated as conditions of all permits authorizing the taking of live marine mammals for public display or scientific research issued by the Fish and Wildlife Service and the National Marine Fisheries Service under the authority of the Marine Mammal Protection Act. Any inconsistent conditions relating to the humane handling, care, treatment, and transportation of captive marine mammals that were imposed by permits issued prior to 20 September 1979 are superseded and replaced by the new Standards, and permit holders have been notified accordingly.

CHAPTER VIII

MARINE MAMMAL MAINTENANCE STANDARDS AND REGULATIONS

On 20 September 1979, the Department of Agriculture's Standards and Regulations for the Humane Handling, Care, Treatment, and Transportation of Marine Mammals went into effect. These standards, promulgated by the Department of Agriculture under the Animal Welfare Act in response to the Commission's recommendations of 20 October 1975, were the subject of lengthy and extensive correspondence, consultation, and rulemaking which are discussed in the Commission's previous Annual Reports, and include most of the Commission's recommendations transmitted in the course of that process.

The Standards and Regulations require dealers, research facilities, exhibitors, operators of auction sales, carriers, and intermediate handlers to comply with minimum standards relating to the various aspects of maintenance and transportation of marine mammals in captivity. All such persons or facilities maintaining marine mammals in captivity in the United States must obtain a license from the Department of Agriculture's Animal and Plant Health Inspection Service and must maintain those marine mammals in compliance with the Standards and Regulations unless a variance has been obtained to allow a limited time for modification or construction of new facilities or other actions necessary to achieve full compliance with the Standards.

Although administration and enforcement of the Standards and Regulations are the direct responsibility of the Animal and Plant Health Inspection Service under the Animal Welfare Act, coordination of these activities with those of the National Marine Fisheries Service and Fish and Wildlife Service relating to scientific research and public display permits is both necessary and desirable. For this purpose, a cooperative agreement was concluded among the Animal and Plant Health Inspection Service, the National Marine Fisheries Service, and the Fish and Wildlife Service on 20 September 1979. This cooperative agreement detailing each agency's responsibilities and authorities under the Animal Welfare Act and the Marine Mammal Protection Act is designed to facilitate coordinated administration and enforcement of the provisions of the two Acts, ensure uniformity, and avoid duplication of effort.

The Commission will continue to consult and cooperate with the Department of Agriculture as well as the National Marine Fisheries Service and Fish and Wildlife Service during 1980 concerning the implementation of the Standards and Regulations.

CHAPTER IX

INTERNATIONAL ASPECTS OF MARINE MAMMAL PROTECTION AND CONSERVATION

Section 108 of the Marine Mammal Protection Act directs the Departments of Commerce, Interior, and State, in consultation with the Commission, to seek to further the protection and conservation of marine mammals under existing international agreements and to take such initiatives as may be necessary to negotiate agreements necessary to achieve the purposes of the Act.

The Commission's activities in 1979 with respect to conservation and protection of marine mammals in the Southern Ocean, the International Whaling Commission, and the Interim Convention for the Conservation of North Pacific Fur Seals are discussed below.

Conservation and Protection of Marine Mammals in the Southern Ocean

The Southern Ocean supports at least thirteen species of seals and whales, several of which are or were in danger of extinction as a consequence of unregulated or poorly regulated sealing and whaling. Commercial sealing in the Southern Ocean has ceased and regulation of whaling has improved, and these activities no longer pose as serious a threat as they once did to either the continued existence or well-being of these species. Conversely, developing fisheries, particularly the fishery for Antarctic krill (Euphausia superba), and the possibility of exploitation of offshore oil and gas resources may pose new and perhaps more serious threats to marine mammals and other biota of the Southern Ocean.

For a comprehensive discussion of the Southern Ocean ecosystem, the reader is referred to a "Review of Information Regarding the Conservation of Living Resources of the Antarctic Marine Ecosystem", a report done under contract to the Marine Mammal Commission and available through the National Technical Information Service (see Appendix B). As noted in the "Review" and previous Commission Annual Reports, Antarctic

krill occupies a central role in the Southern Ocean food web. It is the dominant herbivore in the food web and the principal component in the diets of: fin, blue, humpback, and minke whales; crabeater and Antarctic fur seals; Adelle, chinstrap, macaroni, and rockhopper penguins; several other species of seabirds; and several species of fishes and squids. Some of these are eaten in turn by sperm whales, killer whales, leopard seals, etc.

The biology and ecology of krill and krill-dependent species are not well documented. One cannot now accurately predict either how much krill can be harvested annually without adversely affecting the krill population(s) and/or the species dependent upon it or how these species and other components of the Southern Ocean ecosystem might be affected by offshore oil and gas development. Likewise, available baseline information and existing monitoring programs are inadequate to detect changes in the distribution, abundance, or productivity of krill, whales, seals, etc. that may result from exploitative fisheries or hydrocarbon recovery-related activities. As a result, the Commission has, since 1975, undertaken a continuing review and made numerous recommendations concerning the needs for a comprehensive, biological/ecological Southern Ocean research program and international agreements to regulate fisheries and offshore oil and gas activities in the Southern Ocean. Activities from 1975 to 1978 are described in earlier Annual Reports.

The Living Resources Convention

As noted in the Commission's 1978 Annual Report, the informal meetings of the Antarctic Treaty Consultative Parties held in Washington, D.C. (18-26 September 1978) failed to produce an acceptable draft convention. At further informal meetings held in Bern, Switzerland (12-16 March 1979) and in Washington, D.C. during the Xth Antarctic Treaty Consultative Meeting (17 September to 5 October 1979), tentative agreements on the remaining issues were reached. It now seems likely that the final diplomatic conference to conclude the Convention will be held in the Spring of 1980. At the Xth Consultative Meeting, the Parties also adopted a recommendation reconfirming their commitment to the conclusion and early entry into force of the Convention.

Research-Related Issues

As noted in the Commission's Annual Report for 1978 (pp. 71-72), the Commission wrote to the National Science Foundation on 14 December 1978 and recommended that the

Foundation convene one or more groups of experts to render scientific judgments with respect to: a) the adequacy of the conservation principles in the draft Convention developed at the special consultative meetings; b) the establishment of ecologically sound quotas, including consideration by areas, of krill harvest in case such information might be needed; c) those data which the U.S. should insist be required from vessels engaged in either experimental or commercial fishing in order to develop needed information; d) appropriate actions in light of the SCAR/SCOR plan for Biological Investigations of Marine Antarctic Systems and Stocks (BIOMASS); e) the development of a long-term Southern Ocean research program with clearly defined objectives, carefully derived cost estimates, and a statement of ship and aircraft support needs; and f) essential conservation considerations for inclusion in any convention that might be negotiated to govern the exploration for and exploitation of non-living resources. The Commission also recommended that the Foundation augment its scientific representation on the U.S. delegation involved in negotiating the Living Resources Convention.

To facilitate identification and implementation of needed research programs, the Commission also developed and, with its 14 December letter, sent the Foundation a paper on "Research Needed to Insure Conservation of Southern Ocean Resources". After commenting on the general need for a comprehensive, multi-national research program in the Southern Ocean, the paper described information needs, research objectives, and research priorities for various components of the Southern Ocean ecosystem. With respect to whales, for example, it noted that several endangered species of baleen whales depend upon krill, that krill fishing is likely to be concentrated in the major feeding grounds of these whales, that fishing likely will occur during those months when the whales are present and feeding, and that fishing effort most likely will be focused on the same kinds of high-density krill swarms upon which baleen whales are reported to feed. Noting that severely depleted whale populations could be affected adversely by even low levels of krill harvest, the paper suggested that high priority be assigned to assessing and monitoring the status of krill-eating whales and that these efforts be focused in the Scotia and Bellingshausen Seas where the krill fishery presently is focused.

On 8 January 1979, the Commission again wrote the Foundation to underscore the importance and urgency of acting promptly on the recommendations set forth in the

Commission's 14 December 1978 letter. Noting that informal consultations might occur in March or earlier and that the "decisive" meeting on the Convention was expected to take place in May or June 1979, the letter urged the Foundation to complete the recommended review of the draft Convention for scientific acceptability by late February at the outside so that there would be adequate time to develop or amend position papers in advance of the informal consultations to be held in March. With respect to its recommendation concerning the establishment of ecologically sound quotas for krill harvest and interim measures, the Commission noted that the work begun by the Ad Hoc U.S. Scientific Committee in June of 1978 should be completed by the middle of March, at the latest, so that the results would be available for discussion well in advance of the decisive meeting. The letter also noted the close relationship between the U.S. Antarctic Research Program and the international BIOMASS program and that the Foundation might wish to seek the expert advice of the National Academy of Sciences' Polar Research Board with respect to both programs. In this regard, the Commission offered to consider transferring funds to the Foundation should it wish to ask the Polar Research Board to examine this question.

On 11 January 1979, the Commission's Scientific Program Director met with representatives of the National Science Foundation to elaborate and discuss the views set forth in the aforementioned letters of 14 December 1978 and 9 January 1979. During the course of these and other discussions, the Commission learned that the Foundation would take no action with respect to the Commission's recommendations before late February when the Director of the Division of Polar Programs would return from the Antarctic. The Commission, considering such a delay to be unacceptably long, suggested to the National Oceanic and Atmospheric Administration (NOAA) that it expand and reconvene its Ad Hoc Scientific Committee to address certain of the issues. Subsequently, the Commission developed, at NOAA's request, a draft scope of work and rationale for expanding and reconvening the Committee and forwarded the material on 9 February 1979. Although the previous meeting of the Ad Hoc Scientific Committee had developed worthwhile information, the Commission's paper noted that circumstances had dictated that the meeting be held while the International Whaling Commission and its Scientific Committee were in session in London and cetologists had therefore not been able to participate. Also, the Committee, which had not included ornithologists, oceanographers, or theoretical ecologists, was able to meet only for two days. Because of these restraints, the group had been unable to

fully and adequately consider all relevant data and issues. The paper also noted that the Committee: had not been asked specifically to evaluate available data from the perspective of the conservation objectives contained in the draft Convention; had not been asked specifically to assess possible second-order impacts on endangered species of whales and had not been able to examine all relevant information concerning the possible adverse effects of krill harvesting on endangered whales; had not been able to fully consider or make specific recommendations as to the need to establish krill quotas by area; and had not provided recommendations as to the specific fishery and scientific data that should be collected and exchanged. By letter of 12 February 1979, the Commission informed the National Science Foundation of the on-going discussions concerning the desirability of expanding and reconvening NOAA's Ad Hoc Scientific Committee on the Antarctic.

