

Administration of the Marine Mammal Protection Act of 1972

JANUARY 1, 1985 TO DECEMBER 31, 1985



U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
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Administration of the
MARINE MAMMAL PROTECTION ACT OF 1972
Annual Report
January 1, 1985 - December 31, 1985

Prepared by
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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

MARINE MAMMAL PROTECTION ACT

Report of the Department of the Interior

The Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361-1407, 86 Stat. 1027 (1972), 95 Stat. 979 (1981), and 98 Stat. 440 (1984)) states in Section 103(f) that:

"Within six months after the effective date of this Act [December 21, 1972] and every twelve months thereafter, the Secretary shall report to the public through publication in the Federal Register and to the Congress on the current status of all marine mammal species and population stocks subject to the provisions of this Act. His report shall describe those actions taken and those measures believed necessary, including where appropriate, the issuance of permits pursuant to this title to assure the well-being of such marine mammals."

The responsibility of the Department of the Interior is limited by section 3(11)(B) of the Act to those mammals that are members of the orders Carnivora (polar bear, sea otter and marine otter), Pinnipedia (walrus), and Sirenia (manatee and dugong). Accordingly, published herewith is the report of the Department of the Interior for the period January 1, 1985, to December 31, 1985, on the administration of the Act with regard to those mammals.

Issued at Washington, D.C., dated JUN 16 1986



Deputy Director

ADMINISTRATION OF THE MARINE MAMMAL PROTECTION ACT OF 1972

January 1, 1985 - December 31, 1985

Report of the Department of the Interior

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INTRODUCTION

AUTHORITY

The passage of the Marine Mammal Protection Act of 1972, hereafter referred to as the Act or MMPA, gave the Department of the Interior responsibility for manatees, polar bears, walruses, sea and marine otters, and dugongs. Within the Department of the Interior, the Fish and Wildlife Service (FWS or Service) is responsible for managing these marine mammals and for enforcing the moratorium on taking and importing marine mammals and marine mammal parts.

The FWS administers requests for waiving the moratorium and for the transfer of management authority to States, issues permits, conducts research programs, enforces provisions of the Act, publishes rules and regulations to manage marine mammals, cooperates with the States, and participates in international activities and agreements. In addition, the Service lists and delists species as endangered or threatened and undertakes other Endangered Species Act (ESA) related responsibilities and maintains a close working relationship with the Marine Mammal Commission (MMC) and its Committee of Scientific Advisors.

General information on distribution and migration, abundance and trends, general biology, ecological problems, allocation problems, regulations and research can be found in the 1979 annual report. Thus, it is not repeated here. There were no significant changes during this report period in the status of any of the species of marine mammals whose management is the Service's responsibility.

SPECIES LIST

Species List and Status of Marine Mammals With FWS Jurisdiction
Under the Marine Mammal Protection Act and the Endangered Species Act

<u>Species</u>		<u>Marine Mammal Protection Act</u>	<u>Endangered Species Act</u>
<u>Scientific Name</u>	<u>Common Name</u>		
<u>Ursus maritimus</u>	Polar bear	Yes	No
<u>Enhydra lutris</u>			
<u>lutris</u>	Sea otter-Alaska	Yes	No
<u>Enhydra lutris</u>			
<u>nereis</u>	Sea otter-Southern	Yes	Threatened
<u>Lutra felina</u>	Marine otter	Yes	Endangered
<u>Odobenus rosmarus</u>	Walrus	Yes	No
<u>Dugong dugon</u>	Dugong	Yes	Endangered
<u>Trichechus manatus</u>	West Indian manatee	Yes	Endangered
<u>Trichechus inunguis</u>	Amazonian manatee	Yes	Endangered
<u>Trichechus</u>			
<u>senegalensis</u>	West African manatee	Yes	Threatened



Walrus. U.S. Fish and Wildlife Service photo by David Irons.

APPROPRIATIONS

The most recent funding authorization by Congress for the Service was under Section 114 of the amended MMPA (16 U.S.C. 1361-1407, 86 Stat. 1027 (1972); 95 Stat. 979 (1981) for fiscal year (FY) 1984; and 98 Stat. 440 (1984) for FY 1985 through 1988). The calendar year (January 1, 1985 - December 31, 1985) covered by this report, however, overlaps FY 1985 and FY 1986, and funds authorized (Auth.) and appropriated (Appr.) for both fiscal years are shown below (in \$000).

Reporting Year Funding (January 1 to December 31, 1985)

	<u>MMPA Section 114</u>	
	<u>Auth.</u>	<u>Appr.</u>
FY 85	\$2,500	\$1,289
FY 86	\$3,000	\$2,024

The funding breakdown is as follows (in \$000):

	<u>Actual FY 85</u>	<u>Projected FY 86</u>
<u>Marine Mammal Protection Act</u>		
Research and Development		
Alaskan sea otter	\$ 35	\$ 319
Walrus	15	174
Polar bear	261	674
Total Research	<u>\$ 311</u>	<u>\$1,167</u>
Management		
Permit activities	\$ 25	\$ 25
Law enforcement activities	456	442
Other management activities	497	390
Total Management	<u>\$ 978</u>	<u>\$ 857</u>
MMPA Grand Total	<u>\$1,289</u>	<u>\$2,024</u>
<u>Endangered Species Act</u>		
Section 6 (Grants-to-States)		
California - Sea otter	\$ 92	\$ 92
Florida - Manatee	117	40
Total Section 6	<u>\$ 209</u>	<u>\$ 132</u>
Section 15		
Research and Development		
Endangered/threatened otters	\$ 289	\$ 448
Manatee	379	256
Monk seal	2	2
Total Section 15 Research	<u>\$ 670</u>	<u>\$ 706</u>
Management		
Endangered/threatened otters	\$ 421	\$ 272
Manatee	114	114
Monk seal ^{1/}	25	25
Total Section 15 Management	<u>\$ 560</u>	<u>\$ 411</u>
ESA Grand Total	<u>\$1,439</u>	<u>\$1,249</u>

^{1/} Although the National Marine Fisheries Service (NMFS) has primary responsibility for the monk seal, the species utilizes a National Wildlife Refuge, thereby becoming a management responsibility of the FWS pursuant to the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee).

SUMMARY OF 1985 PROGRAM

OUTER CONTINENTAL SHELF (OCS) OPERATIONS AND ENVIRONMENTAL STUDIES

The Service participates in the Department's OCS Minerals Leasing and Development Program primarily by providing advice, review, and input at various stages of the leasing process. The Service provides technical expertise on the management of fish and wildlife resources and related habitat.

During the report period, the Service participated in several lease sale processes and recommended protective measures for the appropriate marine mammal species. The Department held three oil and gas lease sales, all in the Gulf of Mexico: Central Gulf of Mexico (Sale 98, 5/22/85); Western Gulf of Mexico (Sale 102, 8/14/85); and the Eastern Gulf of Mexico (Sale 94, 12/18/85). The recommendation for the Eastern Gulf of Mexico sale on the protection of the West Indian manatee was made through an "Information to the Lessee" in the Final Notice of Sale. Early presale activities were completed on the North Aleutian Basin (Sale 92) in preparation for a scheduled sale in early 1986. In addition, meetings and discussions were held concerning the Department's five-year leasing program.

Additional OCS related information appears in the southern sea otter status report in the section entitled, "Section 7 Consultations."

RESEARCH AND DEVELOPMENT

The Division of Biological Services (DBS) is continuing to manage a group of studies known as ecological characterizations for the Minerals Management Service (MMS) in support of OCS leasing. This ecological information base is designed to assist in comprehensive coastal resource planning and management. Each characterization contains a narrative section on important marine mammals in the region, their species distribution, migration routes, and habitat preferences and requirements.

The Marine Mammal Section of the Denver Wildlife Research Center (DWRC) and the Alaska Fish and Wildlife Office of Research are responsible for carrying out research under the MMPA. Emphasis has been given to determining the ecological effects of human activities related to development and exploitation of the marine environment on marine wildlife and ecosystems.

Research conducted by the FWS or under contract during FY 85 is summarized below.

Service Conducted Research

1. Polar bear
 - a. Determine distribution, timing, and importance of polar bear maternity denning in Alaska.
 - b. Determine distribution and movement patterns of Alaskan polar bears.
 - c. Determine biological parameters of polar bears of the western and northern populations.

2. Sea otter and marine otter
 - a. Provide the biological basis for determining Optimum Sustainable Population (OSP), estimating sustainable yield, delineating stocks, and for identifying factors important to effective zonal management of sea otters in southeastern Alaska.
 - b. Determine the abundance, size and status of the southern sea otter population.
 - c. Determine the physiology, behavior, and life history of sea otters in California.
 - d. Determine the interactions between southern sea otters and nearshore communities.
 - e. Determine the status of the marine otter.
3. Walrus
 - a. Evaluate areas for potential use for population assessment, investigate hauling out patterns, and determine basic biology of walruses on hauling grounds.
4. Hawaiian monk seal
 - a. Determine the status of the Hawaiian monk seal.
5. Manatee and dugong
 - a. Determine the status, distribution, movements, and population biology of all taxa of sirenians.
 - b. Determine basic reproductive and behavioral characteristics of the West Indian manatee.
 - c. Determine ecosystem relationships of the West Indian manatee.
 - d. Determine causes of mortality and conduct biological studies on materials salvaged from carcasses of the West Indian manatee in the United States and Puerto Rico.
 - e. Determine summer movements and areas of special significance to West Indian manatees.

