

**SURVEY OF FEDERALLY-FUNDED
MARINE MAMMAL RESEARCH AND STUDIES
FY74 - FY95**

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PREFACE

The Marine Mammal Protection Act directs the Marine Mammal Commission, among other things, to conduct a continuing review of research programs conducted or proposed to be conducted under the authority of the Act. To help meet this responsibility, the Commission annually surveys other Federal agencies and the Smithsonian Institution, a trust instrumentality of the United States, to learn of research or studies they are either supporting or conducting which bear upon the conservation and protection of marine mammals. Information provided in response to the annual surveys is summarized in this report.

The summary is an update of previous summaries prepared by the author for the Marine Mammal Commission (see Table 1). The user of this summary will find the Table of Contents helpful for locating specific information and for understanding the organization and breadth of the material provided. The first section is an overview of all Federally-funded research involving marine mammals. The second section focuses upon research and studies conducted under authority of the Act. The last section lists all research and study projects identified by the surveys. Appendix A is a list of publications identified by the agencies as sources (or pending sources) of marine mammal information resulting from Federally-funded research and studies. Appendix B lists recent projects beginning with FY90. Comprehensive summaries of research and studies conducted or supported by Federal agencies and the Smithsonian Institution in fiscal years 1970 through 1979, and from fiscal years 1980 through 1989, are provided in the FY70-FY79 and FY70-FY89 reports, respectively (see p. 5).

Agencies vary in their ability to identify and retrieve information on marine mammal research and studies. Also completeness and accuracy of information provided to the Commission varies by agency and by year. One problem in this regard is the ability of various agencies to differentiate between administrative, management, enforcement, and research costs. Consequently, some of the amounts reported herein may cover activities other than research.

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LIST OF ACRONYMS

<u>Acronym</u>	<u>Definition</u>
AFSC	Alaska Fisheries Science Center
AFWRC	Alaska Fish and Wildlife Research Center
ARPA	Advanced Research Projects Agency
ASC	Alaska Science Center (formerly AFWRC)
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DHHS	Department of Health and Human Services
DOI	Department of the Interior
DOS	Department of State
DWRC	Denver Wildlife Research Center
EPA	Environmental Protection Agency
FWS	Fish and Wildlife Service
FY	Fiscal Year
IWC	International Whaling Commission
MESC	Midcontinent Ecological Science Center (formerly NERC)
MMC	Marine Mammal Commission
MMPA	Marine Mammal Protection Act
MMS	Minerals Management Service
NASA	National Aeronautics and Space Administration
NBS	National Biological Service
NCCOSC	Naval Command, Control, & Ocean Surveillance Center (formerly NOCS)
NEFSC	Northeast Fisheries Science Center
NERC	National Ecology Research Center
NFWL	National Fish and Wildlife Laboratory
NIH	National Institutes of Health
NMFS	National Marine Fisheries Service
NMML	National Marine Mammal Laboratory
NOAA	National Oceanic and Atmospheric Administration
NOSC	Naval Ocean Systems Center
NOPPO	National Ocean Pollution Program Office
NPFMC	North Pacific Fisheries Management Council
NPS	National Park Service
NSF	National Science Foundation
NSGCP	National Sea Grant College Program
NWFSC	Northwest Fisheries Science Center
OCRM	Office of Ocean and Coastal Resource Management
OCS	Outer Continental Shelf
OCSEAP	Outer Continental Shelf Environmental Assessment Program
ORCA	Office of Ocean Resources Conservation and Assessment (formerly OMA)
OMA	Office of Oceanography and Marine Assessment
SBSC	Southern Biological Science Center
SEFSC	Southeast Fisheries Science Center
SERDP	Strategic Environmental Research and Development Program
SI	Smithsonian Institution
SWFSC	Southwest Fisheries Science Center
TQ	Transition Quarter (July-September 1976)
USAF	U.S. Air Force
USDA	U.S. Department of Agriculture
USCG	U.S. Coast Guard
USGS	U.S. Geological Survey

I. OVERVIEW OF FEDERAL RESEARCH PROGRAMS INVOLVING MARINE MAMMALS

Fourteen department-level Federal agencies reported funding marine mammal research and studies from FY74 through FY95. Often more than one agency within the larger departments funded research. Some agencies funded projects in all years, whereas others supported research or studies during only part of the period. The Department of Transportation (i.e., Coast Guard) has intermittently funded projects. The Veterans Administration gave support to a few projects early in the period; but since no further support has occurred in the past decade, this agency is no longer included in this survey. The following section in this chapter reviews the types of studies that have been supported by agencies that have funded marine mammal research during at least four of the preceding ten years. Table 1 lists previous survey information on Federally-funded marine mammal research and studies which is available through the National Technical Information Service.

The average annual number of projects funded with Federal monies during the period FY74-FY95 was 156.4 (Table 2). The trends of these data are depicted in Figure 1. Data for 1976 include the 12-month fiscal year plus a transition quarter (TQ76 = July through September 1976) when the first day of the Federal fiscal year was shifted from 1 July to 1 October. Total funds reported expended by each agency annually for marine mammal research and studies are shown in Table 3. Funding by geographical region, taxonomic group, and research issue are listed in Tables 4, 5, and 6, respectively.

FEDERAL AGENCIES FUNDING MARINE MAMMAL RESEARCH AND STUDIES

Department of Agriculture (USDA)

The Department of Agriculture has conducted studies associated with marine mammal health, environmental damage assessment, and economic interrelationships. These studies have included the San Miguel sea lion virus, investigations of epizootics, and natural resource planning.

Department of Commerce (DOC)

The Department of Commerce, through the National Marine Fisheries Service (NMFS), conducts marine mammal and fisheries research with emphasis on resource surveys, basic biology, ecological interactions, and resource management for use in conserving living marine resources. For example, recent NMFS research programs have included Eastern Tropical Pacific tuna/porpoise interactions and the recovery of North Pacific fur seals, Steller sea lions, Hawaiian monk seals, and endangered whales. The cetaceans and pinnipeds (exclusive of the walrus) are among the responsibilities of this department. Research funding is heavily committed to assessment of marine mammal populations and any impacts associated with fisheries and other human activities. More recently, support for studies to determine the causes of unusual marine mammal mortality events have also been supported as well as a national marine mammal tissue banking program. Other units within the National Oceanic and Atmospheric Administration (NOAA) have supported studies on marine mammals, including the National Ocean Pollution Program Office (NOPPO), the National Sea Grant College Program (NSGCP), the Office of Ocean and Coastal Resource Management (OCRM), and the Office of Ocean Resources Conservation and Assessment (ORCA). Additionally, the North Pacific Fisheries Management Council (NPFMC) has supported studies. The former Outer Continental Shelf Environmental Assessment Program (OCSEAP), managed by NOAA/ORCA, was responsible for part of the Alaska OCS research. OCSEAP was created through interagency agreement between NOAA and the Minerals Management Service (MMS); project funding came from MMS.

Department of Defense (DOD)

The Department of Defense conducts marine mammal research through the Headquarters Space Division of the Air Force; the Army Corps of Engineers; for Navy -- the Assistant Secretary of the Navy for Installations and Environment, CNO Operational Activities, the Naval Command Control and Ocean Surveillance Center, plus the Office of Naval Research; and the joint, multi-agency Strategic Environmental Research and Development Program (SERDP) plus the Advanced Research Projects Agency (ARPA). DOD research varies from basic environmental impact studies to applied military research to monitoring abundance and distribution of marine mammals at military facilities and bases. Differentiating marine mammals from military targets, furthering the understanding of the undersea environment, and the utilization of marine mammals with specific behavioral traits for applied research are the major thrusts of the Navy program; studies on behavior modification, health and husbandry, bioacoustics, cognition and memory, as well as sensory perception are supported.

Department of Energy (DOE)

The Department of Energy occasionally supports marine mammal research. Studies have focused primarily on energy flow in aquatic ecosystems and on problems associated with monitoring marine mammals.

Department of Health and Human Services (DHHS)

The Department of Health and Human Services, through the National Institutes of Health, funds some research on marine mammals; the research is basically oriented toward understanding mammalian morphology, genetics, physiology, and health (including disease processes).

Department of the Interior (DOI)

The Department of the Interior, through the Minerals Management Service (MMS), supports environmental assessment studies involving the effects of outer continental shelf (OCS) development on marine mammals and their habitats. Special studies on the effects of oil spills, noise, and other variables associated with oil and gas activities are also supported. The U.S. Geological Survey (USGS) has conducted research on marine mammal paleontology, and the National Park Service (NPS) supports some marine mammal studies relative to national park, seashore, and monument development and management. Through the end of FY93, the Fish and Wildlife Service (FWS) supported management related research on the biology, population dynamics, and ecology of walruses, sea otters, polar bears, and sirenians (manatees and dugong). With the beginning of FY94, the newly formed National Biological Service (NBS) took over conduct of research on the biology, population dynamics, and ecology of these species, in support of FWS and other DOI resource management bureaus.

Department of State (DOS)

The Department of State supports studies to compile and evaluate information on Antarctic and other treaty negotiations that may have a bearing on marine mammals and other marine species. Funds are also provided to further cetacean-related research of the Inter-American Tropical Tuna Commission, the International Whaling Commission, the National Academy of Sciences, the Marine Mammal Commission, and other organizations.

Environmental Protection Agency (EPA)

The Environmental Protection Agency supports marine mammal research through the study and monitoring of pollutant levels in coastal and pelagic marine organisms and assisting efforts to study causes of marine mammal die-off events.

Marine Mammal Commission (MMC)

The Marine Mammal Commission supports research and studies pertaining to the conservation and protection of marine mammals to improve the implementation of the Marine Mammal Protection Act. Policy studies; methodological research; information overviews; issue-specific research on population assessment, critical habitats, taking, man-induced hazards, ecological inter-relationships, and socio-economic/legal aspects of marine mammal conservation;

and reviews of agency actions and research under the Act are integrated into the Commission's research program.

National Aeronautics and Space Administration (NASA)

The National Aeronautics and Space Administration supports research on marine mammal assessment and monitoring, especially for the manatees utilizing the environment of the Kennedy Space Center.

National Science Foundation (NSF)

Through its various divisions, the National Science Foundation supports marine mammal research, although there is no directed effort on marine mammals per se. Some studies of Antarctic marine mammals have been supported through this agency in accordance with the Antarctic Treaty.

Smithsonian Institution (SI)

The Smithsonian Institution, a trust instrumentality of the United States, supports marine mammal research on evolutionary and general biology, including a salvage program and national cetacean stranding data base, through the National Zoological Park and the Department of Vertebrate Zoology of the Museum of Natural History.

TABLE 1

**Reference list of previous surveys compiled by the author
and available from the National Technical Information Service**

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- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY79. Publication PB81-174336, National Technical Information Service, Springfield, Virginia. 235 p. (1981)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY80. Publication PB81-242059, National Technical Information Service, Springfield, Virginia. 43 p. (1981)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY81. Publication PB82-227570, National Technical Information Service, Springfield, Virginia. 65 p. (1982)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY82. Publication PB83-262998, National Technical Information Service, Springfield, Virginia. 83 p. (1983)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY83. Publication PB84-215086, National Technical Information Service, Springfield, Virginia. 84 p. (1984)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY84. Publication PB85-225613, National Technical Information Service, Springfield, Virginia. 99 p. (1985)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY85. Publication PB86-235637, National Technical Information Service, Springfield, Virginia. 108 p. (1986)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY86. Publication PB87-217386, National Technical Information Service, Springfield, Virginia. 120 p. (1987)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY87. Publication PB88-212782, National Technical Information Service, Springfield, Virginia. 133 p. (1988)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY88. Publication PB90-104050, National Technical Information Service, Springfield, Virginia. 143 p. (1989)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY89. Publication PB90-272097, National Technical Information Service, Springfield, Virginia. 154 p. (1990)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY90. Publication PB91-212217, National Technical Information Service, Springfield, Virginia. 44 p. (1991)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY74-FY91. Publication PB92-190222, National Technical Information Service, Springfield, Virginia. 56 p. (1992)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY74-FY92. Publication PB93-227189, National Technical Information Service, Springfield, Virginia. 66 p. (1993)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY74-FY93. Publication PB94-195021, National Technical Information Service, Springfield, Virginia. 76 p. (1994)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY74-FY94. Publication PB95-238929, National Technical Information Service, Springfield, Virginia. 90 p. (1995)
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TABLE 2

NUMBER OF MARINE MAMMAL RESEARCH PROJECTS SUPPORTED BY FEDERAL AGENCIES IN FY74-FY04

	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	
Department of Agriculture	2	1				2	1	4						9	7								
Department of Commerce																							
National Marine Fisheries Service	13	8	9	13	14	14	34	31	25	31	26	29	34	28	32	35	48	58	41	46	55	73	
National Ocean Pollution Program Office												1											
National Sea Grant	4	2	1	1	2	2	2	2	1	3	2	4	1				1	2	4	6	4	5	
North Pacific Fishery Management Council							1	1	1	1	1												
Ocean and Coastal Resource Management								2	4	6	4	5	9	8	1							2	
Ocean Resources Conservation and Assessment									2	2	1	1	1	1	1	1	1	1	1	1	1	2	
Department of Defense																							
Advanced Research Projects Agency (ARPA)																						3	2
Air Force						1	1	1			2	2	2	2	1	1	1	1	2	1	2	1	
Army						1	2											1	1	1		1	
Navy	26	14	13	21	24	20	17	13	14	11	12	15	16	24	20	20	8	8	16	39	46	54	
Strategic Environmental Research (SERDP)																				2	6	3	
Department of Energy		1	1	2	2		1	1	1					1	1								
Department of Health and Human Services	20	26	17	13	12	8	9	11	12	9	8	11	8	9	13	16	13	10	4		5	7	
Department of the Interior																							
Fish and Wildlife Service	15	20	27	40	43	52	44	33	27	29	22	17	21	20	19	22	22	18	16	15	1	2	
Geological Survey				1	1	1	1	1	1	1	1												
Minerals Management Service		1	4	3	4	7	12	8	10	9	12	12	13	26	13	24	26	28	23	10	8	5	
MMS/NOAA/OCSEAP		3	16	11	11	6	6	7	9	8	6	3	4	2	1	1	2	1					
National Biological Service																					14	14	
National Park Service	1	1	2	3	5	2	2	4	3	3	3		3	3	2	6	2	6	10	10	6	2	
Department of State					2	1	1	2	2	2	2	2	3	3	2	3	3	3	3	2	5	6	
Department of Transportation (Coast Guard)																						1	
Environmental Protection Agency	1	1												1	1	2	2	5	6	5	3	3	
Marine Mammal Commission	14	32	30	29	34	7	21	16	15	13	30	32	20	25	25	16	18	24	23	29	16	19	
National Aeronautics and Space Administration	1	1	1	2	2			1				1	3	2	1	1	2	2	2	2	2	2	
National Science Foundation	12	7	10	10	8	11	14	8	10	11	10	12	12	10	8	9	12	11	12	9	4	10	
Smithsonian Institution	4	4	2	2	2	2	2	2	3	3	3	3	5	3	1	1	1	1	1	2	1	2	
TOTAL:	113	122	133	151	166	137	171	148	140	142	145	150	156	177	148	158	162	180	165	180	184	213	

FIGURE 1
TRENDS IN FEDERAL SUPPORT OF MARINE MAMMAL RESEARCH

Total Number of Marine Mammal Projects Reported to the
Marine Mammal Commission, FY74-FY95

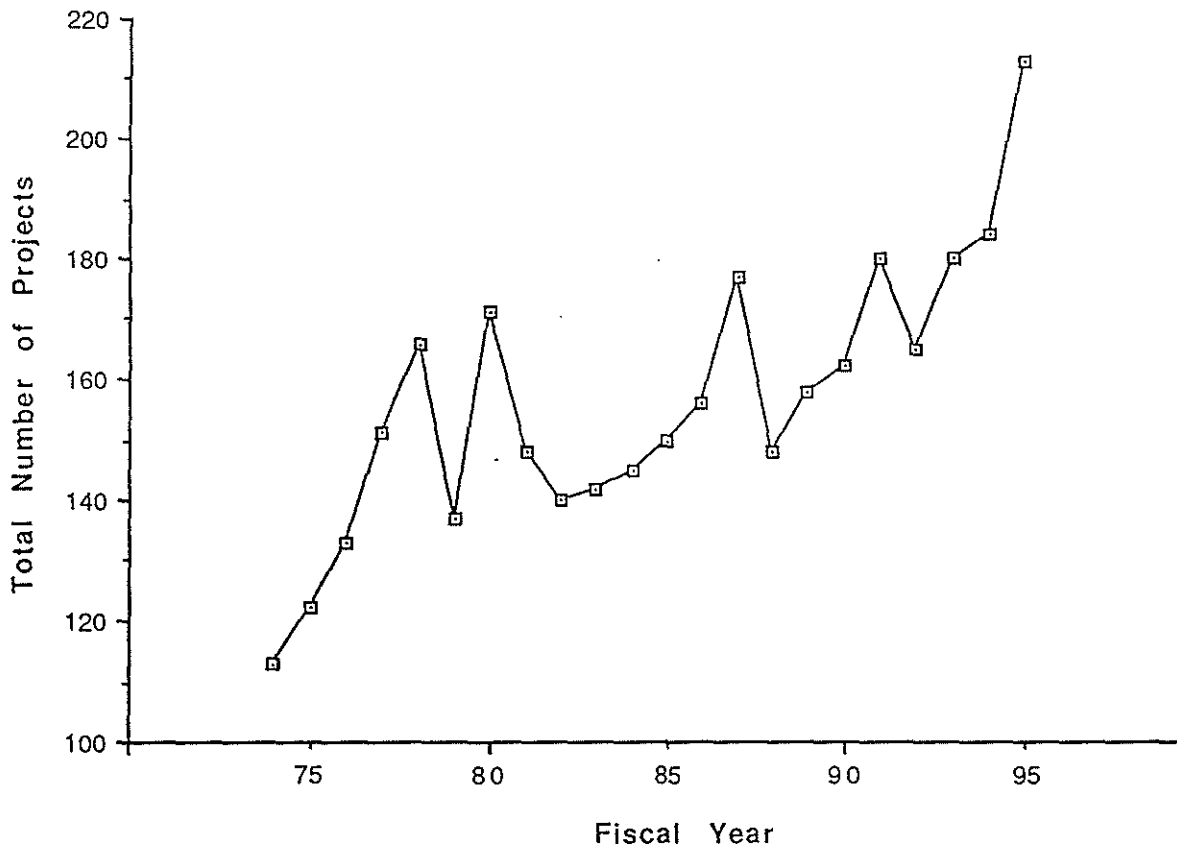


TABLE 3
 FEDERAL FUNDING OF MARINE MAMMAL RESEARCH BY AGENCY *
 (Thousands of Dollars)

	FY78	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95
Department of Agriculture		209		84.7														
Department of Commerce																		
National Marine Fisheries Service	3603.2	4425.9	5126.7	4531.6	3896.4	4050.7	4077	5021	4628.7	4852.9	4482.9	4801.4	7010.6	11925.1	16445.9	14464.7	14339.8	16582.5
National Ocean Pollution Program Office								20										
National Sea Grant Program	49.7	68	59.7	35.1	30	46.7	79.6	66.4	21.4				32.3	47.3	105.5	220.5	249.1	313.1
North Pacific Fishery Mgmt. Council			97.2	28.9	10	11.5	5											
Ocean and Coastal Resource Mgmt.				67	56.6	35.9	81	81.9	185.1	145	63							2
Ocean Resources Conserv. and Assessmt					58	123.6		59	55	15	15	15	25	425	425	425	848	
Department of Defense																		
Advanced Research Projects Agency																224	751	842
Air Force		40	15	79.2			6.5	15.5	58.5	58.5	55	55	173.9	106.7	244.4	173.2	349.7	126.8
Army		44	122										247.9	248.5	580			282
Navy	975	1275.4	2441.8	2031.6	1728	1903.2	1730	2106.6	2488.3	3378.2	3465.8	4037	1139	1064	2430	3907.2	3597.1	5436.9
Strategic Environmental Research (SERDP)																2249	1894	852
Department of Energy	80		30	20	25				70	70								
Department of Health and Human Services	772	392.8	602.5	755.8	899.2	684.4	629	1052.8	852.1	735.2	1089.1	1678.3	1421.5	1324.4	576.9		606.6	788.5
Department of the Interior																		
Fish and Wildlife Service	1042.7	1452.5	1418.9	1127.2	1221	1261.2	1007.7	936.1	1542.3	2349.4	2498.6	3367.6	3007.9	3648.5	3034	3052	17.4	182.1
Geological Survey	30.5	20	45.5	79.6	62.8	76	71											
Minerals Management Service	2519.8	7457.3	6173.2	3507.2	3830.6	4275.9	3595.9	3140.7	2698.3	1695.9	3025.4	5228.9	3462.9	3088.1	2712.8	1691	618	648
National Biological Service																	3243.8	2368.7
National Park Service	64.8	45.8	68	376.9	223	300.4	235		17.5	39.5	27	86.2	50	66	1300	621.8	84.1	6.4
Department of State	51	500	592.9	719.4	644.6	540.6	709.4	795.6	869.4	926.6	913.8	929.2	1148.5	1235.2	1488.9	1300.4	1669.5	1162.5
Department of Transportation																	80	
Environmental Protection Agency										8.5	8	175	100	227.2	119.2	158.9	142.6	90
Marine Mammal Commission	376.1	152.6	358.7	134.7	84.1	204.9	298.7	197.7	85	100.5	102.6	104.8	92.7	94.2	250.9†	150.9—	135.8Δ	45.6
National Aeronautics and Space Admin.	65		12	143.3				10	8.7	1.6	6.2	6	19.1	17.5	16.5	30	30	30
National Science Foundation	334.2	479.3	677.6	574.5	560.6	503	691.9	729.8	620.5	757.6	663.4	901.8	820.9	858.3	1039.7	549.6	316.9	1152
Smithsonian Institution	101.1	133.4	142.8	152.3	148.8	170.4	207.5	212.5	222.5	212	150	161.2	165	169	144.4	182.1	144.2	238.6
TOTAL	10,065.1	16,696	17,984.5	14,449	13,478.7	14,188.4	13,425.2	14,445.6	14,423.3	15,346.4	16,565.8	21,547.4	18,669.3	24,544.4	30,331.7	29,829.4	28,981.8	31,151.7

* Funding totals provided on this table reflect total annual project costs identified in Appendix B as reported by each agency.

† Included in this total is \$127,000 transferred from other agencies to the Marine Mammal Commission.

— Included in this total is \$100,000 transferred from other agencies to the Marine Mammal Commission.

Δ Included in this total is \$91,500 transferred from other agencies to the Marine Mammal Commission.

TABLE 4

REGIONALLY ORIENTED MARINE MAMMAL RESEARCH IN WATERS ADJACENT TO THE UNITED STATES*
 (Thousands of Dollars; Number of Projects Shown in Parentheses)

Geographical Region	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95
Hawaii	71.4 (2)	411.1 (11)	114.8 (2)	130 (2)	481.7 (4)	302.5 (3)	360.8 (3)	332.9 (4)		3+	1.5 (1)	429 (4)	487.6 (4)	747 (3)	1033.7 (6)	833 (3)	1504 (4)
Alaska	3746.7 (17)	5407.4 (34)	3992.1 (29)	4949.4 (31)	4367.5 (30)	4960.2 (25)	4708 (28)	3787.5 (31)	4294 (39)	2827.5 (23)	5776.2 (34)	5612.9 (33)	8462.6 (49)	7714.8 (43)	6435.2 (38)	6081.9 (36)	6258.1 (33)
Oregon/Washington	68 (2)	229.9 (2)	234.5 (5)	73.6 (4)	165.3 (4)		23.2 (1)			1524.2 (3)	1520.2 (2)	68.6 (2)	37 (3)			85 (2)	25 (6)
California	1675.2 (11)	3234.9 (19)	862.3 (13)	1160.7 (17)	1693.9 (25)	1491.9 (32)	1505 (24)	1040.2 (23)	1066.8 (19)	1418.5 (12)	1318.8 (8)	1550.7 (8)	2068.7 (11)	3548.1 (14)	2281.1 (14)	2531.9 (10)	2745.3 (12)
Gulf of Mexico	144.3 (1)	200 (1)	330.8 (2)	275.5 (3)	20 (1)	238.5 (3)	15 (1)	168.1 (1)		62 (4)	154.2 (4)	248.1 (4)	897.8 (6)	3353.3 (4)	3214.3 (6)	3167.7 (5)	2139.5 (3)
Florida	656.3 (4)	858.2 (21)	306.8 (9)	429.8 (8)	610.6 (12)	384.8 (8)	622 (10)	295.6 (10)	573.9 (16)	242.5 (18)	504.2 (12)	560.9 (11)	659.5 (9)	1327.7 (8)	1346.1 (8)	627.4 (3)	1583.9 (9)
Mid-Atlantic States (GA, SC, NC, VA)		200 (2)	293.3 (1)	4 (4)		2.6 (1)		1.5 (1)	669.6 (5)	455.9 (6)	725.8 (5)	544.7 (6)	520.6 (7)	437 (6)	120 (1)	885 (6)	926.9 (8)
NE Coastal States	2762.9 (1)	292.7 (14)	1025.1 (8)	170 (6)	145.2 (10)	141.3 (7)	311.1 (11)	642.8 (15)	141.6 (11)	334.5 (9)	438 (13)	661 (17)	2073.2 (26)	962.3 (13)	1513.9 (15)	1111.7 (15)	3430 (28)

*Note -- Many marine mammal projects reflected in the data on Table 3 were not regionally oriented and thus are not listed on this table.