On 6 April 1979, the Foundation responded to the Commission's letters of 14 December 1978 and 8 January and 12 February 1979. In its response, the Foundation noted that: the Department of State is in charge of the negotiations concerning the Living Resource Convention; the Foundation has been in close touch with the State Department throughout the course of the negotiations and has been able to assist in a number of ways, including the informal identification of experts that the State Department might consult; and, in the absence of a specific request from the State Department, the Foundation considered it inappropriate to convene an independent group of scientists to review current policy or the most recent draft of the Living Resources Convention. The letter also noted that the decision had been made to reconvene and expand the Ad Hoc Scientific Committee on the Antarctic and that the Foundation endorsed this decision. Finally, the response noted that the Foundation had requested a budget increase to expand marine-related research in the Southern Ocean and that it had initiated discussions with the Polar Research Board and other groups of the National Academy of Sciences to determine how best to receive continuing advice on the U.S. Antarctic Research Program and U.S. participation in the international BIOMASS program.

The National Oceanic and Atmospheric Administration expanded and, from 17 to 19 April 1979, reconvened its Ad Hoc Scientific Committee on the Antarctic. The Committee considered a number of issues and, among other things, concluded that: available information on the biology and ecology of Antarctic marine living resources was insufficient to identify the precise measures needed to achieve the conservation objectives set forth in the draft Convention;

there was a critical need for a comprehensive, multi-disciplinary, international research program in the Southern Ocean; and the U.S. can and should play a lead role in identifying and facilitating the conduct of necessary research programs and, toward this end, should undertake a review to identify research necessary to attain the Convention objectives and the role that the U.S. should play to ensure that essential research is conducted.

At about the same time, the Commission learned that the National Science Foundation planned to ask the Polar Research Board of the National Academy of Sciences to conduct a program review consistent with the earlier recommendations of the Commission and the Ad Hoc Scientific Committee. By letter of 20 June 1979, the Foundation requested of the Academy a proposal to form a committee to evaluate and make recommendations to the Foundation regarding the international BIOMASS program--a request to which the Academy enthusiastically responded. Unfortunately, unforeseen increases in the cost of supporting on-going Antarctic programs forced the Foundation to advise the Academy in mid-November that it could no longer provide support for the proposed committee.

The Commission, considering this an extremely serious setback to an essential review, immediately undertook to develop support for the study, somewhat broadened to include evaluation of the existing U.S. research program and capabilities in the Southern Ocean and identification of the research program and capabilities that would best meet U.S. interests and responsibilities relative to the conservation of the Southern Ocean ecosystem. In late November, the Commission initiated discussions with the National Oceanic and Atmospheric Administration, the Council on Environmental Quality, the Smithsonian Institution, the Environmental Protection Agency, and other agencies and groups concerning the critical need for restoring support for this work. The response was sympathetic, and, although no other agencies had committed themselves financially by the end of the year, prospects appeared good that support would be forthcoming and the review would take place in 1980.

Issues Related to Possible Offshore Oil and Gas Development

As noted above, activities and events associated with offshore oil and gas development could directly and indirectly affect whales, seals, krill, and other components of the Southern Ocean ecosystem. Increasing interest in exploring and exploiting possible oil and gas resources in the Antarctic

was apparent in 1977 at the IXth Antarctic Treaty Consultative Meeting at which Contracting Party representatives recommended to their Governments that: "Antarctic Resources - the Question of Mineral Exploration and Exploitation" be the subject of intensified consultation among Treaty Nations; that Treaty Nations urge their nationals and other states to refrain from all exploration and exploitation of Antarctic mineral resources while making progress towards the timely adoption of an agreed regime concerning those resources; the subject be placed on the agenda for the Xth Antarctic Treaty Consultative Meeting; and a meeting of ecological, technological, and other appropriate experts be convened with a view to developing scientific programs aimed at (1) improving predictions of the impact of possible mineral exploration and exploitation in the Antarctic, and (2) developing measures for the prevention of damage to the Antarctic environment.

The Xth Antarctic Treaty Consultative Meeting was held in Washington, D.C. (17 September - 5 October 1979). To prepare for the meeting, the U.S. organized and convened a meeting in June of ecological, technological, and other related experts as called for at the IXth Consultative Meeting. The report of the group of experts noted, among other things, that basic and baseline information on the Antarctic environment is required in order to predict, mitigate, and monitor the possible impacts of mineral exploration and exploitation, and that priority should be afforded to identification of: the structure and dynamics of principal marine, aquatic, and terrestrial ecosystems that might be impacted by activities associated with mineral development; the key components of the ecosystem and those components that might be the most sensitive indicators of the effects of mineral resource development (especially of the impact of either catastrophic or gradual pollution of the Antarctic environment); the areas in Antarctica where mineral exploration and exploitation are most likely to occur; and the areas of special ecological significance and vulnerability in and adjacent to the areas where exploration and exploitation are most likely to occur. The representatives to the Xth Consultative Meeting, after reviewing the report of the group of experts and other related information, agreed to recommend, among other things, to their governments that they: facilitate the development of research programs which would contribute to an improved understanding of relevant aspects of the Antarctic and its environment; include the subject "Antarctic Resources - the Question of Mineral Exploration and Exploitation" on the agenda for the XIth Antarctic Treaty Consultative Meeting; and hold a meeting before the XIth Consultative

Meeting, preferably in the first half of 1980, to consider the ecological, political, technological, legal, and other aspects of a regime for Antarctic mineral resources.

The Commission believes that a regime is needed to ensure that offshore oil and gas development in the Antarctic is not to the disadvantage of whales, seals, krill, and other components of the Southern Ocean ecosystem and that an assessment of the U.S. outer continental shelf oil and gas development program would be useful in determining provisions appropriate for inclusion in an Antarctic minerals regime. By letter of 5 December 1979, the Commission advised the Department of State that it considered such an assessment to be desirable.

International Whaling Commission (IWC)

Representatives of the Marine Mammal Commission consulted with the U.S. Commissioner to the IWC and others in preparation for the thirty-first annual meeting of the IWC in London (9-13 July 1979) and attended the meetings of the IWC and its Scientific Committee during 1979. The Commission's activities in 1979 relating to the IWC and the bowhead whale issue are discussed in Chapter VI. A summary of the Commission's activities relating to IWC actions in 1979 is set forth below.

July 1979 Meeting

The decisions of the IWC member nations at their July 1979 meeting resulted in a significant reduction in the total number of whales that may be killed throughout the world. This continued reduction resulted from the establishment of quotas for certain previously unregulated whaling activities as well as the passage of a partial moratorium, and the application of the IWC's management procedures to individual stocks of whales, based upon the advice of the Scientific Committee. The number of member nations increased from 17 to 23 since the 1978 meetings of the IWC. The Seychelles and Sweden, both non-whaling nations, joined the IWC, as did Spain, Chile, Peru, and South Korea which are whaling nations. As discussed in the Commission's previous Annual Report, the latter three nations had been certified by the Secretary of Commerce in December 1978, in response to recommendations by the Commission, under the provisions of the Pelly Amendment to the Fishermen's Protective Act of 1967 for having conducted whaling operations that diminished the effectiveness of the IWC's conservation program.

The major issue relating to commercial whaling before the IWC in 1979 was the proposed moratorium which was presented to the members in the form of three separate proposals. The U.S. proposed a worldwide moratorium on all commercial whaling, to be implemented immediately and to last until serious flaws in the design and practice of the IWC's conservation program were remedied, while Australia proposed a worldwide moratorium on all whaling, including aboriginal whaling, to be implemented after a review and report by the Technical Committee at the next meeting on procedures, timing, economics, and any hardships associated with implementation. The Seychelles presented a third proposal for a moratorium on all sperm whaling to be implemented immediately and to last for three years. The U.S. proposal received the necessary simple majority in Technical Committee but was amended by Panama in the plenary session so as to call for two separate moratoria -- one on all factory ship whaling and one on all land station whaling. The factory ship portion of the proposed moratorium was further amended by Japan to exempt minke whales from its coverage and, as modified, was adopted by the members by a vote of 18 in favor, 2 opposed, and 3 abstaining. The Australian proposal for a review and report on implementation of a moratorium was also adopted, by consensus, but neither the land station portion of the proposed moratorium nor the Seychelles' proposal for a three-year moratorium on all sperm whaling gained the necessary three-fourths majority. In a related action, the members passed a proposal by the Seychelles to establish an Indian Ocean sanctuary extending southward to 55° south latitude within which no whaling of any kind will be permitted for 10 years.

In addition to establishing a factory ship moratorium and an Indian Ocean Sanctuary, the IWC set quotas for stocks of minke, Bryde's, sperm, and fin whales taken by land station-based vessels of Chile, Peru, the Republic of Korea, and Spain which had not previously been members. As a result, conservation measures were established for the first time in the history of the IWC for all stocks of whales that are taken commercially. The quota for minke whales which were exempted from the factory ship moratorium was increased from 6,221 in 1978/79 to 8,102 for the 1979/80 season in the southern hemisphere but the total quota for sperm whales taken by land station-based vessels were reduced from 9,360 in 1978/79 to 2,203 for the 1979/80 season. Moreover, within this total sperm whale quota, quotas for sperm whales taken off Chile and Peru were decreased from 550 or 50% of the 1978/79 catch, whichever is lower, for 1979/80 to zero in 1981/82. The governments of Chile and Peru are expected

to phase out their whaling operations in accordance with this schedule of quotas and the government of Brazil advised that it will cease all commercial whaling by 1 January 1981.

Post-Meeting Decisions

Under the terms of the Convention for the Regulation of Whaling, decisions of the IWC at its July 1979 meeting setting quotas or otherwise amending the Schedule of regulations governing whaling activities did not become effective until 24 October 1979, 90 days after they were formally transmitted to the members. Any member nation that filed an objection within that 90-day period would not be legally obligated to comply with any Schedule change to which it objected. In 1979, two issues arose during the 90-day period following the IWC meeting.

First, in early September the U.S.S.R. requested a modification of the factory ship moratorium to allow 1,508 male sperm whales to be taken with factory ships in the 1979/80 season in order to provide a transition period in which to conduct continued research and accomplish a re-adjustment of its whaling industry. This proposal, which would have required the affirmative votes of three-fourths of the majority of the 23 member nations for approval, was considered by postal vote. The United States Commissioner to the IWC, after consultation with the Marine Mammal Commission and other interested parties, advised the Chairman of the IWC that the U.S.S.R. had not presented any detailed information concerning the proposed continued research or re-adjustment of its industry to justify modifying the factory ship moratorium, that any such information could and should have been presented for consideration at the July 1979 meeting, and that the U.S. therefore cast its vote against the proposal to modify the factory ship moratorium. The U.S. view was shared by the great majority of IWC members. The U.S.S.R. gained the support of only three nations while there were 16 votes against it and it therefore failed. Having sought a modification and failed, the U.S.S.R. did not file an objection to the factory ship moratorium. It therefore became obligated as of 24 October 1979 to comply with this and other decisions reached at the July 1979 meeting.