Contracted Research

1. San Nicolas Island ecological study. Principal investigator: W. Doyle, University of California (\$90,863 ESA Section 15).
2. Phased assumption of southeast and southwest Florida manatee salvage and necropsy program. Florida Department of Natural Resources (\$112,000 ESA Section 6 funds).
3. Determine causes of mortality for southern sea otters; salvage and necropsy; and observation of incidental take. Principal investigator: R. Hardy, California Department of Fish and Game (\$92,000 ESA Section 6 funds).

ENFORCEMENT

The Service's Division of Law Enforcement investigates known, alleged or potential violations of the Act involving illegal take or importation of marine mammals or their products for which the FWS is responsible. In addition, it assists the National Marine Fisheries Service (NMFS) by making apprehensions and conducting

investigations in cases involving endangered or threatened species under that agency's jurisdiction. Results of these efforts are referred to NMFS for its consideration and appropriate action. However, under a NMFS/Service Memorandum of Understanding, the Service retains authority over those investigations that involve endangered or threatened species under the jurisdiction of the Department of the Interior. Violations are referred to the Department's Office of the Solicitor for civil action or to the Department of Justice for criminal action.

One hundred and fifty-two marine mammal investigations were pending as of December 31, 1984, and Service agents initiated 345 new investigations during 1985. A total of 272 marine mammal investigations were also closed during the year, leaving 225 investigations remaining in a pending status as of December 31, 1985.

Computerized records to date indicate that as a result of the marine mammal investigations initiated by Service agents during 1985, two hundred and nine criminal and/or civil charges have been filed. Thus far, of those charges which have been both adjudicated and entered into the Service's computerized information system, \$18,262 in fines and one hundred and eighty days of jail time have been imposed.

Alaska Law Enforcement Actions

Undercover investigations and use of informants continued to be the most effective methods of detecting violations of the MMPA. Surveillance of walrus haul-out grounds and overt law enforcement operations also continue to be effective. Agents in northwest Alaska have had considerable success in gaining compliance with the MMPA by working with the Eskimo Walrus Commission (EWC) and the various villages.

In May 1985, Special Agents seized from four gift shops in Kodiak, Alaska, numerous products (pillows, teddy bears, pussy willows, cattails) allegedly made by an Alaskan Native from sea otter fur. The seizures were made because the marine mammal products were not commonly made or used by Alaskan Natives prior to December 21, 1972, and, therefore, they cannot be sold under Section 101(b) of the Act. All of the items allegedly were made by an Alaskan Native who has since filed a law suit in U.S. District Court against the FWS, contending that all of these items have been traditionally made by Alaskan Natives. A decision in the case is expected sometime during 1986.

Several investigations have been initiated into the illegal take and sale of sea otters, especially in areas where there is evidence the population may be experiencing excessive take. Several investigations also have been opened on the apparent illegal sale of raw polar bear hides in northwest Alaska.

The illegal sale of walrus ivory appears to have decreased markedly after numerous arrests were made in 1981. The last of those cases was recently concluded when an Anchorage man agreed to forfeit several hundred pounds of ivory to the government. As a part of the settlement, the government agreed to file no charges against him and numerous non-marine wildlife items were returned to his possession. Several new cases were opened to investigate possible sales of illegal ivory.

Charges have been filed under the Airborne Hunting Act in U.S. District Court against a Dillingham, Alaska, man for harassing and stampeding walrus by making

low flights over a hauling-out ground, and causing the death of several walrus. Criminal charges or civil penalty proceedings have been filed against a number of the marine mammal registered agents in Anchorage. The charges were for various violations of the MMPA regulations. Northwest Alaskan Natives have voiced numerous complaints that registered agents are buying ivory and none is finding its way back to Native hands.

Alaska Enforcement Summary

Marine mammal cases opened in 1985	66
Marine mammal cases closed in 1985	27
Marine mammal cases pending on 12/31/85	73
Criminal penalties	\$3,000
Jail time (days)	180

PERMITS AND REGISTRATIONS

The MMPA prohibits the take or import of marine mammals and marine mammal products, although exceptions may be made under permit for scientific research or public display in appropriate cases. These permits may be issued only if it is determined by the Service that there would be no adverse effects on the health and well-being of the marine mammal species, populations and their marine ecosystems. Registered agent permits may also be issued to authorize the buying or selling of raw marine mammal parts or products by non-Alaskan natives (i.e., persons other than Alaskan Indians, Eskimos or Aleuts) in narrowly-defined circumstances. Registered tannery permits may be issued to enable marine mammal hides to be tanned to facilitate trade of these products among Alaskan Natives.

During 1985, five new permits for scientific research were issued, and eight were amended or renewed. Four permits were issued for public display. Sixteen permits were issued (including renewals and an amendment) for registered agent/tannery and one was canceled.

The following is a brief description of permit actions taken in 1985.

Scientific Research Permits

New Permits:

--PRT 697747, David S. Bruce, Biology Department, Wheaton College, Wheaton, Illinois, issued for the period 11/14/85 through 11/30/86, authorized the importation from Canada of four blood samples collected from free-ranging polar bears to analyze for hibernation-induction trigger (HIT), a substance in the blood plasma of animals that hibernate.

--PRT 690489, Detroit Zoological Park, Royal Oak, Michigan, issued for the period 8/23/85 through 8/23/87, authorized permittee to anesthetize and extract four premolar teeth from each of seven zoo-held polar bears for use in age-determination studies.

--PRT 688824, John Gilbert Morris, Florida Institute of Technology, Department of Biology Sciences, Melbourne, Florida, issued for the period 1/9/85 through 1/31/87, authorized harassment of manatees for purposes of photographing

individuals for the scar pattern library compiled by the Service, and to collect fecal samples to analyze for seasonal dietary changes.

--PRT 689909, Hubbs-Sea World Research Institute, San Diego, California, issued for the period 1/31/85 through 1/31/87, authorized: (1) the capture and release of up to 50 northern (Alaska) sea otters in Prince William Sound, Alaska, in the course of selecting 12 for transport to Hubbs-Sea World Research Institute for oiling and rehabilitation experiments; and (2) implantation of otters with radio transmitters and subcutaneous heart rate and temperature probes. The animals would be returned to the capture site in two groups. The permit was subsequently amended to authorize release of all the otters simultaneously without transmitters.

--PRT 690699, Jane M. Packard, Florida Cooperative Fish and Wildlife Research Unit, Gainesville, Florida, issued for the period 2/25/85 through 2/28/87, authorized harassment by application of prototype dermal tags to two manatees in captivity at Sea World of Florida.

Permit Renewals/Amendments:

--PRT 691972, Dr. Ralph A. Nelson, Carle Foundation Hospital, Urbana, Illinois, was renewed for the period 6/13/85 through 6/30/88 for the importation from Canada of two polar bears for long-term study of their food intake patterns and changes in biochemistry and the importation of 300 polar bear blood samples each year to analyze for chemical substances believed essential for survival under extreme climatic conditions.

--PRT 685009, Dr. William H. Taft, Mote Marine Laboratory, Sarasota, Florida, renewed for the period 2/13/85 through 2/28/87, authorized harassment of up to 200 bottle-nosed dolphins and 20 West Indian manatees using variable tilt and range sonar to test the applicability of sonar in monitoring manatee movements and behavior. (No activity occurred under the previous permit, PRT 2-9757). In addition to renewal of PRT 2-9757, the permittee requested taking of additional animals and expansion of the study area, which were denied. (This permit was issued jointly with the NMFS).

--PRT 672624, U.S. Fish and Wildlife Service, Denver Wildlife Research Center, Denver, Colorado, renewed for the period 3/15/85 through 12/31/85, to conduct research by capturing 18 southern (California) sea otters on the California coast from Ragged Point to Cambria, including: (1) tagging and release; (2) immobilizing animals and extracting blood samples; and (3) salvaging dead animals, collecting biological samples, or aiding the caring for sick or injured animals.

--PRT 690038, U.S. Fish and Wildlife Service, Denver Wildlife Research Center, Anchorage, Alaska, renewed for the period 10/23/85 through 10/31/90, authorized the capture and recapture of up to 200 polar bears annually for marking, premolar extraction, blood sampling, radio-collaring (40 annually) and instrumenting with satellite packages (20 of the 40 annually).

--PRT 684532, U.S. Fish and Wildlife Service, Denver Wildlife Research Center, San Simeon, California. The original permit, issued for the period 10/15/84 through 10/31/87, authorized research on West Indian manatees in the U.S. and Puerto Rico including attachment of peduncle tags or free-floating tether tags housing radio transmitters. The permit was amended 12/26/85 to authorize use of

Platform Terminal Transmitter (PTT) tags, deemed superior to the type previously authorized.

--PRT 689424, National Marine Fisheries Service, Southwest Fisheries Center, LaJolla, California, issued for the period 8/13/85 through 6/30/87, authorized import of salvaged material of any marine mammal for scientific research. (This permit was issued jointly with the NMFS).

