

**SURVEY OF FEDERALLY-FUNDED  
MARINE MAMMAL RESEARCH AND STUDIES  
FY74 - FY98**

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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.

April 23, 1999

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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
NOS	National Ocean Service
NOSC	Naval Ocean Systems Center
NUWC	Naval Undersea Warfare 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 FY98. 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-FY97 was 164.5 (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. The agency provides monies in the form of grants to USDA research agencies, state agricultural experiment stations, the state land-grant university system, cooperating state institutions, and participants in USDA's National Research Initiative Competitive Grants Program. In turn, these organizations may use some of the grant money, along with money from other sources, to fund marine mammal research. Information regarding these projects is available on the World Wide Web (<http://cristel.nal.usda.gov:8080>).

### **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 Ocean Service (NOS), 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 SPAWAR Systems Center, Naval Undersea Warfare Center, Navy Legacy Program, 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. In FY96, NBS became a part of USGS.

#### **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)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY74-FY95. Publication PB97-104749, National Technical Information Service, Springfield, Virginia. 105 p. (1996)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY74-FY96. Publication PB98-148281, National Technical Information Service, Springfield, Virginia. 125 p. (1998)
- Survey of Federally-Funded Marine Mammal Research and Studies, FY74-FY97. Publication PB99-100211, National Technical Information Service, Springfield, Virginia. 134 p. (1999)
-

TABLE 2

## NUMBER OF MARINE MAMMAL RESEARCH PROJECTS SUPPORTED BY FEDERAL AGENCIES IN FY74-FY98

	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
Department of Agriculture	2	1				2	1	4						9	7								3	5	3
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	70	70	75
National Ocean Pollution Program Office												1													
National Ocean Service																									1
National Sea Grant	4	2	1	1	2	2	2	2	1	3	2	4	1				1	2	4	6	4	6	1	3	3
North Pacific Fishery Management Council							1	1	1	1	1														
Ocean and Coastal Resource Management								2	4	6	4	5	9	8	1							2	10	19	13
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	2	4
Air Force						1	1	1			2	2	2	2	1	1	1	1	2	1	2	1	1	1	1
Army					1	2												1	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	45	35	47
Strategic Environmental Research (SERDP)																				2	6	3	9	9	7
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	4	12	10
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	2	2	2	9	18
Geological Survey				1	1	1	1	1	1	1	1													13	20
Minerals Management Service		1	4	3	4	7	12	8	10	9	12	13	26	13	24	26	28	23	10	8	5	7	8	8	
MMS/NOAA/OCSEAP		3	16	11	11	6	8	7	9	8	6	3	4	2	1	1	2	1							
National Biological Service																					14	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	6	12	10
Department of State					2	1	1	2	2	2	2	2	3	3	2	3	3	3	3	2	5	6	2	2	2
Department of Transportation (Coast Guard)																					1	1	1	1	2
Environmental Protection Agency	1	1												1	1	2	2	5	6	5	3	3	2	1	2
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	5	7	9
National Aeronautics and Space Administration	1	1	1	2	2			1				1	3	2	1	1	2	2	2	2	2	2	2	2	3
National Science Foundation	12	7	10	10	8	11	14	8	10	11	10	12	12	10	8	9	12	11	12	9	4	11	9	13	11
Smithsonian Institution	4	4	2	2	2	2	2	2	3	3	3	3	5	3	1	1	1	1	1	1	2	1	2	2	1
TOTAL:	113	122	133	151	166	137	171	148	140	142	145	150	156	177	148	158	162	180	165	180	185	216	198	227	246

**FIGURE 1**  
**TRENDS IN FEDERAL SUPPORT OF MARINE MAMMAL RESEARCH**

Total Number of Marine Mammal Projects Reported to the  
Marine Mammal Commission, FY74-FY98