A second issue arising within the 90-day period following the July 1979 meeting related to the IWC decision to establish a quota allowing 143 fin whales to be taken from the Spain-Portugal-British Isles stock.

Spain joined the IWC on 6 July 1979, just before the IWC meeting began on 9 July and just after the conclusion of the IWC's June-July Scientific Committee meeting. When the Scientific Committee met, Spain was not yet a member of the IWC and recent data on the stock of fin whales and catches were not available. The Scientific Committee therefore did not present a written report on this subject. At the IWC meeting, however, Spain provided recent catch statistics and a subcommittee of the Scientific Committee reviewed the data and derived, but did not recommend, a quota of 381 fin whales based upon the most optimistic simulation using the available data. The full Scientific Committee then considered the available information and recommended a lower quota of 143 fin whales for 1980 (the average catch by Spanish vessels from 1970 through 1977). It noted that recent additional catches from this stock by "pirate" whaling vessels flying flags of convenience and the potential connection between this stock and the east Greenland-Iceland stock suggest that the recent total catches may have been in excess of the best estimates of maximum sustainable yield. The recommended quota of 143 fin whales for 1980 was adopted by the IWC and Spain was asked to provide further information on the species, sex, and size composition of its catches together with effort data for review by the Scientific Committee at its next meeting in 1980.

Although the representative of Spain was present at the IWC meeting during this process, he did not at any time request discussion or consideration of the matter. Following the meeting, however, the representative of Spain filed an objection to the decision establishing a quota of 143 fin whales, thereby relieving the whaling vessels of Spain from complying with the quota in 1980. The U.S. has expressed its concern about this action to Spain and urged it to withdraw the objection. The Marine Mammal Commission will consult with the Department of Commerce and other interested agencies in reviewing the Spanish catches of fin whales during 1980 with a view to determining whether the 143 limit is exceeded, and, if so, to certifying those whaling activities and imposing sanctions under the provisions of the Pelly Amendment to the Fishermen's Protective Act and the recently enacted Packwood-Magnuson Amendment of the Fishery Conservation and Management Act. Those sanctions could include an embargo on importation of Spanish fish products into the United States and a reduction by at least 50% of any allocation to Spain to fish within the 200 mile fishery conservation zone of the United States.

Interim Convention on the Conservation of
North Pacific Fur Seals

In order to prepare to make a decision with respect to extension, renegotiation, or termination of the "Interim Convention on North Pacific Fur Seals", the National Marine Fisheries Service reviewed data concerning the North Pacific fur seal population and developed a Draft Environmental Impact Statement which addressed these three options.

The Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, submitted detailed comments on the DEIS on 12 September 1979. The Commission noted that the draft needed to be expanded to more thoroughly project and describe the consequences of the various options on the size of the fur seal population, the stability and productivity of the Bering Sea ecosystem, the well-being of the Pribilof Island natives, and the U.S. efforts in general to protect and conserve marine mammals and other living marine resources of the Bering Sea and elsewhere. In addition, the Commission noted that other options not discussed in the DEIS, such as extending the Convention with a view towards renegotiation or termination at a later date, were not considered. The Commission suggested revision to: (1) provide a more complete discussion of possible alternatives; (2) identify past fur seal population responses to harvesting, incidental taking, and fishery developments; (3) indicate the present status of the fur seal population with regard to the Service's definition of optimum sustainable populations; (4) map the location of at-sea sightings and collection of fur seals outside the economic zones of signatory nations; (5) provide an assessment as to whether pelagic sealing would likely resume if the U.S. were to terminate the Convention, and, if so, how this would affect the fur seal population; and (6) describe other conservation initiatives that could be affected by the U.S. position on the Convention.

At the end of 1979, the National Oceanic and Atmospheric Administration was understood to be finalizing its recommendation to the Department of State concerning the United States position on the future of the Interim Convention. The recommendation was expected to be transmitted in early 1980.

CHAPTER X

PROTECTED AREAS

The Marine Mammal Protection Act recognizes the importance of protecting habitat, and specifically calls for efforts "to protect rookeries, mating grounds, and areas of similar significance for each species of marine mammal from the adverse impact of man's actions." In 1979, the Commission addressed questions of habitat protection in the Point Reyes National Seashore/Golden Gate National Recreation Area, the Northern Channel Islands and Santa Barbara Island, Glacier Bay National Monument, and the coastal waters of Hawaii.

Point Reyes National Seashore/Golden Gate National Recreation Area

The beaches and coastal waters of the Point Reyes National Seashore and the Golden Gate National Recreation Area provide haul-out sites and marine habitat for the harbor seal, the California sea lion, and the Steller sea lion. In addition, it is possible that the California sea otter and Northern elephant seal may soon repopulate the area. In 1976 (see the Commission's Annual Report for 1976), the Commission commented on the Natural Resources Management Plan for the Point Reyes National Seashore which resulted in the National Park Service's erecting signs informing the public of the sensitive nature of these areas and encouraging volunteer patrols.

On 10 October 1979, the Commission, having reviewed the National Park Service's "Draft General Management Plan and Environmental Assessment for the Golden Gate/Point Reyes National Recreation Area/National Seashore" in consultation with its Committee of Scientific Advisors on Marine Mammals, recommended to the National Park Service that: (1) the management objectives for both park units reference the need for protecting marine mammals; (2) consideration of potential marine mammal harassment be included in the discussion of adverse impacts associated with increased visitor use; (3) a proposed campsite adjacent to a major harbor seal hauling area in Bolinas Lagoon be either deleted or relocated; (4) efforts be undertaken to plan for the possible re-establishment of expanding sea otter and/or elephant seal populations; and

(5) certain important marine mammal hauling grounds be designated as Marine Reserves or Research Natural Areas under the Service's land classification system.

Northern Channel Islands
and Santa Barbara Island

The greatest concentration of pinnipeds in the United States outside of Alaska is found on and adjacent to the Northern Channel Islands in the Santa Barbara Channel off Southern California. In 1979, Commission activities with respect to this area involved a review of planning efforts by the National Park Service at the Channel Islands National Monument and an analysis of research concerning potential impacts of the Space Shuttle program proposed by the U.S. Air Force at Vandenberg Air Force Base near Point Conception.

Channel Islands National Monument

Santa Barbara and Anacapa Islands, important breeding and hauling grounds for several species of pinnipeds, comprise the Channel Islands National Monument. They are managed by the National Park Service both to ensure the protection of natural and cultural resources and to provide opportunities for compatible recreation and research activities. In addition to the two Monument Islands, the Service also manages San Miguel Island under terms of a cooperative agreement with the U.S. Navy. San Miguel Island is unique in that nowhere else in the world is a comparably sized island used by as many as six species of pinnipeds.

Significant events in 1979 were: (1) legislation was introduced but not finally acted on to reclassify the Monument as a National Park and expand its boundaries to include Santa Rosa, Santa Cruz, and San Miguel as well as Anacapa and Santa Barbara Islands and also to include the water areas within one mile of all five Islands; and (2) the Service prepared a planning document for the Monument Islands and San Miguel Island entitled "Channel Islands National Monument Environmental Assessment Alternatives for Visitor Use/Interpretation/General Development."

On 13 November 1979, the Commission, in consultation with its Committee of Scientific Advisors, commented on the Service's planning document for the Channel Islands National Monument. Noting that the Service's document identified the Islands' significant marine mammal and seabird habitats, the Commission recommended that this recognition be carried forward by referencing the protection of marine

mammals, seabirds, threatened species, and endangered species in the management objectives for the National Monument. In addition, the Commission recommended that: (1) most of San Miguel Island be designated as both a Research Natural Area and Wilderness Area for purposes of research and education; (2) only the most innocuous forms of development (possibly including some carefully located wildlife observation points) be allowed on San Miguel Island; (3) public access to San Miguel Island be limited to groups of serious amateur naturalists accompanied by an approved guide or ranger and that these groups be prohibited from entering the Island's major pinniped hauling grounds; and (4) the Service establish a standing scientific advisory committee, including, among others, marine mammal biologists and ethologists, to evaluate and comment on contemplated actions for the Monument Islands and San Miguel Island.

Vandenberg Air Force Base Space Shuttle Program

Space Shuttles which are to be launched from Vandenberg Air Force Base may pass over or close to San Miguel and other Channel Islands which provide important habitat for pinnipeds and seabirds. Sonic booms produced during Space Shuttle operations may disturb, injure, or possibly kill animals living on or around these Islands.

On 7 October 1977, the Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, commented on a Draft Environmental Impact Statement for the Vandenberg Air Force Base Space Shuttle Program. The Commission noted that available information was inadequate to determine whether Space Shuttle launches would adversely affect pinniped populations on the Channel Islands and requested that the Air Force include in the final EIS definitive information on: (1) the frequency, by month and year, with which the sonic booms could be expected to affect the Channel Islands; (2) the anticipated levels of sonic pressure; and (3) expected pinniped reactions to these perturbations. As a result of these and other comments, members of the Commission staff met with Air Force representatives on 6 December 1977 to discuss Air Force plans for collecting information concerning the impact of sonic booms on marine mammals inhabiting the Channel Islands area. On 27 February 1978, the Commission received from the Air Force a statement of work and proposed research program to address potential sonic boom impacts on marine mammals and seabirds in the Channel Islands, and informally commented thereon in early March. On 13 September 1978, the Air Force held a meeting at which the preliminary

results of the Phase I study (literature review and problem analysis) were discussed, and the scope of Phase II research efforts needed to fill identified data gaps were considered. In December 1978, the Air Force requested comments from the Commission on a draft report entitled "Potential Impact of Space Shuttle Sonic Booms on the Biota of the California Islands: Literature Review and Problem Analysis". On 8 January 1979, the Commission commented on the draft report noting certain deficiencies and suggesting points appropriate for further consideration.

On 15 October 1979, a Commission representative attended an Air Force meeting to review field study progress and consider data gaps and additional research needs. Time constraints precluded a full discussion and the Commission, therefore, by letter of 2 November, raised additional questions which included the status of Air Force plans for consultation with NASA on coordinating research efforts to measure sound characteristics resulting from initial Space Shuttle launches at the John F. Kennedy Space Center as well as those generated on its return to Edwards Air Force Base. On 9 November, the Commission was informed that the Air Force was attempting to reach an agreement with NASA to obtain information and to use NASA's resources to help collect data from the Space Shuttle launches and returns. In November, the Commission wrote the Air Force requesting that it keep the Commission informed of efforts to predict and mitigate possible adverse effects of Space Shuttle activity on marine mammals in the Channel Islands and of steps to be taken to monitor the first launches at the Kennedy Space Center.