--PRT 688234, Dr. Donald B. Siniff, University of Minnesota, Minneapolis, Minnesota. The original permit, issued for the period 12/20/84 through 12/31/87, authorized the capture of up to 100 southern sea otters of which 70 could be implanted with radio transmitters. Implantation was limited to adults and independent pups weighing 25 pounds or more. The permit was amended 9/20/85 lowering the weight of independent pups from 25 to 20 pounds.

--PRT 678319, Dr. Donald B. Siniff, University of Minnesota, Minneapolis, Minnesota. The original permit, issued for the period 6/7/84 through 11/30/87, authorized the capture of up to 150 northern sea otters of which 100 could be implanted with radio transmitters. The permit was amended 9/9/85 to authorize up to three recaptures of each of the 150 otters.

Public Display Permits

--PRT 696262, Miyajima Public Aquarium, Hiroshima Prefecture, Japan, issued for the period 9/13/85 through 12/31/85, authorized the capture and export of one male and three female northern sea otters.

--PRT 685320, Otaru Public Aquarium, Inc., Otaru City, Japan, issued for the period 9/11/85 through 12/31/85, authorized the capture and export of one male and three female northern sea otters.

--PRT 693357, University of Oregon Museum of Art, Visual Arts Resources, Eugene, Oregon, issued for the period 7/29/85 through 2/28/88, authorized the importation into the United States of an exhibit of Alaskan Native handicraft Eskimo dolls crafted in part from walrus and various seal species. The exhibit is the property of the Alaska State Council on the Arts and is on tour throughout the U.S. and Canada. (This permit was issued jointly with the NMFS).

--PRT 691770, The Seattle Aquarium, Seattle, Washington, issued for the period 5/22/85 through 5/31/86, authorized the importation of one captive-born male northern sea otter from the Vancouver Public Aquarium in Vancouver, British Columbia, Canada.

Registered Agent/Registered Tannery Permits

--PRT 698161, Alaskan Arts, Anchorage, Alaska, issued for the period 10/7/85 through 9/30/87.

--PRT 694077, Brent's Custom Taxidermy, Anchorage, Alaska, issued for the period 10/7/85 through 9/30/87.

--PRT 699948, Brunner of Alaska, Anchorage, Alaska, issued for the period 11/14/85 through 11/30/87.

--PRT 686731, Corrington's Alaskan Ivory Company, Skagway, Alaska, issued for the period 2/4/85 through 2/15/87.

--PRT 688718, D & C Expeditors, Inc., Anchorage, Alaska, issued for the period 2/20/85 through 2/28/87.

--PRT 686542, Forrest Leo Dodson, Sitka, Alaska, issued for the period 2/19/85 through 2/28/87.

--PRT 675131, Ficks Taxidermy, Anchorage, Alaska, issued for the period 4/6/84 through 3/31/86, was canceled on 4/8/85 at the permittee's request.

--PRT 671391, Frontier Tanning Company, Anchorage, Alaska, issued for the period 1/6/84 through 12/31/85, was amended 6/3/85 to authorize additional species.

--PRT 696147, Interior Carvers Association of Alaska, Fairbanks, Alaska, issued for the period 9/20/85 through 9/30/87.

--PRT 688253, Lourders M. Link, Soldotna, Alaska, issued for the period 3/26/85 through 3/31/87.

--PRT 683432, New Method Fur Dressing Company, South San Francisco, California, issued for the period 3/27/85 through 3/31/87.

--PRT 692473, Northstar Products, Juneau, Alaska, issued for the period 6/3/85 through 5/31/87.

--PRT 690371, Dan H. Patterson, Sr., Anchorage, Alaska, issued for the period 3/13/85 through 3/13/87.

--PRT 695307, Silver Eagle Taxidermy, Anchorage, Alaska, issued for the period 10/17/85 through 10/17/87.

--PRT 690436, Ralph Sowards, Anchorage, Alaska, issued for the period 2/14/85 through 2/15/87.

--PRT 691228, Vancouver Taxidermy and Royal Fur Dressing, Inc., Vancouver, Washington, issued for the period 4/22/85 through 4/30/87.

--PRT 685891, White Raven Trading Post, Kodiak, Alaska, issued for the period 2/15/85 through the period 1/31/87.

INTERNATIONAL ACTIVITIES

Excess Foreign Currency Program

During this report period, the Service received new congressional authorizations for the use of excess foreign currencies in India and Pakistan. In addition, the Service continued to work in Egypt using carryover funds authorized in previous years. Those authorizations were requested under Section 8 of the Endangered Species Act, which allows such funds to be expended on projects deemed by the Secretary of the Interior to be necessary for the conservation of endangered or threatened species.

A polar bear in the East Arctic. U.S. Coast Guard photo.



In January, the Marine Biological Association of India convened a "Symposium on Endangered Marine Animals and Marine Parks" in Cochin. The Service sponsored the attendance of one Pakistani biologist and two Egyptian biologists who were able to report on the status of endangered marine mammals in their countries. Several sessions of the Symposium were devoted to biology and conservation of marine mammals.

The Service sponsored two Egyptian wildlife managers to a U.S. marine resource management orientation and training visit in September. The orientation included a portion on marine mammals.

The Service continued its support for the development of Ras Mohamed Natural Protectorate, Egypt's first marine park. This included sending a U.S. refuge management specialist to Egypt in February to assist in the planning stages of the park, and sending a team in July to develop environmental education programs.

US-USSR Environmental Agreement: Marine Mammal Project

In partnership with the NMFS, the Service cooperated with the USSR Ministry of Fisheries and USSR Academy of Sciences in an extensive program of laboratory research and joint survey expeditions to foster the conservation and management of marine mammals of importance to both countries. During 1985 American and Soviet scientists took part in two exchanges totaling six man-months, all under the auspices of the bilateral US-USSR Environmental Agreement.

In March and April, four American and four Soviet pinniped biologists participated in a six-week cooperative walrus/ice seal survey cruise aboard the USSR vessel "Zakharovo." The age, size and physical condition of each specimen taken were determined, and feeding habits and reproductive status also evaluated. Copies of the final report are available from the Service's Office of International Affairs, Room 2441, 18th and C Streets, N.W., Washington, D.C. 20240.

STATUS REPORTS

Reporting and Sealing Regulations

A proposed rule on Marine Mammal Reporting and Sealing Requirements was published in the Federal Register (50 FR 49577) on December 3, 1985. Over 1,500 copies of the proposed rule were mailed to Alaskan Natives, Native Corporations, conservation groups, and other interested parties. The public comment period, initially established for a 90-day period ending on March 3, 1986, was subsequently reopened to allow the submission of comments through March 31. In addition, a number of public meetings were held in Alaska during January and February. A final decision on the proposal is expected in 1986.

Polar Bear

The Service continued to collect harvest data from coastal dwelling Alaskan Native hunters (Figure 1). A minimum of 104 polar bears were taken by hunters from 11 villages during the July 1, 1984, through June 30, 1985, season (Table 1). The harvest was 27 percent below the average take of 143 bears for the previous four years. Forty-two percent of the 1984/85 harvest occurred in the area around the north slope villages of Kaktovik, Nuiqsut, Barrow and Wainwright. This level of

harvest is appreciably greater than the 25 percent average level of take on the north slope during the previous four years. The known sex ratio of 65 males to 35 females is similar to the average for the previous four years. The take during 1984/85 was 40 percent adult bears, 29 percent subadults, and 31 percent dependent animals. Of the polar bears harvested, the 4.6 year average age for males was lower than the average female age of 9.2 years.

Table 1. Alaskan Polar Bear Harvest by Village for Harvest Seasons Extending From July 1 to June 30, 1980-1985.

<u>Village</u>	<u>1980/81</u>	<u>1981/82</u>	<u>1982/83</u>	<u>1983/84</u>	<u>1984/85</u>	<u>Total</u>
Kaktovik	23	1	1	1		26
Nuiqsut	1					1
Barrow	6	5	12	26	28	77
Wainwright	3	16	16	32	16	83
Pt. Lay	1	4	1	9		15
Pt. Hope	9	7	21	29	17	83
Kivalina		1		3	1	5
Kotzebue				2		2
Kiana					1	1
Shishmaref	29	22	13	80	11	155
Wales	6	11	7	20	13	57
Little Diomede	1	3		10	5	19
Brevig Mission				5	1	6
Nome				1		1
Savoonga	16	21	9	48	7	101
Gambell	6	1	6	25	4	42
Emmonak		1				1
Hooper Bay				1		1
Total	101*	93	86*	292**	104	676

*Harvest data adjusted downward from previous reports for 1980/81 and 1982/83 to reflect the reexamination of historical records of the actual harvest dates of polar bears.

**Harvest data for 1983/84 increased from previous year's report to reflect additional data submitted by Alaskan Natives. For all years, numbers are subject to upward change upon receipt by the Service of additional reports.

Source: U.S. Fish and Wildlife Service.

Polar bear hunting usually begins in October and November each year in the North Slope villages. By March and April, hunting predominates in western Alaska villages (Figure 1).

During the report period a study evaluating methods to estimate polar bear population size was completed. Several recommendations were made, including the need to conduct an aerial survey for polar bears in the Bering and Chukchi Seas using a strip sample procedure and either ultra-violet or infra-red video cameras. It was also recommended that a joint census be conducted with Canada of the entire polar bear population in the Beaufort Sea because telemetry data shows the population is jointly shared between the U.S. and Canada.