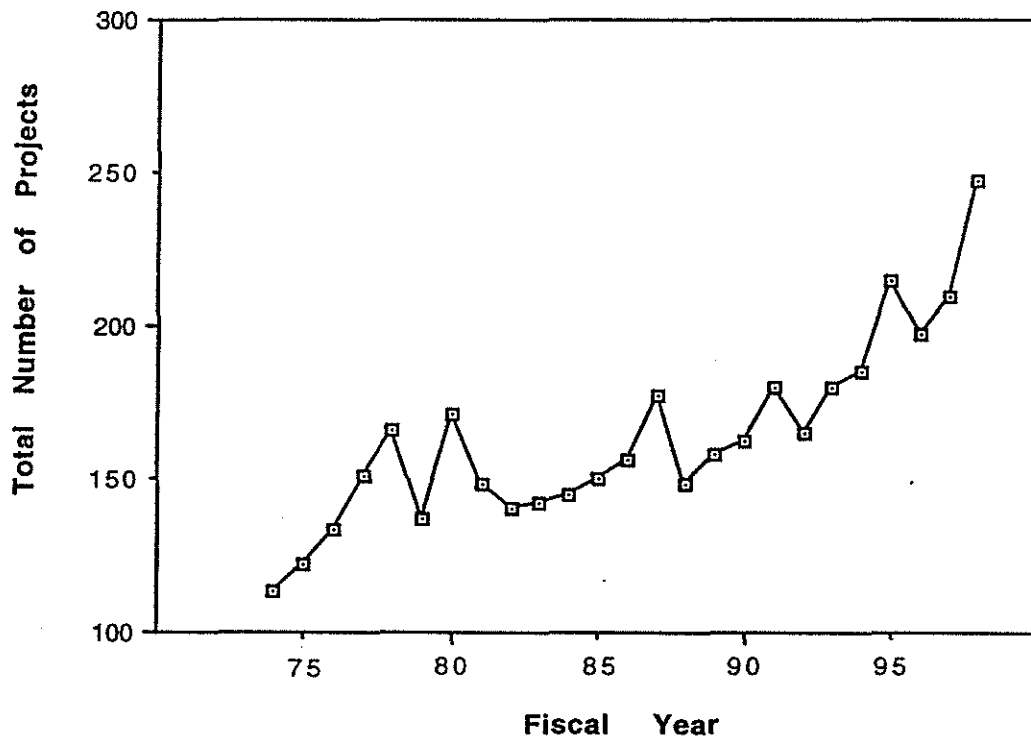


TABLE 3

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

	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98
Department of Agriculture	84.7																	
Department of Commerce																		
National Marine Fisheries Service	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	13362.9	12350.9	17448
National Ocean Pollution Program Office					20													
National Ocean Service																		25
National Sea Grant Program	35.1	30	48.7	79.8	68.4	21.4				32.3	47.3	105.5	220.5	249.1	387	157.8	135.7	152.2
North Pacific Fishery Mgmt. Council	28.9	10	11.5	5														
Ocean and Coastal Resource Mgmt.	67	58.8	35.9	81	81.9	185.1	145	63							2	76.4	170	215
Ocean Resources Conserv. and Assessmt		58	123.8		59	55	15	15	15	25	425	425	425	848				
Department of Defense																		
Advanced Research Projects Agency													224	751	842	1144.2	250.4	
Air Force	79.2			6.5	15.5	58.5	58.6	55	55	173.9	108.7	244.4	173.2	349.7	126.8	89	135.3	100
Army											247.9	248.5	580	282	282			
Navy	2031.6	1728	1903.2	1730	2106.6	2488.3	3378.2	3465.8	4037	1139	1084	2430	3907.2	3597.1	5438.9	4861.5	6384	11258.4
Strategic Environmental Research (SERDP)													2249	1894	852	2684.4	2120.1	1808
Department of Energy	20	25				70	70											
Department of Health and Human Services	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	361.2	?	?
Department of the Interior																		
Fish and Wildlife Service	1127.2	1221	1261.2	1007.7	936.1	1542.3	2349.4	2498.8	3367.6	3007.9	3648.5	3034	3052	169.4	182.1	161.2	213.7	578.2
Geological Survey	79.6	62.8	76	71													2151	1795
Minerals Management Service	3507.2	3830.8	4275.9	3595.9	3140.7	2698.3	1695.9	3025.4	5228.9	3462.9	3068.1	2712.8	1691	618	648	1026.9	1150	1349
National Biological Service														3088.7	2431.7	2118.9		
National Park Service	376.9	223	300.4	235		17.5	39.5	27	86.2	50	68	1300	621.8	84.1	6.4	30.7	444.4	185.5
Department of State	719.4	644.6	540.8	709.4	795.6	869.4	928.6	913.6	929.2	1148.5	1235.2	1488.9	1300.4	1669.5	1162.5	1012.1	993.3	1113.3
Department of Transportation														80	80	80	80	140
Environmental Protection Agency							8.5	8	175	100	227.2	119.2	158.9	142.6	85	1378.5		35
Marine Mammal Commission	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	13.1	43.5	15.3
National Aeronautics and Space Admin.	143.3				10	8.7	1.6	6.2	6	19.1	17.5	16.5	30	30	30	25.5	23.5	31
National Science Foundation	574.5	560.6	503	691.9	729.8	820.5	757.6	663.4	901.8	820.8	858.3	1039.7	549.6	316.9	1292	1054.1	1025	274.8
Smithsonian Institution	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	269.3	155	170.6
TOTAL	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	28,978.7	31,503.6	30,189.5	27,805.8	36,794.3