TABLE 5

TAXONOMIC SUMMARY OF FEDERALLY-FUNDED MARINE MAMMAL RESEARCH *
(Thousands of Dollars)

	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95
Sirenia (Manatees and Dugong)																	
Department of Agriculture																	
Department of Commerce																	
Department of Defense	44	122															656.5
Department of Energy																	
Dept. Health and Human Services																	
Department of the Interior	580.5	328.7	358	353	391.6	276.8	284.1	224	369.5	396.4	402.6	410.8	437.2	739.3	681	597.4	646.9
Department of State																	
Environmental Protection Agency																	
Marine Mammal Commission		109			2.5	4.5	1.5	5	2	41.4	36	0.8	4	4.5	18.2	2.5	
NASA							10	8.7	1.6	6.2	6	19.1	17.5	16.5	30	30	30
National Science Foundation			46.5					94						50	52		
Smithsonian Institution																	
CATEGORY TOTAL	624.5	559.7	404.5	353	394.1	281.3	295.6	331.7	393.1	444	444.6	439.7	456.7	810.3	781.2	629.9	1333.4
Carnivora (Polar Bear and Sea Otter)																	
Department of Agriculture			22.2														
Department of Commerce	59.7	71	5.1				6.1	10									
Department of Defense																	
Department of Energy		30	20	25													149
Dept. Health and Human Services																	
Department of the Interior	809.4	718	639.2	914	1096.7	1156.3	1303.7	1332.4	1883.4	1995.8	2938	2457.6	3148.2	2435.7	2504.1	1425.8	1452
Department of State																	
Environmental Protection Agency											75	50	80		40		
Marine Mammal Commission			18	5.6	31.8	67	33.3		2		7.5		3	14		19.2	6
NASA																	
National Science Foundation	22.6	36.3					149.5		44	44	44		174.3	122.4	122.4		
Smithsonian Institution																	
CATEGORY TOTAL	891.7	855.3	704.5	944.6	1128.5	1223.3	1492.6	1342.4	1929.4	2039.8	3064.5	2507.6	3405.5	2572.1	2666.5	1594	1458
Pinnipedia (Seals, Sea Lions, Walrus)																	
Department of Agriculture	200																
Department of Commerce	956.7	1454.7	940.2	1081.4	1188.8	1269.4	1650.7	1169	49.8	221.1	35.6	1504.8	2447.7	4522.3	3700.7	3836.2	3978.2
Department of Defense	246	353	149.2	50	72.9	68.5	179.9	233.3	344	264.9	502	173.9	106.7	184.4	417.9	909.7	791.4
Department of Energy								70	70								
Dept. Health and Human Services	76.6	43.5	51.4	38.4			57	51.8	162.2	143.9	259.5	227.5	178	72.1		161.2	45.4
Department of the Interior	589	467.7	541.9	385.1	268	494.8	75	170.2	639.3	229.1	161.2	267.9	367.8	1140.6	391.9	33.6	169
Department of State																20	15
Environmental Protection Agency													50	25		12.1	10
Marine Mammal Commission	59.1	106	56	12	159.1	12.5	32.8	8.7	17	3.5	7	14.7	17	11.3	10	10	2.8
NASA																	
National Science Foundation	243.2	240.7	292.3	359.1	330.4	420.7	350.7	307.3	354.5	339.4	225	258.4	213.8	480.9	333.7	209.9	332
Smithsonian Institution	47.4			11.8	22.4	42.5	42.5	76.5	58						66.2		94.6
CATEGORY TOTAL	2418	2665.6	2031	1937.8	2041.6	2308.4	2388.6	2086.8	1694.8	1201.9	1190.3	2447.2	3381	6436.6	4920.4	5192.7	5438.4

TABLE 5 (continued)
 TAXONOMIC SUMMARY OF FEDERALLY-FUNDED MARINE MAMMAL RESEARCH

	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95
Cetacea (Whales and Porpoises)																	
Department of Agriculture			44.6														
Department of Commerce	3328.3	3542.8	3118	2304.2	2037	2421.7	2540.7	2935	2376.7	2257.5	2705.5	3111.3	3342.8	7515.1	7088.1	6679.2	7080.1
Department of Defense	746.4	1583.8	1485.6	1355	1522.3	1218	1566.2	1973.5	2532.1	2565.9	2660	1139	1064	2300	3017.1	4148.8	4222.8
Department of Energy																	
Dept. Health and Human Services	74.1	167.1	463.4	229.9	146.9	162.4	22.4			84.7	86.5	97.3	108.9			221	743.1
Department of the Interior	2937.5	2239.8	1910.4	2560.9	1905.6	2354.2	2888.6	1688.6	932.1	1372.7	2193.5	2456.2	1760.2	2517.8	565	638	495
Department of State	500	592.9	719.4	644.6	540.6	709.4	795.6	860	919.3	911.1	926.1	1146.7	1234	1488.9	1300.4	1649.5	1132.5
Department of Transportation																	80
Environmental Protection Agency											100	50	97.2	94.2	118.9	130.5	5
Marine Mammal Commission	81	133.7	34.4	28	5	63	74	39.8	301.2	27.7	4.5	23	30.3	61.4	44	14.3	21.8
NASA			143.3														
National Science Foundation	187.9	380.8	235.7	158.3	162.6	221.3	101.1	43	200	200	510.8	444	403.7	324.9	41.5	107	299
Smithsonian Institution																	
CATEGORY TOTAL	7853.2	8640.9	8154.8	7300.9	6320	7150	7988.6	7539.9	7261.4	7419.6	9186.9	8467.5	8041.1	14302.3	12175	13668.3	13999.3
Mixed Species or General Studies																	
Department of Agriculture	9		17.9														
Department of Commerce	210.9	245.1	635.9	635.4	1042.6	551.5	1050.8	776.2	2586.4	1668.5	2075.3	2565.8	6606.9	4939	4321.4	4659.3	5839.3
Department of Defense	323	520	476	323	318	450	326	340	560.6	690	930		247.9	438.5	3368.4	1284.3	1871
Department of Energy																	
Dept. Health and Human Services	242.1	391.9	241	630.9	537.5	466.6	973.4	800.3	573	860.5	1332.3	1096.7	1037.5	504.8		224.4	
Department of the Interior	3999.5	3945.9	1654.3	1091.7	2200.6	624.4	740.4	842.9	279.9	1560	2987.4	746.6	1089.2	213.4	1222.8	1268.5	442.3
Department of State								9.4	7.3	2.3	3.1	1.8	1.2				15
Environmental Protection Agency																	75
Marine Mammal Commission	12.5	10	26.3	38.5	6.5	151.7	56.1	31.5	27.3	30	49.8	54.2	39.9	159.7	78.7	89.8	15
NASA																	
National Science Foundation	25.6	19.8		43.2	10	49.9	128.5	176.2	159.1	80	122	118.5	66.5	61.5			521
Smithsonian Institution	86	142.8	152.3	137	148	165	170	146	154	150	161.2	165	169	144.4	115.9	144.2	144
CATEGORY TOTAL	4908.6	5275.5	3203.7	2899.7	4263.2	2459.1	3445.2	3122.5	4347.6	5041.3	7661.1	4748.6	9258.1	6461.3	9107.2	7670.5	8922.6

*In some cases, studies were related to human health and medicine or other topics with little or no bearing on the marine mammal subjects.

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TABLE 6
 FEDERAL FUNDING OF MARINE MAMMAL RESEARCH BY RESEARCH ISSUE' ''
 (Thousands of Dollars)

SPECIAL RESEARCH ISSUE	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FUNDING AGENCY	LINE TOTAL
Tuna/Porpoise:																			
Population Assessment	462.7	676.9	615	462	570	507.3	485.8	606.5	1079.9	1002	1025.4	919.2	554.2	1036.6	1020.1	362.3	229.7	NMFS	11615.6
				4			1.8	1.3										MMC	7.1
	500	592.9	687.1	609.2	673.9	673.9	762	853	914.3	911.1	916.6	1138.4	1225.8	1443.9	1238.5	1537.9	1070	DOS	15748.7
Mortality Reduction	512.9	433.1	303.6	30	30.9									1351.4	475.7	450	450	NMFS	4037.6
			5.6											17				MMC	22.6
Assessment of Taking	329.5	346.9	246.7	320.7	225	181.8	179.3	134.7	185.1	185.1								NMFS	2334.8
Biology	705.3	382.4	430.2	318.3	331	296.5	319.2	288.8	303.5	361.6	360.1	592.7	902.6	245	357	269.4	405.5	NMFS	6869.1
		31.6																NSF	31.6
International Whaling Commission:																			
Assessment of Stocks and Taking		340.5	433		700	856	815	753								74.5	184	NMFS	4156
	70.9	65					16.1				3				8			MMC	163
													49					NSF	49
			32.3	35.4	35.3	35.5	33.6	7	5		9.3	8.3	8.2	45	61.9	111.6	62.5	DOS	490.9
Marine Mammal/Fisheries Conflicts:																			
Southern Ocean Krill				10		49.2												MMC	59.2
	25.6																	NSF	25.6
Fin Fish/Pinniped Interactions	68		30	30	39.2	79.6	44.6	21.4										NSGCP	312.8
		4.9	32.5	10									5.5	3	5			MMC	60.9
Fisheries/Sea Otter Interactions	70	604.6	349.9	309.3	226.4	221.1	701	365.4		601.8	772.9	1255.7	2600.8	1617.3	1331.1	1508.3	592.7	NMFS	13328.3
		8	5.1				6.1											NSGCP	17.2
		4.5			31				142.5	253.9	242.6	36.9	322.9	204.6	207.3	157	157	NBS/FWS	1760.2
			142.4															NMFS	142.4
								10										OCRM	10
																		MMC	3
Fin Fish/Cetacean Interactions		2		10														NPFMC	10
				5		14.1		3										MMC	24.1
Incidental Taking				10	12	64.9	26.8	11	4			68	718.8	337	535.5	231	344.9	NMFS	2235.2
				29		14.8	65	121.3	78.5	165.6			16				5	MMC	149.7
						5						25	3007	1497.7	767.2	1167	1449	NMFS	8387.1
							20											NPFMC	5
																		NOPPO	20
Effects of Oil/Gas Development and Chemicals on Marine Mammals:																			
Physiological Studies	1097.8	394.1	111.8	1390.3	2485.5	1650.1		221.9		65.5	134.7							MMS	7551.7
			2															MMC	2
											75	100	195	25	73.9			EPA	468.9
													425	425	425	425		ORCA	1700
																	50	NMFS	50
Risk Analysis				184.4	51.8	617.8	977.5	409.5	454.2	647.2	833.9	994.7	1363.5	1872.6	1142	953		MMS	10502.1
					3.3	5.9	6.9				7.5		1.1					MMC	24.7
											923.8	580	978		598.7	224.9	3.2	FWS/NBS	3308.6
											30	50						NPS	80
												678.3	32	438.6	409	743	425	NMFS	2725.9
																423		ORCA	423

TABLE 6 (continued)
Federal Funding of Marine Mammal Research by Research Issue

SPECIAL RESEARCH ISSUE	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FUNDING AGENCY	LINE TOTAL		
Marine Mammal Strandings:																					
Biological Studies					6	1.8	10.5			7.5	32		12.4	5				MMC	75.2		
		15		20	25	30	30	35	35	35	38	38	50	50		9	9	SI	419		
	3.5	20	30	31.5	24.6	2							131.6	120	120	146.5	167.5	NMFS	797.2		
	18.7	15			60	101												FWS	196.7		
							7.5											OCRM	7.5		
													32.2	71.2	75	75	75	EPA	326.4		
																3	6.4	NPS	9.4		
Bowhead Whale:																					
Assessment of Stocks and Taking	871.1	737.2	785.1	456.9		806			441	175.1	359	316.2	192	655	499.3	313.9	298.2	NMFS	6886		
		591	345.3		317.4	625.4	543.6	480	180.3		300	603.3	264	512.8	549	549	495	MMS	6416.1		
							4											MMC	4		
Biology		590				589.6	724.5	163.5	156.6	123.5	287.7	22.5		54.0				MMS	2712.7		
Humpback Whale:																					
Population Assessment	15	39.1	70.7	39	38.8	30.1	113.1	82.8	45.7	21.2	2.2	23	45	250	240	387.8	207.6	NMFS	1651.1		
		15	9	5	5		4.5	11		3	1.5	7.4	7.5	1.5	8		10	MMC	88.4		
								15	15	23	20		20.9	16	16	20		NPS	145.9		
																265	45	SEADP	310		
												8						MMS	8		
																	1	OCRM	1		
Biology	39.8	63	376.3	223	293.4	225			7				33					NPS	1240.5		
			4.1		12.6	11		3.3	16	20	20	27	28					NMFS	134		
	40.2	42.3																NSF	82.5		
	48	24						63	63									Navy	72		
															43.4			OCRM	126		
																	2	NSGCP	43.4		
																		MMC	2		
Gray Whale:																					
Population Assessment	25.7						63.8	58											NMFS	148.5	
		37	9																Navy	46	
					317.4	536.4	521.5	468.5	180.3			84	79.6						MMS	2187.7	
								45.6											OCRM	45.6	
Biology		187.7	58.1	497			480	188.2				38.6							MMS	1449.6	
							38.7												NSF	38.7	
									10										OCRM	10	
Assessment of Human-Induced Impact			3.8	6			11								2		1		MMC	23.8	
Northern Right Whale:																					
Population Assessment			27.8	25	47.7	11	49.7	401.2	265.5	207.1	190	190	194	234.6	324	509.9	371		NMFS	3048.5	
			3	4		32.1		4	4.2			2	2	28.4	20				MMC	99.7	
								209.6	214.4	215	414.5	195.8							MMS	1249.3	
																80			USCG	80	
Biology				9													90		Navy	99	
									200	200	249.1	283.3	200.2						NSF	1132.6	
											30	45	45						NMFS	347.6	
												19.6	3.5	12.5					MMS	35.6	
Killer Whale:																					
Population Assessment	3								4											NMFS	7
													5.4							MMC	5.4
													5.4							NPS	5.4
							5													NSF	5
																				OCRM	1
Biology												32.3	32.3							NSGCP	64.6
													14							NPS	14

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TABLE 6 (continued)
Federal Funding of Marine Mammal Research by Research Issue

SPECIAL RESEARCH ISSUE	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FUNDING AGENCY	LINE TOTAL
Pilot Whales:																			
Population Assessment									10.4				45	10				MMC	10.4
																		NMFS	55
Biology			10											10	12.3			USDA	10
																		NMFS	22.3
Beluga:																			
Population Assessment			49.8				4.8		0.2			84	79.6					MMS	213.4
													25	184	275.6	172.8	185	MMC	5
Biology				134	130.3													NMFS	842.3
		350	525	102	100	162.5	219	224	250							171.7	387.4	MMS	264.3
													54.6	57.1		107	209	Navy	2491.6
																		NSF	427.7
Harbor Porpoise:																			
Population Assessment		45		30	9.6	1			7	33	67	181	270	327	553.5	353	531.5	NMFS	2408.6
					4			9	30									OCRM	43
								10	5.8									MMC	15.8
											5							NPS	5
Biology															24	12		NSGCP	36
													3					MMC	3
															107.5	21.1		Navy	128.6
																	9	NMFS	9
Dall's Porpoise:																			
Population Assessment	6.9	264		228	165	165	127.6	117		285	327	553.6	977					NMFS	3216.1
Bottlenose Dolphin:																			
Population Assessment						15		4.5	13.5				1		3.5	5		MMC	42.5
	180.8	219.9	221.8	248.3	236.5	248.5	292.9	177.7	208.8	62	137	172	31.9	105	65	750	845	NMFS	4203.1
										8	100			23	10	55.5	5	EPA	201.5
Biology	467	903.9	850	1074	1310	975.5	1130	1305.5	1848.1	1805.9	2310	677	864	525	676.5	785.5	1504.2	NSGCP	251.7
										84.7	86.5	97.3	108.9		86.3	82.7	82.7	Navy	19020.1
	85.3	90.1	107	48.9	56.5	221.3	57.4	6.9							9.1	99.9	167.8	DHHS	377.4
				4						15.5		10.6						NSF	950.2
	9				13.5					100	2		35	250			20	MMC	30.1
																		NMFS	429.5
Northern Fur Seal:																			
Population Assessment	430.2	246	156.6	263.3	237.4	309.5	274.4	259.9	5	5.5		5.5	5.5	6	7	9	95	NMFS	2315.8
					4.1													MMC	4.1
Biology	269.3	410.9	420.2	285.4	237.4	309.5	274.4	252.5							4	4		NMFS	2467.6
						1.5												MMC	1.5
	88								7									Navy	88
																		OCRM	7
						112						15						MMS	127
																	138	NSF	138
Antarctic Seals:																			
Population Studies	97			68.4	39.9	49.9	41.8			54.3						35		NSF	386.3
										180	291	326.8	335	415	445	393.1	347	NMFS	2732.9
Biology	70.4	171.7	252.2	168.5	179	292.9	159.7	231	311.2	242.5	225	115.5	51.4	377.2	333.7	174.9	€	DOS	20
												2						NSF	3362.8
																		MMC	2

TABLE 6 (continued)
Federal Funding of Marine Mammal Research by Research Issue

SPECIAL RESEARCH ISSUE	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FUNDING AGENCY	LINE TOTAL	
Arctic Seals:																				
Population Studies						65.7			88									MMS	153.7	
Biology							19.9	3.5					10					NPS	10	
	212		281.6	157		292	60	75	250				144	25				MMC	23.4	
			38.8				38.2					102.6	98.7					MMS	1496.6	
					75.5													NSF	278.3	
								70	70									NMFS	75.5	
																		DOE	140	
Hawaiian Monk Seal:																				
Population Assessment	31.2	50.9	31	28	15													FWS	156.1	
	3	108.3		102	311.7	300	340.6	326.4				417.9	447.6	731.2	717	519	1109	NMFS	5433.7	
		60.9										3.7						MMC	64.6	
Biology		34.9			150													Navy	30	
								2.5	18									MMC	184.9	
													15	14.3	33.7			SI	20.5	
													20					NSGCP	63	
																		Army	20	
Gray Seal:																				
Population Studies		2.3	1.3		1.4													NMFS	5	
																	0.8	MMC	0.8	
Harbor Seal:																				
Population Studies			23.5				5.7		14			5	4					2	MMC	54.2
	6					3.5		0.5			15		1.2	237		18.1		NPS	281.3	
		53.7													12.1			NSGCP	65.8	
	11.5	39.4	3.5	20		0.7	1.3	29.2		29	33	33		300.4	101			NMFS	622	
						0.5	0.5	0.5	0.5									USAF	2	
Biology	50					7												MMC	7	
		25																MMS	50	
			38.3		23.8				3.8					500	450	443.5	475	Navy	91.3	
				15			39.4	12	14									NMFS	1932.4	
					2.5													OCRM	80.4	
				50	20									24.3				NSGCP	26.8	
																		OMA	70	
Northern Elephant Seal:																				
Population Studies	4.1						16		1	1								NMFS	4.1	
																		OCRM	18	
														170	120			NPS	290	
Biology	41.2	30.2		45	51	61	55		43.3	42.6		142.9				12.1		EPA	12.1	
	10	5.3		12				1.2	3			2						NSF	512.2	
		43.5	51.7	38.4			45	39.8	149.3	131.7	30	63.4	70.3			52	45.4	MMC	33.5	
									20	25		57.5	27.5	25				DHHS	760.5	
																		MMS	155	
																406.5	298.2	Navy	704.7	
																	10	EPA	10	
California Sea Lion:																				
Population Studies	82.5						15	15										NMFS	82.5	
							3.5											OCRM	30	
Biology	200																	NPS	3.5	
		247				124	164.4	174.8	285.5	209.9	447					55.4		USDA	200	
				11.8	22.4	42.5	42.5	30										Navy	1708	
																		SI	149.2	
																		OCRM	8	

TABLE 6 (continued)
Federal Funding of Marine Mammal Research by Research Issue

SPECIAL RESEARCH ISSUE	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FUNDING AGENCY	LINE TOTAL	
Stellar Sea Lion:																				
Population Studies	148	95	34.9		11.5		6.8							191.3	191			MMS	243	
					5								2.5					NMFS	327.2	
													1.2					NPFMC	11.5	
																		MMC	14.3	
																		NPS	18.7	
																		NSGCP	45	
Biology														689.9	712.5	750	591	NMFS	2743.4	
Walrus:																				
Population Studies	141.8	231.8	99	50	50	53.9		94.7	201.6	201.1	146.2	195.4	183.6	166.6	153.9			FWS	1969.6	
			130.3	150.1	25	19.6												MMS	325	
								4			7		5	5				MMC	21	
Biology	20			77.2	60.5	66.8	15					2						MMC	22	
																	188	NSF	407.5	
												38.6						MMS	38.6	
																	169	NBS	169	
Manatees and Dugong:																				
Population Studies	290.3	285.7	300	150	100	211.8	142	112	97	50.5	18.4			22.9				FWS	1760.6	
							10	5.2	1.6	6.2	6	13.9	10	10	23.5	23.5	23.5	NASA	133.4	
		3																NPS	3	
		109				4.5			2	16.5	35			3.3	12.5			MMC	182.8	
Biology	10																	MMS	10	
	127.2	45	52	173	291.6	20	142	112	275	345.9	368	419.8	437.2	716.4	681	597.4	646.9	FWS/NBS	5450.4	
	44	122											145.2				262	Army	593.2	
							1.5	5		17.9	1		4		5.7			MMC	35.1	
								3.5				5.2	7.5	6.5	6.5	6.5	6.5	NASA	42.2	
									17.5		16.2							NPS	33.7	
														50	52			NSF	102	
																	374.5	Navy	374.5	
Polar Bear:																				
Population Studies	251	140.8	200	80	73.7	80.9	135.8	174.9	602.2	692.9	690.6	673.8	638.5	605.9	657.5	465	423	FWS/NBS	6586.5	
														14		17.2		MMC	31.2	
Biology		50	54	140	100	80.9	125.1	437	85	168.1	135.4	126.8	122.3	112.2	121.6	133	257.8	FWS/NBS	2249.2	
	22.6	36.3																NSF	58.9	
Sea Otter:																				
Population Studies	530.4	400	185.2		100	195.2	120	144.8	85	527.7	572.8	560.9	210.4	24.1	15.3	43	124	FWS/NBS	3838.8	
					770.8	86.1	249.6	96											MMS	1202.5
														360	360			NPS	720	
																	3	MMC	3	
Biology			16	5.6	8.9	35.1	1.9		2				3					MMC	72.5	
		30	20	25														DOE	75	
	28	189.8	200	470	403.9	196.8	190.7	396.9	775.5	258.5	470	395.3	702.5	690.3	543.7	403	409	FWS/NBS	6723.9	
							149.5		44	44	44		174.3	122.4	122.4			NSF	700.6	
								2		4								NPS	6	
				124	463.2					90.7	16	83.9	6.8					MMS	784.6	
																149		USAF	149	

* Amounts underlined are estimated subunits of totals reported by the agency under more general categories.

** Not all projects listed in Appendix B are reflected in this table, and a few projects plus a portion of the funding have been assigned to more than one issue.

II. RESEARCH AND STUDIES UNDER AUTHORITY OF THE MARINE MAMMAL PROTECTION ACT OF 1972, AS AMENDED

The Marine Mammal Protection Act of 1972 (MMPA) established the Marine Mammal Commission and assigned marine mammal protection and conservation responsibilities to the Secretaries of Commerce, the Interior, and State. Such responsibilities have, in some cases, been delegated to agencies within a department. The Act noted the need for better information on the biology, ecology, and management of marine mammals and assigned research responsibilities. Responsibilities for research and its implementation were specified in Sections 108, 109, 111, 112, 202, and 205. Public Laws 102-523, 102-587, and 103-238 added additional research and study responsibilities regarding fishery conflicts, marine mammal health, marine mammal strandings, and ecosystem health and stability. Funding authorized for marine mammal activities conducted by the National Marine Fisheries Service and the Fish and Wildlife Service under Title I of the Act is authorized under Section 116 of the Act. Additional funding authority for cooperative agreements between the agencies and Alaska Native organizations, including cooperative research activities is provided in Section 119. Separate funding authority for activities related to marine mammal health and stranding response under Title IV of the Act is set forth in Section 408.

Table 7 is a list of annual funding authorized under the various sections of the Act, the amounts requested by agencies pursuant to the Act, and amounts appropriated by Congress. Additional Federal funds have been spent in activities related to marine mammals; the additional sources and amounts of research funding are shown in Table 8 and Figure 2. The number of personnel assigned to marine mammal research versus administrative responsibilities within the National Marine Fisheries Service and the Fish and Wildlife Service from FY74 through FY95 are listed in Table 9.

RESEARCH RESPONSIBILITIES OF FEDERAL AGENCIES UNDER THE MARINE MAMMAL PROTECTION ACT

Congress, in passing the Marine Mammal Protection Act, recognized there was inadequate knowledge of the biology, ecology, and population dynamics of marine mammals and other factors important for marine mammal protection and conservation. The Act, therefore, specified certain research and study responsibilities for the Department of Commerce, the Department of the Interior, and the Marine Mammal Commission.

With the establishment of the Act, the Secretary of Commerce was directed to undertake, in consultation with the Marine Mammal Commission, a study of North Pacific fur seals to determine whether herds of such seals, subject to the jurisdiction of the United States, were at their optimum sustainable population and what population trends were evident. The Secretary was also to undertake a comprehensive study, in consultation with the Secretary of State, to determine what modifications, if any, should be made to the provisions of the North Pacific Fur Seal Convention, or to the Marine Mammal Protection Act, or both, to make the Convention and the Act consistent with one another [Sec. 108].

Among other things, the Secretary of Commerce was directed by the Act to immediately undertake a program of research and development for the purpose of devising improved fishing methods and gear so as to reduce to the maximum extent practicable the incidental taking of marine mammals in connection with commercial fishing [Sec. 111]. In 1984, the Secretary of Commerce was directed to commence a research program to monitor the indices of abundance and trends of marine mammal population stocks which are taken incidentally in the course of commercial purse seine fishing for yellowfin tuna. In 1988, the Secretary of Commerce was directed to conduct a study of possible impacts on marine mammals of seal control devices as well as other explosive devices used in the commercial yellowfin tuna fishery. The Secretary also was directed in 1988 to develop a fishery reporting and observation program to obtain reliable estimates of the numbers of marine mammals being taken incidentally in various fisheries in U.S. waters and, in consultation with the Marine Mammal Commission, to develop a recommended system for regulating such takes after 1 October 1993 [Sec. 114]. Title IV was added to the Act in 1992, directing the Secretary to develop contingency plans for responding to, and determining the cause and effect of, unusual marine mammal stranding events. The Secretary was also directed to establish the National Marine Mammal Tissue Bank and to develop guidance for analysis of tissue samples to monitor health trends of, and contaminant levels in, marine mammals.

Amendments enacted in 1994 require establishment of three regional scientific review groups to advise the Secretary on the status and trends of marine mammal stocks that occur in U.S. waters [Sec. 117]. Among other things, the scientific review groups are to identify research needed to resolve uncertainties regarding stock separation, abundance, or trends; factors affecting the distribution, size, or productivity of the stock; and the number, age, sex, and reproductive status of marine mammals that comprise the stock. The scientific review groups are also charged with advising the Secretary on research needed to identify modifications in fishing gear and practices likely to reduce the incidental mortality and serious injury of marine mammals. The Secretary is also required to undertake a research program to monitor the health and stability of the Bering Sea marine ecosystem and to resolve uncertainties concerning observed declines in marine mammals, sea birds, and other marine resources [Sec. 110]. The amendments also direct the Secretary to undertake an investigation of the impacts of California sea lions and Pacific harbor seals on endangered, threatened, or vulnerable salmonid stocks, and on the coastal ecosystems of Washington, Oregon, and California [Sec. 120].

Both the Secretary of Commerce and the Secretary of the Interior are authorized by the Act to make grants to states to assist them in developing programs for the conservation and management of marine mammals and in administering such programs if management authority for such species is transferred to the state. Such grants are not to exceed 50 per centum of the costs of a particular program's development and implementation [Sec. 109(j)(1 & 2)].

The Secretaries are also authorized to make grants to any Federal or state agency, public or private institution, or other person for the purpose of assisting such agency, institution, or person to undertake research in subjects which are relevant to the protection and conservation of marine mammals [Sec. 110]. In 1994, provisions were added to specifically study the Gulf of Maine ecosystem and the Bering Sea ecosystem. Additional authority for grants to Alaska Native organizations for research conducted pursuant to a cooperative agreement with the Secretary was added in 1994 [Sec. 119].

The Secretaries, as appropriate, are directed to review annually the operation of each program in which the United States participates involving the taking of marine mammals on land [Sec. 112 (d)]. The Secretaries are required by the Act to report annually to the public and to the Congress on the current status of all marine mammal species and population stocks subject to the provisions of the Act [Sec. 103(f)].

The Marine Mammal Commission established under Section 201 of the Act was directed in Section 202 (a) to:

1. "undertake a review and study of the activities of the United States pursuant to existing laws and international conventions relating to marine mammals, including, but not limited to, the International Convention for the Regulation of Whaling, the Whaling Convention Act of 1949, the Interim Convention on the Conservation of North Pacific Fur Seals, and the Fur Seal Act of 1966;
2. "conduct a continuing review of the conditions of the stocks of marine mammals, of methods for their protection and conservation, of humane means of taking marine mammals, of research programs conducted or proposed to be conducted under authority of the Act, and of all applications for permits for scientific research, public display, or enhancing the survival or recovery of a species or stock; and
3. "undertake or cause to be undertaken such other studies as it deems necessary or desirable in connection with its assigned duties as to the protection and conservation of marine mammals."

The Act gives the Commission access to all studies and data compiled by Federal agencies regarding marine mammals. With the consent of the appropriate Secretary or agency head, the Commission may also utilize the facilities or services of any Federal agency and shall take every feasible step to avoid duplication of research and to carry out the purposes of the Act [Sec. 205].

TABLE 7

FEDERAL FUNDING UNDER THE MARINE MAMMAL PROTECTION ACT

(Thousands of Dollars)

<u>Department of Commerce (NMFS)</u>	<u>AUTHORIZED</u>	<u>REQUESTED</u>	<u>APPROPRIATED</u>
FY74	4667	5300	1600
FY75	3667	2550	4445
FY76	3667	2550	4872
FY77	4667	4939	7042
FY78	11700	4872	7228
FY79	11425	7042	7080
FY80	11925	6728	7416
FY81	12425	7875	7475
FY82	7223	7416	7700
FY83	8000	7416	9225
FY84	8800	5571	8475
FY85	8800	5615	9375
FY86	8800	5850	8670
FY87	8800	6150	9375
FY88	8800	7586	8670
FY89	15440	7128	9291
FY90	12740	7061	16595
FY91	21780	19579	19266
FY92	21780	20400	20805
FY93	22331	23428	20588
FY94	32138	21101	18059
FY95	32623	30149	20326

<u>Department of the Interior (FWS/NBS)</u>			
FY74	1358	700	700
FY75	1358	1358	1358
FY76	1358	1358	1358
FY77	1358	1358	1358
FY78	2050	1358	1539
FY79	2350	1600	2000
FY80	2660	2000	2000
FY81	3376	2000	2000
FY82	1600	1600	1600
FY83	1760	1690	1690
FY84	2000	1658	1249
FY85	2500	1292	1289
FY86	3000	2024	1815
FY87	3000	1050	1310
FY88	3000	1077	1776
FY89	3000	777	1326
FY90	3120	761	1411

TABLE 7 (continued)
Federal Funding Under the Marine Mammal Protection Act

Department of the Interior (cont.)	AUTHORIZED	REQUESTED	APPROPRIATED
FY91	3240	1419	1419
FY92	3370	1450	1450
FY93	3500	1375	1375
FY94	8000	2038	2038
FY95	8600	1561	1561
<hr/>			
Marine Mammal Commission (MMC)			
FY74	1000	825	412
FY75	1000	1000	750
FY76	1000	1000	900
FY77	1000	1000	1000
FY78	1000	900	900
FY79	1000	702	702
FY80	1000	640	940
FY81	1000	1000	734
FY82	672	672	672
FY83	1000	594	822
FY84	1100	638	929
FY85	1100	648	929
FY86	1100	738	861
FY87	1100	855	910
FY88	1100	906	953
FY89	1100	933	953
FY90	1140	960	960
FY91	1190	1003	1153
FY92	1230	1153	1250
FY93	1280	1310	1260
FY94	1500	1290	1290
FY95	1550	1390	1381

Note: Figures on this table reflect administrative and enforcement costs as well as research costs. The figures for FWS/NBS and NMFS are those reported to the Commission by those agencies. Funding under the column headings reflect levels listed as (1) authorized under sections of the Act, (2) requested funding of the agencies, and (3) funds subsequently appropriated by Congress. Implementation of the 1988 "Interim Exemptions" evident in the NMFS appropriations beginning in FY90.