Glacier Bay National Monument

The best available information indicates that the North Pacific population of humpback whales consists of approximately 1,000 individuals and that during the summer months, approximately 100 of these whales inhabit and feed in the coastal waters of Southeastern Alaska.

In late summer 1979, the Commission received reports indicating that there had been a substantial increase in vessel traffic in Glacier Bay which might be causing humpback whales to avoid the Bay. Among other points, the Commission learned that: from 1967 to 1977, 20 to 25 humpback whales were observed feeding in Glacier Bay during the summer months; in 1978, the whales entered the Bay as usual but left sooner than expected; in 1979, only a few humpback whales entered the Bay; in 1978 and 1979, there had been a substantial increase in the number of cruise ships and small

boats entering the Bay; in 1979, the National Park Service had issued emergency regulations limiting vessel speeds, courses, and approaches to whales; although the emergency regulations were complied with, the whales continued to avoid the Bay; in August 1979, the National Park Service requested a formal consultation with the National Marine Fisheries Service pursuant to Section 7 of the Endangered Species Act; and this consultation was not yet completed.

The Commission also determined that it was generally agreed that additional research was needed to better define the nature and possible causes of the problem, that a meeting should be held to discuss the nature of the problem and possible research approaches, and that there was a need for face-to-face discussion among interested parties. Accordingly, the Commission convened a meeting of people representing all involved parties to: (1) review available information concerning the nature and possible causes of the movement of whales from Glacier Bay; (2) review present and planned research and management actions relating to humpback whales in Glacier Bay in Southeast Alaska; and (3) identify additional research and management actions that may be necessary to conserve and protect the North Pacific population(s) of humpback whales including those in Glacier Bay and Southeast Alaska. The National Park Service and National Marine Fisheries Service assisted in organizing the meeting which was held in Seattle, Washington, on 12 and 13 October 1979. Representatives from those Services, the Fish and Wildlife Service, the Alaska Department of Fish and Game, the cruise ship industry, and the marine mammal scientific community participated.

Participants concluded that: while vessel traffic had clearly increased and humpback whales were no longer using Glacier Bay as they had in the past, available information had not been fully evaluated and would likely be insufficient to determine with certainty, whether the increase in vessel traffic was responsible for the observed shift in whale distribution; available data concerning whale-vessel interactions should be promptly evaluated and the results used to describe appropriate additional studies or monitoring programs and/or restrictions on the number and activity of cruise ships and other vessels using the Bay to eliminate or minimize adverse impacts on whales; vessel traffic was increasing outside of Glacier Bay; observed shifts in the distribution pattern of whales may be symptomatic of a larger problem in the coastal waters of Southeastern Alaska and elsewhere; and that it would be desirable to develop and implement a recovery plan for the entire North Pacific humpback whale population.

With respect to immediate research and management needs for humpback whales in Glacier Bay, participants suggested that an optimal short-term research and management strategy would include the following actions: (1) by early 1980, compile and complete the analysis and evaluation of all existing and relevant data; (2) based on the evaluation of the best available data, promulgate temporary (one season) whale-watching regulations and/or place restrictions on access by all or certain classes of vessels as may be appropriate; (3) continue, and if appropriate, expand, surveys of whale/vessel numbers, distribution, movements, behavior, and interactions in and outside Glacier Bay; and (4) identify and initiate additional research that is needed to identify and mitigate the cause and causes of the observed humpback whale movement from the Bay (e.g., acoustical studies, studies of the distribution and abundance of prey species, etc.).

With respect to longer range research and management activities, participants suggested that an optimal long-term research and management strategy would include: (1) development and implementation of a humpback whale recovery plan for Glacier Bay, Southeastern Alaska, and the North Pacific in general; (2) identification, designation, and protection of critical whale habitat; (3) development of a universal and/or site-specific definition of "harassment"; (4) development and implementation of a long-range research and management plan for the Glacier Bay National Monument including a whale and environmental monitoring program; (5) determination as to the direct and indirect effects of incidental take, whale-watching, fishing activity, etc. on humpback whales in Glacier Bay, Southeast Alaska, and the North Pacific in general; and (6) determination as to the long-term cumulative impacts of habitat degradation and destruction throughout the North Pacific range of humpback whales and its impact on the survival of humpback whales. In November, the Commission distributed a draft report of the meeting to meeting participants for review and comment, and the final report should be available in early 1980.

By letter of 3 December 1979, the National Marine Fisheries Service advised the National Park Service of the results of its threshold examination conducted pursuant to Section 7 of the Endangered Species Act. The Service found that recent uncontrolled increase in vessel traffic, particularly of erratically travelling charter/pleasure craft, had probably altered humpback whale behavior in Glacier Bay and might thus be a factor in the fewer numbers in the Bay during the

past two years. The Service concluded that continued increase in the amount of vessel traffic, particularly charter/pleasure craft, in Glacier Bay would likely jeopardize the continued existence of the humpback whale population in Southeast Alaska, and, therefore, recommended to the National Park Service that it: restrict vessel use in the Bay to 1976 levels; develop regulations which collectively restrict vessel routing and maneuvering in areas inhabited by whales; develop general guidelines prohibiting the pursuit or willful or persistent disturbance of whales through vessel maneuvering; initiate a public education effort; continue efforts to monitor the humpback whale population and whale-vessel interactions; and initiate new research to (1) characterize the food and feeding behavior of humpback whales in Glacier Bay and other areas, (2) ascertain the acoustic characteristics of vessels in the Bay and other areas in order to identify equipment and/or modes of operation which are inimical to the whales, and (3) compare behavioral responses of the humpbacks to vessels in Glacier Bay with those observed in other areas of Southeast Alaska.

By letter of 17 December 1979, the Commission, in consultation with its Committee of Scientific Advisors, commented to the National Marine Fisheries Service on its Section 7 comments and opinion. The Commission concurred with the Service's findings and conclusion and also supported its recommendation that vessel use be restricted to 1976 levels and that vessel operator discretion in pursuing or approaching whales be curtailed. In the interest of clarifying the Service's regulatory and research recommendations, the Commission also recommended that it elaborate on certain recommendations in its 3 December 1979 letter to the National Park Service so as to: clearly distinguish between recommended regulations and general guidelines for boating activity in Glacier Bay; and provide the National Park Service with a more detailed description of the research projects believed to be necessary to protect humpback whales and their habitat in Glacier Bay. The Commission also recommended that the Service offer to coordinate research efforts and continue consultations with the National Park Service to ensure that the necessary education and research programs achieve the desired results and develop the needed information as quickly and economically as possible.

By the end of 1979, the National Park Service had already taken steps to support research necessary to more completely analyze available data on whale-vessel interactions in Glacier Bay.

Humpback Whales in Hawaii

The waters surrounding the main Hawaiian Islands provide winter calving grounds and habitat for approximately 500 of the estimated 1,000 humpback whales comprising the North Pacific population of this species. As public interest in whale-watching in Hawaii increased, the Commission became concerned over reports that these activities might be adversely affecting the whales and, in July 1977, it convened a workshop to consider the problem. Following the 1977 workshop and in 1978, the Commission, in cooperation with the National Marine Fisheries Service, considered and acted on a number of issues related to humpback whale conservation and protection in Hawaii including: hydrofoil operation in certain areas; establishing criteria for determining activities constituting humpback whale harassment; the education of military and civilian boat and aircraft operators on potential adverse effects on whales of certain activities and the requirements of applicable regulations; and research on the abundance, distribution, and movement of humpback whales in the coastal waters of Hawaii. These activities are discussed in detail in the Commission's Annual Report for 1978.

On 4 January 1979, the Service, in consultation with the Marine Mammal Commission, published a "Notice of Interpretation of 'Taking by Harassment' in Regard to Humpback Whales in the Hawaiian Islands Area" thereby establishing criteria for activities constituting harassment. Also in 1979, plans were announced to re-institute inter-island hydrofoil service and the Office of Coastal Zone Management began considering the designation of a Humpback Whale Marine Sanctuary in Hawaiian waters.

With respect to the re-institution of the hydrofoil service, the Commission inquired on 6 August 1979 of the National Marine Fisheries Service as to the steps it was taking with respect to the possible resumption of hydrofoil service. On 4 September the Service answered that its Southwest Regional Office intended to work with the company to insure compliance with the provisions of the Marine Mammal Protection Act and Endangered Species Act and to review and incorporate appropriate protection measures into the Service's on-going interpretation of harassment relative to humpback whales in Hawaiian waters. Concerned about the timing of these steps and future plans, the Commission wrote the Service on 13 November 1979 requesting information on: the status of plans to resume operation; the results of the Service's review of appropriate protection measures; whether either an environmental impact statement or a Section 7

consultation under the Endangered Species Act would be required; and plans for future research and management actions. At the end of 1979, the Commission was awaiting the Service's response.

With respect to a possible Marine Sanctuary, the Office of Coastal Zone Management convened a group of experts (12-14 December) to consider action on a proposal to designate a humpback whale Marine Sanctuary in Hawaiian waters. A consensus was reached among participants that the Office of Coastal Zone Management should proceed with a sanctuary nomination which would focus efforts on establishing a monitoring and research program to investigate potential impacts and conduct certain research on humpback whales in Hawaii. Participants also recommended that a recovery team be established and that a recovery plan be prepared for humpback whales in the North Pacific. The workshop report was being prepared by the Office of Coastal Zone Management at the close of 1979.

CHAPTER XI

OUTER CONTINENTAL SHELF OIL & GAS DEVELOPMENT

Activities and events, such as well blowouts or oil spills, associated with offshore oil and gas development may have direct and indirect effects on marine mammals and the ecosystems of which they are a part. The Bureau of Land Management is responsible under the OCS Lands Act, as amended, for predicting, mitigating, and detecting possible adverse environmental impacts associated with OCS oil and gas development. The National Marine Fisheries Service and the Fish and Wildlife Service are responsible, under the authority of the Marine Mammal Protection Act and the Endangered Species Act, for reviewing and providing recommendations to the Bureau on proposed actions which may affect the conservation and protection of marine mammals and other wildlife. The Commission overviews the relevant policies and activities of these agencies, and advises them of actions that appear necessary to conserve marine mammals and their habitats. Commission activities in 1979 which relate to OCS oil and gas development are discussed below.