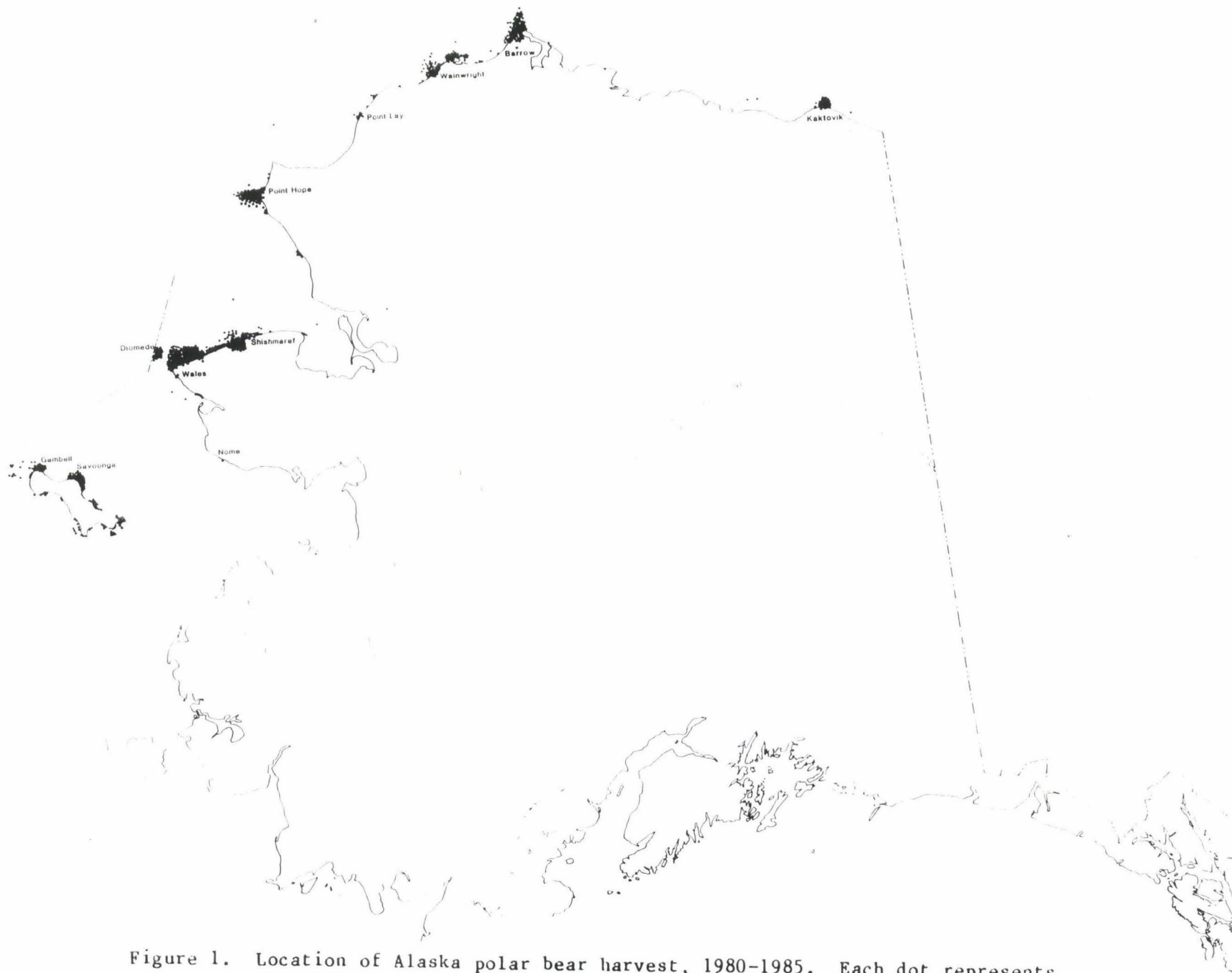


Figure 1. Location of Alaska polar bear harvest, 1980-1985. Each dot represents one animal. U.S. Fish and Wildlife Service data.

The Service continued its participation in the International Union for Conservation of Nature and Natural Resources (IUCN) Polar Bear Specialist Group. This group passed a resolution which urged the affected countries to take active steps to coordinate research and management of shared polar bear populations. Of particular interest is the Beaufort Sea population jointly shared between the United States and Canada.

To address the issue of shared populations, the Service has entered into informal discussions with the North Slope Borough (NSB) Mayor's office, the NSB Office of Environmental Protection, the NSB Fish and Game Management Committee, and organizations from Canada. The goal is to develop a cooperative management plan between polar bear user groups from the United States and Canada.

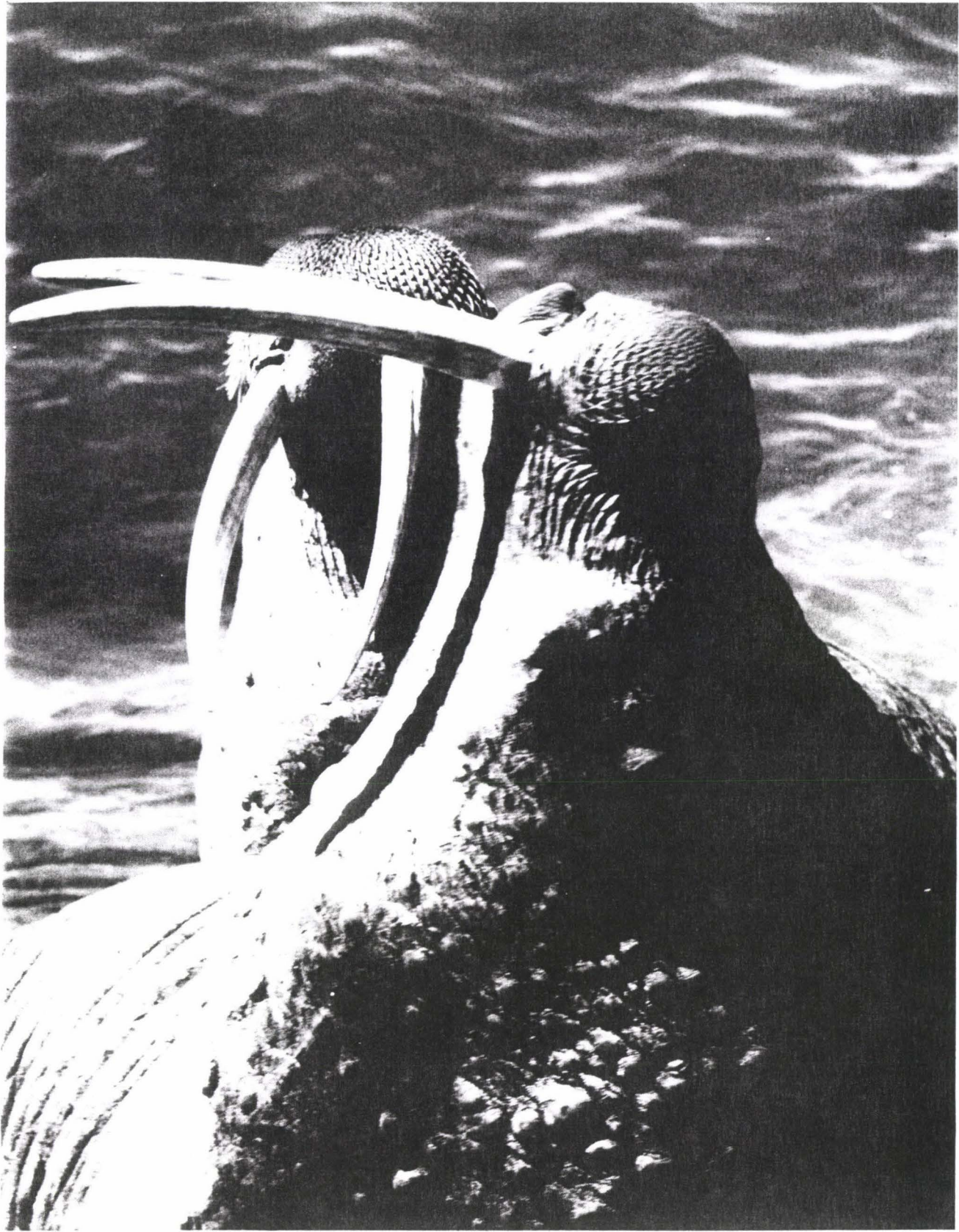
Alaskan Native polar bear subsistence harvest was summarized in papers presented at the IUCN Polar Bear Specialist Group meeting, Polar Bear Technical Group meeting and the Alaska Interagency Bear Biologist Conference and Workshop.

Walrus

The 1985 walrus harvest monitoring program was the sixth consecutive year that spring harvests were measured by the Service in five Bering Sea villages - Gambell, Savoonga, Little Diomedede, Nome/King Island and Wales. The combined total take of 3,529 animals was the second highest take recorded for subsistence hunting in the five villages. The take (Table 2) was comprised of 27 percent adult males, 58 percent adult females, 3 percent adults with sex unknown, and 12 percent calves.

Table 2. Retrieved Walrus Harvest in Selected Bering Sea Villages, 1985.