TABLE 8

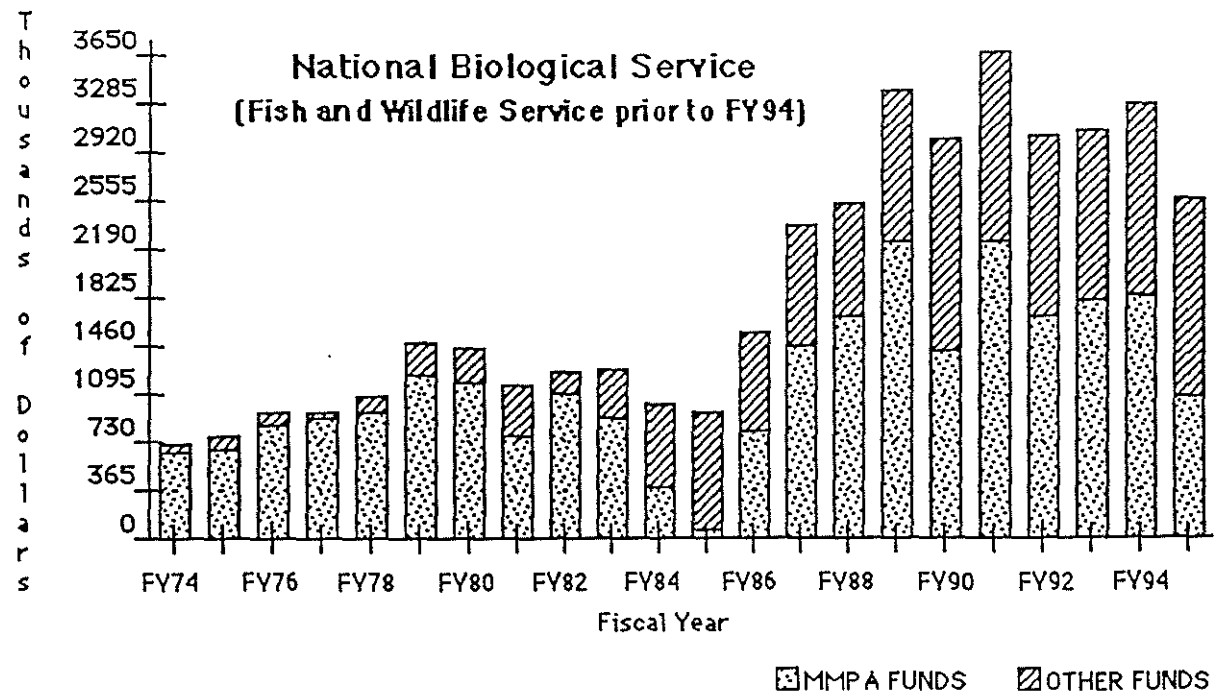
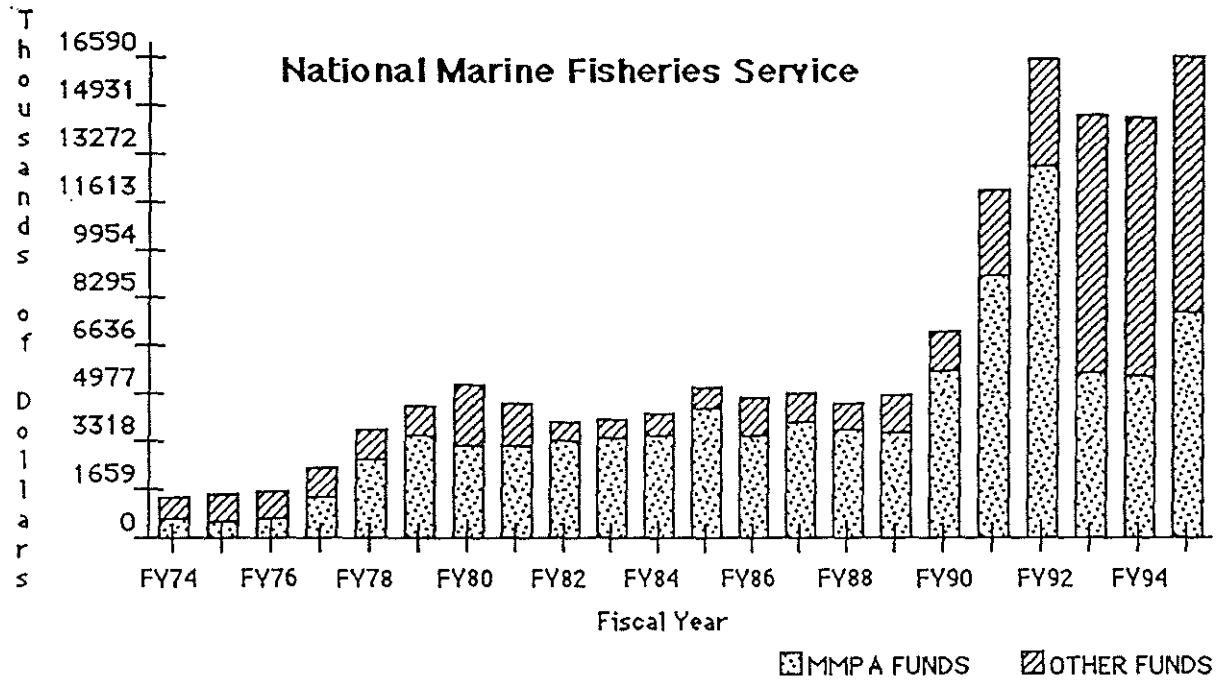
**FUNDS EXPENDED ON MARINE MAMMAL RESEARCH
OTHER THAN THOSE APPROPRIATED UNDER AUTHORITY OF THE
MARINE MAMMAL PROTECTION ACT
(Thousands of Dollars)**

	FY76*	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	
Department of Commerce, NOAA																					
National Marine Fisheries Service																					
Fur Seal Act Authorization	743	595	595	595	595	595	595	595	619	620	654	654	477	368	448						
Reprogramming and Reserves	59	78																			
Endangered Species Act Appropriation		294	294	294	1428	775					500	250	350	799	803	2899	3609	8821	8812	8430	
NMFS TOTAL	802	967	889	889	2023	1370	595	595	619	620	1154	904	827	1167	1251	2899	3609	8821	8812	8430	
Department of the Interior																					
National Biological Service																					
(re USFWS before FY94)																					
FWS Appropriation	83.3	18			82.2															298	298
Endangered Species Act Appropriation			93.7	213.1	162	362.9	123	348	614	879	736.3	891	825	1125	1170	1398	1348	1253	1050	1050	
National Wildlife Refuge System Administration Act Appropriation							11	5													
Oil Spill Damage Assessment															414					83	
NBS/FWS TOTAL	83.3	18	93.7	213.1	244.2	362.9	134	353	614	879	736.3	891	825	1125	1584	1398	1348	1253	1411	1348	

*FY76 data include transition quarter (July-September 1976)

FIGURE 2

**FUNDS EXPENDED ON MARINE MAMMAL RESEARCH
BY THE NATIONAL MARINE FISHERIES SERVICE AND THE
NATIONAL BIOLOGICAL SERVICE, FY74-FY95***
(Thousands of Dollars)



* Figure 2 is developed from data shown on Table 3 and Table 8.

TABLE 9

NUMBER OF PERSONNEL ASSIGNED TO MARINE MAMMAL ADMINISTRATIVE AND RESEARCH ACTIVITIES
IN THE NATIONAL MARINE FISHERIES SERVICE AND THE NATIONAL BIOLOGICAL SERVICE, FY76-FY95*

National Marine Fisheries Service**																				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95
Administrative	42	7	8	86.5		33.5	27.1	16	19.9	23.2	21.8	11.8	22.3	23.1	38.3	51.7	58.7	53.3	59.7	58.5
Research	31	17	20	48.9		60.7	61.2	42.7	76.3	75.6	76.3	63.5	67.3	70.2	80.5	98.4	134.8	131.2	125.3	120.1
NMFS Total	73	24	28	135.4	166.1	94.2	88.3	58.7	96.2	98.8	98.1	75.3	89.6	93.3	118.8	150.1	193.5	184.5	185	178.6
National Biological Service (re Fish and Wildlife Service before FY94) ***																				
	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95
Administrative	15.2	18.6	17.1	20.3	24.6	23.3	21.5	6	18.1	21.1	19.6	1.5	5.5	5.4	4	4.2	4.2	4.2	5	5
Research	11.8	14.8	13.2	17.2	17.4	17.8	16.5	16	17.6	17.8	16.5	27.7	29.1	31.4	29.8	37.3	30.2	28.1	29	29
NBS/FWS Total	27	31.4	30.3	37.5	42	41.1	38	22	35.7	38.9	36.1	29.2	34.6	36.8	33.8	41.5	34.4	32.3	34	34

*Figures provided by the agencies.

**The National Marine Fisheries Service changed their method of reporting --
in FY77, to number of personnel; in FY79, to permanent employee man-years; and
in 1984, to full-time equivalents.

***Reported in man-years through FY81 and as full-time equivalents thereafter.

APPENDIX A

SOURCES OF PUBLISHED INFORMATION FROM FEDERALLY-FUNDED RESEARCH AND STUDIES ON MARINE MAMMALS

Department of Commerce

National Marine Fisheries Service

Administrative reports of the various fisheries centers
 Annual Reports for the Marine Mammal Protection Act
 Bulletin of Zoological Nomenclature
 Canadian Journal of Fisheries and Aquatic Sciences
 (Journal Fisheries Research Board of Canada)
 Canadian Journal of Zoology
 Conservation Biology
 Contributions to edited books
 Ecology
 Evolution
 Fishery Bulletin (NMFS, NOAA, Department of Commerce)
 International Whaling Commission Annual Reports
 International Whaling Commission, Working Papers of the
 Scientific Committee
 Journal of Mammalogy
 Journal of Theoretical Biology
 Journal of Wildlife Management
 Marine Fisheries Review (NMFS, NOAA, Department of Commerce)
 Marine Mammal Division -- Annual Reports on Fur Seal Investigations
 Marine Mammal Science
 Marine Pollution Science
 NOAA Technical Reports, NMFS Scientific Reports--Fisheries
 North Atlantic Studies
 Oceanus
 Pacific Science
 Physiological Zoology
 Polar Biology
 Proceedings of conferences

National Sea Grant College Program

Marine Mammal Information

Office of Ocean and Coastal Resource Management, Sanctuary
Programs Division

Administrative reports of contractors
Fishery Bulletin
Marine Fisheries Review
NOAA Technical Reports
Proceedings of conferences

Department of Defense

Air Force

Headquarters Space Division Technical Reports
Space Shuttle Final Environmental Impact Statement

Navy

Acta Zoologica Fennica
American Journal of Veterinary Research
Animal Behavior Processes
Annals of the New York Academy of Science
Aquatic Mammals
Arctic
Behavioral and Brain Sciences
Biology of Reproduction
Brain, Behavior and Evolution
Breviora
Canadian Journal of Zoology
Cetology
Contributions to edited books
Deep-Sea Research
Diseases of Aquatic Organisms
Fishery Bulletin
Journal Acoustical Society of America
Journal American Veterinary Medical Association
Journal of Mammalogy
Journal of Morphology
Journal of Wildlife Diseases
Marine Fisheries Review
Marine Mammal Science
Microbios Letters
Naval Ocean Systems Center Technical Reports
Polar Record
Proceedings of conferences
Science
Transactions of the San Diego Society of Natural History
Vision Research

Department of Energy

Canadian Journal of Fisheries and Aquatic Sciences
 Ecological Monographs
 Environmental Conservation
 Journal American Veterinary Medical Association
 Progress reports on projects
 Wildlife Society Bulletin

Department of the Interior**Fish and Wildlife Service/ National Biological Service**

Acta Anatomica
 Acta Zoologica
 Aquatic Mammals
 Biological Conservation
 Bulletin of Marine Science
 Contributions to edited books
 Cornell Veterinarian
 Fishery Bulletin
 Florida Scientist
 Journal American Veterinary Medical Association
 Journal of Comparative Physiology
 Journal of Mammalogy
 Journal of Morphology
 Journal of Wildlife Diseases
 Journal of Wildlife Management
 North American Fauna Series
 Northeast Gulf Science
 Reports available through the National Technical Information Service
 U. S. Department of the Interior, Fish and Wildlife Service:
 a) Annual Reports for the Marine Mammal Protection Act
 b) Biological Services Reports
 c) National Fish and Wildlife Laboratory Reports
 d) Wildlife Research Reports
 Veterinary Clinical Pathology
 Zoomorphology

Geological Survey

Geological Survey Professional Papers
 Publications of the Charleston Museum
 Smithsonian Institution Contributions to Paleontology
 Systematic Zoology

Minerals Management Service

American Zoologist
 Bulletin of Marine Science
 Canadian Journal of Zoology
 Contributions to edited books
 Fishery Bulletin
 Journal of Herpetology

Journal of Mammalogy
 Journal of Wildlife Management
 Marine Mammal Science
 NOAA/OCEAP Annual Reports
 NOAA/OCEAP Final Reports
 NOAA/OCEAP Lease Area Synthesis Reports
 Project reports available through the National Technical Information Service
 Regional information transfer meetings
 Southwestern Naturalist
 Various workshops

National Park Service

Administrative reports

Department of State

EIS: Possible Regime for the Conservation of Antarctic
 Marine Living Resources
 International Whaling Commission Scientific Reports
 Project reports available through the National Technical
 Information Service

Marine Mammal Commission

Project reports available through the National Technical
 Information Service
 Marine Mammal Commission Annual Report
 Numerous scientific journals and contributions to edited books

National Science Foundation

Antarctic Bibliography
 Antarctic Journal of the United States
 Numerous scientific journals

Smithsonian Institution

Behavioral Ecology and Sociobiology
 Contributions to edited books
 Fishery Bulletin
 Florida State Museum, Plaster Jacket
 Journal of Mammalogy
 Marine Mammal Science
 Physiological Zoology
 Proceedings of the Biological Society of Washington
 Smithsonian Institution Contributions to Marine Sciences
 Smithsonian Institution Contributions to Paleontology
 Smithsonian Institution Contributions to Zoology
 Systematic Zoology

APPENDIX B

LISTING OF MARINE MAMMAL RESEARCH AND
STUDY PROJECTS, PRINCIPAL INVESTIGATORS,
AND FUNDING LEVEL
FOR FY90-FY95*

COMPILED FROM INFORMATION PROVIDED
TO THE MARINE MAMMAL COMMISSION
BY EACH AGENCY

* For a listing of projects for the period FY70-FY79, see Waring, G. H., 1981, Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY79, Publication PB81-174336, National Technical Information Service, Springfield, Virginia, 235 p.

For a listing of projects for the period FY80-FY89, see Waring, G. H., 1990, Survey of Federally-Funded Marine Mammal Research and Studies, FY70-FY89, Publication PB90-272097, National Technical Information Service, Springfield, Virginia, 154 p.

Department of Agriculture

FY90-FY95

(No projects)

Department of Commerce

1. National Marine Fisheries Service

A. Alaska Fisheries Science Center

FY90

Bengtson, J. L. (NMML) Antarctic Ecosystem Program (8L1A5T3N)	\$326.8K
Braham, H. W. (NMML) Laboratory Administration (8L1A5T3A)	\$436.6K
Calkins, D. G. (Alaska Dept. of Fish and Game) Assessment of Injury to Steller Sea Lions in Prince William Sound and the Gulf of Alaska ("Exxon Valdez" Oil Spill)	\$171.2K
DeLong, R. L. (NMML) California Current Ecosystem Program (8L1A5T3C)	\$297.5K
Fowler, C. W. (NMML) Ecosystem and Population Assessment Program (8L1A5T3E)	\$447.9K
Jones, L. L. (NMML) High Seas Fisheries Interactions (8L1A5T3H)	\$233.4K
High Seas Squid Driftnet (8L2B5N00)	\$320.2K
Jones, L. L. and D. Withrow (NMML) Arctic Whales Program (8L1A5T3R)	\$316.2K
Lowry, L. and K. Frost (Alaska Dept. of Fish and Game) Assessment of Injury to Harbor Seals in Prince William Sound and Adjacent Areas ("Exxon Valdez" Oil Spill)	\$159.3K
Loughlin, T. R. (NMML) Bering Sea and Gulf of Alaska Ecosystem (8L1A5T3B)	\$715.3K
Matkin, C. and O. von Ziegesar (North Gulf Oceanic Society) Assessment of Injuries to Killer Whales in Prince William Sound, Kodiak Archipelago, and Southeast Alaska ("Exxon Valdez" Oil Spill)	\$255.8K
Matkin, C., D. McSweeney, J. Straley, and O. von Ziegesar Effects of the "Exxon Valdez" Oil Spill on the Distribution and Abundance of Humpback Whales in Prince William Sound, Southeast Alaska, and the Kodiak Archipelago	\$92K

FY91

Bengtson, J. L. (NMML) Antarctic Ecosystem Program (8L1A5T3N)	\$335K
Braham, H. W. (NMML) Laboratory Administration (8L1A5T3A)	\$589K
DeLong, R. L. (NMML) California Current Ecosystem Program (8L1A5T3C)	\$830K
Fowler, C. W. (NMML) Ecosystem and Population Assessment Program (8L1A5T3E)	\$356K
Jones, L. L. (NMML) High Seas Fisheries Interactions (8L1A5T3H)	\$977K
Jones, L. L. and D. Withrow (NMML) Arctic Whales Program (8L1A5T3R)	\$192K
Loughlin, T. R. (NMML) Bering Sea and Gulf of Alaska Ecosystem (8L1A5T3B)	\$1300K

FY92

Bengtson, J. L. (NMML) Antarctic Ecosystem Program	\$415K
Braham, H. W. (NMML) Laboratory Administration	\$520K
MMPA Population Assessment	\$1543K
DeLong, R. L. (NMML) California Current Ecosystem Program	\$695K
Fowler, C. W. (NMML) Ecosystem and Population Assessment Program	\$525K
Jones, L. L. (NMML) High Seas Fisheries Interactions	\$1028K
Jones, L. L. and D. Withrow (NMML) Arctic Whales Program	\$325K
Loughlin, T. R. (NMML) Alaska Ecosystem Program	\$922.3K

FY93

Bengtson, J. L. (NMML) Antarctic Ecosystem Program	\$445K
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Braham, H. W. (NMML)	
MMPA Population Assessment	\$965K
Laboratory Administration	\$759K
DeLong, R. L. (NMML)	
Ecosystem Program	\$345.7K
DeMaster, D. P. (NMML)	
Arctic Whales Program	\$185.4K
High Seas Fisheries Interactions	\$594.8K
Fowler, C. W. (NMML)	
Ecosystem and Population Assessment Program	\$418.8K
Loughlin, T. R. (NMML)	
Alaska Ecosystem Program	\$985.4K
	<u>FY94</u>
Bengtson, J. L. (NMML)	
Antarctic Ecosystem Program	\$393.1K
Braham, H. W. (NMML)	
Marine Mammal Assessment Program	\$801.7K
Laboratory Administration	\$693K
DeLong, R. L. (NMML)	
California Current Ecosystem Program	\$354.2K
DeMaster, D. P. (NMML)	
Arctic Ecosystem and Oceanography Program	\$510K
Driftnet Research	\$168K
Fowler, C. W. (NMML)	
Ecosystem Ecology and Assessment Program	\$195.4K
Loughlin, T. R. (NMML)	
Alaska Ecosystem Program	\$899.1K
	<u>FY95</u>
Bengtson, J. L. (NMML)	
Antarctic Ecosystem Program (AKC NM03)	\$347K
Braham, H. W. (NMML)	
Program Management and Support (AKC NM01)	\$644.3K
Marine Mammal Assessment Program (AKC NM08)	\$1613.2K
DeLong, R. L. (NMML)	
California Current Ecosystem Program (AKC NM05)	\$368.2K

DeMaster, D. P. (NMML) Arctic Ecosystem and Oceanography Program (AKC NM04)	\$543.2K
Fowler, C. W. (NMML) Ecosystem Ecology and Assessment Program (AKC NM06)	\$161.7K
Loughlin, T. R. (NMML) Alaska Ecosystem Program (AKC NM02)	\$297.1K
Steller Sea Lion Program (AKC NM09)	\$591K
B. Alaska Regional Office	
<u>FY90</u>	
Spraker, T. (Wildlife Pathology International) Humane Observer Studies of the Northern Fur Seal Subsistence Harvest (0-HAWF-0-00092)	\$3.5K
Zacharof, M. (Aleut Community of St. Paul) 1990 Fur Seal Subsistence Harvest Data (0-HAWF-0-00091)	\$2K
<u>FY91</u>	
Morris, R. (AKR/PRMD) Cook Inlet Beluga Whale Survey	\$25K
Munro, N. and D. Hicks (Saltwater, Inc.) Marine Mammal Observers: Prince William Sound and Unimak Pass Gillnet Fisheries (0-ABNF-0-00036)	\$1300K
Spraker, T. (Wildlife Pathology International) Humane Observer Studies of the Northern Fur Seal Subsistence Harvest (0-HAWF-0-00092)	\$3.5K
Zacharof, M. (Aleut Community of St. Paul) 1990 Fur Seal Subsistence Harvest Data (0-HAWF-0-00091)	\$2K
<u>FY92</u>	
Alaska Eskimo Whaling Commission Manage the Bowhead Harvest and Conduct Research	\$330K
Alaska and Inuvialuit Beluga Whale Committee Beluga Whale Studies	\$184K
Calkins, D. (Alaska Dept. Fish and Game) Research on Steller Sea Lions	\$689.9K
Insley, S. (Univ. California, Davis) Effects of Airport Noise on Northern Fur Seals on St. George Island	\$4K
Lowry, L. (Alaska Dept. Fish and Game) Harbor Seal Research	\$500K

Spraker, T. (Colorado State Univ.) Humane Observer Studies of the Northern Fur Seal Subsistence Harvest	\$4K
Wolfe, R. (Alaska Dept. Fish and Game) Determination of Number of Steller Sea Lions and Harbor Seals Taken by Alaska Natives	\$382.6K
Zacharof, D. (Aleut Community of St. Paul) 1992 Subsistence Harvest Data (Northern Fur Seal)	\$2K

FY93

Alaska Eskimo Whaling Commission Manage the Bowhead Harvest and Conduct Research	\$313.9K
Alaska Department of Fish and Game Study to Determine the Number of Steller Sea Lions and Harbor Seals and Bristol Bay/Cook Inlet Beluga Whales Taken by Alaska Natives	\$304.7K
Alaska and Inuvialuit Beluga Whale Committee Beluga Whale Studies	\$172.8K
Calkins, D. (Alaska Department of Fish and Game) Cooperative Agreement to Conduct Research on Steller Sea Lions	\$712.5K
Insley, S. (Univ. California, Davis) Effects of Airport Noise on Northern Fur Seals on St. George Island	\$4K
Lowry, L. (Alaska Department of Fish and Game) Cooperative Agreement to Conduct Harbor Seal Research	\$450K
Spraker, T. (Colorado State Univ.) Humane Observer Studies of the Northern Fur Seal Subsistence Harvest	\$4K
Williams, M. (Univ. Alaska) Monitor Fur Seal Subsistence Harvest by Aleut Residents of St. George Island	\$1K
Zacharof, D. (Aleut Community of St. Paul) Provide Assistance in the Collection of 1994 Subsistence Harvest Data	\$2K

FY94

Alaska Eskimo Whaling Commission Manage the Bowhead Harvest and Conduct Research	\$313.9K
Alaska and Inuvialuit Beluga Whale Committee (North Slope Borough) Beluga Whale Studies	\$172.8K
Calkins, D. (Alaska Department of Fish and Game) Cooperative Agreement to Conduct Research on Steller Sea Lions	\$750K
Lowry, L. (Alaska Department of Fish and Game) Harbor Seal Research	\$443.5K

Spraker, T. (Colorado State Univ.) Humane Observer Studies of the Northern Fur Seal Subsistence Harvest	\$4K
Williams, M. (Univ. Alaska) Saint George Fur Seal Subsistence Harvest	\$3K
Wolfe, R. (Alaska Department of Fish and Game) Alaska Native Marine Mammal Subsistence Study	\$304.7K
Wynne, K. (Alaska Sea Grant) Copper River Delta Beachcast Surveys	\$15K
Zacharof, D. (Aleut Community of St. Paul) Provide Assistance in the Collection of 1994-95 Subsistence Harvest Data	\$2K

FY95

Alaska Eskimo Whaling Commission Manage the Bowhead Harvest and Conduct Research	\$298.2K
Alaska and Inuvialuit Beluga Whale Committee Beluga Whale Studies	\$185K
Bureau of Indian Affairs Alaska Native Cooperative Management Plans	\$35K
Calkins, D. (Alaska Dept. Fish and Game) Research on Steller Sea Lions	\$750K
Lowry, L. (Alaska Dept. Fish and Game) Harbor Seal Research	\$475K
Spraker, T. (Colorado State Univ.) Humane Observer Studies of the Northern Fur Seal Subsistence Harvest	\$4K
Williams, M. (Univ. Alaska) Monitoring of Fur Seal Subsistence Harvest by Aleut Residents on St. George Island	\$3K
Wolfe, R. (Alaska Dept. Fish and Game) Alaska Native Marine Mammal Subsistence Study	\$435K
Wynne, K. (Univ. Alaska) Copper River Delta Beachcast Survey	\$25K
Zacharof, D. (Aleut Community of St. Paul) 1995 Subsistence Harvest Data (Northern Fur Seal)	\$2.5K
Zimmerman, S. T. (NMFS, Alaska Region) Cook Inlet Set and Drift Gillnet Fishery Observer Program	\$150K

C. Northeast Fisheries Science Center

FY90

Brault, S. (National Research Council) Pilot Whale Population Dynamics (OP.4)	S45K
Finn, J. (Univ. Massachusetts) North American Right Whale Program: Population Dynamics (OP.1.4)	S18K
Katona, S. (College of the Atlantic) Humpback Whale Individual Identification (OP.3.2)	S23K
Kraus, S. (New England Aquarium) North American Right Whale Program: Individual Identification (OP.1.3)	S79K
Mayo, C. A. (Center for Coastal Studies) Distribution and Habitat Usage of Large Cetaceans (OP.3.1)	S41K
North American Right Whale Program: Habitat Requirements (OP.1.2)	S33K
Nicolas, J. (NEFSC) Marine Mammal Biological Sampling (ER.2)	S23K
Payne, P. M. (Manomet Bird Observatory) Fishery Resource and Marine Mammal Sighting Surveys (ER.1.1)	S46K
Polacheck, T. (NEFSC) Harbor Porpoise Program: Sighting Survey (OP.2.2)	S75K
Polacheck, T. and D. Potter (NEFSC) Harbor Porpoise Program: Sighting Survey Methods (OP.2.2)	S49K
Smith, T. D. (NEFSC) Marine Mammal By-Catch Estimation (HI.2)	S25K
North American Right Whale Program (OP.1)	S12K
Harbor Porpoise Program (OP.2)	S25K
North Atlantic Humpback Whale Program (OP.3)	S6K
Waring, G. T. (NEFSC) Predation and Spatial Co-Occurrence (ER.1)	S49K
Cetacean Habitat Survey (ER.1.2)	S19K
Winn, H. and R. Kenney (Univ. Rhode Island) North American Right Whale Program: Sighting Data and Habitat Use (OP.1.1)	S93K