\* 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	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98
Hawaii	130 (2)	481.7 (4)	302.5 (3)	360.8 (3)	332.9 (4)	(1)	3+ (3)	1.5 (1)	429 (4)	487.6 (4)	747 (3)	1033.7 (6)	833 (3)	1504 (4)	1458.8 (2)	10 (5)	834.3 (4)
Alaska	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)	6105.2 (35)	7993.9 (39)	7571.2 (48)
Oregon/Washington	73.6 (4)	165.3 (4)	(1)	23.2 (1)	(3)		1524.2 (3)	1520.2 (2)	68.6 (2)	37 (3)			85 (2)	25 (6)	7 (5)	371.4 (5)	451.2 (6)
California	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)	2868.7 (11)	3548.1 (14)	2281.1 (14)	2531.9 (10)	2745.3 (12)	3326.4 (13)	1562.1 (18)	832.9 (17)
Gulf of Mexico	275.5 (3)	20 (1)	238.5 (3)	15 (1)	168.1 (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)	14 (1)		134 (2)
Florida	429.8 (8)	610.6 (12)	384.8 (6)	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)	779.4 (4)	1583.9 (9)	829.5 (6)	631.7 (10)	433.7 (14)
Mid-Atlantic States (GA, SC, NC, VA)	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)	327.4 (6)	2510.2 (9)	1665.6 (8)
NE Coastal States	170 (6)	145.2 (10)	141.3 (7)	311.1 (11)	642.8 (15)	141.6 (11)	334.5 (9)	438 (13)	661 (17)	2873.2 (26)	962.3 (13)	1513.9 (15)	1111.7 (15)	3430 (28)	2391.1 (33)	1005.9 (18)	1269.7 (4)

\* 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)