<u>Village</u>	<u>Male</u>	<u>Female</u>	<u>Unknown</u>	<u>Calves</u>	<u>Total</u>
Gambell	217	432	27	273	949
% of Total	22.9	45.5	2.8	28.8	
% Adults	32.1	63.9	4.0	-	
Savoonga	318	157	0	105	580
% of Total	54.8	27.1	0	18.1	
% Adults	66.9	33.1	-	-	
Nome/King Island	29	215	20	7	271
% of Total	10.7	79.3	7.3	2.6	
% Adults	11.0	81.4	7.6	-	
Little Diomedede	119	1,020	22	47	1,208
% of Total	9.9	84.4	1.8	3.9	
% Adults	10.2	87.9	1.9	-	
Wales	260	222	37	2	521
% of Total	49.9	42.6	7.1	0.4	
% Adults	50.1	42.8	7.1	-	
Totals	943	2,046	106	434	3,529
% of Total	26.7	58.0	3.0	12.3	
% Adults	30.5	66.1	3.4	-	



Walrus. U.S. Fish and Wildlife Service photo.

The Service, the Alaska Department of Fish and Game, the University of Maine in Orono, the EWC, and the National Oceanic and Atmospheric Administration (NOAA) cooperated in completing the American sector of the joint U.S.-U.S.S.R. Pacific walrus census. Field operations were conducted on nine days between September 16 and October 2, 1985. Eight survey flights were completed. A best total estimate of 78,500 animals has been calculated for the walrus population in the American sector, while the Russians have estimated the total walrus population in their sector to be between 95,000 and 156,000 animals. Thus, the total Pacific walrus population is estimated at between 173,500 and 234,500 animals.

The Service has continued to participate in the Pacific Walrus Technical Committee, a group that provides scientific advice to the EWC.

A contract was let to age all walrus teeth collected from 1980 through 1984. The report is due in 1986.

Sea Otter-Alaska

About 150 years of uncontrolled commercial harvest of sea otters reduced an abundant and widely distributed species in Alaska to a few remnant groups comprising about 2,000 otters. In 1911, the North Pacific Fur Seal Treaty protected sea otters from high seas harvests. Since 1911, otters have recovered to an estimated population of 150,000 to 200,000 and have expanded and repopulated much of their historic range. In some areas, the population may be at, or exceeding, historic levels.

Population surveys were conducted in eastern Prince William Sound (PWS) and the Kodiak Archipelago in 1985. The overall population in eastern PWS is similar to the population in western PWS (surveyed in 1984). The total population is approximately 5,000 animals for PWS. The number of otters counted in the waters of the Kodiak Archipelago was similar to those counted in the 1984 survey. However, distribution changed from northern Shuyak Island to southern Afognak Island.

Several in-house reports were drafted and/or finalized during 1985: A Progress Report on Sea Otter Distribution and Abundance in Western Prince William Sound, Alaska (Iron et al. 1984); Sea Otter Survey, Kodiak Island - 1984 (Simon-Jackson et al. 1985); Fisherman Opinions of Sea Otter/Fisheries Issues in Alaska (Simon-Jackson, in progress); and Traditional Use of Sea Otters by Alaskan Natives - A Literature Review (Jones 1985). Copies of the reports may be obtained by writing the U.S. Fish and Wildlife Service, 1011 E. Tudor Road, Anchorage, Alaska 99503.

Increases in subpopulations of sea otters, range expansion into areas also used by humans, and their ability to greatly reduce locally abundant shellfish fisheries are causing a growing concern among recreational, commercial and subsistence users of shellfish in some areas. The near extirpation of sea otters during the 18th and 19th centuries made it possible for shellfish populations to flourish and become the basis for fisheries interests. Now that the sea otter has again entered areas from which it has long been absent, considerable controversy has developed. There is a growing animosity toward sea otters and resentment of managing agencies that do not allow harvesting of an economically valuable fur resource.



Two southern sea otters. U.S. Fish and Wildlife Service photo by Stephen Tuttle.

Native take of sea otters in Alaska under the Native take exemption of the MMPA has been steadily increasing. The MMPA exempts the nonwasteful take of nondepleted marine mammals by Alaska Natives for subsistence purposes or for purposes of creating authentic Native articles of handicraft and clothing. Native take of sea otters appears to be increasing specifically in the waters of Prince William Sound, near Kodiak, and near Sitka. Several meetings were held with Native leaders, hunters and others in these areas to discuss the MMPA and Service regulations.

Coordination efforts involved review of scientific research permits and public display permits.

The Fourth International Otter Symposium held August 5-10, 1985, in Santa Cruz, California, was attended. The IUCN sea otter Special Survival Commission adopted a resolution which recommends that steps be taken toward a zonal management program which would ultimately benefit Alaskan sea otters.

Sea Otter-Southern

The southern sea otter population in California is a remnant of the sea otter species that once ranged throughout the northern and eastern Pacific. In the mid-1700's, the sea otter was recognized as a valuable fur-bearing animal, and commercial exploitation began. The historical population in California is estimated to have been 16,000-18,000 individuals. By 1910, the species had been virtually exterminated from its entire range except for remnant populations in Russia, Alaska, the Queen Charlotte Islands (British Columbia), central California, and the San Benito Islands (Baja California). Even though the International Fur Seal Treaty of 1911 promoted protection of sea otters on the high seas, by 1920 the British Columbia and Baja populations were also extinct. In 1913, the California State Legislature protected the sea otter from exploitation, although there were apparently very few sea otters left in California. Those that survived were probably concentrated in the Point Sur area. In 1938, 50 otters were noted at Bixby Creek in Monterey County, just north of Point Sur.

Fully protected against take, the population subsequently grew in number and range. By 1970 the population had become reestablished in about ten percent of its historical California range. However, since 1970 little or no growth in numbers has been observed, although the range has expanded somewhat. In 1977 the southern sea otter, already afforded the protection of the MMPA, was listed as a threatened species under the authority of the ESA. The sea otter's physiological vulnerability to oil and greatly reduced population size and distribution, combined with threats of oil spills resulting from increasing tanker traffic near the central coast were the primary reasons for listing the southern sea otter.

The California Department of Fish and Game (CDF&G) and the Service again conducted spring and fall surveys of sea otters during the periods of April-May and October-November, 1985 (Table 3). The area surveyed included all the 220-mile long established range of the southern sea otter population from Point Año Nuevo in Santa Cruz County to the Santa Maria River in San Luis Obispo County plus additional peripheral habitat. The fall survey resulted in the lowest count of otters and the second lowest count of independent otters since the current technique, which combines aerial and ground counts, was initiated in 1982.

 Table 3. California Sea Otter Population Survey Results, 1982-1985.

<u>Survey Date</u>	<u>Independent Otters</u>	<u>Pups</u>	<u>Total</u>
Spring 1982	1,124	222	1,346
Fall 1982	1,194	144	1,338
Spring 1983	1,131	120	1,251
Fall 1983	1,062	164	1,226
Spring 1984	1,181	123	1,304
Fall 1984	No Survey		
Spring 1985	1,124	236	1,360
Fall 1985	1,066	155	1,221

Translocation. A primary goal of the MMPA is to manage marine mammal populations at their OSP levels. The Southern Sea Otter Recovery Plan, approved in 1982, identifies research and management actions considered necessary for the conservation of the southern sea otter as well as steps necessary to determine the OSP level. One of the primary goals is to conduct appropriate research and take appropriate actions to establish at least one additional colony of sea otters at a site sufficiently distant from the extant population to assure that a viable breeding population would survive a catastrophic oil spill. The research associated with translocation will aid the Service in evaluating the effects on the ecosystem of reestablishing a sea otter population in unoccupied historical habitat, the effects of removing otters from the present population (for the purposes of translocation), the feasibility of containing a translocated population, and the population dynamics of a reestablished population. Results will be useful in determining OSP and assessing the need for, and likely consequences of, future translocations.

Because of the controversial nature and potential environmental impacts of a sea otter translocation the Service decided to prepare an Environmental Impact Statement (EIS) to evaluate the various issues, alternatives and consequences associated with a translocation and to seek public input to the decision-making process.

Scoping meetings, held in 1984, were discussed in last year's report. The most frequently raised issues regarding the translocation involved economic impacts on commercial shellfish fisheries and oil development, risks of oil spills to sea otters, the need for a plan to contain the translocated population, threats of environmental contaminants to the sea otter, economic impacts on kelp harvesting, the need to establish a reserve breeding colony, the need for a law enforcement plan, and the need for a public education program.

In conjunction with the draft EIS, the Service is preparing a proposed rulemaking and translocation plan for establishing an experimental population of sea otters, as authorized by Section 10(j) of the ESA. The translocation plan will serve as the basis for requesting research permits under Section 101(a) of the MMPA and Section 10 of the ESA.

Major progress has been made toward the development of the draft EIS and the experimental population rulemaking for proposed translocation. By the end of 1985, two Preliminary Draft EIS's (DEIS) had been produced for internal review

and comment. The first preliminary draft (January 1985) was also distributed to an Interagency Project Review Team (IPRT) for review and comment. The IPRT provides assistance in defining issues and alternatives and provides suggestions concerning the content of the EIS. The IPRT is comprised of Federal and State officials including representatives of the Service, MMS, MMC, National Oceanic and Atmospheric Administration, U.S. Coast Guard, CDF&G, California Fish and Game Commission, California Coastal Commission and California State Land Commission. Non-government organizations and the public have also been invited to participate.