FY91

Brault, S. (National Research Council) Pilot Whale Population Dynamics (OP.4)	\$10K
Christensen, D. (NEFSC) Commercial Fishery Monitoring (HI.1)	\$69K
Drew, S., P. Gerrior, and G. Power (Manomet Bird Observatory and NEFSC) Domestic Observer Program (HI.1.1)	\$1588K
Finn, J. (Univ. of Massachusetts) North Atlantic Right Whale Program: Population Dynamics (OP.1.4)	\$22K
Gerrior, P. (NEFSC) Foreign Observer Project (HI.1.2)	\$0-
Katona, S. (College of the Atlantic) North Atlantic Humpback Whale Program: Humpback Whale Individual Identification (OP.3.2)	\$20K
Kraus, S. (New England Aquarium) North Atlantic Right Whale Program: Individual Identification (OP.1.3)	\$79K
Krieger, K. and D. Potter (New England Aquarium and NEFSC) Pilot Whale Release (OP.5)	\$10K
Mayo, C.A. (Center for Coastal Studies) Distribution and Habitat Usage of Large Cetaceans (OP.3.1)	\$20K
North Atlantic Right Whale Program: Habitat Requirements (OP.1.2)	\$33K
Nicolas, J. (NEFSC) Marine Mammal Biological Sampling (ER.2)	\$25K
Palka, D. (NEFSC) Harbor Porpoise Program: Sighting Survey (OP.2.1)	\$180K
Potter, D. (NEFSC) Harbor Porpoise Program: Harbor Porpoise Aerial Survey (OP.2.3)	\$40K
Read, A. and S. Kraus (Woods Hole Oceanogr. Inst. and New England Aquarium) Harbor Porpoise Program: Inshore Sighting Survey (OP.2.2)	\$25K
Smith, T. D. (NEFSC) Harbor Porpoise Program: HPP (OP.2)	\$25K
Marine Mammal By-Catch Estimation (HI.2)	\$50K
North Atlantic Right Whale Program: NARWP (OP.1)	\$12K
North Atlantic Humpback Whale Program: NAHWP (OP.3)	\$10K
Waring, G. T. (NEFSC) Predation and Spatial Co-Occurrence (ER.1)	\$50K

Northeast Cetacean Aerial Survey (ER.1.1)	\$173K
Cetacean Habitat Survey (ER.1.2)	\$250K
Winn, H. and R. Kenney (Univ. Rhode Island) North Atlantic Right Whale Program: Sighting Data and Habitat Use (OP.1.1)	\$93K
<u>FY92</u>	
Desportes, G. (Faroe Islands) Analysis of Reproductive Status in the Northeast (40EANF-201695)	\$12.3K
Gilbert, J. (Univ. Maine, Orono) Aerial Survey of Harbor Seals in the Northeast (50EANF-2-00064)	\$41.1K
Hain, J. (NEFSC) Mitigating Human Impacts (Net Entanglements and Ship Strikes) on Right Whales in Their Calving and Wintering Grounds Off the Southeast U.S.	\$48K
Kenney, R. (Univ. Rhode Island) An Integrated Program for Research on the North Atlantic Right Whale Off the Eastern U. S. (NA27FEO044301)	\$186.6K
Potter, D. (NEFSC) NMFS Marine Mammal Electronic Tagging and Tracking (ETT) Program	\$140K
Read, A. (Woods Hole Oceanographic Institution) Life History of Small Cetaceans -- Part I. (50EANF-2-00082)	\$49.2K
Smith, T. D. (NEFSC) Harbor Porpoise Population Structure and Abundance	\$327K
Summer Abundance Estimates by Catch and Vital Rates and Habitat Use for the Delphinid Complex and Beaked Whales in the Northeast	\$136K
Years of the North Atlantic Humpback Whale (YONAH)	\$250K
Monitoring Harbor Seal Abundance and Distribution	\$68K
<u>FY93</u>	
Griffin, R. (Univ. Rhode Island) Distributional Ecology of Apex Predators (NA17FEO414)	\$28.6K
Hain, J. (NEFSC) Endangered Species	\$214.1K
Kenney, R. (Univ. Rhode Island) Movements of North Atlantic Right Whales in the Great South Channel (NA17FEO415)	\$21K
Maintain Computer Database for Right Whales in Waters of the Western North Atlantic (NA37FEO434)	\$29.9K

Knowlton, A. (New England Aquarium, Boston) Computer Modelled Analysis of Ship Strikes on North Atlantic Right Whales (40EAMF-4-00534)	\$24K
Kraus, S. (New England Aquarium, Boston) Maintain North Atlantic Right Whale Photo-ID Catalog (52EANF-4-00048)	\$35K
Nicolas, J. and K. Bisack (NEFSC) By-Catch and Biology (cetaceans)	\$195K
Palka, D. and D. Potter (NEFSC) Harbor Porpoise Abundance and Distribution	\$553.5K
Read, A. (Woods Hole Oceanographic Institution) Life History of Small Cetaceans -- Part II. (50EANF-2-00082)	\$95.9K
Smith, T. D. (NEFSC) Humpback Whales -- YONAH	\$240K
By-Catch Reduction	\$70.5K
Waring, G. T. and J. Nicolas (NEFSC) Large Marine Predator Abundance and Distribution	\$100K

FY94

Clapham, P. (Center for Coastal Studies, Provincetown) YONAH analysis -- an Integrated Program for Research on North Atlantic Humpback Whale (NA47FL0068)	\$50K
Griffin, R. (Univ. Rhode Island) Distributional Ecology of Apex Predators (NA17FEO414)	\$30.9K
Hain, J. (NEFSC) Endangered Species	\$193.1K
Katona, S. (College of the Atlantic, Bar Harbor) Maintain North Atlantic Humpback Whale Photo-ID Catalog (50EANF-1-00056)	\$112.8K
Kenney, R. (Univ. Rhode Island) Movements of North Atlantic Right Whales in the Great South Channel (NA17FEO415)	\$40.4K
Nicolas, J. and K. Bisack (NEFSC) By-Catch and Biology	\$18.3K
Pabst, A. (James Madison Univ., Harrisonburg) Physiological Function of the Dorsal Fin on Small Cetaceans	\$10.6K
Palka, D. and D. Potter (NEFSC) Harbor Porpoise Abundance and Distribution	\$268K

Potter, D. (NEFSC)	
By-Catch Reduction	\$36K
Electronic Tagging and Tracking	\$33.1K
Read, A. (Woods Hole Oceanographic Institution)	
An Integrated Program for Research into the Life History of Small Cetaceans in the Northwest Atlantic	\$91.7K
Smith, T. D. (NEFSC)	
Humpback Whales -- YONAH	\$175K
International Whaling Commission Scientific Report	\$74.5K
Stewart, B. (Hubbs Sea World, San Diego)	
Development of Satellite-linked Radio Transmitter Tag Package for Small Cetaceans	\$41.3K
Waring, G. T. (NEFSC)	
Large Marine Predator Abundance and Distribution	\$38.1K

FY95

Best, P.	
Preparation and Editing of Report on NEFSC Right Whale Scientific Review (Oct. 3-7, 1994) (40-ENNF-500061)	\$0.4K
Buckley, L. (Univ. Rhode Island)	
Estimating Harbor Porpoise and/or Blue Fin Tuna Abundance Using an Adaptive Sampling Scheme (NA-47-FEO-456)	\$12.5K
Gilbert, J. (Univ. Maine)	
Harbor Seal Distribution, Abundance, and Biological Sample Analysis	\$20K
Hain, J. H. W. and S. Kraus (NEFSC & New England Aquarium)	
Electronic Tagging and Tracking	\$60K
Genetics -- Right Whale	\$60K
Ship Strikes -- Ship Collisions and Mortality Reduction	\$20K
Human Impacts -- Cape Cod and Massachusetts Bays Habitat Profile	\$60K
Human Impacts -- Data Compilation and Review, Right Whales in New England Waters	\$36.2K
Stranding Response	\$15K
Hain, J. H. W. and S. Katona (NEFSC & College of the Atlantic, Bar Harbor)	
Humpback Whale Photo ID	\$62.5K
Katona, S. (College of the Atlantic)	
Maintain No. Atlantic Humpback Whale Catalog (40-EANF-1-00056)	\$50K

Kenney, R. (Univ. Rhode Island) Maintenance of Computer Database for Right Whales in Western No. Atlantic (NA-37-FE-0434)	\$55.8K
Kraus, S. (New England Aquarium) Right Whale Research in Western No. Atlantic -- Year II (52-EANF-4-00093)	\$36.4K
Moses, E. ARC-INFO GIS Data Files and Maps Relating Scotian Shelf Right Whale Sightings to Oceanographic and Bathymetric Features (40-EANF-500160)	\$0.6K
Nicolas, J. and K. Bisack (NEFSC) Marine Mammal By-Catch and Biology	\$110.8K
Nicolas, J. and A. Read (NEFSC & Woods Hole Oceanographic Institution) Harbor Porpoise By-Catch and Biology	\$124.2K
Northridge, S. Estimating Marine Mammal By-Catch in Drift Gillnet and Pair Trawl Fisheries (1989-1993) (40-ENNF-5-00045)	\$9.5K
Palka, D. and D. Potter (NEFSC) Harbor Porpoise Abundance and Distribution	\$394K
Potter, D. (NEFSC) By-Catch Reduction	\$60K
Marine Mammal Aerial Survey	\$125K
Read, A. (Woods Hole Oceanographic Institution) Life History of Small Cetaceans -- Year II (50-EANF-2-00082)	\$118.6K
Rommel, S. Analysis of Immune System of Harbor Porpoises Taken in Commercial Fisheries (40-ENNF-5-00148)	\$9K
Rubenstein, B. Analysis and Archiving of Seal Biological Samples Collected by Fishery Observer Program (40-ENNF-5-00082)	\$3K
Smith, T. D. (NEFSC) International Whaling Commission Scientific Support	\$184K
Capture-Recapture and Population Modelling Analyses of No. Atlantic Humpbacks (NA-17-FEO-415)	\$39.3K
Distributional Ecology of Cetaceans and Other Apex Predators (NA-17-FEO-414)	\$36K
Spice Island Traders Ship Charter of R/V Abel-J for 1994 Marine Mammal Summer Research Surveys (50-EANF-5-00059)	\$202.2K
Waring, G. T. (NEFSC) Large Marine Pelagic By-Catch and Biology	\$40K

Waring, G. T. and J. Nicolas (NEFSC)
Large Marine Predator Abundance and Distribution S252K

Winn, H. (Univ. Rhode Island)
Report on State-of-the-Art Acoustic Studies of Cetaceans (40-ENNF-500255) S8K

D. Northwest Fisheries Science Center

FY90

Varanasi, U. (NWFSC)
Chemical and Biochemical Analyses of Marine Mammals S27.5K

FY91

Varanasi, U. (NWFSC)
Chemical and Biochemical Analyses of Marine Mammals S54.5K

FY92

Varanasi, U. (NWFSC)
National Marine Mammal Tissue Bank and Marine Mammal
Contaminants Monitoring Projects S250K

FY93

Varanasi, U., J. Stein, and S. Chan (NWFSC)
Toxic Chemicals in Marine Mammals: Development of Nationwide and
Integrated Database to Assess Regional and Species Differences in Toxic
Chemical Impact S200K

Expansion of the Database on Chemical Contaminants in Gray Whales;
Effects of Tissue Decomposition on Analyses of Chemical Contaminant
Levels in Cetaceans; Distribution of Chlorinated Hydrocarbons in
Blubber of Bottlenose Dolphins S90K

FY94

Stein, J. E., S.-L. Chan, and M. M. Krahn (NEFSC)
Toxic Chemicals in Marine Mammals: Development of a Nationwide and
Integrated Database to Assess Regional and Species Differences in Toxic
Chemical Impact S334K

FY95

Stein, J. E., S.-L. Chan, and M. M. Krahn (NWFSC)
Toxic Chemicals in Marine Mammals: Development of Nationwide
and Integrated Database to Assess Regional and Species Differences
in Toxic Chemical Input S371.4K

Stein, J. E. and L. Jones (NWFSC)
Interaction of California Sea Lions and Pacific Harbor Seals with
Salmonids in Washington, Oregon, and California S20K

Varanasi, U., J. E. Stein, H. R. Sanborn, and M. M. Krahn (NWFSC)
Monitoring of Chemical Contaminants in Gray Whales \$50K

E. Northwest Regional Office

FY90

Brown, R. (Oregon Dept. of Fish and Wildlife)
Oregon Harbor Seal and Sea Lion Project (NA88-ABD-00103) \$35.6K

FY91

Brown, R. (Oregon Dept., of Fish and Wildlife)
Oregon Harbor Seal and Sea Lion Project (NA17FX0278-01) \$35.6K

FY92-FY93

(No projects reported)

FY94

Scordino, J. and R. DeLong (Northwest Region Office and NMML)
Evaluation of Pinniped Deterrence Methods \$75K

FY95

(No projects reported)

F. Southeast Fisheries Science Center

FY90

McGowan, M. (SEFSC)
Image Archival and Processing for Right Whales, Humpback
Whales, and Bottlenose Dolphins (FSN100-8L1C4T) \$16K

Mullin, K. (SEFSC, Pascagoula Laboratory)
Deep Water Cetaceans of the Gulf of Mexico \$83.1K

Powers, J. (SEFSC, Miami Laboratory)
Stock Structure Analysis of Bottlenose Dolphins
(FSN100-8L1C4T) \$12K

Low-Level Monitoring of Bottlenose Dolphin Stocks in the
Coastal Waters of the Southeastern United States
(FSN100-8L1C4T) \$100K

Photogrammetric Analysis of Bottlenose Dolphin
Populations (FSN100-8L1C4T) \$10K

Regional Aerial Survey of the Gulf of Mexico (FSN100-8L1C4T) \$50K

Emergency Investigation of Gulf Dolphin Dieoff \$114K

FY91

Cross, F. (Beaufort Laboratory) Marine Mammal and Turtle Strandings (SEC-9-91-12)	\$9.1K
Kifer, R. (Charleston Laboratory) Marine Mammals and Endangered Species, Research & Technical Support (SEC8-91-03)	\$122.5K
Nichols, S. (Mississippi Laboratory) Low Level Marine Mammal Monitoring (SEC2-91-09)	\$31.9K
Powers, J. (Miami Laboratory) Bottlenose Dolphin Low-Level Monitoring (SEC1)	\$0-
Bottlenose Dolphin Fishery Interaction I (SEC1)	\$12K
Emergency Investigation -- Gulf of Mexico Dolphin (SEC1)	\$35K
Emergency Investigation -- Megaborg Oil Spill (SEC1)	\$32K
Marine Mammal Assessment Studies I (SEC1)	\$69K
Marine Mammal Assessment Studies III (SEC1)	\$86K
Marine Mammal Assessment Studies IV (SEC1)	\$110K

FY92

Brown, B. (SEFSC) NMFS Regional Marine Mammal Abundance Assessment (SEC1-92-01 & SEC1-92-04)	\$217K
Cooperative Marine Mammal Assessments (NMFS, MMS, TAMU & OSU) (SEC1-92-06, SEC2-92-09, SEC2-92-10)	\$1917K
SE U.S. Marine Mammal Stranding Network-Related Activities (SEC1-92-03, SEC5-92-08, SEC6-92-16, SEC8-92-03, SEC9-92-21)	\$120K
Bottlenose Dolphin Low Level Monitoring (SEC1-92-02)	\$105K
Marine Mammal Fishery By-Catch Observer Program	\$337K
Bottlenose Dolphin Mortality and Condition Indices Investigation	\$250K
Marine Mammal Abundance Assessments -- (Methods) Inter-Platform Comparison	\$88K

FY93

Gitschlag, G. (SEFSC, Galveston) Sea Turtle and Marine Mammal Associations with Petroleum Platforms (SEC7-94-05)	\$409K
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Hansen, L. and R. Blaylock (SEFSC)	
Marine Mammal Assessments (SEC4-94-19)	\$360K
Southeastern U.S. Marine Mammal Strandings Life History Project	\$120K
Monitoring of Bottlenose Dolphin Population in Tampa Bay, Florida	\$35K
Lee, D. (SEFSC)	
Oceanic Pelagic Fishery Observers (SEC4-94-15)	\$170K
Mullin, K. and W. Hoggard (SEFSC)	
Marine Mammal Surveys (SEC5-94-08)	\$30K
Scott, G., L. Hansen, and K. Mullin (SEFSC)	
Deep Water Marine Mammals in the Gulf of Mexico (SEC4-94-20)	\$2037K

FY94

Blaylock, R. (SEFSC)	
Aerial Surveys to Monitor Presence of Northern Right Whales in the Southeastern U.S. Calving and Wintering Grounds	\$240K
Caillouet, C. (SEFSC, Galveston)	
Response to Major Marine Mammal and Sea Turtle Stranding Events	\$26.5K
Hansen, L., P. Fair, and B. Curry (SEFSC)	
Bottlenose Dolphin Stock Identification	\$30K
Fair, P., W. McFee, and L. Trent (SEFSC)	
Investigation of Marine Mammal Entanglement Associated with Coastal Net Fisheries	\$85K
Gitschlag, G. (SEFSC, Galveston)	
Sea Turtle and Marine Mammal Associations with Petroleum Platforms	\$409K
Hansen, L. and R. Blaylock (SEFSC)	
Marine Mammal Assessment	\$360K
Synoptic Survey of Coastal Distribution of a Depleted Stock of Bottlenose Dolphins	\$330K
SE U.S. Marine Mammal Strandings Life History Project	\$120K
Hansen, L., R. Blaylock, K. Mullin, W. Hoggard, P. Fair, and V. Thayer (SEFSC)	
Marine Mammal Surveys	\$30K
Hansen, L. and K. Mullin (SEFSC)	
Deep Water Marine Mammals in the Gulf of Mexico	\$1852K
Lee, D. (SEFSC)	
Oceanic Pelagic Fishery Observers	\$220K

FY95

Caillouet, C. (SEFSC, Galveston)	
Response to Major Marine Mammal and Sea Turtle Stranding Events	\$47.5K
Gitschlag, G. (SEFSC)	
Sea Turtle and Marine Mammal Associations With Petroleum Platforms	\$425K
Hansen, L. and R. Blaylock (SEFSC)	
Marine Mammal Assessments	\$220K
Southeastern U.S. Marine Mammal Strandings Life History Project	\$120K
Synoptic Survey of Coastal Distribution of a Depleted Stock of Bottlenose Dolphins	\$300K
Hansen, L., R. Blaylock, K. Mullin, W. Hoggard, P. Fair, and V. Thayer (SEFSC)	
Marine Mammal Surveys	\$260K
Hansen, L., P. Fair, and B. Curry (SEFSC)	
Bottlenose Dolphin Stock Identification	\$65K
Hansen, L. and K. Mullin (SEFSC)	
Deep Water Marine Mammals in the Gulf of Mexico	\$1667K
Lee, D. (SEFSC)	
Oceanic Pelagic Fishery Observers	\$-0-
McFee, W. (SEFSC)	
Aerial Surveys to Monitor Presence of Northern Right Whales in the Southeastern U.S. Calving and Wintering Grounds	\$240K
G. Southeast Regional Office	

FY90-FY94

(No projects reported)

FY95

Brooks, B. (Florida Marine Research Institute)	
Implementation of Right Whale Recovery Plan: Section 6 Agreement with Florida	\$15K
Harris, M. and B. Zoodsma (Georgia DNR)	
Implementation of Right Whale Recovery Plan: Section 6 Agreement with Georgia	\$15K
Harris, M., B. Zoodsma, and B. Brooks (Georgia DNR & Florida DEP)	
Offshore Aerial Surveys for Northern Right Whales	\$40K
Hohn, A. (NMFS Beaufort Laboratory)	
Life History Studies of Western North Atlantic Coastal Bottlenose Dolphins	\$20K

H. Southwest Fisheries Science Center

FY90

Barlow, J. and D. P. DeMaster (SWFSC) Coastal Marine Mammals (540)	\$242.9K
Dizon, A. and D. P. DeMaster (SWFSC) Biological Assessment Program (520)	\$457.4K
Gerrodette, T. and D. P. DeMaster (SWFSC) Dolphin Stock Assessment Program (510)	\$583.6K
Gilmartin, W. G. (SWFSC, Honolulu Lab) Hawaiian Monk Seal Research and Recovery (FSR200/8L1A3VW0) (759)	\$392.9K
Northwestern Hawaiian Islands Beach Debris Clean-up (FSR200/8L1A5B7F) (742)	\$25K
Perrin, W. F. (SWFSC) Senior Scientist Unit (060)	\$135.3K
Reilly, S. and D. P. DeMaster (SWFSC) Fishery Dependent Assessment Program (530)	\$335.6K

FY91

Barlow, J. and D. P. DeMaster (SWFSC) Coastal Marine Mammals (540)	\$190K
Coastal Marine Mammals (981)	\$61.8K
Coastal Delphinid Surveys (988)	\$158.6K
Whale and Bottlenose Dolphin Surveys (989)	\$75.2K
Dizon, A. and D. P. DeMaster (SWFSC) Biological Assessment Program (520)	\$470.9K
Edwards, E. and D. P. DeMaster (SWFSC) Fishery Dependent Assessment Program (550)	\$87.8K
Gerrodette, T. and D. P. DeMaster (SWFSC) Dolphin Stock Assessment Program (510)	\$466.4K
Gilmartin, W. G. (SWFSC, Honolulu Lab) Hawaiian Monk Seal Research and Recovery (FSR200/8L1A3VW0) (759)	\$422.6K
Northwestern Hawaiian Islands Beach Debris Clean-up (FSR200/8L1A5B7F) (742)	\$25K
Perrin, W. F. (SWFSC) Senior Scientist Unit (060)	\$150.9K

Reilly, S. and D. P. DeMaster (SWFSC) Dolphin Ecology Program (530)	\$280.8K
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FY92

Barlow, J. and S. B. Reilly (SWFSC) Coastal Marine Mammal Program (540) (\$220K from F/PR; \$66K from SWR)	\$469.7K
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Dizon, A. and S. B. Reilly (SWFSC) Biological Assessment Program (520) (\$79.6K from F/PR)	\$541.8K
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Edwards, E. and S. B. Reilly (SWFSC) Dolphin-Safe Research Program (550) (\$577.2K from F/PR)	\$1351.4K
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Fiedler, P. C. and S. B. Reilly (SWFSC) Dolphin Ecology Program (530)	\$245K
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Gerrodette, T. and S. B. Reilly (SWFSC) Dolphin Stock Assessment Program (510)	\$345.8K
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Gilmartin, W. G. (SWFSC, Honolulu Lab.) Hawaiian Monk Seal Research and Recovery (750)	\$731.2K
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Perrin, W. F. (SWFSC) Senior Scientist Unit (060)	\$149K
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FY93

Barlow, J. and R. L. Brownell (SWFSC) Coastal Marine Mammal Program	\$172.4K
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Dizon, A. and R. L. Brownell (SWFSC) Population Identify Program	\$492.3K
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Edwards, E. and R. L. Brownell (SWFSC) Dolphin-Safe Research Program	\$475.7K
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Gerrodette, T. and R. L. Brownell (SWFSC) Dolphin Stock Assessment Program	\$370.1K
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Gilmartin, W. G. (SWFSC) Hawaiian Monk Seal Research and Recovery	\$717K
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Perrin, W. F. (SWFSC) Senior Scientist Unit	\$157.7K
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Reilly, S. B. and R. L. Brownell (SWFSC) Dolphin Ecology Program	\$357K
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FY94

Barlow, J. and R. L. Brownell (SWFSC) Coastal Marine Mammal Program (540)	\$567.6K
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Dizon, A. and R. L. Brownell (SWFSC) Population Identity Program (520,102,110)	\$606.4K
Edwards, E. and R. L. Brownell (SWFSC) Dolphin-Safe Research Program (550)	\$450K
Gerrodette, T. and R. L. Brownell (SWFSC) Dolphin Stock Assessment Program (510)	\$223.4K
Gilmartin, W. G. (SWFSC, Honolulu) Debris Inventory and Destruction, Northwestern Hawaiian Islands	\$25K
Gilmartin, W. G. and T. J. Ragen (SWFSC, Honolulu) Hawaiian Monk Seal Research and Recovery	\$494K
Perrin, W. F. (SWFSC) Senior Scientist Unit (060)	\$138.9K
Reilly, S. B. and R. L. Brownell (SWFSC) Dolphin Ecology Program (530)	\$269.4K

FY95

Barlow, J. P. and R. L. Brownell, Jr. (SWFSC) Coastal Marine Mammal Program	\$561K
Dizon, A. and R. L. Brownell, Jr. (SWFSC) Population Identity Program	\$521K
Edwards, E. and R. L. Brownell, Jr. (SWFSC) Dolphin-Safe Research Program	\$450K
Gerrodette, T. and R. L. Brownell, Jr. (SWFSC) Dolphin Stock Assessment Program	\$90.8K
Gilmartin, W. G. and T. Ragen (SWFSC, Honolulu Lab.) Hawaiian Monk Seal Research and Recovery	\$1069K
Gilmartin, W. G. and J. R. Henderson (SWFSC, Honolulu Lab.) Debris Inventory and Destruction, NW Hawaiian Islands	\$40K
Perrin, W. F. (SWFSC) Senior Scientist Unit	\$138.9K
Perryman, W. and R. L. Brownell, Jr. (SWFSC) Photogrammetry Program	\$217K
Reilly, S. B. and R. L. Brownell, Jr. (SWFSC) Dolphin Ecology Program	\$405.5K

I. Southwest Regional Office

FY90

Hanan, D. (California Dept. Fish and Game) California Coastal Marine Mammals (A90AB-H-FC411)	\$65K
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FY91

California Department of Fish and Game Category 1 Fishery Effort and Harbor Seal Monitoring	\$219K
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Forestell, P. and J. Mobley Aerial Surveys of Hawaiian Humpback Whales	\$25K
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FY92-FY93

(No projects reported)

FY94

Hanan, D. (California Dept. Fish and Game) Coastal Marine Mammals Fisheries Interaction and Monitoring	\$180K
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FY95

Hanan, D. (California Dept. Fish and Game) Fishery Effort Studies	\$80K
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2. National Sea Grant College Program

FY90

Fay, F. (Univ. Alaska) Behavior and Vocalizations of Transient Killer Whales (R/06-C)	\$32.3K
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FY91

Grau, G., S. Atkinson, & W. Gilmartin (Hawaii Inst. Marine Biology and NMFS) Behavior Modification of Male Hawaiian Monk Seals (R/MR-45)	\$15K
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Fay, F. and J. Kelley (Univ. Alaska) Behavior and Vocalizations of Transient Killer Whales (R/06-31)	\$32.3K
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FY92

Castellini, M. A. (Univ. Alaska) Physiological Health Status of Steller Sea Lions: Ecological Implications	\$24.6K
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Elsner, R. (Univ. Alaska) Resistance to Hypoxia in the Seal Heart	\$18.3K
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Grau, G. E. (Hawaii Inst. Marine Biology) Behavioral Modification of the Male Hawaiian Monk Seal	\$14.3K
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Wynne, K. (Univ. Alaska) Regional Estimation of Harbor Seal and Harbor Porpoise in Alaska	\$48.3K
<u>FY93</u>	
Atkinson, S. (Hawaii Inst. Marine Biology) Aggression in Hawaiian Monk Seals (1204)	\$33.7K
Castellini, M. A. (Univ. Alaska) Physiological Health Status of Steller Sea Lions: Ecological Implications (784)	\$20.4K
Davidson, J. R. (Hawaii Inst. Marine Biology) The Hawaiian Spinner Dolphin, <i>Stenella longirostris</i> : Effects of Human Activities (1206)	\$12.6K
Rappa, P. J. (Hawaii Inst. Marine Biology) Investigating the Feasibility of Establishing a National Marine Sanctuary for Humpback Whales (1200)	\$43.4K
Würsig, B. (Texas A&M Univ.) Bottlenose Dolphins as Environmental Monitors (1396)	\$86.3K
Wynne, K. (Univ. Alaska) Regional Estimation of Harbor Seal and Harbor Porpoise in Alaska: Part II. Collection and Sampling of Marine Mammals Harvested by Alaska Native Hunters (776)	\$24.1K
<u>FY94</u>	
Castellini, M. A. (Univ. Alaska) Physiological Health Status of Alaskan Marine Mammals (R/08-B)	\$88.1K
Elsner, R. and S. O. Ebbesson (Univ. Alaska) Resistance to Hypoxia in the Seal Heart (R/08-04)	S-0
Goering, J. J., D. M. Schell, and O. Mathisen (Univ. Alaska) Diet Studies of Sea Lions and Seals in Alaska Using Stable Isotope Ratios (R/08-C)	\$78.3K
Würsig, B. (Texas A&M Univ.) Bottlenose Dolphins as Environmental Monitors (R/ES-55)	\$82.7K
<u>FY95</u>	
Castellini, M. (Univ. Alaska) Physiological Health Status of Alaskan Marine Mammals (R/08-B)	\$44K
Elsner, R. and S. O. Ebbesson (Univ. Alaska) Resistance to Hypoxia in the Seal Heart	\$24.5K
Goering, J. J. and O. Mathisen (Univ. Alaska) Diet Studies of Sea Lions and Seals in Alaska Using Stable Isotope Ratios (R/08-C)	\$40.4K

Wynne, K. (Univ. Alaska)
 Monitoring Marine Mammal Mortality in Alaska (A/71-08P) \$121.5K
 Part I: Observer Program Considerations for Alaskan Coastal Fisheries
 Part II: Survey of Marine Mammal Mortality on the Copper River Delta
 [funded by NMFS]

Würsig, B. (Texas A&M Univ.)
 Bottlenose Dolphins as Environmental Monitors \$82.7K

3. Office of Ocean and Coastal Resource Management

FY90-FY94

(No projects)

FY95

Calambokidis, J. and D. Ellifirt (Cascadia Research Collective)
 Humpback and Killer Whale Photo ID \$2K