	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98
<b>Sirenia (Manatees and Dugong)</b>																	
Department of Agriculture															?	?	
Department of Commerce																	
Department of Defense														658.5	612		
Department of Energy																	
Dept. Health and Human Services																	
Department of the Interior	353	391.6	276.8	284.1	224	389.5	396.4	402.6	419.8	437.2	739.3	681	594.3	619.9	483.5	608.2	665
Department of State																	
Environmental Protection Agency																	
Marine Mammal Commission		2.5	4.5	1.5	5	2	41.4	36	0.8	4	4.5	18.2	2.5				3
NASA				10	8.7	1.6	6.2	6	19.1	17.5	16.5	30	30	30	25.5	23.5	20
National Science Foundation					94						50	52					
Smithsonian Institution																	
CATEGORY TOTAL	353	394.1	281.3	295.6	331.7	393.1	444	444.6	439.7	458.7	810.3	781.2	626.8	1306.4	1121	631.7	688
<b>Carnivora (Polar Bear and Sea Otter)</b>																	
Department of Agriculture																	
Department of Commerce				6.1	10										2		12
Department of Defense													149				
Department of Energy	25																
Dept. Health and Human Services																	
Department of the Interior	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	980.4	909	1359.2
Department of State																	
Environmental Protection Agency								75	50	80		40					
Marine Mammal Commission	5.6	31.8	67	33.3		2		7.5		3	14		19.2	6		2	
NASA																	
National Science Foundation				149.5		44	44	44		174.3	122.4	122.4					
Smithsonian Institution																	
CATEGORY TOTAL	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	982.4	911	1371.2
<b>Pinnipedia (Seals, Sea Lions, Walrus)</b>																	
Department of Agriculture																	
Department of Commerce	1081.4	1188.8	1269.4	1650.7	1169	49.8	221.1	35.8	1504.8	2447.7	4522.3	3700.7	3836.2	3978.2	5061.8	4618.2	4608.4
Department of Defense	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	480.1	466.8	391.2
Department of Energy					70	70											
Dept. Health and Human Services	38.4			67	51.8	162.2	143.9	259.5	227.5	178	72.1		161.2	45.4	66.4	?	?
Department of the Interior	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	572.7	121.7	685
Department of State													20	15			
Environmental Protection Agency									50	25			12.1	10			
Marine Mammal Commission	12	159.1	12.5	32.8	8.7	17	3.5	7	14.7	17	11.3	10	10	2.8			3.1
NASA																	
National Science Foundation	359.1	330.4	420.7	350.7	307.3	354.5	339.4	225	258.4	213.6	480.9	333.7	209.9	332	19.7	85	248.1
Smithsonian Institution	11.8	22.4	42.5	42.5	76.5	58						66.2		94.6	115		
CATEGORY TOTAL	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	6315.7	5291.5	5935.8

TABLE 5 (continued)