Six alternatives are presently considered in the draft EIS including: (1) translocate to, and contain otters at, San Nicolas Island, California (preferred alternative); (2) translocate to, and contain otters within, northern California; (3) translocate to, and contain otters within, southern Oregon; (4) translocate to any of the three sites identified above and concurrently prevent any range expansion of the existing population into southern California; (5) provide greater protection to the existing population and do not translocate; and (6) no action.

As part of the ESA, Congress is considering specific authorization of translocation of sea otters and setting the ground rules to minimize impacts on fisheries and OCS development. H.R. 1027, passed by the House of Representatives on July 29, 1985, contains a comprehensive sea otter translocation amendment. However, the Senate Environment and Public Works Committee passed its own ESA reauthorization bill without substantive amendments with Senate floor vote still pending. The House-passed bill, if passed by the full Congress, would establish procedures for planning and implementing a translocation. The second Preliminary DEIS was written to reflect several possible outcomes of the amendments, including the requirements of H.R. 1027, no amendment at all, and a simplified amendment that would provide for the management and containment of experimental populations established under Section 10(j) of the ESA notwithstanding restrictions in the MMPA.

The EIS schedule was placed on hold in August pending Congressional action on the sea otter amendment; however, a Joint Resolution for Continuing Appropriations directed the Secretary of Interior to resume the EIS process. A third Preliminary DEIS and translocation plan were nearly ready by the end of 1985 to be distributed to the IPRT for review and comment. When the DEIS and proposed rule are published, there will be a 90-day comment period. Due to the time required to complete the decision-making process, translocation cannot take place any earlier than the fall of 1987.

Incidental Take. Major progress was made in 1985 on curtailing incidental take of sea otters in commercial fishing nets. Based on data gathered by gill and trammel net observers (partially funded through Section 6 grants to the State and by the MMC) CDF&G estimated that, on the average, 80 otters have drowned in set nets each year in recent years. CDF&G conducted public meetings on a proposal to close this fishery and subsequently implemented a 120-day emergency closure out to 15 fathoms along the sea otter range beginning on January 27, 1985. The State, on May 24, 1985, enacted Senate Bill 89 which implemented permanent closures out to 15 fathoms for most of the sea otter's range in an effort to significantly reduce the number of otters entangled in large-mesh gill and trammel nets. Because otters were observed drowned outside the closure near the central portion of the range (Ragged Point), the Director of CDF&G implemented another 120-day emergency closure on August 25, 1985, that closed a 17-mile strip of coastline (between Cape San Martin and Pt. Piedras Blancas) out to 20 fathoms. The Service actively

supported the State's conservation efforts by providing written and verbal testimony at the public and legislative hearings, and meeting on several occasions with CDF&G and the State Legislature. Based on beached carcass counts, total observed sea otter mortality this year (69 otters) was a reduction of about 50 percent compared to 1984 and about a 25 percent reduction compared to the long-term (i.e., 13-year) average.

Section 7 Consultations. Pursuant to Section 7 of the ESA, the Service reviews proposed federally funded, conducted or permitted activities that may affect the southern sea otter and issues Biological Opinions and recommendations to minimize impacts. In 1985, the Service was engaged in six Section 7 consultations (and one Section 7 Evaluation) on the sea otter in California. No "jeopardy" opinions were rendered. One of the most complex consultations resulted in a "no jeopardy" opinion issued to the MMS for proposed offshore oil and gas development and production on the Outer Continental Shelf (OCS). The consultation (June 21, 1985) analyzed proposed oil and gas development and production offshore from Pt. Pedernales in the central Santa Maria Basin. This project is located approximately 25 miles south of the southern end of the current sea otter range (the mouth of the Santa Maria River). The data indicated that there is only a 0.2 percent probability that development in the Pt. Pedernales area will result in greater than one percent mortality of the current sea otter population. Because of the low probability of a spill and the low number of otters in the southern portion of the range where a spill from the project would be likely to landfall, a spill in the project area would not likely have a significant adverse impact on the sea otter population at this time.

The MMS initiated formal Section 7 Consultation for the San Miguel Project, an OCS oil and gas development project offshore from Pt. Sal of Santa Barbara County in December 1985. The consultation originally covered the effects of the Platform Julius and pipelines to shore and six hypothetical platforms that are expected to be needed to fully recover the oil and gas resources in the San Miguel field (northern Santa Maria Basin). The lease tract for Platform Julius is seven miles from Pt. Sal and the pipelines to shore landfall just north of the Santa Maria River, which is the southern boundary of the established sea otter range.

Review of OCS oil development EIS's and Biological Assessments (pursuant to Section 7 of the ESA) indicates an increasing threat to the southern sea otter, especially where natural range expansion to the south is anticipated over the next 20-25 years. The DEIS for the San Miguel Project (northern Santa Maria Basin offshore of Pt. Sal) indicates that full development of the San Miguel Project significantly increases the risk to the southern sea otter compared to the risk expected from full development of the Pt. Arguello and Pt. Pedernales projects, both individually and collectively. Oil spills from the San Miguel Project are more likely to affect future sea otter habitat (habitat into which the southern sea otter is expected to become naturally reestablished) rather than the current range. The consultation was in progress at year's end.

The Service issued a "no jeopardy" Biological Opinion to the Bureau of Land Management (BLM) on the proposed Pacific Texas Pipeline and its effects on southern sea otters. The proposal involved the construction of a pipeline from

Los Angeles to Texas that would transport crude oil unloaded from tankers or carried by pipeline from the Alaska North Slope, California coast, and the Pacific rim. The pipeline would be served by a marine terminal at the Port of Los Angeles and carry oil to Midland, Texas, for refinement. The operation of the Pacific Texas Pipeline would result in tankers that now travel through the Panama Canal being rerouted through the Santa Barbara Channel to the Port of Los Angeles. The change in routing will increase the number of vessels moving closer to shore. The BLM concluded that the Pacific Texas project could result in an additional 6.6 spills in the Santa Barbara Channel area over the 25-year life of the project. Oil spill trajectories indicated that there is a small (i.e., less than 0.5 percent) conditional probability that a spill would contact the current sea otter range. The most likely location for landfall of a spill is in the area south of the current range, primarily the area between Point Conception and Point Arguello which the sea otter population is expected to naturally repopulate during the next 20-25 years.

On September 20, 1985, the Service issued a "no jeopardy" Biological Opinion to the Environmental Protection Agency (EPA) regarding their issuance of 301(h) variance permits pursuant to the 1972 Federal Water Pollution Control Act, as amended (i.e., the Clean Water Act). At issue were the possible effects on the sea otter that could result from the proposal by the City of Watsonville to relocate its ocean outfall for wastewater and from the Clean Water Act Section 301(h) proposals (to waive the requirement to upgrade wastewater disposal facilities to secondary treatment) by the cities of Santa Cruz and Watsonville. The monitoring program required as a component of 301(h) should adequately assess and evaluate the effects of the variance. The Service, after considering the expected level of discharge, and principally, the short-term (i.e., five years) of the proposed variance during which the effects of the discharge will be monitored and criteria developed to evaluate effects of wastewater discharges on sea otters and their main prey species, determined that the impacts of the 301(h) permit modifications are not likely to jeopardize the sea otter.

On June 27, 1985, the Service determined that a Corps of Engineer's (COE) proposal to repair the breakwater at Morro Bay in San Luis Obispo County would not jeopardize the southern sea otter.

On October 7, 1985, the Office of Sea Otter Coordination completed a Section 7 Evaluation of the Service's proposed translocation of southern sea otters to San Nicolas Island (the preferred translocation site). The evaluation formally initiates the internal Section 7 consultation process.

An Intra-Service Section 7 Consultation with the Federal Wildlife Permit Office was completed regarding CDF&G's application for renewal of its sea otter research permit for tagging, herding, capture and tooth extraction. The Biological Opinion concluded that CDF&G's proposal would promote the continued existence of the species. The Service recommended: (1) minimum and maximum number of herding attempts to obtain conclusive results without excessive harassment of otters; (2) dependent pups caught in the capture nets should be released immediately to their mothers, and mothers with dependent pups should be released simultaneously to avoid premature weaning; and (3) a veterinarian should be present if anesthetics are administered.

Section 6 of the ESA. The Service provides funding for sea otter conservation to CDF&G through Section 6, Grant-in-Aid to the States, of the ESA. The CDF&G uses

these funds to obtain an index of sea otter mortality and to determine the causes of death. The CDF&G program involves sea otter carcass salvage and necropsy, and observation of incidental take of sea otters in commercial fishing nets.

The carcass salvage program involves computer cataloging of all verified observations of dead sea otters. Necropsies are performed on fresh carcasses; those animals suspected of being shot are X-rayed. During the reporting period, 69 sea otter mortalities were reported by salvage personnel. In 1984, 131 otters were recovered, compared to a 13-year average of 91 otters per year. Of the 69 carcasses that were found in 1985, 18 were known to have died directly or indirectly from human causes (12 by gill net operations and 6 by gunshot wounds). A large percentage of the salvaged otters were classified as "unknown" for cause of death. Likely reasons for the relatively lower recorded mortality were the lack of typical wintertime occurrence of fresh, emaciated carcasses due to wintertime starvation, the enactment of the emergency gill net closure in January 1985, and passage of California Senate Bill 89 in May 1985 that imposed gear restrictions designed to eliminate the accidental take of sea otters in gill and trammel nets. Observations of gill net activities since the closures were implemented revealed some problem areas; amendments to existing legislation were introduced to further reduce these losses. Future measures may include additional fishing closures extending out to 20 fathoms in parts of the sea otter's range. The California Fish and Game Commission approved five experimental gear permits which will allow fishermen to experiment with modified seines and trawls to determine if halibut and flounder can be economically caught using this gear without entangling sea otters and other non-target species.