Jameson, R. (National Biological Service)
 Sea Otter Survey S-0-

Mizroch, S. (NMFS/NMML)
 Humpback Photo ID S-0-

Troutman, B. (Washington Dept. Fish and Wildlife)
 Marine Mammal Surveys Off Washington S-0-

4. Office of Ocean Resources Conservation and Assessment

FY90

Basta, D. J. (NOAA Ocean Assessments Division)
 Living Marine Resources Mapping Project:
 Marine Mammals \$25K

FY91

DeLong, R. L. (NMFS, AFSC, NMML)
 Determination of Injury to California Sea Lions from
 PCBs and DDTs \$425K

FY92

DeLong, R. L. (NMFS, AFSC, NMML)
 Determination of Injury to California Sea Lions from
 PCBs and DDTs \$425K

FY93

DeLong, R. L. (NMFS, AFSC, NMML)
 Determination of Injury to California Sea Lions from
 PCBs and DDTs \$425K

FY94

DeLong, R. L. (NMFS, AFSC, NMML) Determination of Injury to California Sea Lions from PCBs and DDTs	\$425K
Hameedi, M. J. and A. Robertson (NOAA Coastal Monitoring and Bioeffects Assessment in cooperation with Office of Naval Research) Occurrence and Probable Sources of Radionuclides in Arctic Environment and Biota	\$423K

FY95

(No projects)

Department of Defense

1. Advanced Research Projects Agency (ARPA)

FY93

Clark, C. W. (Cornell Univ.) Marine Mammal Research, Hawaii: Baseline Population Studies and Behavioral Observation Studies -- North Shore Kauai, Hawaii	\$224K
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FY94

Clark, C. W. (Cornell Univ.) Marine Mammal Research, Hawaii: Baseline Population Studies and Behavioral Observation Studies -- North Shore Kauai, Hawaii	\$314K
Costa, D. (Univ. California, Santa Cruz) Marine Mammal Baseline Studies, California: Population and Behavioral Observation Studies for the Point Sur Area, Phase I	\$207K
Marine Mammal Baseline Studies, California: Population and Behavioral Observation Studies for the Point Sur Area, Phase II	\$230K

FY95

Clark, C. W. (Cornell Univ.), J. Mobley (Univ. Hawaii), B. Würsig (Texas A&M Univ.), J. Gordon (Oxford Univ.), and A. Bowles (HSWRI) Marine Mammal Research, Hawaii and Azores: Baseline Aircraft Derived Population Studies -- North Shore Kauai, Hawaii; Sperm Whale Behavioral Studies -- Azores	\$365K
Costa, D. P. (Univ. California, Santa Cruz), B. Mate (Oregon State Univ.), J. Harvey (Moss Landing Marine Lab.), and J. Calambokidis (Cascadia Research Collective) Marine Mammal Baseline Studies, California: Aircraft- and Vessel-Derived Population and Behavioral Studies for the Pioneer Seamount Area	\$477K

2. Air Force (Space Division, Air Force Systems Command)

FY90

Stewart, B., C. Cooper, and P. K. Yochem (Hubbs Marine Research Center)
 Field Studies of Pinniped and Seabird Populations Likely to
 be Affected by Launch-Related Noise of Military Space
 Vehicles (F0470-88C-0026) \$173.9K

FY91

Stewart, B., C. Cooper, and P. K. Yochem (Hubbs Marine Research Center)
 Field Studies of Pinniped and Seabird Populations Likely to
 be Affected by Launch-Related Noise of Military Space
 Vehicles (F0470-88C-0026) \$106.7K

FY92

Stewart, B., C. Cooper, and P. K. Yochem (Hubbs Marine Research Center)
 Field Studies of Pinniped and Seabird Populations Likely to
 be Affected by Launch-Related Noise and Sonic Booms from Titan IV/Centaur
 and Other Military Space Vehicles (F0470-88C-0026) \$184.4K

Roest, M. (The Nature Conservancy)
 Marine Mammal Monitoring and Management Plan
 (Vandenberg Air Force Base) \$60K

FY93

Stewart, B., C. Cooper, and P. K. Yochem (Hubbs Marine Research Center)
 Field Studies of Pinniped and Seabird Populations Likely to
 be Affected by Launch-Related Noise and Sonic Booms from Titan IV/Centaur
 and Other Military Space Vehicles (F0470-88C-0026) \$173.2K

FY94

Augustine, G. V. and D. Boone (Elmendorf AFB and USFWS)
 Protected Sea Otter Population Status and Ecology, Shemya Island, Alaska \$149K

Stewart, B., C. Cooper, and P. K. Yochem (Hubbs Marine Research Center)
 Field Studies of Pinniped and Seabird Populations Likely to
 be Affected by Launch-Related Noise and Sonic Booms from Titan IV/Centaur
 and Other Military Space Vehicles (F0470-88C-0026) \$200.7K

FY95

Stewart, B., C. Cooper, and P. K. Yochem (Hubbs Marine Research Center)
 Field Studies of Pinniped and Seabird Populations Likely to
 be Affected by Launch-Related Noise and Sonic Booms from Titan IV/Centaur
 and Other Military Space Vehicles (F0470-88C-0026) \$126.8K

3. Army (Corps of Engineers)

FY90

(No projects)

FY91

Activities associated with planning, construction, operation, and maintenance of civil works projects (SK by Corps Division Offices: New England, 22.0; South Atlantic, 179.4; Pacific Ocean, 32.5; and North Pacific, 14.0)

\$247.9K

FY92

Activities associated with planning, construction, operation, and maintenance of civil works projects (SK by Corps Division Offices: New England, 32.5; South Atlantic, 161.2; Pacific Ocean, 37.7; North Pacific, 10.1; and South Pacific, 7.0)

\$248.5K

FY93

Activities associated with planning, construction, operation, and maintenance of civil works projects (SK by Corps Division Offices: New England, 17.5; North Atlantic, 28; South Atlantic, 497; Lower Mississippi, 5; Pacific Ocean, 12; North Pacific, 8; Southwestern, 12.5)

\$580K

FY94

(No projects)

FY95

Dickerson, D. D. (Army Engineer Waterways Experiment Station)
 Demonstration of an Applied Acoustic Warning System to Protect Manatees (*Trichechus manatus*) from Collisions with Watercraft (see U.S. Navy's Legacy Program)

Dickerson, D. D. and K. J. Reine (Army Engineer Waterways Experiment Station)
 Methods to Reduce Manatee Mortalities at Water Control Spillways and Navigation Lock Structures in Central and Southern Florida

\$282K

4. Navy

A. Assistant Secretary of the Navy for Installations and Environment

FY95

Hain, J. (NMFS)
 Northern Right Whale

\$10K

Ragen, T. (NMFS)
 Hawaiian Monk Seal Relocation to Midway Atoll

\$30K

B. CNO Operational Activities:

FY95

Newcomer, M. W. (Continental Shelf Associates) Aerial Census Surveys Off Norfolk, VA, and Mayport, FL	\$300K
Ridgway, S. H. (NRaD, NCCOSC, San Diego) Marine Mammal Medicine (063709N)	\$100K

C. Naval Command, Control, and Ocean Surveillance Center
(formerly Naval Ocean Systems Center)FY90

Au, W. W. L. (NOSC) Complex Echo Classification (Tursiops) (MMB2511B01)	\$117K
Gisiner, R. C. and J. A. Thomas (NOSC) Echolocation in a False Killer Whale (MMB2511B03)	\$102K
Moore, P. W. B. (NOSC) Binaural Hearing (Tursiops) (MMB2511B02)	\$130K
Nachtigall, P. E. (NOSC) Risso's Visual Acuity (MMB2511B05)	\$108K
Nachtigall, P. E., P. W. B. Moore, and H. L. Roitblat (NOSC) Matching-to-Sample (Tursiops) (MMB2511A01)	\$113K
Ridgway, S. H. and D. A. Carder (NOSC) Marine Mammal Medical Research and Animal Health (MM40510N01)	\$354K
Sigurdson, J. E. (NOSC) Acoustic Communication (Tursiops) (MMB2511B04)	\$55K

FY91

Au, W. W. L. (NOSC) Complex Echo Classification (Tursiops) (MMB2511B01)	\$120K
Gisiner, R. C. and W. W. L. Au (NOSC) Echolocation in a False Killer Whale (MMB2511B03)	\$130K
Moore, P. W. B. (NOSC) Binaural Hearing (Tursiops) (MMB2511B02)	\$130K
Neural Network Models (Tursiops) (ZW29511A01)	\$124K
Nachtigall, P. E. (NOSC) Risso's Visual Acuity (MMB2511B05)	\$110K

Nachtigall, P. E., P. W. B. Moore, and H. L. Roitblat (NOSC)
 Matching-to-Sample (Tursiops) (MMB2511A01) \$160K

Ridgway, S. H. and D. A. Carder (NOSC)
 Marine Mammal Medical Research and Animal Health
 (MM40510N01) \$90K

FY92

Au, W. W. L. (NCCOSC)
 Complex Echo Classification (Tursiops)
 (MMB2512B01) S-0

Gisiner, R. C. and W. W. L. Au (NCCOSC)
 Echolocation in a False Killer Whale (MMB2512D01) \$130K

Moore, P. W. B. (NCCOSC)
 Binaural Hearing (Tursiops) (MMB2512C01) \$135K

Neural Network Models (Tursiops) (ZW29512A01) \$120K

Nachtigall, P. E. (NCCOSC)
 Risso's Visual Acuity (MMB2512A01) \$120K

Nachtigall, P. E., P. W. B. Moore, and H. L. Roitblat (NCCOSC)
 Matching-to-Sample (Tursiops) (MM47512A01) \$150K

Ridgway, S. H. and D. A. Carder (NCCOSC)
 Marine Mammal Medical Research and Animal Health
 (MM4510011A01) \$90K

Sigurdson, J. E. (NCCOSC)
 Azimuth Range Monitor (Tursiops) (MMB2512F01) \$120K

FY93

Au, W. W. L. (NCCOSC)
 Complex Echo Classification (Tursiops)
 (MMB2512B01) S-0

Gisiner, R. C. and W. W. L. Au (NCCOSC)
 Echolocation in a False Killer Whale (MMB2512D01) \$70K

Moore, P. W. B. (NCCOSC)
 Binaural Hearing (Tursiops) (MMB2512C01) \$250K

Neural Network Models (Tursiops) (ZW29512A01) S-0

Nachtigall, P. E., P. W. B. Moore, and H. L. Roitblat (NCCOSC)
 Matching-to-Sample (Tursiops) (MM47512A01) \$150K

Ridgway, S. H. and D. A. Carder (NCCOSC)
 Marine Mammal Medical Research and Animal Health
 (MM4510011A01) \$90K

Sigurdson, J. E. (NCCOSC)
Azimuth Range Monitor (Tursiops) (MMB2512F01) \$175K

FY94

(Projects reported under Office of Naval Research)

D. Navy Legacy Program

FY95

Dickerson, D. D. (Army Engineer Waterways Experiment Station)
Demonstration of an Applied Acoustic Warning System to Protect
Manatees (Trichechus manatus) from Collisions with Watercraft \$330K

Kraus, S. and C. Slay (New England Aquarium)
Southeast Surveillance Overflights (Aerial Surveys to Monitor Presence of
Northern Right Whales in the Southeastern U.S. Caving and Wintering
Grounds) (95400054) \$80K

Naval Submarine Base, Kings Bay, GA
Manatee Use Survey (9540016) \$44.5K

E. Office of Naval Research

FY90

Nachtigall, P. E. (NOSC)
Dolphin Echolocation: Cognitive and Perceptual Processing
Models (Tursiops) (4424262-01) \$160K

FY91

Nachtigall, P. E. (NOSC)
Dolphin Echolocation: Cognitive and Perceptual Processing
Models (Tursiops) (4424262-01) \$200K

FY92

Jones, D. (Univ. British Columbia)
Construction and Testing of Satellite Tags for Whales to Enable Research
on the Effects of Low Frequency Sound on Marine Mammals \$114.5K

Effects of Low Frequency Sound on Marine Mammals \$40K

Katsourous, M. H. (National Academy of Sciences)
Low Frequency Sound and Marine Mammals \$50K

Mate, B. (Oregon State Univ.)
Development of an ARGOS Transmitter to Evaluate the Response of
Marine Mammals to Low Frequency Sound Signals \$62.8K

Nachtigall, P. E. (NCCOSC, Hawaii)
Effects of Loud Low Frequency Sounds on Marine Mammal Behavior,
Hearing, and Physiology \$200K

Nachtigall, P. E. and P. W. B. Moore (NCCOSC, San Diego) Marine Animal Capabilities (RP 35A01)	\$1000K
Ridgway, S. H. (NCCOSC, San Diego) Low Frequency Sound and Marine Mammal Hearing	\$40K
Thomas, J. (Western Illinois Univ.) Low Frequency Audiometric Studies of Pacific White-sided Dolphins	\$57.7K

FY93

Castellini, M. (Univ. Alaska) Biochemical Indices of High Pressure Tolerance in Marine Mammals (3415811-04)	\$89K
Clark, C. W. (Cornell Univ.) Analysis and Interpretation of Whales '93 (4412147-02)	\$308.5K
Costa, D. P. (Univ. California, Santa Cruz)/IPA Administration IPA (3010056IPA)	\$166.5K
Djzelski, J. (Pennsylvania State Univ.) IUSS Tracking Algorithms	\$30K
Dolphin, W. (Boston Univ.) Determination of Low Frequency Auditory Thresholds in Marine Mammals Using Scalp-Recorded Acoustically Evoked Responses (3414209-04)	\$128K
Fedak, M. A. (Sea Mammal Research Unit, Cambridge, U.K.) Analysis of Marine Mammal Behavior in Relation to the Oceanic Environment (4412165)	\$33.4K
Gentry, R. L. (NMML, NMFS) Analysis & Publication of Data on Seasonal Variation in Diving Behavior of Northern Fur Seals (4412173)	\$9.3K
Goodyear, J. (Univ. British Columbia) Construction and Testing of Satellite Tags for Whales to Enable Research on the Effects of Low Frequency Sound on Marine Mammals (4414214)	\$115.3K
Griggs, G. A. (Univ. California, Santa Cruz) Physiology of Freely Diving Sea Lions (4412171)	\$115.4K
Jones, D. (Univ. British Columbia) Effects of Low Frequency Sound on Marine Mammals	\$40K
Katsouros, M. H. (National Academy of Sciences) Low Frequency Sound and Marine Mammals	\$50K
Ketten, D. R. (Harvard Medical School) Three-Dimensional Analyses of Marine Mammal Ears and Estimates of Auditory Sensitivity (3414224)	\$66.1K
Three-Dimensional Sectioning and Analysis of Multi-Modal Marine	

Mammal Ear Data (4414aas11)	S75.1K
Mate, B. (Oregon State Univ.) Development of an ARGOS Transmitter to Evaluate the Response of Marine Mammals to Low Frequency Sound Signals (3414217-04)	S102K
Mattlin, R. H. (Victoria Univ. of Wellington, New Zealand) Effects of Low Frequency Sound on Seasonal Foraging (34114228-03)	S19.2K
Mayo, C. A. (Center for Coastal Studies) Studies of Cetacean Behavior	S14.5K
Moore, P. W. B. and T. Cranford (NCCOSC, San Diego) Three Studies in Toothed Whale Acoustics (3412166-03)	S22K
Moore, P. W. B. and J. E. Sigurdson (NCCOSC, San Diego) Alternative Mine Detection and Classification Technologies: (1) Acoustic Response Monitor and (2) Dolphin Direction Device (904-234-4903)	S500K
Nachtigall, P. E. (NCCOSC, Hawaii) Effects of Loud Low Frequency Sounds on Marine Mammal Behavior, Hearing, and Physiology (3414211-04)	S220K
Nachtigall, P. E. and P. W. B. Moore (NCCOSC) Dolphin Echolocation (703-696-2085)	S87K
Pabst, D. A. (James Madison Univ.) Functional Morphology of Vascular Structures in the Dolphin Dorsal Fin (4412167-01)	S43K
Functional Design of Dolphin Blubber (3412152-03)	S74.2K
Ridgway, S. H. and D. A. Carter (NCCOSC, San Diego) Low Frequency Sound and Marine Mammal Hearing (703-696-2085)	S90K
Schusterman, R. J. (California State Univ., Hayward) Low Frequency Sound Hearing of Pinnipeds	S120K
St. Aubin, D. and J. Geraci (Univ. Guelph) Biocompatibility of Materials Implanted Percutaneously in Bottlenose Dolphins (4412172)	S86.5K
Stewart, B. A. and P. Thorson (Hubbs Marine Research Center) Development of a Satellite-Linked Radio-Transmitter Package for Small Cetaceans (4412169)	S74.5K
Thomas, J. A. (Western Illinois Univ.) Low Frequency Audiometric Studies on Pacific White-sided Dolphins (4414212)	S60.1K
Testa, J. W. (Univ. Alaska) Technical Workshop on Analysis of TDR and SLTDR (4414227)	S4.1K
Tyack, P. and R. S. Wells (Woods Hole and Mote Marine Laboratory) Reactions of Bottlenose Dolphins to Low Frequency Sound (4424306)	S15K

Watkins, W. A. and A. J. Read (Woods Hole Oceanographic Institution) Development and Testing of Tagging and Attachment Equipment for Harbor Porpoises in the SW Bay of Fundy (4412168)	\$107.5K
Watkins, W. A. and P. Tyack (Woods Hole Oceanographic Institution) Response of Sperm Whales to Low Frequency Sound	\$300K
Williams, T. D. (Office of Naval Research) NRaD Travel (4412174)	\$6K
<u>FY94</u>	
Clark, C. W. (Cornell Univ.) Potential Effects of Low Frequency Sound on Mysticetes (22ba22B)	\$141.1K
Acoustic Recordings of North Atlantic Whales (3412252)	\$24.3K
Costa, D. P. (Univ. California, Santa Cruz) Physiology of Freely Diving White Whales (4113005)	\$34.7K
Davis, R. (Texas A&M Univ., Galveston) Assessment of Swimming Performance and Three-dimensional Movements of Trained Dolphins at Sea (3412244)	\$25K
DeLong, R. L. (NMFS/NMML) Seasonal At-Sea Distribution and Diving Behavior of California Sea Lion Females from San Miguel Island, CA (3245189)	\$55.4K
DeMaster, D. P. and H. W. Braham (NMFS/NMML) Workshop on the Use of Ice-Associated Seals in the Bering and Chukchi Seas as Indicators of Environmental Change (3412245)	\$5K
Dolphin, W. (Boston Univ.) Determination of Low Frequency Auditory Thresholds in Marine Mammals Using Scalp-Recorded Acoustically Evoked Responses (4101268)	\$123.7K
Auditory Processing of Low Frequency Complex Sound (4113002)	\$167.7K
Fedak, M. A. (Sea Mammal Research Unit, Cambridge, U.K.) Analysis of Marine Mammal Behavior in Relation to the Oceanic Environment (4412165)	\$24.9K
Fristrup, K. M. and K. VonDerHeydt (Woods Hole Oceanographic Institution) Recording Acoustic Signals from Arctic Marine Mammals Exposed to Low Frequency Transmissions (22ha026)	\$51.2K
Greene, C. H. (Cornell Univ.) Marine Mammals and Acoustic Remote Sensing Research Initiative (3231231)	\$25K
Harvey, J. T. (Moss Landing Marine Laboratories) Effects of Low Frequency Sounds on Harbor Seals (3231227)	\$66.3K
Development of a New Delivery and Attachment System for Tagging Large Cetaceans (4113011)	\$15K

Heath, M. E. (Naval Medical Research Institute) Thermal Acclimation in Dolphins (3412242)	\$37.3K
Hohn, A. A. (NMFS/Office of Protected Resources) Satellite Tracking of a Deep-diving Small Cetacean, <i>Kogia breviceps</i> (3412247)	\$5K
Jones, D. R. and R. D. Andrews (Univ. British Columbia) Effects of Low Frequency Sound on Marine Mammals (4103213)	\$17.6K
Ketten, D. R. (Harvard Medical School) Three-Dimensional Digital Sectioning and Analysis of Multi-modal Marine Mammal Ear Data (4113003)	\$65.7K
Three-Dimensional Digital Sectioning and Analysis of Multi-Modal Marine Mammal Ear Data (4414aas11)	\$75K
Measures of Auditory Function in Stranded Marine Mammals (4101269)	\$69K
Le Boeuf, B. J. (Univ. California, Santa Cruz) Low Frequency Sound in the Marine Acoustic Environment of the Northern Elephant Seal (4203339)	\$250.7K
Losey, G. and P. E. Nachtigall (Univ. Hawaii) Dolphin Echolocation: Cognition and Perception (4424355)	\$23.4K
Mantey, P. and G. Oliver (Univ. California, Santa Cruz) Movement and Position Tracking System for Marine Mammals (3245300)	\$70.3K
Mate, B. R. (Oregon State Univ.) Development of an ARGOS Transmitter to Evaluate the Response of Marine Mammals to Low Frequency Sound Signals (4101270)	\$82K
Mattlin, R. (Moss Landing Marine Laboratories) Effects of Low Frequency Sound on the Foraging Behavior of the New Zealand Fur Seal (3414228)	\$3.8K
Moore, P. W. B. and T. Cranford (NRaD, NCCOSC, San Diego) Three Studies in Toothed Whale Acoustics (4101274)	\$65K
Moore, P. W. B., J. E. Sigurdson and R. L. Brill (NRaD, NCCOSC, San Diego) Marine Mammals for Mine Countermeasures (ONR-32)	\$530K
Nachtigall, P. E. (NRaD, NCCOSC, Hawaii) Low Frequency Hearing in Three Species of Cetaceans (3414211-04)	\$220K
Biosonar Classification (3424338)	\$60K
Sensory Systems of Aquatic Mammals (3412258)	\$5K
Pabst, D. A. (James Madison Univ.) Functional Design of Dolphin Blubber (4101275)	\$100.9K
Potter (MPL-SIO) Detection and Isolation of Marine Mammal Calls Using Artificial Intelligence Algorithms (3412252)	\$58.9K

Ridgway, S. H. (NRaD, NCCOSC, San Diego)	
Whale Physiology at Depth: Hearing, Sonar, and Homeostasis (22ha028)	\$137K
Marine Mammal Medicine (DON 63709N)	\$90K
Low Frequency Sound and Marine Mammal Hearing (703-696-2085)	\$90K
Rothe, M. J. (NRaD, NCCOSC, San Diego)	
Marine Mammal Performance -- Research Support (4101272)	\$128.5K
Schusterman, R. J. (Univ. California, Santa Cruz)	
Bioacoustics of Monterey Bay Pinnipeds (4113009)	\$172K
Stewart, B. S. (Hubbs Sea World Research Institute)	
Development of a Satellite-Linked Radio-Transmitter Package for Small Cetaceans (3412269)	\$41.3K
Stewart, B. S. and P. H. Thorson (Hubbs Sea World Research Institute)	
Effects of Temperature and pH on the Dynamics of Hemoglobin-oxygen Binding Properties in Marine Mammals (3412246)	\$14.9K
Thomas, J. A. (Western Illinois Univ./Shedd Aquarium)	
Low Frequency Hearing of Pacific White-sided Dolphins (3245302)	\$45.8K
Townsend, F. I. and F. L. Decker	
Development of a Non-invasive Dorsal Fin SaddlePack for Dolphins (3412237)	\$25K
Tyack, P. L. (Woods Hole Oceanographic Institution)	
Fusion of Acoustic and Visual Observations of Marine Mammals (33412aas08)	\$110.1K
Tyack, P. L. and R. D. Andrews (Woods Hole Oceanographic Institution)	
Low Frequency Sound in the Marine Acoustic Environment of the Northern Elephant Seal (4203379)	\$85.5K
Watkins, W. A. (Woods Hole Oceanographic Institution)	
Sperm Whale Activities and Responses from Acoustic and Radio Tracking (3231232)	\$100K
Watkins, W. A. and A. J. Read (Woods Hole Oceanographic Institution)	
Development and Testing of Tagging and Attachment Equipment for Harbor Porpoises in the Southwestern Bay of Fundy (3412251)	\$21.1K
Worthy, G. A. J. (Texas A&M Univ., Galveston)	
Insulation in Small Odontocetes: Seasonal Qualitative and Quantitative Changes (3412243)	\$29.5K
Tenth Biennial Conference on the Biology of Marine Mammals (3412177)	\$7.5K

FY95

Benson, R. H. and W. E. Evans (Texas A&M Univ.)	
Effects of Low-Frequency Tomographic Signals on SpermWhales (96PR04732)	\$115K

Carder, D. A. and S. H. Ridgway (NRaD, NCCOSC, San Diego) Hearing in Beached or Ensnared Whales (96PR02272)	\$24K
Castellini, M. A. (Univ. Alaska) Biochemical Indices of High Pressure Tolerance in Marine Mammals (4114811)	\$95.3K
Chotiros, N. P. (Univ. Texas) Sediment Penetration of Underwater Mammalian Sonar Signals (4203424)	\$120K
Clark, C. W. (Cornell Univ.) Potential Effects of Low Frequency Sound on Marine Mammals (22ba22B)	\$155.5K
Costa, D. P. (Univ. California, Santa Cruz) Physiology of Freely Diving WhiteWhales (96PR0687)	\$28.2K
Physiology of Freely Diving WhiteWhales (AASERT) (341aas95-06)	\$87.2K
Cranford, T. W. (NRaD, NCCOSC, San Diego) Investigations of the Dolphin Biosonar Apparatus (96PR02274)	\$51K
Croll, D. A. (Univ. California, Santa Cruz) Role of Low Frequency Sound in the Foraging Ecology and Behavior of Balaenopteran Whales (96PR04643)	\$164.7K
Dobeck, G. J. (Naval Research Laboratory) Benefits of a Dolphin-Like Transmit Signal (4203421)	\$50K
Dolphin, W. F. (Boston Univ.) Determination of Low Frequency Auditory Thresholds in Marine Mammals Using Scalp-Recorded Acoustically Evoked Responses (4101268-05)	\$54.3K
Auditory Processing of Low Frequency Complex Sound (96PR04640)	\$149K
Development, Testing, and Implementation of Techniques for Optimizing the Acquisition of Auditory Evoked Potentials in Marine Mammals (341aas95-07)	\$88.4K
Fish, F. E. (West Chester Univ.) Examination of Swimming Performance by Dolphins (4203413)	\$35.8K
Fitzgerald, E. R. (Johns Hopkins Univ.) Dynamic Mechanical Measurements of Marine Mammal Tissues (4203411)	\$53K
Fristrup, K. M. (Woods Hole Oceanographic Institution) Recording Acoustic Signals from Arctic Marine Mammals Exposed to Low Frequency Transmissions (22ha026)	\$57.6K
Goo, G.-I. (Morgan State Univ.) Bionic Sonar Target Identification System (96PR04679)	\$110K
Goodyear, J. D. (Univ. British Columbia) Study of the Relationships Between Anthropogenic Sounds, Whale Sounds, and Behavior and Physiology of Free-swimming Whales (96PR04586)	\$108.4K
Greene, C. H. (Cornell Univ.) Bioacoustical Oceanography Workshops: Top Predators and Their	

Prey in the Marine Environment (96PR04647)	\$75K
Harvey, J. T. (Moss Landing Marine Laboratories) Effects of Low Frequency Sounds on Harbor Seals (22ba227)	\$49.5K
Development of a New Delivery and Attachment System for Tagging Large Cetaceans (96PR04746)	\$22K
Herman, L. M. (Univ. Hawaii) Echoic-Visual Sensory Integration by the Bottlenosed Dolphin (4203600-01)	\$20K
Herzing, D. L. (Wild Dolphin Project, Juniper, FL) Measurement of Echolocation Signals of Wild Dolphins Foraging for Bottom and Buried Prey (4113-b02)	\$77K
Jones, D. R. and R. D. Andrews (Univ. British Columbia) Effects of Low Frequency Sound on Marine Mammals (4103213-05)	\$24K
Use of Low Frequency Sound by Beluga Whales in the Arctic Ocean (96PR02276)	\$115K
Kelly, B. P. (Univ. Alaska, Fairbanks) Ringed Seals and Low Frequency Sound (96PR03734)	\$132.3K
Ketten, D. R. (Harvard Medical School) Three-Dimensional Digital Sectioning and Analysis of Multi-modal Marine Mammal Ear Data (4101269-07)	\$50.9K
Ketten, D. R. and W. F. Dolphin (Harvard Medical School) Measures of Auditory Function in Stranded Marine Mammals (96PR04580)	\$74.5K
Le Boeuf, B. J. (Univ. California, Santa Cruz) Low Frequency Sound in the Environment of the Elephant Seal (96PR04681)	\$212.1K
Losey, G. (Univ. Hawaii) Marine Mammal Echolocation and Signal Processing (96PR03309)	\$284.3K
Losey, G. and P. Nachtigall (Univ. Hawaii) Training Minority Institution Students Through the Marine Mammal Research Program (96PR04530)	\$284.3K
Mate, B. (Oregon State Univ.) Development of an ARGOS Transmitter to Evaluate the Response of Marine Mammals to Low Frequency Sound Signals (4101270-05)	\$56.1K
Moore, P. W. B. (NRaD, NCCOSC, San Diego) Alternative Mine Detection Capabilities (0602315N)	\$400K
Acoustic Characterization of Anti-Invasion Mines (96PR02275)	\$25K
Moore, P. W. B. and T. W. Cranford (NRaD, NCCOSC, San Diego) Three Studies in Toothed Whale Acoustics (4101274)	\$44K
Anatomy of Sound Reception in a Balcon Whale (4113012)	\$58.6K