Proposed OCS Oil & Gas Federal/State Lease Sale in the Beaufort Sea

A Draft Environmental Impact Statement on the Proposed Federal/State Oil & Gas Lease Sale in the Beaufort Sea was issued by the Bureau of Land Management in March 1979. The proposed sale was scheduled for December 1979 and included 186 blocks (514,193 acres) of OCS lands offshore of the Alaskan Arctic coast. The area is inhabited, either seasonally or permanently, by bowhead whales, gray whales, polar bears, and several species of seals and other cetaceans.

The Commission, in consultation with its Committee of Scientific Advisors, carefully reviewed the Draft Environmental Impact Statement and the related research proposal from the Naval Arctic Research Laboratory (see Chapter II) and concluded that available information was insufficient to predict, or to serve as a basis for detecting, how activities and events associated with the proposed action might affect marine mammals and their habitats and the people who are dependent upon them for subsistence purposes. The Commission also concluded that on-going research efforts would not provide the information needed to make informed judgments prior to the scheduled lease sale and, by letter of 11 June 1979, recommended that the Bureau of Land Management postpone the Beaufort Sea lease sale until there is sufficient information

to ensure that the proposed action would not have an adverse impact on bowhead whales, gray whales, or other marine mammals that occur in or adjacent to the proposed lease sale area. The Commission also recommended that the Bureau consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to develop and implement such research efforts and mitigating measures as might be necessary to ensure that activities and events associated with the proposed action would not be to the disadvantage of marine mammals and their habitats.

The National Oceanic and Atmospheric Administration (NOAA) also concluded that available information was insufficient to predict how the proposed action might affect marine mammals and other wildlife of the Beaufort Sea and, in a 1 June 1979 policy memorandum, recommended that the Department of the Interior not proceed with the sale unless certain deficiencies in the Draft Environmental Impact Statement were corrected and certain protective measures were incorporated as conditions of the sale. These recommendations were developed, in consultation with scientists from the NOAA/BLM Outer Continental Shelf Environmental Assessment Program (OCSEAP), and were refined and supplemented in a 3 August 1979 letter from the Assistant Administrator of the Office of Coastal Zone Management to the Director of the Bureau of Land Management. Many, but not all, of NOAA's recommendations were incorporated in the Proposed Notice of Sale published in the Federal Register on 23 August 1979 and, by letter of 15 October 1979, NOAA raised a number of questions and advised the Department of the Interior of its continuing concern that the proposed mitigating measures did not provide adequate environmental safeguards.

On 2 November 1979, the Bureau of Land Management requested that the National Marine Fisheries Service prepare a final biological opinion, pursuant to Section 7(b) of the Endangered Species Act, regarding the impact of the proposed Beaufort Sea lease sale on endangered bowhead and gray whales. The Service's 6 November 1979 letter responding to this request indicated that: "After reviewing the best scientific evidence currently available, including results from the 1978 and 1979 NMFS bowhead whale research program and the BLM-sponsored 'Project Whales' research program, NMFS still concludes that insufficient information exists to determine whether the lease sale and resulting activities are or are not likely to jeopardize endangered bowhead and gray whales ...". The letter also noted that Section 7(b) of the Endangered Species Act requires that the Service provide reasonable and prudent alternatives that would avoid jeopardizing the relevant species and that, pursuant to this

requirement, such alternatives had been recommended in its 15 October 1979 letter to the Department of the Interior.

The Department of the Interior decided to proceed with the sale and, by Federal Register Notice of 7 November 1979, announced that the sale would take place in Fairbanks, Alaska on 11 December 1979. On 7 December, suits were filed by the North Slope Borough, the National Wildlife Federation, and the Village of Kaktovik against the Department of the Interior and the National Oceanic and Atmospheric Administration in an effort to enjoin all or parts of the Beaufort Sea lease sale. The United States District Court for the District of Columbia denied the plaintiff's request for a preliminary injunction and a hearing on motions for summary judgment has been scheduled for 3 January 1980.

BLM's Environmental Studies Program

As noted above, the Bureau of Land Management is responsible, under the Outer Continental Shelf Lands Act (P.L. 95-372), as amended, for predicting and mitigating possible adverse effects of offshore oil and gas development. To provide the biological, ecological, and technical information needed to meet this responsibility, the Bureau has established regional environmental studies programs which are administered by the Bureau's OCS Offices in New York, New Orleans, Los Angeles, and Anchorage. The Bureau also has contracted with the National Oceanic and Atmospheric Administration to plan and administer the Alaska Outer Continental Shelf Environmental Assessment Program (OCSEAP).

To assist the Bureau in developing and implementing the research programs needed to assess and monitor the effects of OCS oil and gas development on marine mammals and their habitats, the Commission has: reviewed and commented on relevant plans and requests for proposals developed by the Bureau; participated in meetings of Technical Proposal Evaluation Committees convened by the Bureau to review proposals; and organized several meetings to review and coordinate the Bureau's and the National Marine Fisheries Service's plans for bowhead whale research as discussed elsewhere in this report. As part of its overview activities, the Commission also initiated a general review and assessment of the Bureau's Environmental Studies Program as it relates to marine mammals.

The results of the program review and recommendations as to how the program might be improved will be forwarded to the Director of the Bureau of Land Management in early 1980.

Bay of Campeche Oil Spill

On 3 June 1979, a blowout occurred on the drilling rig IXTOC I in the Bay of Campeche, Mexico. The blowout resulted, at least initially, in the release of an estimated 20,000 to 30,000 barrels of oil per day, some of which was carried north from Mexican waters into U.S. waters and onto Texas beaches. As the spill continued, the Commission became increasingly concerned that the oil would have an adverse effect on marine mammals and their habitats in the Gulf of Mexico. Therefore, in early August, the Commission requested that its Committee of Scientific Advisors assess the adequacy of on-going efforts to detect and mitigate the possible adverse effects of the oil and cleanup operations on marine mammals and, as appropriate, to identify additional actions that could or should be taken to detect and mitigate possible adverse effects or to improve responses to future spills.

In response to the Commission's request, members of the Committee of Scientific Advisors on Marine Mammals met in Miami, Florida with representatives of the National Oceanic and Atmospheric Administration on 30 and 31 August 1979 to review on-going and planned efforts to assess and mitigate the effects of the oil spill on marine mammals and their habitats. During the course of the meeting, it was noted that: oil could have acute and chronic effects on marine mammals and their habitats; there was little empirical evidence concerning the actual effects of oil on marine mammals or their habitats; and available information on the distribution, movements, abundance, and productivity of marine mammals in the Gulf of Mexico was insufficient to serve as a basis for predicting or detecting changes in distribution, etc. that might be caused by the oil. It was agreed that on-going and planned efforts to assess and mitigate the effect of the spill should be expanded, as possible, to: rescue and rehabilitate live-stranded animals; recover and examine dead animals to determine the cause of death; provide space for marine mammal scientists on research ships investigating the impacts of the spill; and provide for diverting survey ships and aircraft to investigate reports of marine mammals in areas covered with oil.

APPENDIX A

COMMISSION RECOMMENDATIONS: CALENDAR YEAR 1979

- 8 January National Science Foundation, restating and expanding on 14 December 1978 recommendations on the Draft Convention of the Conservation of Antarctic Marine Living Resources recommending that a comprehensive review of the Draft Convention be completed by late February and that advice on the BIOMASS and U.S. Antarctic research programs be sought from the Polar Research Board.
- 9 January Commerce, public display permit application, Marineland, Cote d'Azur.
- 17 January Commerce, scientific research permit application, Robert Personius.
- 17 January Commerce, scientific research permit application, David Mattila.
- 18 January North Pacific Fishery Management Council, commenting on the Fishery Management Plan and Draft Environmental Impact Statement for the Groundfish Fishery in the Bering Sea/Aleutian Islands Area and recommending that relevant data and theory be re-evaluated to better identify uncertainties associated with the lack of knowledge or understanding, and that allowable catch levels be adjusted to reflect the degree of uncertainty concerning the possible impacts of multi-species harvesting on target, dependent, and associated species as well as the ecosystem(s) of which they are a part.
- 26 January Army Corps of Engineers, recommending that consultation with the Fish and Wildlife Service be initiated, pursuant to Section 7 of the Endangered Species Act, to insure that activities associated with Permit Application No. 78Q-0251 will not jeopardize the continued existence of the endangered West Indian manatee or result in the destruction or adverse modification of its critical habitat, and that further action on this application be deferred pending the completion of that consultation.

12 February Commerce, requesting information on a mass stranding of sperm whales in Baja California, Mexico, and recommending that the National Marine Fisheries Service undertake efforts to develop appropriate institutional arrangements with the Mexican government for the conduct of comprehensive investigations on strandings.

14 February Interior, scientific research permit application, Charles Repenning.

21 February Interior, scientific research permit application, Gerald Kooyman.

22 February Interior, commenting on proposed rule-making to provide for the establishment of manatee protection areas, and recommending that modifications be made to clarify language and definitions and that provisions be made, as necessary, for the conduct of certain activities relative to manatee protection and maintenance of water areas.

22 February Commerce, recommending that field research on the Hawaiian monk seal be continued at least one more year and that the National Marine Fisheries Service provide funding and contract management support for this research.

23 February Commerce, collector of record statement, Richard Headley.

27 February Commerce, public display permit application, Kolmardens Djurpark.

1 March Interior, public display permit application, Sea World, Inc.

5 March Interior, Bureau of Land Management, restating recommendation of 20 November 1978 that the Bureau defer investing funds in research relating to the bowhead whale until it has been determined that the work is well-conceived and well-justified.

7 March Commerce, public display permit application, Marine Animal Productions, Inc.

8 March Commerce, scientific research permit application, Brian and Patricia Johnson.

9 March Interior, scientific research permit application, National Fish and Wildlife Laboratory.

19 March Commerce, scientific research permit application, Burney J. LeBoeuf.

21 March Commerce, scientific research permit application, Point Reyes Bird Observatory.

22 March Interior, Bureau of Land Management, commenting on the Naval Arctic Research Laboratory's (NARL) revised proposal for FY 79 studies of bowhead whales and gray whales in the Beaufort Sea, and recommending that: (1) the Bureau postpone the Beaufort Sea lease sale until there is sufficient information to determine any adverse impacts on the North Pacific populations of bowhead and gray whales; (2) the Bureau not fund the NARL proposal in its present form; and (3) the Bureau initiate further Section 7 consultations with the National Marine Fisheries Service to determine more precisely what information is needed to predict how oil and gas development in the Beaufort Sea might impact bowhead whales and gray whales.

26 March Interior, U.S. Geological Survey, recommending that the Survey reconsider its allowed extension of permits to conduct seismic activities in the Beaufort Sea and that it take such steps as necessary to insure that activities conducted pursuant to issued permits are consistent with the purposes and provisions of the Marine Mammal Protection Act.