Searches under MMC contract of selected beaches for otter carcasses in the southern half of the sea otter range ended in 1985 and may not be resumed. The beaches north of Point Sur were searched by volunteers. The variability in search effort continues to be a major drawback to using the salvaged otter carcass data as an index of total mortality.

The CDF&G cooperated with the Service in conducting the spring and fall population counts discussed earlier.

Methods for containing sea otters and controlling their movements were studied by CDF&G with Section 6 funds. This project was initiated in recognition that protection of sea otters from oil spills as well as managing a new colony of sea otters would be enhanced with the development of means to control their movement. The 1985 studies were designed to examine the feasibility of moving otters into a specially designed trammel net with floats with the objective of capturing large numbers of otters in a short period of time. In the event of an uncontained oil spill it may be desirable to quickly move otters out of the path of the slick.

If the Service's translocation proposal is implemented, a certain age and sex ratio must be achieved for the group of otters captured for relocation to the new breeding colony site. Also related to translocation, otters that stray from the translocation site must be captured and returned to either the translocation site or the range of the parent population. The capture and recapture of otters is also necessary to monitor the progress of research animals, and to tag and take body weights and measurements.

Current techniques to capture otters are either passive capture in floating nets (which can take some time) or more labor intensive methods that involve either a



A West Indian manatee and a diver observe each other. U.S. Fish and Wildlife Service photo by James A. Powell.

diver with a hand-held capture device or dip-netting from a boat. Both labor intensive methods capture only one otter at a time. Improving the efficiency of removing otters from an area should reduce the impacts of oil spills on the sea otter population as well as facilitate capture for translocation and containment of any new colony of sea otters.

The CDF&G enhanced their diver-held capture devices by modifying equipment and testing new techniques. Modifications of gear such as adding rebreathers to eliminate bubbles and changing the propulsion apparatus has made the device less cumbersome for the diver and less apparent to the otters. Capture rates are expected to improve with further testing.

Manatee

The Service's manatee salvage program continued for the 12th consecutive year but with the responsibility for the operation assumed by the Florida Department of Natural Resources (FDNR) on July 1. A Section 6 ESA grant proposal of \$106,000 for a three-year period beginning in 1985 has enabled FDNR to accept this responsibility. The 129 carcasses recovered this year approached the record number of 131 recorded in 1984. Necropsies revealed that, once again, boat barge collisions accounted for the largest identifiable cause of mortality (27 percent). Based on data gathered from the increasing number of ESA Section 7 consultations with the COE on boat docks, marinas and dredging projects, this threat to the manatee will only increase. For instance, in 1984, 21 formal consultations involving the manatee were completed with the COE while in 1985, 44 formal consultations occurred. The seriousness of the impacts is drastically illustrated by the number of jeopardy biological opinions issued, three in 1983 and eight in 1985. The insidious nature of the cumulative impact of boating projects on the manatee resulted in a consolidated jeopardy opinion for several boating facility developments proposed for a 40 mile stretch of the Indian River on Florida's east coast. The Service's biological judgement is that future boating facilities in this stretch of the Indian River are likely to jeopardize the manatee unless a manatee protection plan to reduce the current level of manatee boat/barge collisions has been developed and is in place. This situation is likely to be repeated in other areas of Florida where manatees and boats are in serious conflict.

Coordination with the COE continued in an effort to minimize mortality at navigation locks. The COE installed screens at two additional locks this year and has plans for screens at three additional locks. Manatee lock mortality is down from six in 1983 and three in 1984 to one in 1985. Hopefully this reflects in part the screening of three locks to date. The Service will closely monitor the effectiveness of these measures to ensure manatee lock mortality is permanently reduced or eliminated.

Service funded manatee studies at the Florida Cooperative Fish and Wildlife Research Unit were completed this year with the submittal to the Service of three additional reports titled: "Development of Manatee Aerial Survey Techniques," "Manatee Response to Interrupted Operation of the Ft. Myers Plant," and "Modeling Manatee Populations." A population survey technique developed by Dr. Jane Packard for possible use as means to assess Statewide manatee population trends was further tested at Crystal River National Wildlife Refuge (NWR) during the winter of 1985-86 by Refuge and Sirenia Project staff. State,

Federal and several nongovernmental manatee biologists reviewed 1984-85 Statewide winter survey data and determined that 1,200 manatees represents a minimum population size. While this is higher than the generally stated figure of 1,000 for a total population size, no comparison can be drawn nor does 1,200 reflect a population estimate because of the many variables inherent in surveying manatees. This is precisely the reason why the Service has funded research for the development of a population survey method which can be used as an index.

Preliminary results of Dr. Packard's population modeling efforts indicate the maximum rate of increase of manatee populations is likely to be as low as 2-7 percent and noted the possibility of a current negative rate of change in the manatee populations because of uncertainties involved in estimating population parameters. She further points out that the margin for error in managing the population is narrow and that management policies are well justified in being conservative regarding reduction of impacts to the population.

The manatee identification catalog initiated in 1981 is being updated and now includes four years of data from Statewide observations. This survey, funded by the Service and Florida Power and Light Company, has proved to be particularly useful in documenting long distance manatee movements throughout the State.

Researchers at the Service's Sirenia Project continued studies of basic reproductive and behavioral characteristics of manatees individually recognized by unique scar patterns. Sixteen manatees were radio-tagged in the Caloosahatchee River for the first of a two field season study to determine summer movements and habitat use of manatees in southwest Florida. Additionally, a manatee originally rescued in Mississippi in a debilitated condition in 1979 was radio-tagged with a satellite transmitter and released in the Homosassa River in February 1985. This effort not only demonstrated the short-term successful assimilation of a rehabilitated manatee into the wild population, but also provided valuable experience for subsequent use of satellite telemetry technology in manatee research and important data for a Section 7 consultation in the Suwannee River. Food habit studies have been initiated and will include an analysis of gut content samples from salvaged carcasses and field observation of radio-tagged manatees. Also initiated during the fall of 1985 were twice monthly distribution surveys on the east coast. These surveys are funded by the COE and will occur in conjunction with surveys flown by the FDNR, and Brevard County. The Indian River from Riviera Beach in Palm Beach County to the Tomoka River in Volusia County, a distance of approximately 175 miles, will be surveyed in a coordinated manner enabling researchers to determine manatee distribution, abundance and seasonal movement patterns along Florida's east coast. The Service's Sirenia Project, also under COE support, is synthesizing all available recent data on manatee distribution and abundance and is updating the 1974 report by D.S. Hartman, "Distribution, Status, and Conservation of the Manatee in the United States."

The Service convened a meeting with the FDNR, the Suwannee River Water Management District (SRWMD), the MMC and The Nature Conservancy to coordinate habitat protection efforts for the manatee in the Southern Big Bend region of Florida. The FDNR has initiated acquisition efforts for a Crystal River Project Design totaling approximately 11,000 acres. The SRWMD is developing an acquisition plan for a buffer strip along much of the Suwannee River not encompassed in the Lower Suwannee NWR.



U.S. Fish and Wildlife Service Sirenia Project researchers releasing a radio-tagged manatee at Ft. Myers, Florida. U.S. Fish and Wildlife Service photo by Angela Kantola.

The Service has filed condemnation proceedings to acquire approximately 13 acres of water bottoms adjacent to the Crystal River NWR. Control of the water bottoms is necessary to post a manatee sanctuary area. Presently the bottoms continue to be leased from the owner during the winter months.

The Service continues to support the Manatee Rescue Contingency Plan conducted through cooperative agreement with Sea World and Miami Seaquarium. The agreement provides for rescue services and rehabilitation for injured or distressed manatees.

The Florida Marine Patrol (FMP) is an integral and essential link in injured manatee rescue efforts since any reports from the public of distressed manatees goes to the FMP through the "Resource Alert Watch Line." The FMP determines the validity of the reports after which Sea World and Miami Seaquarium coordinate rescue efforts with the Service's Jacksonville Endangered Species Office. The FMP also responds to dead manatee reports and secures carcasses for subsequent retrieval and necropsy by the FDNR or its two contractors, Sea World and the University of Miami.

Finally, the FDNR continues to develop its new manatee program. Its major emphasis is management oriented and it has focused its initial efforts on upgrading the posting of its 20 manatee speed regulatory zones and the carcass salvage program. They also have a growing involvement in permit reviews for boating facility development and they work closely with the "Save the Manatee Club" on information and education efforts. The Service and the FDNR enjoy a close and mutually supportive working relationship.

Dugong

Dugongs occur in limited numbers throughout Indonesia including Palau Island, Trust Territories of the Pacific Islands. This island group has opted for Republic status under the Compact of Free Association between the United States of America and the Trust Territories.

The Service has executed a Memorandum of Understanding (MOU) with the Republic of Palau providing for technical assistance in resource conservation. An item in the MOU is the provision for review of research proposals. This provision was included at the specific request of the Republic of Palau. They do not presently have the staff to make these evaluations or to conduct baseline studies of their resources.