Muir, T. G. (Univ. Texas) Role of Nonlinear Acoustics in Biosonar (96PR04322)	\$100K
Nachtigall, P. E. and W.W.L. Au (Univ. Hawaii & NRaD, NCCOSC, San Diego) Effects of Loud Low Frequency Sounds on Marine Mammal Behavior, Hearing, and Physiology (96PR05455)	\$180K
Pabst, D. A. (Univ. North Carolina, Wilmington) Functional Design of Dolphin Blubber (4101275)	\$51.6K
Ridgway, S. H. (NRaD, NCCOSC, San Diego) Whale Physiology and Hearing at Depth (96PR02259)	\$157K
Isolating Delphinoid Pulse Groupings (96PR02264)	\$30.5K
Rothe, M. J. (NRaD, NCCOSC, San Diego) Marine Mammal Performance (4101274)	\$80K
Schusterman, R. J. (Univ. California, Santa Cruz) Effects of Low Frequency Sound on Pinnipeds: Auditory Fatigue and Masking (96PR04867)	\$154.6K
Townsend, F. I. and F. L. Deckert (Trac-Pac, Inc., Fort Walton Beach, FL) Development of a Non-invasive Dorsal Fin Saddle Pack for Dolphins (4113013)	\$8.8K
Tyack, P. L. (Woods Hole Oceanographic Institution) Low Frequency Sound in the Marine Acoustic Environment of the Northern Elephant Seal (96PR04680)	\$86.1K
Watkins, W. A. (Woods Hole Oceanographic Institution) Sperm Whale Activities and Responses from Acoustic and Radio Tracking (96PR04901)	\$42K
Williams, T. M. (Univ. California, Santa Cruz) Dolphins as Models for Cost Efficient Autonomous Underwater Vehicles 96PR01727)	\$101.8K

5. Strategic Environmental Research and Development Program (SERDP)

FY93

Conlon, D. and R. Gisiner (Space and Naval Warfare Systems Command/NCCOSC) Fishing Enforcement/Whale Monitoring Using Integrated Undersea Surveillance System (IUSS)	\$2000K
Ridgway, S. H. (NCCOSC, San Diego) Marine Mammal Health Monitoring	\$249K

FY94

Clark, C. W. (Cornell Univ.) Analysis and Interpretation of Whales '93 (SERDP)	\$267K
Conlon, D. (RPI Corp.; Command, Undersea Surveillance) Bermuda Data (various large Mysticetes) (SERDP)	\$250K

Fleming, H. and C. Nishimura (Naval Research Lab.) Whales '93 Archives (SERDP)	\$630K
Fox, W. W. and H. W. Braham (NMFS/NMML) Pacific Whale Monitoring (SERDP)	\$382K
Gisiner, R. C. (ONR) Pacific Humpbacks (SERDP)	\$265K
Pei, G. (Mitre Corp.) Statistical Analysis of IUSS Data for Whales (SERDP)	\$100K

FY95

Clark, C. W. (Cornell Univ.) Whales '95 (SERD01)	\$557K
Gisiner, R. C. (NRaD, NCCOSC, San Diego) Tracking Humpback Whales with IUSS (SERD03)	\$45K
Ridgway, S. H. (NRaD, NCCOSC, San Diego) Marine Mammal Health (SERDP/WX2C007)	\$250K

Department of EnergyFY90-FY95

(No projects)

Department of Health and Human Services

National Institutes of Health

FY90

Bullock, T. H. (Univ. California, San Diego) Non-Standard Models for Study of Cognition ERPS (R01 NS25963-03)	\$92.1K
Castellini, M. A. (Univ. Alaska) Sleep Apnea in Seals: Metabolic Implications (R29 HL38675-04)	\$86.1K
Fathman, C. G. (Stanford Univ.) Study of a Ternary Complex That Drives T Cell Activation (R01 AI27989-02)	\$185.3K
Hodgson, E. (North Carolina State Univ.) Pesticides and Xenobiotic Metabolizing Enzymes (P01 ES00044-25)	\$132K
Kooyman, G. L. (Univ. California, San Diego) Exercise Physiology to Maximum Lung Volume in Aquatic Mammals (P01 HL17731-16)	\$122.5K

LaMar, G. N. (Univ. California, Davis) Structural and Dynamic Study of Model Heme Complexes (R37 HL16087-17)	\$187.8K
Ortiz, C. L. (Univ. California, Santa Cruz) Developmental Physiology of Elephant Seal Pups During Natural, Prolonged Fasts (S06 GM08132-16)	\$63.4K
Rowell, L. B. (Univ. Washington) Regulation of Blood Flow Distribution (P01 HL16910-17)	\$133.1K
Tyack, P. L. (Woods Hole Oceanographic Institution) Ontogeny of Signature Whistles and Mimicry (Tursiops) (R29 DC00429-04)	\$97.3K
Weiner, S. (Weizmann Institute, Israel) Structural Studies of Matrix Proteins in Teeth and Bone (R01 DE06954-06)	\$57.7K
Wicham, G. M. (Northeastern State Univ., OK) Computer Based Image Analysis of Iris Sections (R15 EY085450-1)	\$95.4K
Wichman, H. A. (Univ. Idaho) Mammalian Genomes: Stasis and Change (R29 GM38727-05)	\$90.8K
Witztum, J. L. (Univ. California, San Diego) Apolipoprotein E Deficiency and Atherosclerosis (R01 HL39608-04)	\$78K
<u>FY91</u>	
Castellini, M. A. (Univ. Alaska) Sleep Apnea in Seals: Metabolic Implications (HL38675-05)	\$107.7K
Fathman, C. G. (Stanford Univ.) Study of a Ternary Complex That Drives T Cell Activation (AI27989-03)	\$169.9K
Hodgson, E. (North Carolina State Univ.) Pesticides and Xenobiotic-Metabolizing Enzymes (ES00044-26)	\$134.7K
Hsueh, A. J. W. (Stanford Univ.) Role of Bioactive FSH in Reproduction (HD23273-06)	\$129.1K
Kooyman, G. L. (Univ. California, San Diego) Exercise Physiology to Maximum Lung Volume in Aquatic Mammals (HL17731-17)	\$187.2K
LaMar, G. N. (Univ. California, Davis) Structural and Dynamic Study of Model Heme Complexes (HL16087-18)	\$188.1K

Ortiz, C. L. (Univ. California, Santa Cruz) Developmental Physiology of Elephant Seal Pups During Natural, Prolonged Fasts (GM08132-17)	\$70.3K
Rowell, L. B. (Univ. Washington) Regulation of Blood Flow Distribution (HL16910-18)	\$133.6K
Tyack, P. L. (Woods Hole Oceanographic Institution) Ontogeny of Signature Whistles and Mimicry (Tursiops) (DC00429-05)	\$108.9K
Wichman, H. A. (Univ. Idaho) Mammalian Genomes: Stasis and Change (GM38727-06)	\$94.9K

FY92

Fathman, C. G. (Stanford Univ.) Study of a Ternary Complex That Drives T Cell Activation (AI27989-04)	\$162.9K
Hodgson, E. (North Carolina State Univ., Raleigh) Pesticides and Xenobiotic-Metabolizing Enzymes (ES00044-27)	\$145.4K
Kooyman, G. L. (Univ. California, San Diego) Exercise Physiology to Maximum Lung Volume in Aquatic Mammals (HL17731-18)	\$196.5K
Ortiz, C. L. (Univ. California, Santa Cruz) Developmental Physiology of Elephant Seal Pups During Natural, Prolonged Fasts (GM08132-18)	\$72.1K

FY93

(No projects reported)

FY94

Castellini, M. A. (Univ. Alaska, Fairbanks) Cardiorespiratory Pattern During Sleep Apnea (pinnipeds) (R15 HL50107-01)	\$109.2K
Fathman, C. G. (Stanford Univ.) Study of a Ternary Complex That Drives T Cell Activation (cetacean) (R01 CA65237-06)	\$221K
Hoezel, A. R. (National Institutes of Health) Elephant Seal Genetic Variation & Effects of Population Bottleneck (Z01 CP05764-01)	\$-0-
Kooyman, G. L. (Univ. California, La Jolla) Aerobic Exercise in Aquatic Animals (P01 HL17731-20)	\$224.4K
Ortiz, C. L. (Univ. California, Santa Cruz) Developmental Physiology of Elephant Seal Pups During Natural,	

Prolonged Fasts (S06 GM08132-20) \$52K

FY95

Fathman, C. G. (Stanford Univ.)
Study of a Ternary Complex That Drives T Cell Activation (cetacean)
(R01 CA65237-07) \$228.7K

Hoebel, A. R. (National Institutes of Health)
Elephant Seal Genetic Variation & Effects of Population Bottleneck
(Z01 CP05764-01) \$-0-

Evolution of Population Genetic Differentiation in Relation to
Habitat Use (cetaceans) (Z01 CP05798-01) \$-0-

Jonas, J. (Univ. Illinois, Urbana)
High Pressure NMR Studies of Proteins (R01 GM442452-07) \$212.7K

Lecomte, J. T. (Pennsylvania State Univ.)
Mechanisms of Stabilization of B Hemeproteins (R01 GM54217-06) \$188.9K

Ortiz, C. L. (Univ. California, Santa Cruz)
Developmental Physiology of Elephant Seal Pups During Natural,
Prolonged Fasts (S06 GM08132-20S1) \$45.4K

Yonetani, T. (Univ. Pennsylvania)
Relaxation Processes in Protein Function: Photo-Induced Transients
of Hemoprotein-Ligand Complexes (P01 GM48130-03) \$112.8K

Department of the Interior

1. Fish and Wildlife Service

FY90

Amstrup, S. (AFWRC)
Distribution, Timing, and Importance of Polar Bear
Denning in Northern Alaska (204.01) \$45.4K

Population Definition and Dynamics of Polar Bears in
the Beaufort Sea (204.02) \$324K

Relationships Between Polar Bears, Sea Ice, and
Pagophilic Seals (204.03) \$47.8K

Brownell, R. (NERC)
Ecological Studies of Sea Otters and Other Marine
Mammals (880.11) \$263.1K

Interactions Between Sea Otters and Nearshore Ecological
Communities (880.12) \$132.2K

Translocation of Sea Otters (880.13) \$348.6K

DeGange, A. (AFWRC)	
Biological Information Necessary to Establish a Zonal Management Program for Sea Otters in Alaska (210.02)	\$212.3K
Interactions Between Sea Otters and Fisheries in Alaska (210.03)	\$36.9K
Basis for Estimating Sustained Yield, and Means for Regulating Sea Otter Populations in North America (210.04)	\$-0-
Assess the Fate of Sea Otters Oiled and Rehabilitated as a Result of the "Exxon Valdez" Oil Spill (210.06)	\$65K
Magnitude, Extent, and Duration of Impacts from the "Exxon Valdez" Oil Spill on Sea Otter Populations (210.05)	\$515K
Garner, G. (AFWRC)	
Population Definition and Dynamics of Polar Bears in Northwestern and Western Alaska (204.04)	\$349.8K
Inter-Relationships Between Sea Ice Habitats and Polar Bear Distribution in Northwestern Alaska (Bering and Chukchi Sea) (204.05)	33.6K
Hills, S. and L. F. Pank (AFWRC & Maine Cooperative Fish and Wildlife Research Unit)	
Techniques to Monitor Walrus Population Dynamics and Refine Estimates of Numbers (214.01)	\$195.4K
Kitchens, W. (Florida Cooperative Fish and Wildlife Research Unit)	
Manatee Protection Project: Survey of Boat Usage Patterns (540.05)	\$-0-
Evaluation of Manatee Distribution Patterns in Response to Public Use Activities, Crystal River, Florida (540.06)	\$-0-
Evaluation of Cumulative Impacts to the Habitat of the Manatee, Crystal River National Wildlife Refuge, Florida (540.07)	\$-0-
Manatee Movements and Foraging in Cumberland Sound and Adjacent Waters (FL 06)	\$25K
Klein, D. (Alaska Cooperative Fish and Wildlife Research Unit)	
Walrus Harvest Monitoring in Western Alaska (596.01)	\$?-
O'Shea, T. (NERC)	
Ecological Studies of Manatees and Dugongs (880.10)	\$340.2K
Hobe Sound Sea Grass Study (880.61)	\$54.6K
Schamberger, M. (NERC)	
Develop a Generalized Microcomputer Capability for Field Offices to Address Large-Scale Resource Assessment (640.17)	\$19K

FY91

Amstrup, S. (AFWRC)	
Distribution, Timing, and Importance of Polar Bear Denning in Northern Alaska (00018)	\$44.4K
Population Definition and Estimation of Survival, Recruitment, and Numbers of Polar Bears in the Beaufort Sea (00019)	\$297.7K
Relationships Between Polar Bears, Sea Ice Movement and Condition, and Pagophilic Seals (00020)	\$46K
Ballachey, B. E. (AFWRC)	
Assess the Fate of Sea Otters Oiled and Rehabilitated as a Result of the "Exxon Valdez" Oil Spill (00041)	\$43.6K
Magnitude, Extent, and Duration of Impacts from the "Exxon Valdez" Oil Spill on Sea Otter Populations (00042)	\$934.4K
Bodkin, J. (AFWRC)	
Biological Information Necessary to Establish a Zonal Management Program for Sea Otters in Alaska (00023)	\$110.5K
Interactions Between Sea Otters and Fisheries in Alaska (00024)	\$322.9K
Basis for Estimating Sustained Yield, and Means for Regulating Sea Otter Populations in North America (00025)	\$-0-
Cronin, M. (AFWRC)	
Use of DNA to Define Populations of Birds, Mammals, and Fish of Alaska (00043)	\$36K
Estes, J. (NERC)	
Ecological Studies of Sea Otters and Other Marine Mammals (00404)	\$322.9K
Interactions Between Sea Otters and Nearshore Ecological Communities (00407)	\$269.1K
Garner, G. (AFWRC)	
Population Definition and Estimation of Survival, Recruitment, and Number of Polar Bears in Northwestern and Western Alaska (00021)	\$340.8K
Inter-Relationships Between Sea Ice Habitats and Polar Bear Distribution in the Bering and Chukchi Seas in Northwestern Alaska (204.05)	\$31.9K
Gilbert, J., S. Hills, and M. Udevitz (AFWRC & Maine Cooperative Fish and Wildlife Research Unit)	
Techniques to Monitor Walrus Population Dynamics and Refine Estimates of Numbers (00026)	\$183.6K
Osborn, R. (NERC)	
Develop a Generalized Microcomputer Capability for Field Offices to Address Large-Scale Resource Assessment (00101)	\$17.1K

O'Shea, T. (NERC) Ecological Studies of Manatees and Dugongs (00406)	\$437.2K
Percival, F. (Florida Coop. Fish and Wildlife Research Unit) Manatee Movements and Foraging in Cumberland Sound and Adjacent Waters (FL RWO 65)	\$-0-
Rathbun, G. (NEFSC) Translocation of Sea Otters (00405)	\$210.4K
<u>FY92</u>	
Amstrup, S. (AFWRC) Distribution, Timing, and Importance of Polar Bear Denning in Northern Alaska (00018)	\$44.6K
Population Definition and Estimation of Survival, Recruitment, and Numbers of Polar Bears in the Beaufort Sea (00019)	\$289.4K
Relationships Between Polar Bears, Sea Ice Movement and Condition, and Pagophilic Seals (00020)	\$42.5K
Ballachey, B. E. (AFWRC) Magnitude, Extent, and Duration of Impacts from the "Exxon Valdez" Oil Spill on Sea Otter Populations (00042)	\$438.6K
Bodkin, J. (AFWRC) Biological Information Necessary to Establish a Zonal Management Program for Sea Otters in Alaska (00023)	\$81.4K
Interactions Between Sea Otters and Fisheries in Alaska (00024)	\$204.6K
Cronin, M. (AFWRC) Use of DNA to Define Populations of Birds, Mammals, and Fish of Alaska (00043)	\$36K
Estes, J. (NERC) Ecological Studies of Sea Otters and Other Marine Mammals (00404)	\$295.4K
Interactions Between Sea Otters and Nearshore Ecological Communities (00407)	\$313.5K
Garner, G. (AFWRC) Population Definition and Estimation of Survival, Recruitment, and Number of Polar Bears in Northwestern and Western Alaska (00021)	\$316.5K
Inter-Relationships Between Sea Ice Habitats and Polar Bear Distribution in the Bering and Chukchi Seas in Northwestern Alaska (00022)	\$25.1K
Gilbert, J., S. Hills, and M. Udevitz (AFWRC & Maine Cooperative Fish and Wildlife Research Unit) Techniques to Monitor Movements for Population Assessment, Age/Sex Composition, Behavior, and Estimates of Populations of Walrus (00026)	\$166.6K

Lefebvre, L. (NERC) Ecological Studies of Manatees and Dugongs (00406)	\$716.4K
Osborn, R. (NERC) Develop a Generalized Microcomputer Capability for Field Offices to Address Large-Scale Resource Assessment (00101)	\$16.4K
Percival, F. (Florida Coop. Fish and Wildlife Research Unit) Workshop on Florida Manatee Population Dynamics (FL RWO 88)	\$22.9K
Rathbun, G. (NERC) Translocation of Sea Otters (00405)	\$24.1K
<u>FY93</u>	
Amstrup, S. C. (Alaska Fish and Wildlife Research Center) Population Definition and Estimation of Survival, Recruitment and Numbers of Polar Bears in the Beaufort Sea (00019)	\$267.2K
Relationships Between Polar Bears, Sea Ice Movement and Condition, and Pagophilic Seals (00020)	\$44K
Ballachey, B. E. (Alaska Fish and Wildlife Research Center) Magnitude, Extent, and Duration of Impacts From the "Exxon Valdez" Oil Spill on Sea Otter Populations (00042)	\$588K
Bodkin, J. (Alaska Fish and Wildlife Research Center) Interactions Between Sea Otters and Fisheries in Alaska (00024)	\$207.3K
Bodkin, J., B. Ballachey, and M. Cronin (Alaska Fish and Wildlife Research Center and Alaska Pacific Univ.) Biological Information Necessary to Establish a Zonal Management Program for Sea Otters in Alaska (00023)	\$46.9K
Estes, J. (San Simeon Field Station, NERC) Ecological Studies of Sea Otters and Other Marine Mammals (00404)	\$331K
Interactions Between Sea Otters and Nearshore Ecological Communities (00407)	\$212.7K
Ford, G. R. and M. L. Bonnell (Ecological Consulting, Inc.) Assessing the Potential Impacts of a Reasonable Worst-Case Oil Spill Scenario on Populations of Southern Sea Otters	\$10.7K
Gamer, G. W. (Alaska Fish and Wildlife Research Center) Population Definition and Estimation of Survival, Recruitment and Number of Polar Bears in North-Western and Western Alaska (00021)	\$390.3K
Inter-Relationships Between Sea Ice Habitats and Polar Bear Distributions in the Bering and Chukchi Seas in Northwestern Alaska (00022)	\$30.7K
Gilbert, J., S. Hills, and M. Udevitz (Alaska Fish and Wildlife Research Center and Cooperative Wildlife Research Unit, Univ. Maine) Techniques to Monitor Movements for Population Assessment, Age/Sex Composition, Behavior, and Estimates of Populations of Walrus (00026)	\$153.9K

Lefebvre, L. (Gainesville Field Station) Ecological Studies of Manatees and Dugongs (00406)	\$681K
Osborn, R. (NERC) Develop a Generalized Microcomputer Capability for Field Offices to Address Large-Scale Resource Assessment Problems (00101)	\$16.5K
Rathbun, G. (San Simeon Field Station, NERC) Translocation of Sea Otters (00405)	\$15.3K
Scribner, K. (Alaska Fish and Wildlife Research Center) Use of DNA to Define Populations of Birds, Mammals, and Fish of Alaska (00043)	\$56.5K

FY94

Ford, R. G. and M. L. Bonnell (Ecological Consulting, Inc.) Analysis of the Relationship Between Oil Spill Risk to Sea Otters and Tanker Routing	\$17.4K
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FY95

FWS Field Office (Ventura, California) Preparation and Transport of Southern Sea Otter Carcasses for NBS Research	\$3.2K
Lefebvre, L. (National Biological Service, Gainesville) Study of Manatee Movements Along the Atlantic Coast of Florida and Puerto Rico (1448-0004-95-931)	\$178.9K

2. Geological Survey

FY90-FY95

(No projects reported)

3. Minerals Management Service

FY90

Becker, P., S. Wise, and R. Zeisler (NOAA, National Inst. of Standards and Technology) Acquisition and Curation of Alaskan Marine Mammal Tissues for Determining Levels of Contaminants Associated with Offshore Oil and Gas Development (OCSEAP RU 692)	\$107K
Brueggeman, J. J. (Ebasco, Inc.) Oregon and Washington Marine Mammal and Seabird Surveys (14-35-0001-30426)	\$33K
Burns, J. (Living Resources, Inc.) Bowhead Whale Book -- Cocditor (PO 83381)	\$22.5K

Carvan, M. (Texas A&M Univ.) A Novel In Vitro System for Marine Toxicological Analysis (PO 13270)	\$15.4K
Davis, R. and T. Williams (Texas A&M Univ.) Production of Sea Otter Rescue Training Videos and Monograph (14-35-0001-30522)	\$83.9K
Geraci, J. and D. St. Aubin (Battelle) Synthesis of Effects of Oil on Marine Mammals (14-12-0001-30293)	\$25K
Goodyear, J. (Univ. Guelph) Application and Construction of Satellite Tags for Large Whales (PO 12886)	\$18.6K
Hain, J. H. W. (Associated Scientists at Woods Hole, MA) Publication of Scientific Results on Aspects of the CETAP Program (PO 11206)	\$0-
Southeast Atlantic Right Whale/Boat Interactions Using Coordinated Airship Overflights (PO 13269)	\$19.6K
Johnson, S. (LGL Alaska Research Associates) Monitoring Beaufort Sea Waterfowl and Marine Birds; Determining Use of Kasegaluk Lagoon by Marine Birds and Mammals (14-35-0001-30491)	\$420K
Kraus, S. et al. (New England Aquarium) Endangered Right Whales of the South Atlantic (14-35-0001-30486)	\$414.5K
Lambertsen, R. (Univ. Pennsylvania) A Baseline Method to Evaluate Chemico-Biological Interactions Involving Cetacea (14-12-0001-30533)	\$56.6K
LeBoeuf, B. (Univ. California, Santa Cruz) Conference on Northern Elephant Seal (14-35-0001-30554)	\$30K
Diving Studies of Northern Elephant Seals (PO 12485) (co-funded with NSF)	\$27.5K
Mate, B. (Oregon State Univ.) Applications of Remote Methods of Large Cetacean Tracking (14-12-0001-30411)	\$329.3K
Mizroch, S. (NMFS) Workshop on the Estimation of Calf Mortality in the North Pacific Humpback Whale (PO 13184) (co-funded with NMML & MMC)	\$8K
Moore, S. (SEACO/SAIC) Monitoring the Distribution of Chukchi Sea Whales (14-35-0001-30468)	\$252K

Mullin, K. (NMFS) Relationship Between Sea Turtles and Petroleum Platforms and Whale Species Diversity (14-12-0001-30398)	\$197.8K
Phillips, R. L. (NOAA & USGS) Delineation, Faunal Composition, and Repeated Use of Benthic Feeding Areas by Walrus and Endangered Gray Whales in the Northeastern Chukchi Sea (OCSEAP RU 722)	\$77.2K
Ragen, T. and P. Dayton (Scripps Institute) Migration of Northern Fur Seal Pups in the Bering Sea (PO 12523)	\$15K
Richardson, W. J. et al. (LGL Ecological Research Assoc.) Synthesis of Information on the Effects of Noise on Marine Mammals (14-12-0001-30362)	S-0
Normal Behavior of Davis Strait Bowheads: A Control Group for the Western Arctic Stock (14-12-0001-30390)	S-0
Effects of Production Activities on Arctic Whales (14-12-0001-30412)	\$715K
Schell, D. (Univ. Alaska) Stable Isotope Analysis of 1987 and 1988 Zooplankton and Bowhead Whale Tissues (14-12-0001-30472)	\$75.7K
Setzler-Hamilton, E. (Univ. Maryland, Eastern Shore) Development of Visual Matrix Charts Which Categorize Research Literature on Endangered Whales (14-12-0001-30208)	S-0
Treacy, S. D. (MMS, Alaska OCS Region) Bowhead Whale Aerial Survey Project	\$519.3K
Wartzok, D. (Society for Marine Mammalogy) Bowhead Whale Book (14-35-0004-60148)	S-0
Winn, H. E. (Univ. Rhode Island) South Channel Ocean Productivity Experiment (SCOPEX) (PO 14669) (co-funded with NSF)	S-0
<u>FY91</u>	
Alaska Sea Grant (NOAA) Workshop: Key to Declining Marine Mammal and Seabird Populations (co-funded with Alaska Sea Grant)	\$5K
Becker, P., S. Wise, and R. Zeisler (NOAA, National Inst. of Standards and Technology) Acquisition and Curation of Alaskan Marine Mammal Tissues for Determining Levels of Contaminants Associated with Offshore Oil and Gas Development (OCSEAP RU 692)	\$70K

Brueggeman, J. J. (Ebasco, Inc. and Ecological Consultants, Inc.) Oregon and Washington Marine Mammal and Seabird Surveys (14-35-0001-30426)	\$-0-
Burns, J. (Living Resources, Inc.) Bowhead Whale Book – Coeditor (PO 83381)	\$-0-
Davis, R. (Texas A&M Univ. and NMFS/SEFC) Distribution and Abundance of Marine Mammals in the North-Central and Western Gulf of Mexico (14-35-0001-30619)	\$732.8K
Production of Sea Otter Rescue Training Videos (14-35-0001-30522)	\$-0-
DeMaster, D. P. (NMFS/SWFC) Development of Manual to Address the Issue of Safety During Aerial Surveys (PO 15156) (co-funded with NMFS/SWFC)	\$22.1K
Ford, R. G. (Ecological Consulting, Inc.) Combining Marine Mammal and Seabird Databases (14-35-0001-30596)	\$95.2K
Goodyear, J. (Univ. Guelph) Application and Construction of Satellite Tags for Large Whales (PO 12886)	\$13.7K
Hain, J. H. W. (Associated Scientists at Woods Hole, MA) Southeast Atlantic Right Whale Behavior and Whale/Boat Interactions Using Coordinated Airship Overflights (PO 13269)	\$3.5K
Publication of Scientific Results on Aspects of the CETAP Program (PO 11206)	\$-0-
Johnson, S. and K. Frost (LGL Alaska Research Associates and ADF&G) Monitoring Beaufort Sea Waterfowl and Marine Birds; Determining Use of Kasegaluk Lagoon by Marine Birds and Mammals (14-35-0001-30491)	\$109K
Kraus, S. et al. (New England Aquarium) Endangered Right Whales of the South Atlantic (14-35-0001-30486)	\$195.8K
Lambertsen, R. (Univ. Pennsylvania) A Baseline Method to Evaluate Chemico-Biological Interactions Involving Cetacea (14-35-0001-30533)	\$-0-
LeBoeuf, B. (Univ. California, Santa Cruz) Diving Studies of Northern Elephant Seals (PO 12485) (co-funded with NSF)	\$27.5K
Loughlin, T. (NMML) Use of Satellite Tags to Determine Pelagic Areas Important to Declining Populations of Fur Seals and Sea Lions (Interagency 14411)	\$144K
Mate, B. (Oregon State Univ.) Applications of Remote Methods of Large Cetacean Tracking (14-12-0001-30411)	\$58K