27 March Commerce, public display permit application, Wometco Miami Seaquarium.

29 March Commerce, recommending for the third time with respect to the tuna-porpoise research program that the National Marine Fisheries Service reassess data needs, develop a proposal for cooperative government/industry research, circulate the proposal for review and comment, convene a group of appropriate government/industry representatives to agree upon a cooperative goal-oriented research plan, and re-institute the preparation and distribution of "mini-milestone" reports on porpoise mortality estimates during the course of the fishing season.

30 March Commerce, scientific research permit application, Edward C. Murphy and Agnes A. Hoover.

30 March Commerce, collector of record statement, John D. Hall.

5 April Interior, recommending that the Fish and Wildlife Service: (1) prepare a proposal for consideration of the conference of Parties to the Convention on International Trade in Endangered Species to include at least those stocks of whales for which the International Whaling Commission has established a zero quota, since the meat and other products of such whales are or might be indistinguishable from products of whales already listed in Appendix I and strict regulation of such trade is necessary so that trade in those populations and species of whales already in Appendix I may be effectively controlled; (2) submit that proposal for consideration and clearance by the Commission and other interested parties; and (3) transmit the proposal to the Secretariat for consideration by the Parties pursuant to Article XV(2).

6 April Commerce, restating previous Commission recommendations on the protection and recovery of the Hawaiian monk seal; expressing concern that activities by the National Marine Fisheries Service to encourage recovery were not adequate; transmitting a recommended 5-year research plan; and recommending that the National Marine Fisheries Service: (1) immediately appoint a recovery team of knowledgeable scientists; (2) develop a comprehensive 5-year research plan; (3) commit immediate support for those research activities identified to be of critical importance and high priority; and (4) promptly develop a comprehensive recovery plan.

6 April Interior, amendment to scientific research permit, National Fish and Wildlife Laboratory.

20 April Commerce, scientific research permit application, Bureau of Land Management.

25 April Commerce, collector of record statement, Brian Hunt, Jay Sweeney, and Martin Dinnes.

3 May Commerce, commenting on a research proposal entitled "Harbor Seal-Fisheries Interactions on the Columbia River and Adjacent Waters" and recommending that the National Marine Fisheries Service: (1) consider the request by the States of Washington and Oregon to be a preliminary proposal; (2) not fund the proposal as presently written; and (3) encourage the States to prepare and submit a revised and more detailed proposal that addresses the Commission's comments and recommendations.

3 May Commerce, scientific research permit application, State of Washington Department of Game and State of Oregon Department of Fish and Wildlife.

9 May Interior, recommending that the Fish and Wildlife Service modify the mode of consultation between the Service and the Commission with respect to marine mammal permit applications so as to encourage the Wildlife Permit Office to utilize the administrative and substantive expertise of the Fish and Wildlife Service, to place the burden on the Service to conduct its own analyses, and to reduce the amount of duplicative and unnecessary time and effort expended on permit applications.

14 May Commerce, scientific research permit application, Northwest and Alaska Fisheries Center.

14 May Commerce, commenting that authorization by the National Marine Fisheries Service for the taking of Tursiops truncatus in the St. Petersburg, Florida area in 1980 be deferred so that the action may be evaluated with reference to the best available information including the results of aerial surveys of the affected population.

14 May Commerce, modification of scientific research permit, Southwest Fisheries Center.

15 May Commerce, public display permit application, Zoogesellschaft Osnabruck.

18 May Commerce, scientific research permit application, Lavern Weber.

23 May Interior, modification of scientific research permit, Gerald Kooyman.

29 May Commerce, scientific research permit application, Southwest Fisheries Center.

7 June Commerce, restating certain recommendations and requesting additional information from the National Marine Fisheries Service on its tuna-porpoise research program concerning school size estimation, cooperative government/industry research, satellite-linked radio tracking, mark/recapture studies, a computer model for purse seine operations, and porpoise behavior and physiological studies.

7 June Commerce, scientific research permit application, Kenneth S. Norris.

7 June Commerce, public display permit application, Sea World, Inc.

8 June Commerce, restating 8 December 1978 recommendation that the National Marine Fisheries Service develop a system to review, verify, and update information on the world catch of marine mammals and that the system of data coding be made compatible with the system used by the International Whaling Commission.

8 June Commerce, scientific research permit application, Southwest Fisheries Center.

11 June Interior, Bureau of Land Management, transmitting comments on the Draft Environmental Impact Statement on the Proposed Federal/State Oil and Gas Lease Sale in the Beaufort Sea and the related "Project Whales" research proposal and repeating recommendations that: (1) the Bureau postpone the Beaufort Sea lease sale until there is adequate information to assure the lease sale will not adversely affect marine mammals; and (2) the Bureau consult with the National Marine Fisheries Service and the Fish and Wildlife Service to develop and implement, before undertaking the proposed action, such research efforts and analyses, stipulations, and mitigating measures as are necessary to insure that activities and events associated with the proposed action will not be to the disadvantage of marine mammals and their habitats and that any activities that may be undertaken can be effectively monitored so as to detect and prevent adverse impacts.

- 13 June Commerce, recommending that the National Marine Fisheries Service consult with the Bureau of Land Management to: (1) identify the specific information needed to determine whether the proposed action in the Beaufort Sea is likely to affect bowhead whales and other marine mammals; (2) determine and describe the most cost-effective method for obtaining the needed information; and (3) implement a coordinated research program to obtain, analyze, and evaluate that information.
- 13 June Interior, recommending that the Fish and Wildlife Service consult with the Department of State and the Bureau of Land Management on the extent to which the proposed Beaufort Sea lease sale will violate the International Agreement on the Conservation of Polar Bears.
- 14 June Interior, amendment of scientific research permit, California Department of Fish and Game.
- 18 July Commerce, commenting on the National Marine Fisheries Service's Request for Proposals concerning studies of the bottlenose dolphin, and recommending that the Service deal directly with agency colleagues to resolve such questions and seek outside information only after prompt consultation within the agency has proved inadequate.
- 18 July Interior, scientific research permit application, Donald B. Siniff.
- 25 July Interior, transmitting comments on the Fish and Wildlife Service's Technical Draft of the West Indian Manatee Recovery Plan, and recommending that: (1) the Service revise the Plan to set forth, in greater detail, the specific actions to be undertaken to protect and encourage the recovery of manatee populations; (2) develop and periodically update, at least once a year, technical appendices detailing organizational responsibilities, specific task implementation plans, and funding; and (3) that provisions be made in the plan to develop specific implementation plans for the protection of manatees in Puerto Rico and for cooperation with protection efforts in other countries.

31 July Commerce, collector of record statement, Donald P. Jacobs.

10 August Commerce, scientific research permit application, Southeast Fisheries Center.

23 August Interior, commenting on actions taken by the Fish and Wildlife Service with respect to the California sea otter; noting that little appeared to have been done to achieve the goals of the Endangered Species Act and the Marine Mammal Protection Act; requesting the names of Service personnel involved in planning and decision making relative to the California sea otter; suggesting that the Service issue monthly reports on Service efforts and progress on the California sea otter problem; recommending with respect to the sea otter recovery plan, that the Service adopt, as appropriate, recommendations made by the Commission on the Technical Draft of the West Indian Manatee Recovery Plan; noting that the sea otter recovery plan should be designed to restore the sea otter to optimum sustainable population levels; and recommending that the Service synthesize available information relevant to sea otters into a text and maps useful for identifying options for actions and information needs.

31 August Interior, scientific research permit application, Ursula Rowlett.

31 August Commerce, modification of scientific research permit, Bruce R. Mate.

12 September Commerce, commenting on the Draft Environmental Impact Statement on the Interim Convention on the Conservation of North Pacific Fur Seals, and recommending the statement be revised to:
 (1) describe alternatives with respect to their effect on the fur seal population size, the stability of the Bering Sea ecosystem, the well-being of the Pribilof natives, and U.S. efforts to protect marine mammals in the Bering Sea;
 (2) discuss additional alternatives or options;
 (3) identify how the fur seal population has changed in response to harvest strategies and commercial fishing; (4) indicate present status of the fur seal population relative to OSP;
 (5) include a map of at-sea sightings outside national economic zones; (6) assess the likelihood that pelagic sealing might resume and project its effect on the fur seal population; and
 (7) describe other U.S. conservation initiatives in the Bering Sea.

20 September Commerce, modification of scientific research permit, Kenneth S. Norris.

21 September Commerce, extension of scientific research permit, G. Causey Whittow.

2 October Commerce, scientific research permit application, J. Buchwald.

3 October Commerce, public display permit application, Marine Animal Productions, Inc.

3 October Commerce, public display permit application, Bank of Public Works and Services, Inc.

10 October Interior, National Park Service, transmitting comments on the Draft General Management Plan and Environmental Assessment for the Golden Gate/Point Reyes National Recreation Area/National Seashore, and recommending certain changes to reflect the need to balance park use and necessary protection of marine mammals.

24 October Commerce, public display permit application, Cedar Point, Inc.

24 October Commerce, public display permit application, Louis Scarpuzzi Enterprises, Inc.

25 October Commerce, public display permit application, S.A.R.L. La Galoperie.

26 October Commerce, scientific research permit application, Charles L. Ortiz.

30 October Interior, recommending that the Fish and Wildlife Service fund and make arrangements for a walrus harvest monitoring and sampling program and that, for this purpose, the Service explore the feasibility of providing funds to the Eskimo Walrus Commission to design and conduct the program in coordination with the State of Alaska and the Service.

1 November Commerce, collector of record statement, Donald P. Jacobs.

2 November Commerce, scientific research permit application, Howard Winn.

- 13 November Interior, National Park Service, commenting on Channel Islands National Monument Environmental Assessment Alternatives for Visitor Use/Interpretation/General Development and recommending that: (1) San Miguel Island be designated a Research Natural Area and Wilderness Area; (2) public access to the Point Bennett area of San Miguel Island be limited and supervised; (3) a scientific advisory committee be established to review contemplated actions at the Monument; and (4) San Miguel Island be managed to provide a stronger focus on resource protection and scientific research and education.
- 13 November Commerce, recommending that the Commission-National Marine Fisheries Service review of the Southwest Fisheries Center's tuna-porpoise research program and the Service's Hawaiian monk seal research program be held as soon as possible.
- 20 November Commerce, scientific research permit application, California Department of Fish and Game.
- 27 November Commerce, scientific research permit application, Manomet Bird Observatory.
- 4 December Commerce, noting that the National Science Foundation would be unable to provide funding support to the National Academy of Sciences for a Committee to review the international BIOMASS program and appropriate U.S. research activities in the Antarctic, and requesting that the National Oceanic and Atmospheric Administration contribute funds in partial support of the Committee's work.
- 17 December Commerce, commenting on the National Marine Fisheries Service's 3 December 1979 "Section 7" consultation with the National Park Service relative to humpback whale harassment in Glacier Bay, and recommending that the Service: (1) clarify its recommendation concerning regulation of boating activities in Glacier Bay; (2) provide the National Park Service with a more detailed description of the education and research programs it recommended be undertaken; and (3) offer to coordinate research efforts and to continue consultations with the National Park Service on necessary education and research programs.