Traditionally, the dugong had high cultural significance to the Palauans, as well as affording a good source of protein. A bracelet made from the atlas vertebra of a dugong could be worn only by the chiefs of villages or municipalities, and as a consequence, the dugong was effectively conserved by the chief. At the present, the role of traditional chiefs has been greatly diminished resulting in little protection for this species.

Modern technology (speed boats, explosives, spear guns, etc.) has also had a tremendous impact on the taking of this species and has perhaps altered the distribution of the species. The limited resources of the Republic of Palau are insufficient to promote protection of the dugong from illegal taking.

Unregulated taking of the dugong has become critical. There is substantial disagreement among Palauans and outside researchers on the number of dugongs

present in Palau. Aerial surveys in 1977 and 1978 led to a population estimate of not more than 50 individuals, substantially less than estimates offered by most local residents. An additional survey was conducted by Service personnel in 1983, which indicates the population size probably remains the same. Certainly, there has not been any improvement in the situation. Data from this survey will be analyzed along with those from previous surveys and a more detailed report will be presented in the future. Because of the very low population and the continued illegal take of animals, the Palau dugong population could be exterminated by the end of the century.

In 1985 the Service worked with Australian scientists to modify the equipment used in radiotracking manatees so that it could be used on dugongs. Prototypes have been developed and there are plans to test them on captive Indonesian dugongs in 1986. The Indonesians are very interested in the project and Service coordination with them in 1985 was very good.

Service efforts have been directed towards developing a census methodology that is understood and accepted by the Palauans. Without this acceptance, any results derived will be suspect. However, this effort has not been a sustained one due to insufficient resources. An effective methodology which incorporates the observations and concerns of the Palauans is essential. Unless the fragile nature of this isolated dugong population can be clearly demonstrated to the Palauans, any effort to promote conservation of the dugong will be virtually ineffectual.

No formal Section 7 consultations under the ESA were completed during 1985 regarding the dugong.

Hawaiian Monk Seal

Endangered species funding in 1985 for the Hawaiian monk seal was utilized in support of the Service's Field Station at Tern Island, French Frigate Shoals (FFS). Service activities in relation to monk seals focused on management studies at FFS and Laysan Island, and on cooperative research projects with the NMFS in the Hawaiian Islands NWR and Johnson Atoll NWR.

The Refuge staff operated the Tern Island facility throughout 1985, and, in so doing, provided an opportunity to continue management studies initiated in 1979. The seal population using Tern Island was monitored via surveys conducted every four days. The location of all animals identifiable by scars or other marks was recorded. Monthly atoll surveys of the other islets were also made by boat from Tern Island. A Service volunteer at Tern Island assisted in the census and individual identification of seals that haul out there. Service personnel also served on the Monk Seal Recovery Team which met during the year.

Data collected by NMFS and FWS personnel indicated that pup production at FFS for 1983, 1984, and 1985 was 90, 106, and 96 (87 of which survived and were tagged), respectively (see Table 4). In 1985, 94 percent of the pup production in FFS was at East Whale Skate and Round Islands. The aerial photo project was not continued in 1985.

Table 4. Number of Hawaiian Monk Seals Born in 1985.

<u>Island</u>	<u>Number born</u>	<u>Number weaned and tagged</u>
FFS	96	87
Laysan	32	30
Lisianski	15	14
Pearl and Hermes Reef	<u>19</u>	<u>15</u>
Totals	162	146

Special Use Permits were issued to the NMFS to conduct cooperative studies of monk seals in the Hawaiian Islands NWR. These studies involved field camps on several islands and NMFS personnel stationed at FFS. The primary purpose of these studies was to assess populations of seals through tagging (see Table 5).

Table 5. Number of Tagged Hawaiian Monk Seals Resighted in 1985.

<u>Island</u>	<u>Year Tagged</u>	<u>Number Originally Tagged</u>	<u>Number Resighted</u>
FFS	1984	92	73
Laysan	1984	29	26
	1983	20	20
Lisianski	1984	15	14
	1983	24	18
	1982	<u>13</u>	<u>11</u>
Totals		193	162

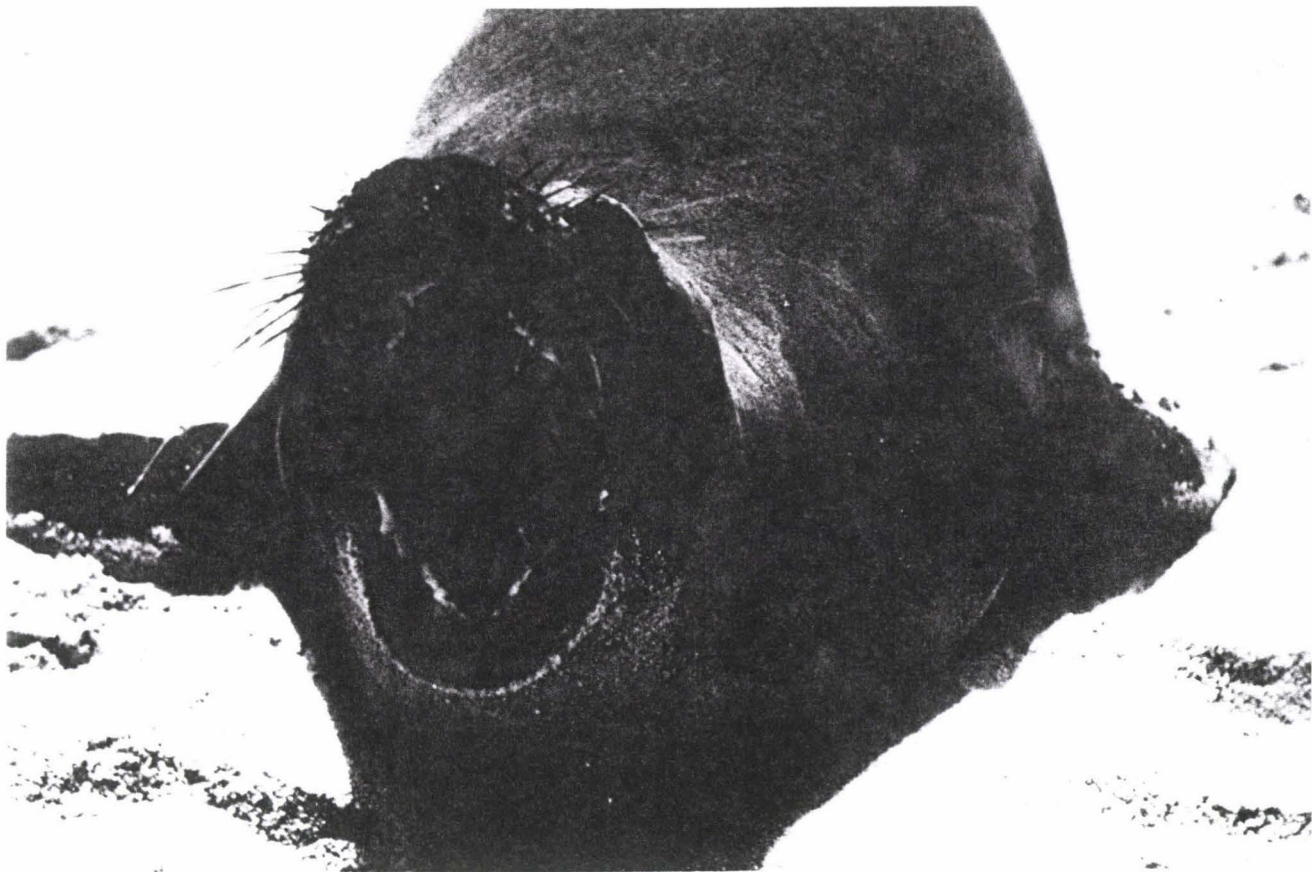
At Laysan Island, efforts were concentrated on documenting mobbing behavior of adult male monk seals so as to identify individual adult males involved in such attacks. Marine debris that would entangle seals was destroyed and samples were taken for analysis of origin. Field camps were established at Necker Island (August 24), Laysan Island (March 3 - November 30), Lisianski Island (June 17 - July 20) and Pearl and Hermes Reef (June 19 - July 17). NMFS personnel were stationed at Tern Island at FFS from April 4 - September 11 and December 2-19.

Other cooperative studies involved the capture and removal of two underdeveloped pups from FFS for transfer and headstarting at Kure Atoll. Three of the 1984 underdeveloped pups were released at Kure in June 1985, and were regularly sighted through the year. One pup released in 1984 was found dead in 1985.

Monk seal field surveys were conducted on Midway by FWS personnel. Field efforts on Midway also included coordination with the U.S. Navy and the contractor to minimize conflicts with monk seals.

The Service continued work on a Refuge Master Plan for the Hawaiian Islands NWR. The Master Plan includes long range management alternatives for FFS in view of its importance to monk seal recovery efforts. Formal consultation as required

by Section 7 of the ESA was initiated with the NMFS to assess the impact of the Master Plan on the monk seal. The biological opinion is expected in 1986. It is anticipated that the Master Plan will take effect in 1986.



Hawaiian monk seal at the Hawaiian Islands National Wildlife Refuge.
U.S. Fish and Wildlife Service photo.