Moore, S. (SEACO/SAIC) Monitoring the Distribution of Chukchi Whales (14-35-0001-30468)	\$238.7K
Phillips, R. L. (NOAA & USGS) Delineation, Faunal Composition, and Repeated Use of Benthic Feeding Areas by Walrus and Endangered Gray Whales in the Northeastern Chukchi Sea (OCSEAP RU 722)	\$-0-
Ralls, K. (Smithsonian Inst.) Publication of Sea Otter Manuscripts (PO 11134 & 12419)	\$6.8K
Richardson, W. J. et al. (LGL Ecological Research Assoc.) Normal Behavior of Davis Strait Bowheads: A Control Group for the Western Arctic Stock (14-12-0001-30390)	\$-0-
Synthesis of Information of the Effects of Noise on Marine Mammals (14-12-0001-30362)	\$-0-
Effects of Production Activities on Arctic Whales (14-12-0001-30412)	\$937K
Schell, D. (Univ. Alaska) Stable Isotope Analysis of 1987 and 1988 Zooplankton and Bowhead Whale Tissues (14-12-0001-30472)	\$75.7K
Sherman, K. (NMFS/NEFSC) Workshop: Northeast Shelf Symposium (co-funded with EPA, NMFS, MMC, American Fisheries Society, and Marine Affairs Program, Univ. Rhode Island)	\$2K
Treacy, S. D. (MMS, Alaska OCS Region) Bowhead Whale Aerial Survey Project	\$184.5K
Truett, J. (LGL Ecological Research Associates) Development of Guidelines for OCS Operations in Polar Bear Habitats (14-35-0001-30631)	\$166.8K
Wartzok, D. (Society for Marine Mammalogy) Bowhead Whale Book -- Publication (14-35-0004-60148)	\$-0-
Winn, H. E. (Univ. Rhode Island) Great South Channel Ocean Productivity Experiment (PO 14669)	\$-0-
<u>FY92</u>	
Becker, P. (NMFS, Office of Protected Resources) Alaska Marine Mammal Tissue Archival Project (AMMTAP) (17909)	\$60K
Burns, J. (Living Resources, Inc.) Bowhead Book Coeditor (PO 83381)	\$18K
Costa, D. (Office of Naval Research) Tagging and Tracking Workshop (17906)	\$15K
Davis, R. (Texas A&M Univ. & NMFS/SEFSC) Distribution and Abundance of Marine Mammals in the North-Central	

and Western Gulf of Mexico (14-35-0001-30619 & 14-35-0001-16197)	\$1182.8K
DeMaster, D. P. (NMFS, SWFSC) Development of Manual to Address the Issue of Safety During Aerial Surveys of Marine Mammals (PO 15156)	\$-0-
Ford, R. G. (Ebasco Environmental Co. and Ecological Consulting, Inc.) Combining Marine Mammal and Seabird Databases (14-35-0001-30596)	\$6K
Frost, K., L. Lowry, and R. Davis (Alaska Dept. Fish and Game and Texas A&M Univ.) Hauling Out and At-Sea Behavior of Spotted Seals in Kasegaluk Lagoon (PO 16576)	\$25K
Hain, J. H. W. (Associated Scientists at Woods Hole, MA) Mitigating Human Impacts on Right Whale Calving and Nursery Grounds (PO 16259)	\$12.5K
Johnson, S. and K. Frost (LGL Alaska Research Associates) Monitoring Beaufort Sea Waterfowl and Marine Birds/Determining Use of Kasegaluk Lagoon by Marine Birds and Mammals (14-35-0001-30491)	\$-0-
Kraus, S. (New England Aquarium; Univ. Rhode Island) Endangered Right Whale of the South Atlantic (14-35-0001-30486)	\$-0-
Lambertson, R. (Univ. Pennsylvania Medical Center) Baseline Method to Evaluate Chemico-Biological Interactions Involving Cetacea (14-35-0001-30533)	\$-0-
LeBoeuf, B. (Univ. California, Santa Cruz) Diving Study of Northern Elephant Seal (PO 12485)	\$25K
Loughlin, T. (NMFS/NMML) Use of Satellite Tags to Determine Pelagic Areas Important to Declining Populations of Fur Seals and Sea Lions (14411)	\$-0-
Mate, B. (Oregon State Univ.) Application of Remote Methods of Large Cetacean Tracking (14-12-0001-30411)	\$189.1K
Moore, S. (SAIC, Maritime Services Division) Monitoring the Distribution of Chukchi Sea Whales (14-35-0001-30468)	\$-0-
Phillips, R. L. and H. Nelson (USGS) Delineation, Faunal Composition, and Repeated Use of Benthic Feeding Areas by Walrus and Endangered Gray Whales in the Northeastern Chukchi Sea (14157)	\$-0-
Richardson, W. J. (LGL Ecological Research Associates) Effects of Production Activities on Arctic Whales (14-12-0001-30412)	\$549.8K
Richardson, W. J., C. R. Greene, C. I. Malme, and D. H. Thomson (LGL Ecological Research Associates) Effects of Noise on Marine Mammals (14-35-0001-30673)	\$80K

Schell, D. (Univ. Alaska, Fairbanks) Stable Isotope Analysis of 1987 and 1988 Zooplankton and Bowhead Whale Tissues (14-12-0001-30472)	\$-0
Treacy, S. D. (MMS, Alaska OCS Region) Bowhead Whale Aerial Survey Project (MMS-001 & 14-35-0001-12493)	\$512.8K
Truett, J. (LGL Ecological Research Associates) Development of Guidelines for OCS Operations in Polar Bear Habitats (14-35-0001-30631)	\$-0
Wartzok, D. (Society for Marine Mammalogy) Bowhead Whale Book -- Publication (60148)	\$36.8K
Winn, H. E. (Univ. Rhode Island) Great South Channel Ocean Productivity Experiment (SCOPEX) (PO 14669)	\$-0
<u>FY93</u>	
Becker, P., S. Wise, and R. Zeisler (NMFS; National Inst. Standards & Technology) Acquisition and Curation of Alaskan Marine Mammal Tissues for Determining Levels of Contaminants Associated with Offshore Oil and Gas Development (17909)	\$60K
Davis, R. et al. (Texas A&M Univ.; NMFS) Distribution and Abundance of Marine Mammals in the North-Central and Western Gulf of Mexico (14-35-0001-30619)	\$647K
Frost, K. J. (Alaska Dept. Fish and Game) Hauling Out and At-Sea Behavior of Spotted Seals, <i>Phoca largha</i> , in Kaschguluk Lagoon (PO 16576)	\$-0
Lambertson, R. (Univ. Pennsylvania Medical Center) A Baseline Method to Evaluate Chemico-Biological Interactions Involving Cetacea (14-35-0001-30533)	\$435K
Loughlin, T. (NMFS/NMML) Use of Satellite Tags to Determine Pelagic Areas Important to Declining Populations of Fur Seals and Sea Lions (14411)	\$-0
Mate, B. (Oregon State Univ.) Application of Remote Methods of Large Cetacean Tracking (14-12-0001-30411)	\$-0
Phillips, R. L. (USGS) Delineation, Faunal Composition, and Repeated Use of Benthic Feeding Areas by Walrus and Endangered Gray Whales in the NE Chukchi Sea (14157)	\$-0
Richardson, W. J. (LGL Ecological Research Associates) Effects of Production Activities on Arctic Whales (14-12-0001-30412)	\$-0
Treacy, S. D. (MMS/Environmental Studies Unit) Bowhead Whale Aerial Survey Project (MMS-001)	\$549K

Truett, J. (LGL Ecological Research Associates) Development of Guidelines for OCS Operations in Polar Bear Habitats (14-35-0001-30631)	\$-0
<u>FY94</u>	
Becker, P. and S. Wise (Army Engineer Waterways Exper. Station; NIST, Chemical Science and Technology Laboratory) Acquisition and Curation of Alaskan Marine Mammal Tissues for Determining Levels of Contaminants Associated with Offshore Oil and Gas Development (17909) (see also NBS 17909 below)	\$-0
Davis, R. et al. (Texas A&M Univ.; NMFS) Distribution and Abundance of Marine Mammals in the North-Central and Western Gulf of Mexico (14-35-0001-30619 & 16197) (see also NBS below)	\$-0
Frost, K. J. (Alaska Dept. Fish and Game) Hauling Out and At-Sea Behavior of Spotted Seals, <u>Phoca largha</u> , in Kaseguluk Lagoon (PO 16576)	\$-0
Mate, B. (Oregon State Univ.) Application of Remote Methods of Large Cetacean Tracking (14-12-0001-30411)	\$-0
Phillips, R. L. and H. Nelson (USGS) Delineation, Faunal Composition, and Repeated Use of Benthic Feeding Areas by Walrus and Endangered Gray Whales in the NE Chukchi Sea (14157)	\$-0
Richardson, W. J. (LGL Ecological Research Associates) Effects of Production Activities on Arctic Whales (14-12-0001-30412)	\$69K
Schell, D. M. (Univ. Alaska, Fairbanks) Testing Conceptual Models of Marine Mammal Trophic Dynamics Using Carbon and Nitrogen Stable Isotope Ratios (14-35-0001-30661)	\$-0
Treacy, S. D. (MMS/Environmental Studies Unit) Bowhead Whale Aerial Survey Project (MMS-001; 14-35-0001-12493)	\$549K
<u>FY95</u>	
Gorbics, C. (USFWS, Anchorage) Gulf of Alaska: Sea Otters (IA-05059)	\$78K
Mate, B. (Oregon State Univ.) Application of Remote Methods of Large Cetacean Tracking (14-12-0001-30411)	\$-0
Richardson, W. J. (LGL Ecological Research Associates) Effects of Production Activities on Arctic Whales (14-12-0001-30412)	\$-0
Schell, D. M. (Univ. Alaska, Fairbanks) Testing Conceptual Models of Marine Mammal Trophic Dynamics Using Carbon and Nitrogen Stable Isotope Ratios (14-35-0001-30661)	\$75K

Treacy, S. D. (MMS/Environmental Studies Unit)
Bowhead Whale Aerial Survey Project (MMS-001; IA-05052) \$495K

4. National Biological Service

FY94

Amstrup, S. C. (Alaska Science Center)
Population Definition and Estimation of Survival, Recruitment and Numbers
of Polar Bears in the Beaufort Sea (00019) \$178K

Relationships Between Polar Bears, Sea Ice Movement and Condition,
and Pagophilic Seals (00020) \$31K

Ballachey, B. E. (Alaska Science Center)
Magnitude, Extent, and Duration of Impacts From the "Exxon Valdez"
Oil Spill on Sea Otter Populations (00042) \$207.4K

Ballachey, B., S. Amstrup, J. Bodkin, and G. Garner (Alaska Science Center)
Population Status and Trends in Marine Mammals (00058) \$323K

Becker, P. and S. Wise (Army Corps of Engineers Waterways Exper. Station and
National Institute of Standards and Technology)
Alaska Marine Mammal Tissue Archival Project (AMMTAP) (17909)
(see MMS #17909 also) \$60K

Bodkin, J. (Alaska Science Center)
Interactions Between Sea Otters and Fisheries in Alaska (00024) \$157K

Bodkin, J., B. Ballachey, and M. Cronin (Alaska Science Center/AK Pacific Univ.)
Biological Information Necessary to Establish a Zonal Management
Program for Sea Otters in Alaska (00023) \$43K

Davis, R. W. and G. P. Scott (Texas A&M Univ., Galveston/ NMFS, SEFRC)
Distribution and Abundance of Marine Mammals in the North-Central and
Western Gulf of Mexico (14-35-0001-30619 and 16197) (see MMS also) \$824K

Estes, J. (San Simeon Field Station)
Ecological Studies of Sea Otters and Other Marine Mammals (00404) \$250K

Interactions Between Sea Otters and Nearshore Ecological Communities (00407) \$153K

Garner, G. W. (Alaska Science Center)
Population Definition and Estimation of Survival, Recruitment and Number
of Polar Bears in Northwestern and Western Alaska (00021) \$287K

Inter-relationships Between Sea Ice Habitats and Polar Bear Distributions
in the Bering and Chukchi Seas in Northwestern Alaska (00022) \$102K

Lefebvre, L. (Southeastern Biological Science Center)
Ecological Studies of Manatees and Dugong (00406) \$595.4K

Scribner, K. (Alaska Science Center)
Use of DNA to Define Populations of Birds, Mammals and Fish
of Alaska (00043) \$33K

FY95

Amstrup, S. C. (Alaska Science Center) Ecosystem Dynamics of Polar Bears in the Polar Basin (00059)	\$253K
Ballachey, B., S. Amstrup, J. Bodkin, and G. Garner, (Alaska Science Center) Population Status and Trends in Marine Mammals (00058)	\$124.5K
Becker, P. and S. Wise (Army Engineer Waterways Exper. Station; NIST, Chemical Science and Technology Laboratory) Alaska Marine Mammal Tissue Archival Project (AMMTAP) (17909)	\$75K
Bodkin, J. (Alaska Science Center) Interactions Between Sea Otters and Fisheries in Alaska (00024)	\$157K
Bodkin, J., B. Ballachey, and M. Cronin (Alaska Science Center and Alaska Pacific Univ.) Biological Information Necessary to Establish a Zonal Management Program for Sea Otters in Alaska (00023)	\$104K
Estes, J. (California Pacific Science Center) Population Biology of Sea Otters (51001)	\$300K
Interactions Between Sea Otters and Nearshore Ecological Communities (51002)	\$109K
Garner, G. W. (Alaska Science Center) Population Definition and Estimation of Survival, Recruitment, and Number of Polar Bears in Northwestern and Northern Alaska (00021)	\$170K
Dynamics of Marine Ecosystems in the Bering and Chukchi Seas (00085)	\$257.8K
Garner, G. W. and C. Jay (Alaska Science Center) Bering-Chukchi Sea Ecosystem Initiative (00086)	\$116.4K
Garner, G. W., C. Jay, and B. Ballachey (Alaska Science Center) Sensitive Non-Endangered Mammals and Marine Birds in the Chukchi and Beaufort Seas	\$169K
Lefebvre, L. (Southeastern Biological Science Center) Ecological Studies of Manatees and Dugongs (00406)	\$468K
Scribner, K. (Alaska Science Center) Use of DNA to Define Populations of Birds, Mammals, and Fish of Alaska (00043)	\$45K
Thomas, N. J. (National Wildlife Health Center) Laboratory Diagnosis of Wildlife and Endangered Species Mortality (00103)	\$20K

5. National Park Service

FY90

Rice, B. (NPS)
Sea Lion, Harbor Seal, Sea Otter Surveys: Assessment of Oil

Spill, Kenai Fjords National Park, Alaska	\$30K
Squibb, R. (NPS) Sea Lion, Harbor Seal, Sea Otter Surveys: Assessment of Oil Spill, Katmai National Park and Preserve, Alaska	\$20K
<u>FY91</u>	
Gabriele, C. M. (NPS) Humpback Whale Monitoring, Glacier Bay National Park, Alaska	\$20.9K
Potts, R. (NPS) Sea Lion and Harbor Seal Survey in Katmai National Park, Alaska	\$10K
Schroeder, M. (NPS) Steller Sea Lion Surveys, Glacier Bay National Park, Alaska	\$1.2K
Harbor Seal Census, Glacier Bay National Park, Alaska	\$1.5K
Sharman, L. (NPS) Whale Prey Monitoring at Glacier Bay National Park, Alaska	\$27.5K
Taggart, J. (NPS) Killer Whale Monitoring, Glacier Bay National Park, Alaska	\$5.4K
<u>FY92</u>	
Barlow, J. and M. Lowry (NMFS/SWFSC) Pinniped Population Assessments	\$15K
Benz, C. (USFWS) Southern Sea Otter Relocation	\$360K
DeLong, R. and S. Melin (NMFS/NMML) Monitoring of Northern Fur Seals, California Sea Lions, Guadalupe Fur Seals, and Harbor Seals at Channel Islands National Park	\$100K
DeLong, R., S. Melin, J. Thomason, B. Hanson, and S. Osmek (NMFS) Effects of Organochlorine Pollutant Residues on California Sea Lions	\$400K
Gabriele, C. M. (NPS, Glacier Bay National Park) Population Monitoring of Humpback Whales in Glacier Bay and Adjacent Waters	\$16K
Hanan, D. (California Dept. Fish and Game) Harbor Seal Monitoring	\$220K
Irvine, G. and L. Daniel (NPS/Office of Coastal Processes) Population Monitoring of Harbor Seals in Kenai Fjords National Park and Pinniped Survey of Katmai National Park Coastline	\$10K
Mathews, E. A. (NMFS/NMML) Population Assessment of Harbor Seals in Glacier Bay	\$7K

Schroeder, M. (NPS, Alaska Regional Office of Natural Resources)
Sea Lion Surveys in Glacier Bay and Adjacent Waters \$2K

Stewart, B. (Hubbs/Sea World Research Institute)
Northern Elephant Seal Population Biology \$170K

FY93

Allen, S. (Point Reyes Bird Observatory)
Biomonitoring of Harbor Seal, Northern Elephant Seal, California
Sea Lion, and Northern Sea Lion Populations at Point Reyes \$3K

Bailey, S. (California Academy of Science)
Salvage of Stranded Marine Mammals \$-?

Barlow, J. and M. Lowry (NMFS/SWFSC)
Pinniped Population Assessments \$15K

Benz, C. (USFWS)
Southern Sea Otter Relocation \$360K

DeLong, R. and S. Melin (NMFS/NMML)
Monitoring of Northern Fur Seals, California Sea Lions, Guadalupe
Fur Seals, and Harbor Seals at Channel Islands National Park \$100K

DeLong, R., S. Melin, J. Thomason, B. Hanson, and S. Osmek (NMFS)
Effects of Organochlorine Pollutant Residues on California Sea Lions \$-?

Gabriele, C. M. (NPS, Glacier Bay National Park)
Population Monitoring of Humpback Whales in Glacier Bay and
Adjacent Waters \$16K

Hanan, D. (California Dept. Fish and Game)
Harbor Seal Monitoring in California \$-?

Lee, K. (California Marine Mammal Center)
Marine Mammal Rescue, Rehabilitation, and Release \$7.8K

Stewart, B. (Hubbs/Sea World Research Institute)
Northern Elephant Seal Population Biology \$120K

FY94

Gabriele, C. M. (Glacier Bay National Park)
1994 Humpback Whale Population Monitoring in Glacier Bay National Park \$20K

Goatcher, B. L. (Katmai National Park)
1994 Marine Mammal Surveys, Katmai National Park \$26K

Koenig, S. (Point Reyes National Seashore)
Marine Mammal Stranding Network \$3K

Kozie, K. and W. Route (Wrangell-St. Elias National Park)
1994 Harbor Seal Monitoring in Wrangell-St. Elias National Park \$2.6K

Mathews, E. A. (Univ. Alaska Southeast) 1994 Pinniped Monitoring in Glacier Bay National Park	\$31K
Resource Management Specialist (Kenai Fjords National Park) 1994 Marine Mammal Population Monitoring in Kenai Fjords National Park	\$1.5K

FY95

Kumer, J. (Assateague Island National Seashore) Marine Mammal Stranding and Salvage Program	\$2.4K
Obernesser, R. and M. Reynolds (Cape Cod National Seashore) Sea Mammal/Sea Turtle Strandings	\$4K

Department of State

Bureau of Oceans and International Environmental and
Scientific Affairs

FY90

Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$8.3K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$1138.4K
Powell D. L. (Commission for the Conservation of Antarctic Marine Living Resources) Scientific Committee Budget	\$1.8K

FY91

Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$8.2K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$1225.8K
Powell D. L. (Commission for the Conservation of Antarctic Marine Living Resources) Scientific Committee Budget	\$1.2K

FY92

Cetacean Specialist Group (World Conservation Union--IUCN) Research on Endangered Small Cetaceans	\$?-
Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$45K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$1443.9K

FY93

Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$61.9K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$1238.5K

FY94

Baker, C. S. (Univ. Auckland) Monitoring Environmental Change and Recovery of Mysticete Whales in the Southern Hemisphere	\$25K
Bengtson, J. L. (NMFS, NMML) Antarctic Seal Research	\$20K
Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$71.6K
International Whaling Commission Assessment of Southern Hemisphere Whale Populations Based on Past Soviet Whaling Activities	\$15K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$1537.9K

FY95

Brownell, R. (NMFS, MMML) Status of Okhotst Sea Populations of Gray Whales	\$24K
Galster, S. (Global Security Investigative Network) Russian Marine Mammal Council	\$15K
Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$13.5K
International Whaling Commission Beluga Whale Population Studies in the Arctic	\$25K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$1070K
Siniff, D. (Univ. Minnesota) Meeting of SCAR Group of Specialists on Seals	\$15K

Department of Transportation

Coast Guard

FY94

Blaylock, R. (NMFS, SEFSC) Aerial Surveys to Monitor Presence of Northern Right Whales in the	
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Southeastern U.S. Calving and Wintering Grounds \$80K

FY95

(No projects)

Environmental Protection Agency

FY90

Haebler, R. and R. K. Harris (Environmental Research Laboratory
and Armed Forces Institute of Pathology)
Assessment of Pathological Processes and Mechanisms
of Toxicity in Sea Otters That Died Following Exxon Valdez Oil Spill \$50K

Haebler, R. and D. Kuehl (Environmental Research Laboratory)
Environmental Pathotoxicology of Dolphins \$50K

FY91

Fisher, W. S. and C. S. Via (EPA/Environmental Research Laboratory and
Univ. Maryland School of Medicine)
Study of Immune Compromise in Bottlenose Dolphins \$15K

Haebler, R. and R. K. Harris (EPA/Environmental Research Laboratory
and Armed Forces Institute of Pathology)
Assessment of Pathological Processes and Mechanisms of
Toxicity in Sea Otters That Died Following Exxon Valdez Oil Spill \$80K

Haebler, R. and D. Kuehl (EPA/Environmental Research Laboratory)
Environmental Pathotoxicology of Dolphins \$50K

Haebler, R. and J. Lake (EPA/Environmental Research Laboratory)
Evaluation of Tissue Contaminant Concentrations in
Harbor Seals as Monitors of Temporal Trends of Pollution
in Near Coastal Environments \$50K

Sentinel Species (cetaceans) \$32.2K

FY92

Fisher, W. S. and A Hohn (EPA/Environmental Research Laboratory and
NMFS/Office of Protected Resources)
Dolphin Mortalities in North America \$8K

Fisher, W. S. and E. C. Peters (EPA/Environmental Research Laboratory and
Tetra Tech, Inc., VA)
Scientific Research on Diseases and Mortalities of Dolphins in U.S. Waters \$15K

Haebler, R. and R. K. Harris (EPA/Environmental Research Laboratory
and Armed Forces Institute of Pathology)
Assessment of Pathological Processes and Mechanisms of Toxicity in
Sea Otters That Died Following Exxon Valdez Oil Spill S-0-

Haebler, R. and D. Kuehl (EPA/Environmental Research Laboratory) Environmental Pathotoxicology of Dolphins	\$25K
Haebler, R. and J. Lake (EPA/Environmental Research Laboratory) Evaluation of Tissue Contaminant Concentrations in Harbor Seals as Monitors of Temporal Trends of Pollution in Near Coastal Environments	\$25K
Sentinel Species (cetaceans)	\$46.2K

FY93

Haebler, R. and R. K. Harris (EPA/Environmental Research Laboratory and Armed Forces Institute of Pathology) Assessment of Pathological Processes and Mechanisms of Toxicity in Sea Otters That Died Following Exxon Valdez Oil Spill	\$40K
Haebler, R. and J. Lake (EPA/Environmental Research Laboratory) Sentinel Species	\$75K
Kuehl, D. W. and K. Bottess (EPA/Environmental Research Laboratory and Midwest Research Institute, MO) Quantification of Chemical Contaminants in Dolphin Blood Samples	\$14.6K
Kuehl, D. W. and T. O. Tiernan (EPA/Environmental Research Laboratory and Wright State Univ, OH) Quantification of Chemical Contaminants in Dolphin Blood	\$19.3K
Kuehl, D. W. and R. Wells (EPA/Environmental Research Laboratory and Dolphin Biology Research Institute, FL) Collection and Hormone Analysis of Dolphin Blood from Sarasota/Tampa Bay Region	\$10K

FY94

Fisher, W. S. and J. K. Tabenberger (EPA/Environmental Research Laboratory and Armed Forces Institute of Pathology) Detection of Morbillivirus Using a PCR-based Assay in Bottlenose Dolphins from the Atlantic and Gulf of Mexico Epizootics	\$55.5K
Haebler, R. and J. Lake (EPA/Environmental Research Laboratory) Sentinel Species	\$75K
Kuehl, D. W. and L. Shoda (EPA/Environmental Research Laboratory and Armed Forces Institute of Pathology) Collection and Analysis of Blood and Milk from Northern Elephant Seals	\$12.1K

FY95

Fisher, W. S. and J. K. Tabenberger (EPA Gulf Ecology Division and Armed Forces Institute of Pathology) Detection of Morbillivirus Using a PCR-based Assay in Bottlenose Dolphins from the Atlantic and Gulf of Mexico Epizootics	\$5K
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Fisher, W. S., D. W. Kuehl, and L. Shoda (EPA Gulf Ecology and Mid-Continent Divisions and Texas A&M Univ.) Cellular Immune Responses and Redistribution of Organo-Chlorines in Rehabilitating Northern Elephant Seals	\$10K
Haebler, R. and J. Lake (EPA Atlantic Ecology Division) Sentinel Species	\$75K

Marine Mammal Commission

FY90

Buckland, S. (Scottish Agricultural Statistical Service, Aberdeen, Scotland) Review of Information Concerning Small Cetacean Populations in the Black Sea (T75133135)	\$1K
Domning, D. P. (Howard Univ.) Communication of Information Concerning Conservation of Manatees and Dugongs (T75132327)	\$0.8K
Fay, F. H. (Univ. Alaska) International Workshop on the Ecology and Management of Walrus Populations (T75132903)	\$2K
Haigh, J. C. et al. (USDA, Animal and Plant Health Inspection Service) Training Course for APHIS Veterinary Inspectors	\$6.4K
Justman, R. A. Tern Island Site Survey (T75132669 & T75132709)	\$3.7K
Kellert, S. R. (Yale Univ.) Development of a Global Marine Environment Ethic (T75132932)	\$5K
Kraus, S. D. and R. D. Kenney (New England Aquarium and Univ. Rhode Island) Evaluation of Critical Right Whale Habitat (T75133753 & T75133740)	\$2K
LeBoeuf, B. J. (Univ. California, Santa Cruz) International Conference on Northern and Southern Elephant Seal (T75133724)	\$2K
National Marine Fisheries Service Workshop to Develop a Recommended Protocol for Evaluating Swim-With-A-Dolphin Programs	\$7.1K
Center for Marine Conservation World Conservation Union: Species Survival Commission Cetacean Action Plan (T75133685)	\$6K
Pitcher, K. W. (Alaska Dept. of Fish and Game) Tugidak Island Harbor Seal Survey (T75133261)	\$5K
Reif, J. S. and R. S. Wells (Dept. Environmental Health, Ft. Collins, Colorado, and the Brookfield Zoo) Review of Gulf of Mexico Bottlenose Dolphin Die-off Investigation (T75132851 & T75132864)	\$1K

Scientific Committee on Antarctic Research (Scott Polar Research Institute, Cambridge, United Kingdom) Handbook on Antarctic Seal Research Methods and Techniques (T75133672)	\$2K
Swartzman, G. L., J. J. Brueggeman, and K. A. Green-Hammond (Univ. Washington; EBASCO Environmental, Albuquerque, NM) Workshop on the Bering Sea and Southern Ocean Ecosystems (T75133193, T75133656, T75133669)	\$33.3K
Townsend, R. L. (Townsend Environmental, Otis, OR) Review of Information Concerning Humpback Whales in Hawaii (T75132495)	\$7.4K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T75133724)	\$3.5K
Watkins, W. A. (Woods Hole Oceanographic Institution) Development of a Computerized Cetacean Bibliography (T75133685)	\$1K
Würsig, B. (Texas A&M Univ., Galveston) Bottlenose Dolphins as Possible Environmental Indicators (T75133708)	\$3.5K

FY91

Aguilar, A. (Univ. Barcelona) Mediterranean Dolphin Die-off Sample Archiving (T75134516)	\$2K
Bruchhausen, P. (Condor Expeditions, New York) Marine Mammal Harvests in Argentina (T75134011)	\$0.5K
Calkins, D. (Alaska Dept. of Fish and Game) Update of Steller Sea Lion Species Account (T75136613)	\$2.5K
Clapham, P. J. (Center for Coastal Studies, Provincetown, MA) Project YONAH (Years of the North Atlantic Humpback Whale) (T75136349)	\$4K
Dearborn, R. K. (Univ. Alaska, Fairbanks) Field Guide to Alaska Marine Mammals (T75136394)	\$2K
Geraci, J. P. and G. Miller (Univ. Guelph and Navigation Systems Command) On-site Evaluation of the Striped Dolphin Die-off in the Western Mediterranean (T75133818)	\$10.4K
Hain, J. H. W. (Associated Scientists at Woods Hole, MA) Airship Surveys of Right Whale Mother/Calf Pairs (T75136394)	\$2K
Hoover-Miller, A. (Pacific Rim Research, Philo, CA, & Haines, AK) Update of Alaska Harbor Seal Species Account (T75134749)	\$4K
Alaska Marine Mammal Geographic Information System Feasibility Study (T75136297)	\$5.7K
Kelly, B. P. (Univ. Alaska, Fairbanks) Pacific Walrus Draft Conservation Plan (T75136051)	\$5K