- 19 December Interior, scientific research permit application, National Fish and Wildlife Laboratory.
- 26 December Interior, recommending that the Patuxent Wildlife Research Center conduct, as soon as possible, the analysis of collected manatee tissue samples and related plant samples for copper, pesticides, and other environmental contaminants.
- 27 December Commerce, transmitting the Commission's draft research plan for allocating its FY 80 Hawaiian monk seal appropriation, recommending that the National Marine Fisheries Service immediately take steps to appoint and convene a recovery team by early February, and requesting that the Service provide: (1) suggestions to strengthen the plan; (2) details on its ciguatoxin studies; (3) plans to prepare a "die-off" response plan and convene a workshop on the matter; (4) a description of the status of plans for the radio tracking/depth of dive study and associated permit applications; (5) an indication as to the Service's willingness to take on the Task 6 Laysan Island field studies if the Commission were to transfer funds to cover the cost; (6) the dates when the recovery team will be appointed and convened; and (7) a research proposal concerning field work on Laysan Island that can be reviewed by the Commission at its 21 February meeting and used to develop an appropriate inter-agency transfer of funds agreement.
- 27 December Interior, transmitting the Commission's draft research plan for allocating its FY 80 Hawaiian monk seal appropriation, and requesting that the Fish and Wildlife Service: (1) review and comment on the plan; (2) provide the Commission with a description of related research projects to be conducted at the Hawaiian Islands National Wildlife Refuge; and (3) advise the Commission of long and short-term plans for the abandoned Coast Guard station on Tern Island.

APPENDIX B

REPORTS ON COMMISSION-SPONSORED RESEARCH ACTIVITIES
AVAILABLE FROM THE
NATIONAL TECHNICAL INFORMATION SERVICE (NTIS) 1/

- Ainley, D.G., H.R. Huber, R.P. Henderson, and T.J. Lewis. 1977. Studies of marine mammals at the Farallon Islands, California, 1970-1975. Final report for MMC contract MM4AC002. NTIS PB-274 046. 42 pp. (\$6.00)
- _____, H.R. Huber, R.P. Henderson, T.J. Lewis, and S.H. Morrell. 1977. Studies of marine mammals at the Farallon Islands, California, 1975-1976. Final report for MMC contract MM5AC020. NTIS PB-266 249. 32 pp. (\$6.00)
- _____, H.R. Huber, R.R. LeValley, and S.H. Morrell. 1978. Studies of marine mammals at the Farallon Islands, California, 1976-1977. Final report for MMC contract MM6AC027. NTIS PB-286 603. 44 pp. (\$6.00)
- Bengtson, J.L. 1978. Review of information regarding the conservation of living resources of the Antarctic marine ecosystem. Final report for MMC contract MM8AD055. NTIS PB-289 496. 148 pp. (\$11.00)
- Bockstoce, J. 1978. A preliminary estimate of the reduction of the western Arctic bowhead whale (Balaena mysticetus) population by the pelagic whaling industry: 1848-1915. Final report for MMC contract MM7AD111. NTIS PB-286 797. 32 pp. (\$6.00)
- Brownell, R.L., C. Schonewald, and R.R. Reeves. 1979. Report on world catches of marine mammals 1965-1976. Final report for MMC contract MM6AC002. NTIS PB-290 713. 353 pp. (\$19.00)
- Chapman, D.G., L.L. Eberhardt, and J.R. Gilbert. 1977. A review of marine mammal census methods. Final report for MMC contract MM4AC014. NTIS PB-265 547. 55 pp. (\$7.00)
- Cornell, L.H., E.D. Asper, K. Osborn, and M.J. White, Jr. 1977. Investigations on cryogenic marking procedures for marine mammals. Final report for MMC contract MM6AC003. NTIS PB-291 570. 24 pp. (\$6.00)

1/ Prices shown are for printed reports and include postage within the U.S. Microfiche copies are \$3.50 each. When ordering, include the NTIS accession number (e.g., PB-274 046). Make checks payable to the National Technical Information Service. Address: 5285 Port Royal Road, Springfield, Virginia 22161.

- DeBeer, J., F. Awbrey, D. Holts, and P. Patterson. 1978. Research related to the tuna-porpoise problem: summary of research results from the first cruise of the dedicated vessel, 26 January-16 March 1978. Final report for Cruise I for MMC contract MM8AC006. Southwest Fisheries Center Admin. Rep. LJ-78-14. 27 pp. 2/
- Erickson, A.W. 1978. Population studies of killer whales (Orcinus orca) in the Pacific Northwest: a radio-marking and tracking study of killer whales. Final report for MMC contract MM5AC012. NTIS PB-285 615. 34 pp. (\$6.00)
- Fay, F.H., H.M. Feder, and S.W. Stoker. 1977. An estimation of the impact of the Pacific walrus population on its food resources in the Bering Sea. Final report for MMC contracts MM4AC006 and MM5AC024. NTIS PB-273 505. 38 pp. (\$6.00)
- Foster, M.S., C.R. Agegian, R.K. Cowen, R.F. Van Waggenen, D.K. Rose, and A.C. Hurley. 1979. Toward an understanding of the effects of sea otter foraging on kelp forest communities in central California. Final report for MMC contract MM7AC023. NTIS PB-293 891. 60 pp. (\$7.00)
- Gaines, S.E. and D. Schmidt. 1978. Laws and treaties of the United States relevant to marine mammal protection policy. Final report for MMC contract MM5AC029. NTIS PB-281 024. 668 pp. (\$32.00)
- Gard, R. 1978. Aerial census, behavior, and population dynamics study of gray whales in Mexico during the 1974-75 calving and mating season. Final report for MMC contract MM5AC006. NTIS PB-274 295. 18 pp. (\$5.00)
- _____, 1978. Aerial census and population dynamics study of gray whales in Baja California during the 1976 calving and mating season. Final report for MMC contract MM6AC014. NTIS PB-275 297. 20 pp. (\$6.00)
- Geraci, J.R. and D.J. St. Aubin. 1979. The biology of marine mammals: insights through strandings. Final report for MMC contract MM7AC020. NTIS PB-293 890. 343 pp. (\$19.00)
- _____, S.A. Testaverde, D.J. St. Aubin, and T.H. Loop. 1978. A mass stranding of the Atlantic whitesided dolphin, Lagenorhynchus acutus: a study into pathobiology and life history. Final report for MMC contract MM5AC008. NTIS PB-289 361. 141 pp. (\$11.00)

2/ Available from Director, National Marine Fisheries Service, Southwest Fisheries Center, La Jolla, California 92038.

- Gilbert, J.R., V.R. Schurman, and D.T. Richardson. 1979. Gray seals in New England: present status and management alternatives. Final report for MMC contract MM7AC002. NTIS PB-295 599. 40 pp. (\$6.00)
- Gonsalves, J.T. 1977. Improved method and device to prevent porpoise mortality application of polyvinyl panels to purse seine nets. Final report for contract MM6AC007. NTIS PB-275 088. 28 pp. (\$6.00)
- Goodman, D. 1978. Management implications of the mathematical demography of long-lived animals. Final report for MMC contract MM8AD008. NTIS PB-289 678. 80 pp. (\$8.00)
- Green, K.A. 1977. Antarctic marine ecosystem modeling revised Ross Sea model, general Southern Ocean budget, and seal model. Final report for MMC contract MM6AC032. NTIS PB-270 375. 111 pp. (\$9.00)
- Hofman, R.J. (editor). 1979. A workshop to identify new research that might contribute to the solution of a tuna-porpoise problem. Proceedings of a Marine Mammal Commission-sponsored workshop held on 8 and 9 December 1975, at the University of California, Santa Cruz. NTIS PB-290 158. 17 pp. (\$5.00)
- Huber, H.R., D.G. Ainley, S.H. Morrell, R.R. LeValley, and C.S. Strong. 1979. Studies of marine mammals at the Farallon Islands, California, 1977-1978. Final report for MMC contract MM7AC025. NTIS PB-111 602. 50 pp. (\$7.00)
- Hui, C.A. 1978. Reliability of using dentin layers for age determination in Tursiops truncatus. Final report for MMC contract MM7AC021. NTIS PB-288 444. 25 pp. (\$6.00)
- Irvine, A.B., M.D. Scott, R.S. Wells, J.H. Kaufmann and W.E. Evans. 1979. A study of the activities and movements of the Atlantic bottlenosed dolphin, Tursiops truncatus, including an evaluation of tagging techniques. Final report for MMC contracts MM4AC004 and MM5AC018. NTIS PB-298 042. 54 pp. (\$7.00)
- Johnson, B.W. and P.A. Johnson. 1978. The Hawaiian monk seal on Laysan Island: 1977. Final report for MMC contract MM7AC009. NTIS PB-285 428. 38 pp. (\$6.00)
- Johnson, M.L. and S.J. Jeffries. 1977. Population evaluation of the harbor seal (Phoca vitulina richardi) in the waters of the State of Washington. Final report for MMC contract MM5AC019. NTIS PB-270 376. 27 pp. (\$6.00)

- Katona, S.K. and S. Kraus. 1979. Photographic identification of individual humpback whales (Megaptera novaeangliae): evaluation and analysis of the technique. Final report for MMC contract MM7AC015. NTIS PB-298-740. 29 pp. (\$6.00)
- Leatherwood, J.S., R.A. Johnson, D.K. Ljungblad, and W.E. Evans. 1977. Broadband measurements of underwater acoustic target strengths of panels of tuna nets. Final report for MMC contract MM6AC020. Naval Ocean Systems Center Tech. Report 126. 19 pp. 3/
- Loughlin, T. 1978. A telemetric and tagging study of sea otter activities near Monterey, California. Final report for MMC contract MM6AC024. NTIS PB-289 682. 64 pp. (\$7.00)
- Marine Mammal Commission. 1974. Annual Report of the Marine Mammal Commission, Calendar Year 1973. Report to Congress. NTIS PB-269 709. 14 pp. (\$5.00)
- _____, 1975. Annual Report of the Marine Mammal Commission, Calendar Year 1974. Report to Congress. NTIS PB-269 710. 27 pp. (\$6.00)
- _____, 1976. Annual Report of the Marine Mammal Commission, Calendar Year 1975. Report to Congress. NTIS PB-269 711. 50 pp. (\$7.00)
- _____, 1976. Marine mammal names used by the Marine Mammal Commission. Marine Mammal Commission, Washington, D.C. 8 pp. Available on request from the Commission.
- _____, 1977. Annual Report of the Marine Mammal Commission, Calendar Year 1976. Report to Congress. NTIS PB-269 713. 71 pp. + Appendices (\$9.00)
- _____, 1978. Annual Report of the Marine Mammal Commission, Calendar Year 1977. Report to Congress. NTIS PB-281 564. 101 pp. (\$9.00)
- _____, 1979. Annual Report of the Marine Mammal Commission, Calendar Year 1978. Report to Congress. NTIS PB-106 784. 108 pp. (\$9.00)
- Mate, B.R. 1977. Aerial censusing of pinnipeds in the eastern Pacific for assessment of population numbers, migratory distributions, rookery stability, breeding effort, and recruitment. Final report for MMC contract MM5AC001. NTIS PB-265 859. 67 pp. (\$7.00)

3/ Available from the Naval Ocean Systems Center, San Diego, California 92152.

- Miller, L.K. 1978. Energetics of the northern fur seal in relation to climate and food resources of the Bering Sea. Final report for MMC contract MM5AC025. NTIS PB-275 296. 27 pp. (\$6.00)
- Norris, K.S. and J.D. Hall. 1979. Development of techniques for estimating trophic impact of marine mammals. Final report for MMC contract MM4AC013. NTIS PB-290 399. 16 pp. (\$5.00)
- _____, and R.R. Reeves (editors). 1978. Report on a workshop on problems related to humpback whales (Megaptera novaeangliae) in Hawaii. Final report for MMC contract MM7AC018. NTIS PB-280 794. 90 pp. (\$8.00)
- _____, W.E. Stuntz, and W. Rogers. 1978. The behavior of porpoises and tuna in the Eastern Tropical Pacific yellowfin tuna fishery - preliminary studies. Final report for MMC contract MM6AC022. NTIS PB-283 970. 86 pp. (\$8.00)
- Odell, D.K. 1979. A preliminary study of the ecology and population biology of the bottlenose dolphin in southeast Florida. Final report for MMC contract MM4AC003. NTIS PB-294 336. 26 pp. (\$6.00)
- _____, D.B. Siniff, and G.H. Waring. 1979. Tursiops truncatus assessment workshop. Final report for MMC contract MM5AC021. NTIS PB-291 161. 141 pp. (\$10.00)
- Pitcher, K.W. 1977. Population productivity and food habits of harbor seals in the Prince William Sound-Copper River Delta area, Alaska. Final report for MMC contract MM5AC011. NTIS PB-266 935. 36 pp. (\$6.00)
- Ralston, F. (editor). 1977. A workshop to assess research related to the porpoise/tuna problem, February 28 and March 1-2. Southwest Fisheries Center Administrative Report LJ-77-15. Final report for MMC contract MM7AC022. 119 pp., 6 appendices. 4/
- Ray, G.C., R.V. Salm, and J.A. Dobbin. 1979. Systems analysis mapping: an approach towards identifying critical habitats of marine mammals. Final report for MMC contract MM6AC011. NTIS PB80-111 594. 16 pp. (\$6.00)
- Reeves, R.R. 1977. Exploitation of harp and hooded seals in the western North Atlantic. Final report for MMC contract MM6AD055. NTIS PB-270 186. 57 pp. (\$7.00)

4/ Available from Director, National Marine Fisheries Service, Southwest Fisheries Center, La Jolla, California 92038.

- Reeves, R.R. 1977. The problem of gray whale (Eschrichtius robustus) harassment: at the breeding lagoons and during migration. Final report for MMC contract MM6AC021. NTIS PB-272 506 (Spanish translation PB-291 763). 60 pp. (\$7.00)
- Ridgway, S.H. and K. Benirschke (editors). 1977. Breeding dolphins; status, suggestions for the future. Final report for MMC contract MM6AC009. NTIS PB-273 673. 308 pp. (\$17.00)
- Risebrough, R.W. 1979. Pollutants in marine mammals a literature review and recommendations for research. Final report for MMC contract MM7AD035. NTIS PB-290 728. 64 pp. (\$7.00)
- Schmidly, D.J. and S.H. Shane. 1978. A biological assessment of the cetacean fauna of the Texas coast. Final report for MMC contract MM4AC008. NTIS PB-281 763. 38 pp. (\$6.00)
- Shane, S.H. and D.J. Schmidly. 1978. The population biology of the Atlantic bottlenose dolphin, Tursiops truncatus, in the Aransas Pass area of Texas. Final report for MMC contract MM6AC028. NTIS PB-283 393. 130 pp. (\$10.00)
- Smith, T.D. 1979. Uncertainty in estimating historical abundance of porpoise populations. Final report for MMC contract MM7AC006. NTIS PB-296 476. 59 pp. (\$7.00)
- Stoker, S.W. 1977. Report on a subtidal commercial clam fishery proposed for the Bering Sea. Final report for MMC contract MM7AD076. NTIS PB-269 712. 33 pp. (\$6.00)
- Swartz, S.L. and W.C. Cummings. 1978. Gray whales, Eschrichtius robustus, in Laguna San Ignacio, Baja California, Mexico. Final report for MMC contract MM7AC008. NTIS PB-276 319. 38 pp. (\$6.00) (Spanish translation PB-288 636. 40 pp. (\$7.00))
- _____, and M.L. Jones. 1979. The evaluation of human activities on gray whales, Eschrichtius robustus, in Laguna San Ignacio, Baja California, Mexico. Final report for MMC contract MM8AC005. NTIS PB-289 737. 34 pp. (\$6.00) (Spanish translation PB-299 598. 40 pp. (\$6.00))
- Taylor, L.R. and G. Naftel. 1978. Preliminary investigations of shark predation on the Hawaiian monk seals at Pearl and Hermes Reef and French Frigate Shoals. Final report for MMC contract MM7AC011. NTIS PB-285 626. 34 pp. (\$6.00)
- Williams, T.D. 1978. Chemical immobilization, baseline hematological parameters and oil contamination in the sea otter. Final report for MMC contract MM7AD094. NTIS PB-283 969. 27 pp. (\$6.00)

- Wilson, S.C. 1978. Social organization and behavior of harbor seals, Phoca vitulina concolor, in Maine. Final report for MMC contract MM6AC013. NTIS PB-280 188. 103 pp. (\$9.00)
- Woodhouse, C.D., R.K. Cowen, and L.R. Wilcoxon. 1977. A summary of knowledge of the sea otter, Enhydra lutris L., in California and an appraisal of the completeness of the biological understanding of the species. Final report for MMC contract MM6AC008. NTIS PB-270 374. 71 pp. (\$7.00)
- Wray, P. 1978. The West Indian manatee (Trichechus manatus) in Florida: a summary of biological, ecological, and administrative problems affecting preservation and restoration of the population. Final report for MMC contract MM8AD054. NTIS PB-285 410. 89 pp. (\$8.00)
- Yellin, M.B., C.R. Agegian, and J.S. Pearse. 1977. Ecological benchmarks of the Santa Cruz kelp forests before the re-establishment of sea otters. Final report for MMC contract MM6AC029. NTIS PB-272 813. 125 pp. (\$10.00)

The following reports on Commission-sponsored research activities are expected to be available from the National Technical Information Service in early 1980.

- Allen, S.G., D.G. Ainley, and G.W. Page. In prep. Haul out patterns of harbor seals in Bolinas Lagoon, California. Final report for MMC contract MM8AC012.
- DeBeer, J. In prep. Cooperative dedicated vessel research program on the tuna-porpoise problem: overview and final report. Final report for MMC contract MM8AC006.
- Fowler, C.W., W.T. Bunderson, M.B. Cherry, R.J. Ryel, and B.B. Steele. In prep. Comparative population dynamics of large mammals: a search for management criteria. Final report for MMC contract MM7AC013.
- Green Hammond, K.A. In prep. Fisheries management under the Fisheries Conservation and Management Act, the Marine Mammal Protection Act, and the Endangered Species Act. Final report for MMC contract MML300885-3.
- Herman, L.M., P.H. Forestell, and R.C. Antinoja. In prep. The 1976/77 migration of humpback whales into Hawaiian waters: composite description. Final report for MMC contracts MM7AC014 and MML300907-2.
- Huber, H.R., D.G. Ainley, S.H. Morrell, R.J. Boekelheide, and R.P. Henderson. In prep. Studies of marine mammals at the Farallon Islands, California, 1978-1979. Final report for MMC contract MML300888-2.
- Marine Mammal Commission. In prep. Humpback whales in Glacier Bay National Monument, Alaska. Final report of an Interagency Review Meeting.
- Mate, B.R. In prep. Workshop on marine mammal-fisheries interactions in the north eastern Pacific. Final report for MMC contract MM8AC003.
- Mathisen, O.A. In prep. Methods for the estimation of krill abundance in the Antarctic. Final report for MMC contract MM7AC032.
- Matkin, G.O. and F.H. Fay. In prep. Marine mammal-fishery interactions on the Copper River and in Prince William Sound, Alaska, 1978. Final report for MMC contract MM8AC013.
- Odell, D.K. and J.E. Reynolds. In prep. Abundance of the bottlenose dolphin, Tursiops truncatus, on the West Coast of Florida. Final report for MMC contract MM5AC026.

- Prescott, J.H. and P.M. Fiorelli. In prep. Review of the harbor porpoise (Phocoena phocoena) in the U.S. Northwest Atlantic. Final report for MMC contract MM8AC016.
- Prescott, J.H., S.D. Kraus, and J.R. Gilbert. In prep. East Coast/Gulf Coast cetacean and pinniped research workshop. Final report for MMC contract MM1533558-2.
- Sawyer-Steffan, J.E. and V.L. Kirby. In prep. A study of serum steroid hormone levels in captive female bottlenose dolphins, their correlation with reproductive status, and their application to ovulation induction in captivity. Final report for MMC contract MM7AC016.
- Swartz, S.L. and M.L. Jones. In prep. Gray whales, Eschrichtius robustus, during the 1977-1978 and 1978-1979 winter seasons in Laguna San Ignacio Baja California Sur, Mexico. Final report for MMC contract MM1533497-8.
- Wartzok, D. and G.C. Ray. In prep. The hauling-out behavior of the Pacific walrus. Final report for MMC contract MM5AC028.