Kimmel, M., K. Wynne, and S. Montgomery (Alaska Sea Otter Commission, Univ. Alaska-Cordova, and Woodstock, Virginia) Alaska Sea Otter Conservation Plan (T75136064, T75136226, T75136336)	S3K
Mate, B. R. (Oregon State Univ., Newport) Identification of Programs Needed to Meet the Monitoring Requirements of Section 101(a)(5) of the Marine Mammal Protection Act (T75134833)	S1.1K
Review of Navy Briefing on the Bombing of Sea Lion Rock (T75134736)	S1.4K
Matkin, C. O. (North Gulf Oceanic Society, Homer, AK) Alaska Killer Whale Species Account (T75135023)	S5.4K
Miles, E. (Univ. Washington) Workshop to Identify Issues Meriting Priority Attention by the Newly-Formed North Pacific Marine Science Organization (T75136420)	S5.4K
Mizroch, S., C. S. Baker, and J. Calambokidis (NMFS; Univ. Wellington; and Cascadia Research Collective, Olympia, WA) Humpback Whale Calf Mortality Workshop (T75136352)	S3.5K
Nail, D. L. (Eckerd College, St. Petersburg, FL) Selected International Agreements and Domestic Legislation Affecting Marine Resources and Marine Habitat (T75135573)	S2.3K
Northridge, S. Second Order Effects of Large-scale High-seas Driftnet Fisheries on the North Pacific Marine Ecosystem (T75135269, T75136200)	S16K
Read, A. (Dolphin Biology Research Associates, Sarasota, FL) Harbor Porpoise Age Determination by Tooth Sectioning (T75136381)	S3K
Sherman, K. (NMFS) Symposium on the Northeast Atlantic Shelf Ecosystem: Stress, Mitigation, and Sustainability (T75135654) (co-funded with MMS)	S2K
Townsend, R. (Townsend Environmental, Otis, OR) Review of the Department of the Interior's Draft Report to Congress on the Impact of Potential Crude-Oil Spills on the Arctic Ocean on Alaska Natives (T75135764)	S0.5K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T75136103)	S3.5K
Wilson, W. (LGL Alaska Research Associates, Inc.) Amendments to the Bering Sea/Alcutian Islands Ground Fish Fishery Management Plan (T75135010)	S5K
Worthy, G. A. J. (Texas A&M Univ., Galveston) Energetic Studies of Manatee Calves and Mothers (T75136365)	S4K

FY92

Ainley, D. G. (Point Reyes Bird Observatory)

Symposium on the Biology of the White Shark (T94070415)	\$1K
Baur, D. C. (Perkins Coie, Washington, D.C.) Analysis of United States Authority for Implementing the 1973 Agreement on the Conservation of Polar Bears (T94071388)	\$14K
Review of the Possible Legal Ramifications of the Recent GATT Panel Decision on the Tuna-Porpoise Issue (T94071375)	\$17K
Carr, T. (Caribbean Conservation Corp., Gainesville, FL) Manatee Surveys in the Miskito Marine and Coastal Reserve, Nicaragua (T94070376)	\$3.3K
Center for Marine Conservation, Washington, D.C. Implementation of the World Conservation Union's Action Plan for the Conservation of Dolphins, Porpoises, and Whales (T94071605)	\$3K
Data Conversion Services, American Society of International Law, and Editorial Experts, Inc. Compendium of International Treaties and Agreements Bearing Upon the Conservation and Protection of Marine Mammals and Other Marine Living Resources (T94070978, T94070981, T94071511)	\$81.5
Domning, D. P. (Howard Univ.) Publication of "Sirenews" (T94069688)	\$1.2K
Geraci, J. R. (J. R. Geraci and Associates, Guelph, Ontario, Canada) Cape Cod Aquarium Inspection (T94071595)	\$2K
Gradwohl, J. (Smithsonian Institution) Proposal Preparation by the Smithsonian Institution for the Ocean Planet Exhibit (T94071016)	\$3K
Hain, J. H. W. (Associated Scientists at Woods Hole, Woods Hole, MA) Airship Surveys of Right Whales Off the Coast of Florida and Georgia (T94070460)	\$12K
Kawerak, Inc., Nome, Alaska Implementation of the Walrus Conservation Plan (T94071579)	\$5K
Kenney, R. D. (Univ. Rhode Island and Aero Marine Surveys) Assessment of the Paucity of Right Whales and Other Cetaceans Off the New England Coast in Spring 1992 (T94070648 & T94070635)	\$16.4K
Koretsky, I. A. Maintenance of the Smithsonian Institution's Remington Kellogg Library (T94070871)	\$6K
Lounsbury, V. (Literature Research & Illustration, Salford, Ontario, Canada) Illustration of a Field Guide to Marine Mammal Strandings (T94071618)	\$2K
Mate, B. R. (Oregon State Univ., Newport) Representation of the Marine Mammal Commission at the Seventeenth International Meeting for the Study of Marine Mammals (T94070208)	\$1.2K

Mecklenburg, C. (Point Stevens Press, Auke Bay, Alaska) Editing and Publication of Species Accounts Concerning Steller Sea Lions, Harbor Seals, and Killer Whales in Alaska (T94071029)	\$10K
Naveen, R. F. (Oceanites, Cookesville, MD) Conference on Tourism in Polar Areas (T94070198)	\$0.5K
Reijniders, P. J. H. (Research Institute for Nature Management, Ben Burg, Neth.) Preparation of a Pinniped Action Plan (T94070651)	\$3.3K
Talbot, L. (Lee Talbot Associates International, McLean, VA) New Principles for the Conservation of Wild Living Resources (T94071553)	\$51K
University of Hawaii, Sea Grant Program Hawaii Humpback Whale Research Coordination Meeting (T94069523)	\$1.5K
Villa-Ramirez, B. (Naturalia, Coyoacan, Mexico) Preparation of a Recovery Plan for the Vaquita (T94070800)	\$8K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T94070994)	\$4.5K
Würsig, B. G. (Texas A&M Univ., Galveston) Health of Bottlenose Dolphins in Texas Coastal Waters (T94070596)	\$3.5K

FY93

Alternative Business Systems; Editorial Experts, Inc.; Lee Kimball Compendium of International Treaties and Agreements Bearing Upon the Conservation and Protection of Marine Mammals and Other Marine Living Resources (T10154124, T10154111, T10154234, T94071647)	\$10.2K
Alverson, D. L. (Natural Resources Consultants, Seattle, WA) Review of Bycatch in World Fisheries (T10153921)	\$3K
Best, P., E. Norse, P. Shaughnessy, and Lee M. Talbot Associates New Principles for the Conservation of Wild Living Resources (T10153954, T10153646, T10153219, T10153714)	\$22.2K
Clapham, P. J. (Center for Coastal Studies, Provincetown, MA) Project YONAH (Years of the North Atlantic Humpback Whale) (T10153840)	\$5K
Center for Marine Conservation (Washington, D.C.) Support of Publication Which Examined the International Whaling Commission's Revised Management Scheme (T10154344)	\$3K
Dedina, S. L. (Univ. Texas, Austin) Sociological Factors Affecting the Conservation of Gray Whale Habitat in Mexico (T10155592)	\$2K
Domning, D. P. (Howard Univ.) Publication of "Sirenews" (T10155233)	\$2.5K
Environmental Research Institute (Redlands, CA) Acquisition of Geographic Information System Software for the	

Alaska Department of Fish and Game (T10154195)	\$6K
Geraci, J. R. (Univ. Guelph) Attend and Report on Workshop on Pathogens in Marine Mammals (T10154108)	\$1.2K
Hain, J. H. W. (Associated Scientists at Woods Hole) Reducing Ship-Strikes of Right Whales Off Florida and Georgia (T10153604)	\$17K
Hale Kohola, House of the Whale (Lahaina, HI) Hawaiian Humpback Whale Research Coordination Meeting (T10155644)	\$3K
Hoover-Miller, A. (Pacific Rim Research, Seward, AK) Workshop on Improving Access to and use of Data Relevant to Conservation of Marine Mammals in Alaska (T10155550)	\$17K
International Whaling Commission Workshop on Application of Genetic Techniques for Cetacean Stock Identity (T10155673)	\$5K
Jefferson, T. A. (San Diego, CA) Review and Evaluation of Past Research on the Use of Sound to Prevent Entanglement of Marine Mammals in Fishing Gear (T10155628)	\$2K
Kelly, B. P. and B. R. Mate (Univ. Alaska & Oregon State Univ.) Attend and Report on Workshop to Review the Program Proposed to Meet Monitoring Requirements of Section 101(a)(5) of the Marine Mammal Protection Act (T10153808, T10153811)	\$1.6K
Kooyman, G. L., B. R. Mate, and G. A. J. Worthy Attend Workshop on Improving the Marine Mammal Scientific Research Permitting Process (T10154878, T10154865, T10154852)	\$1.5K
Koretsky, I. A. Maintenance of the Smithsonian Institution's Remington Kellogg Library (T10153332, T10155220)	\$6K
Kraus, S. D. (New England Aquarium) Studies of Right Whales in the Bay of Fundy (T10155482)	\$3K
Marsh, H. D. (James Cook Univ., Australia) Development of a Draft Recovery Plan for Dugongs in the Republic of Palau (T101555340)	\$1.5K
Morales, B. (Centro de Investigaciones de Quintana Roo, Mexico) Manatee Surveys in Belize and Quintana Roo, Mexico (T10155657)	\$2K
National Museum of Natural History (Smithsonian Institution) Publication of a Comprehensive Bibliography on Manatees and Dugongs (T10155631)	\$3.2K
Naveen, R. S. (Oceanites, Cooksville, MD) Design a Field Test of a Tourist Site Inventory in Antarctica (T10155660)	\$2K
Reeves, R. R. (Okapi Wildlife Associates, Canada) Review and Edit General Bibliography on Marine Mammals (T10155589)	\$1.5K

Rough, V. (Spruce Head, ME) Assessment and Monitoring of Gray Seals in New England Waters (T10155615)	\$5K
Szelistowski, W. A. (Eckerd College) Manatee Surveys in Tampa Bay, Florida (T10154069)	\$9K
Trites, A. W. (North Pacific Universities Marine Mammal Consortium) Relationship Between Fisheries and Pinniped Population Declines in the Bering Sea and Gulf of Alaska (T10154014)	\$5K
Villa-Ramirez, B. (Naturalia, Coyoacan, Mexico) Translation and Distribution of the Vaquita Recovery Plan (T10155563)	\$1K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T10155275)	\$4.5K
Würsig, B. G. (Texas A&M Univ., Galveston) Population Studies of Bottlenose Dolphins in the Coastal Waters of Texas (T10154454)	\$5K

FY94

Baker, C. S. (Univ. Aukland) Possible Illegal Trade in Whale Meat (T10157516)	\$1.8K
Brueggeman, J. J., J. Calambokidis, D. M. Lavigne, B. J. LeBoeuf, C. O. Matkin, R. R. Reeves, D. B. Siniff, M. A. Smultea, I. Stirling, B. S. Stewart, and G. A. J. Worthy Reviews of Marine Mammal Stock Assessment Reports (T30916708 et al.)	\$10K
Clapham, P. J. (Center for Coastal Studies, Provincetown, Massachusetts) Project YONAH (Years of the North Atlantic Humpback Whale) (T10156643)	\$5K
Domning, D. P. (Howard Univ.) Publication of "Sirenews" (T3091636)	\$2.5K
Fraker, M. A. and B. R. Mate (Sidney, British Columbia/Oregon State Univ.) Review and Analysis of Sea Lion Predation of Steelhead Trout at Ballard Locks (T10156766 and T10156737)	\$10K
International Whaling Commission (Cambridge, England) Acquiring and Evaluating Russian Whaling Data from the Past (T10157150)	\$5K
Inuit Circumpolar Conference Participation by Arctic Indigenous People in Meetings Related to the Arctic Environmental Protection Strategy (T30916177)	\$22.3K
Participation by Arctic Indigenous People in Meetings Related to the Russian/U.S. Agreement on the Management and Conservation of Polar Bear Populations and Their Habitats (T309161780)	\$17.2K
Participation by Arctic Indigenous People in a Seminar on Traditional Knowledge and in a Meeting of the Conservation of Arctic Flora and Fauna Working Group of the Arctic Environmental Protection Strategy (T30916193)	\$20.5K

Koretsky, I. A. (Falls Church, Virginia) Maintenance of the Remington Kellogg Library (T30916232)	\$3K
Naveen, R. S. (Oceanites, Cooksville, Maryland) Environmental Education and Tourist Site Inventory in Antarctica (T10157383)	\$21.5K
Society for Marine Mammalogy Preparation of a Career Guide in Marine Mammal Science (T10157419)	\$0.7K
Species Survival Commission, IUCN Support for Publication of a Conservation Action Plan "Whales, Dolphins, and Porpoises, 1994-1998" (T30916627)	\$2.5K
VanBlaricom, G. R. (Univ. Washington) Acquisition of Historical Sea Otter Data from Russia (T30916151)	\$2K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T30916452)	\$4.5K
Weber, M. L. (Washington, D.C.) Analysis of International Fisheries Agreements (T30916119)	\$7.3K

FY95

Allen, J. M. (College of the Atlantic) Curation of the North Atlantic Humpback Whale Photograph Collection and Associated Databases (T30919556)	\$5K
Alternative Business Systems (Washington, DC), Editorial Experts, Inc. (Alexandria, VA), and Richard L. Wallace (Yale Univ.) Updating the Commission's Compendium of Selected Treaties and International Agreements Regarding Marine Resources (T30919679, T30919404, T30919077) [funded by Dept. of State (\$3K) and National Marine Fisheries Service (\$25K)]	
Associated Scientists at Woods Hole (Woods Hole, MA) Right Whale Distribution, Abundance, and Relative Sightability in the Southeast United States (T30918117) [funded by U.S. Navy (\$10K)]	
Au, W. W. L., P. E. Nachtigall, S. Dawson, T. A. Jefferson, J. Lien, C. O. Matkin, R. R. Reeves, R. J. Schusterman, P. D. Shaughnessy, B. Würsig, Battelle Seattle Conference Center, and Lee Talbot Associates International Workshop on the Effects and Effectiveness of Acoustic Deterrents (T30919802 et al.) [funded by National Marine Fisheries Service (\$60K)]	

<u>1994</u> Chapin, T. G. and J. R. Gilbert (Univ. Maine) Report on Feeding Gray Whales in the Russian Chukchi Sea (T30917671)	\$1K
<u>1994</u> Fisheries Management Foundation (Seattle, WA) Bycatch Reduction Workshop (T30917846)	\$2K
<u>1994</u> Gerber, L. R. (Seattle, WA) Analysis of Sea Otter/Fisheries Conflicts in Washington State (T30917202)	\$3K

✓ Hale Kohola, House of the Whale (Lahaina, HI) Hawaiian Humpback Whale Research Coordination Meeting (T30917901, T30919475)	\$2K
✓ Hoover-Miller, A. (Pacific Rim Research, Seward, AK) Development of a Database on Harbor Seals Hunted in Alaska (T30919815)	\$2K
✓ International Fund for Animal Welfare (Yarmouth Port, MA) Publication and Distribution of the Workshop Report on Scientific Aspects of Managing Whale Watching (T30919572)	\$2K
✓ Matilla, D.K. (Center for Coastal Studies, Provincetown, MA) Analysis and Reporting of Data Concerning the North Atlantic Humpback Whale Populations (T30918256)	\$5K
✓ Mayo, C. A. (Center for Coastal Studies, Provincetown, MA) Identification of Key Components of Baleen Whale Habitats (T30918382)	\$6.8K
✓ Monnett, C. W. (Homer, AK) Sea Otter Pup Survival and Development (T30919828)	\$3K
✓ Read, A. J. (Duke University Marine Laboratory, Beaufort, NC) Possible Application of New and Developing Technologies to the Study of Marine Mammals (T30919695)	\$5K
✓ Rough, V. (Spruce Head, ME) Aircraft Surveys of Gray Seals in New England Waters (T30918573)	\$0.8K
✓ Straley, J. M. (J. Straley Investigations, Sitka, AK) Review of Glacier Bay National Park and Preserve Vessel Management Plan (T30919080)	\$0.5K
✓ Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T30919035)	\$4.5K
✓ Warren, B. (National Fisheries Conservation Center, Seattle, WA) Assessment of Legislation and Regulations Banning Gillnets in U.S. Waters (T30919860)	\$3K
✓ Zemsky, V. (Russian Marine Mammal Council, Moscow) Formation of the Russian Marine Mammal Council (T30919381) [funded by Dept. of State (\$15K)]	

National Aeronautics and Space Administration

FY90

Lefebvre, L. and J. A. Provancha (USFWS & NASA) Determination of Long Term Changes in a Seagrass Bed Protected from Grazing by Manatees (NAS10-1162AX)	\$5.2K
Provancha, J. A. (NASA) Long Term Monitoring of Distribution and Abundance of Manatees at Kennedy Space Center, Florida (NAS10-11624A)	\$13.9K

FY91

Lefebvre, L. and J. A. Provancha (USFWS & NASA) Determination of Long Term Changes in a Seagrass Bed Excluded from Grazing by Manatees (NAS10-11624-EX)	\$7.5K
Provancha, J. A., M. Provancha, and R. Reddick (NASA) Long Term Monitoring of the Abundance and Distribution of Manatees on Kennedy Space Center, Florida (NAS10-11624-A)	\$10K

FY92

Lefebvre, L. and J. A. Provancha (USFWS & Bionetics Corp., Kennedy Space Center, FL) Determination of Long Term Changes in a Seagrass Bed Excluded from Grazing by Manatees (NAS10-11624-EX)	\$6.5K
Provancha, J. A., M. Provancha, and R. Reddick (The Bionetics Corp., Ecological Programs, Kennedy Space Center, FL) Long Term Monitoring of the Abundance and Distribution of Manatees on Kennedy Space Center, Florida (NAS10-11624-A)	\$10K

FY93

Lefebvre, L. and J. A. Provancha (USFWS & Bionetics Corp., Kennedy Space Center, FL) Determination of Long Term Changes in a Seagrass Bed Excluded from Grazing by Manatees (NAS10-11624-EX)	\$6.5K
Provancha, J. A., M. Provancha, and R. Reddick (NASA, Ecological Programs, Kennedy Space Center, FL) Long Term Monitoring of the Abundance and Distribution of Manatees on Kennedy Space Center, Florida (NAS10-11624-A)	\$23.5K

FY94

Lefebvre, L. and J. A. Provancha (USFWS & Bionetics Corp., Kennedy Space Center, FL) Determination of Long Term Changes in a Seagrass Bed Excluded from Grazing by Manatees: Carrying Capacity Determination (NAS10-11624-EX)	\$6.5K
Provancha, J. A., M. Provancha, and R. Reddick (NASA, Ecological Programs, Kennedy Space Center, FL) Long Term Monitoring of the Abundance and Distribution of Manatees on Kennedy Space Center, Florida (NAS10-11624-A)	\$23.5K

FY95

Lefebvre, L. and J. A. Provancha (NBS/Sirenia Project & NASA, Ecological Programs, Kennedy Space Center, FL) Determination of Long Term Changes in a Seagrass Bed Excluded from Grazing by Manatees: Carrying Capacity Determination (NAS10-11624-EX)	\$6.5K
Provancha, J. A., M. Provancha, and R. Reddick (NASA, Ecological Programs, Kennedy Space Center, FL)	

Long Term Monitoring of the Abundance and Distribution of
Manatees on Kennedy Space Center, Florida (NAS10-11624-A) S23.5K

National Science Foundation

FY90

Beardsley, R. C. and R. Limeburner (Woods Hole
Oceanographic Institution)
Springtime Circulation in the Great South Channel
(SCOPEX) (OCE-8713988) S83.3K

Frost, B. and M. Macauley (Univ. Washington)
Acoustics of Copepods and Micronekton in the Great
South Channel (OCE-8915844) S27K

Hain, J. H. W. (Woods Hole Oceanographic Institution)
Airships in Cetacean Research (OCE-9009431) S48.6K

LeBoeuf, B. (Univ. California, Santa Cruz)
Diving Studies of Northern Elephant Seals (BSR-89169677)
(co-funded with MMS) S55K

Biological Studies of Northern Elephant Seals (BSR-8919933) S70K

Diving and Foraging Behavior of Northern Elephant Seals (INT-9016374) S17.9K

Miyamoto, M. (Univ. Florida)
Molecular Systematics of Eutherian Mammals and
Other Species (BSR-8945103) S25K

Palumbi, S. R. (Univ. Hawaii)
Genetic Diversity of Endangered Populations of Mysticete
Whales: Mitochondrial DNA and Historical Demography (BSR-9000006) S130K

Smuts, B. (Univ. Michigan)
Social Behavior in Apes and Dolphins (BNS-885769) S66.5K

Testa, J. (Univ. Alaska)
Dispersal and Diving Behavior of Seals Determined
by Satellite Telemetry (DPP-88-16567) S115.5K

Tyack, P. and L. Sayigh (Woods Hole Oceanographic Institution)
Development of Signature Whistles in Free-Ranging
Bottlenose Dolphins (BNS-9014545) S9.1K

Winn, H. E. et al. (Univ. Rhode Island)
South Channel Ocean Productivity Experiment (SCOPEX) (OCE-8915844) S173K

FY91

Beardsley, R. C. and R. Limeburner (Woods Hole
Oceanographic Institution)
Springtime Circulation in the Great South Channel
(SCOPEX) (OCE-9101034) S200.2K

Berta, A. (San Diego State Univ.) Phylogenetic Relationships Within the Phocid Pinniped Clade (BSR-9006535)	\$59.8K
Costa, D. P. and R. S. Wells (Univ. California, Santa Cruz) Energetics of Free-ranging Bottlenose Dolphins (OCE-9018626)	\$78.8K
Felten, D. L. (Univ. Rochester) Neural-Immune Interactions in the Beluga Whale (DCB-9105791)	\$54.6K
Palumbi, S. R. (Univ. Hawaii) CRB: Genetic Diversity of Endangered Populations of Mysticete Whales: Mitochondrial DNA and Historical Demography (BSR-9000006)	\$49K
Siniff, D. (Univ. Minnesota) The Behavioral Ecology of Sea Otters at Amchitka Island, Alaska (DPP-9101134)	\$174.3K
Smuts, B. (Univ. Michigan) Social Behavior in Apes and Dolphins (BNS-88-57969)	\$66.5K
Testa, J. (Univ. Alaska) Dispersal and Diving Behavior of Seals Determined by Satellite Telemetry (DPP-88-16567)	\$51.4K
Tyack, P. and L. Sayigh (Woods Hole Oceanographic Institution) Development of Signature Whistles in Free-ranging Bottlenose Dolphins (BNS-90-14545)	\$0-
Wartzok, D. (Univ. Missouri, St. Louis) Under-Ice Behavior of Ringed Seals (DPP-9024106)	\$102.6K
Worthy, G. A. J. (Texas A&M Univ.) Free-Ranging Energetics of Bottlenose Dolphins (OCE-9019962)	\$21.1K

FY92

Berta, A. (San Diego State Univ.) Phylogenetic Relationships Within the Phocoid Pinniped Clade (BSR-9006535)	\$5K
Costa, D. P. and R. S. Wells (Univ. California, Santa Cruz) Energetics of Free-Ranging Bottlenose Dolphins (OCE-9018626)	\$81.9K
Felten, D. A. (Univ. Rochester) Neural-Immune Interactions in the Beluga Whale (DCB-9105791)	\$57.1K
Herman, L. M. (Univ. Hawaii) Integration of Visual and Echoic Information (IBN-9121331)	\$100K
Reep, R. (Univ. Florida) Manatee Cerebral Cortex and Comparative Volumetrics (IBN-91-20450)	\$50K
Siniff, D. (Univ. Minnesota) The Behavioral Ecology of Sea Otters at Amchitka Island, Alaska	

(DPP-9101134)	\$122.4K
Smuts, B. (Univ. Michigan) Social Behavior in Apes and Dolphins (BNS-885769)	\$62.5K
Testa, J. and M. Castellini (Univ. Alaska) Physiological Development and Survival of Juvenile Weddell Seals DPP-9119885)	\$227.1K
Wartzok, D. (Univ. Missouri, St. Louis) Under-Ice Behavior of Ringed Seals (DPP-9024106)	\$98.7K
Welker, W. (Univ. Wisconsin, Madison) Comparative Neuroanatomical Study of the Brain (IBN-11934)	\$61.5K
Worthy, G. A. J. (Texas A&M Univ.) Free-Ranging Energetics of Bottlenose Dolphins (OCE-9019962)	\$23.4K
Zapol, W. (Massachusetts General Hospital) Physiological Studies of Free-Diving Weddell Seals (DPP-9118192)	\$150.1K
<u>FY93</u>	
Felten, D. A., V. Quaranta, and T. Romano (Univ. Rochester) Neural-Immune Interactions in the Beluga, <u>Delphinapterus leucas</u> (DCB-9105791)	S-0-
Herman, L. M. (Univ. Hawaii) Integration of Visual and Echoic Information (IBN-9121331)	S-0-
Reep, R. L. (Univ. Florida) Manatee Cerebral Cortex and Comparative Volumetrics (IBN-9120450)	\$52K
Siniff, D. (Univ. Minnesota) The Behavioral Ecology of Sea Otters at Amchitka Island, Alaska (OPP-9101134)	\$122.4K
Antarctic Pack-Ice Seals: A Workshop (OPP-9312289)	\$14K
Smuts, B. (Univ. Michigan) Social Behavior in Apes and Dolphins (BNS-88-57969)	\$41.5K
Testa, J. and M. Castellini (Univ. Alaska) Physiological Development and Survival of Juvenile Weddell Seals (OPP-9119885)	\$206K
Wartzok, D. (Univ. Missouri, St. Louis) Under-Ice Behavior of Ringed Seals (OPP-9024106)	S-0-
Zapol, W. (Massachusetts General Hospital) Physiological Studies of Free-Diving Weddell Seals (OPP-9118192)	\$113.7K

FY94

Castellini, M. (Univ. Alaska) Physiological Development and Survival of Juvenile Weddell Seals (OPP-9119885)	\$160.9K
Felten, D., V. Quarauta, and T. Romano (Univ. Rochester) Neural-Immune Interactions in the Beluga, <u>Delphinapterus leucas</u> (MCB 9317267)	\$107K
Siniff, D. (Univ. Minnesota) Antarctic Pack-Ice Seals: A Workshop (OPP-9312289)	\$14K
The Distributional Ecology of Antarctic Seals (OPP-9403672)	\$35K

FY95

Berta, A. (San Diego State Univ.) Collaborative Research: Phylogenetic and Functional Analysis of Fossil and Living Walruses (DEB-9419802)	\$98K
Castellini, M. (Univ. Alaska) Physiological Development and Survival of Juvenile Weddell Seals (OPP-9119885)	\$6K
Costa, D. (Univ. California, Santa Cruz) The Importance of Foraging Pattern on Reproductive Success in the Northern Fur Seal, <u>Callorhinus ursinus</u> (OPP-9500072)	\$138K
Demere, T. (San Diego Museum of Natural History) Collaborative Research: Phylogenetic and Functional Analysis of Fossil and Living Walruses (DEB-9419803)	\$90K
Felten, D., V. Quarauta, and T. Romano (Univ. Rochester) Neural-Immune Interactions in the Beluga, <u>Delphinapterus leucus</u> (MCB-9317267)	\$107K
Heath, M. (Naval Medical Research Institute) Diving Physiology in White Whales (IBN-9507441)	\$102K
Luo, Z. (Univ. Charleston) RUI - Phylogenetic Analysis of the Cetacean Basal Cranium and Inner Ear and Study of the Cetacean Relationships (DEB-9419898)	\$90K
MacFadden, B. (Univ. Florida) Vertebrate Paleontology Collection Improvements at the Florida Museum of Natural History (DEB-9318715)	\$137K
Timm, R. (Univ. Kansas) Conservation of Mammal Collections (DEB-9301021)	\$275K
Whitman, J. (Brown Univ.) Development of a Variable Flow Seawater Flume and High-Speed Video Imaging System (BIR-9512348)	\$109K

Smithsonian InstitutionFY90

Mead, J. G. (Museum of Natural History) Marine Mammal Program (80337100)	\$165K
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FY91

Mead, J. G. (Museum of Natural History) Marine Mammal Program (80337100)	\$169K
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FY92

Mead, J. G. (Museum of Natural History) Marine Mammal Program (82337100)	\$144.4K
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FY93

Boness, D. J., O. T. Oftedal, and K. Ralls (National Zoological Park) Marine Mammal Research (pinnipeds)	\$66.2K.
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Mead, J. G. (Museum of Natural History) Marine Mammal Program (82337100)	\$115.9K
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FY94

Mead, J. G. and C. Potter (Museum of Natural History) Marine Mammal Program (82337100)	\$144.2K
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FY95

Boness, D. J., R. C. Fleischer, K. Ralls, O. T. Oftedal, and D. Wildt (National Zoological Park) Marine Mammal Research (pinnipeds)	\$94.6K
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Mead, J. G. and C. Potter (Museum of Natural History) Marine Mammal Program (82337100)	\$144K
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