## TAXONOMIC SUMMARY OF FEDERALLY-FUNDED MARINE MAMMAL RESEARCH

	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98
<b>Cetacea (Whales and Porpoises)</b>																	
Department of Agriculture															?	?	?
Department of Commerce	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	3022.9	3996.1	8461.7
Department of Defense	1355	1522.3	1218	1566.2	1973.5	2532.1	2565.9	2660	1139	1064	2300	3017.1	4148.8	4222.8	6011.6	3985.9	5986.7
Department of Energy																	
Dept. Health and Human Services	229.9	146.9	162.4	22.4			84.7	86.5	97.3	108.9			221	743.1	294.8	?	?
Department of the Interior	2580.9	1905.8	2354.2	2888.6	1688.6	932.1	1372.7	2193.5	2456.2	1760.2	2517.8	565	638	495	540.7	1207.3	905.5
Department of State	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	1012.1	993.3	1113.3
Department of Transportation													80	80	80	80	140
Environmental Protection Agency								100	50	97.2	94.2	118.9	130.5	5	150		
Marine Mammal Commission	28	5	63	74	39.8	301.2	27.7	4.5	23	30.3	61.4	44	14.3	21.8	6.6	21	2
NASA																	9
National Science Foundation	158.3	162.6	221.3	101.1	43	200	200	510.8	444	403.7	324.9	41.5	107	299	247	257	26.7
Smithsonian Institution																	
<b>CATEGORY TOTAL</b>	<b>7300.9</b>	<b>6320</b>	<b>7150</b>	<b>7988.6</b>	<b>7539.9</b>	<b>7261.4</b>	<b>7419.6</b>	<b>9186.9</b>	<b>8467.5</b>	<b>8041.1</b>	<b>14302.3</b>	<b>12175</b>	<b>13668.3</b>	<b>14079.3</b>	<b>11365.7</b>	<b>10540.6</b>	<b>16644.9</b>
<b>Mixed Species or General Studies</b>																	
Department of Agriculture															?	?	?
Department of Commerce	635.4	1042.6	551.5	1050.8	776.2	2566.4	1668.5	2075.3	2565.8	6606.9	4939	4321.4	4659.3	5839.3	6109.1	2690.4	4758.1
Department of Defense	323	318	450	326	340	560.6	690	930		247.9	438.5	3368.4	1284.3	1871	1957.4	4417.3	6888.5
Department of Energy																	
Dept. Health and Human Services	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	1091.7	2200.6	624.4	740.4	842.9	279.9	1560	2987.4	746.8	1089.2	213.4	1222.8	1268.5	442.3	693.8	1678.9	293
Department of State					9.4	7.3	2.3	3.1	1.8	1.2				15			
Environmental Protection Agency														75	75		35
Marine Mammal Commission	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	6.5	20.5	7.2
NASA																	2
National Science Foundation	43.2	10	49.9	128.5	176.2	159.1	80	122	118.5	66.5	61.5			521	680.4	683	
Smithsonian Institution	137	148	165	170	146	154	150	161.2	165	169	144.4	115.9	144.2	144	154.3	155	170.6
<b>CATEGORY TOTAL</b>	<b>2899.7</b>	<b>4263.2</b>	<b>2459.1</b>	<b>3445.2</b>	<b>3122.5</b>	<b>4347.6</b>	<b>5041.3</b>	<b>7661.1</b>	<b>4748.6</b>	<b>9258.1</b>	<b>6461.3</b>	<b>9107.2</b>	<b>7670.5</b>	<b>8922.6</b>	<b>11676.5</b>	<b>9645.1</b>	<b>12154.4</b>

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

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

SPECIAL RESEARCH ISSUE	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FUNDING AGENCY †	LINE TOTAL
<b>Tuna/Porpoise:</b>																			
Population Assessment	462	570	507.3	485.8	606.5	1079.9	1002	1025.4	919.2	554.2	1038.8	1020.1	362.3	229.7	228.4	92.2	3699.5	NMFS	13681.1
	4			1.8	1.3													MMC	7.1
	609.2	673.9	673.9	762	853	914.3	911.1	916.8	1138.4	1225.8	1443.9	1238.6	1537.9	1070	1000.2	979.1	1091	DOS	17039
Mortality Reduction	30	30.9									1351.4	475.7	450	450	237.5	237.2	228.3	NMFS	3491
											17							MMC	17
Assessment of Taking	320.7	225	181.8	179.3	134.7	185.1	185.1											NMFS	1411.7
Biology	318.3	331	296.5	319.2	288.8	303.5	381.8	360.1	592.7	902.8	245	357	269.4	405.5	465.2	325.8	322.8	NMFS	6485
<b>International Whaling Commission:</b>																			
Assessment of Stocks and Taking		700	858	815	753								74.5	184			69.9	NMFS	3452.4
				16.1				3				8				21		MMC	48.1
										49								NSF	49
	35.4	35.3	35.5	33.8	7	6		9.3	8.3	8.2	45	61.9	111.6	62.5	11.9	14.2	22.3	DOS	507
<b>Marine Mammal/Fisheries Conflicts:</b>																			
Southern Ocean Krill	10		49.2															MMC	59.2
Fin Fish/Pinniped Interactions	30	39.2	79.6	44.6	21.4													NSGCP	214.8
	10									5.5	3	5						MMC	23.5
	309.3	226.4	221.1	701	365.4		801.8	772.9	1255.7	2600.8	1817.3	1331.1	1508.3	592.7	1495	1969.8	1502.6	NMFS	17271.2
Fisheries/Sea Otter Interactions		31		6.1														NSGCP	6.1
						142.5	253.9	242.6	36.9	322.9	204.6	207.3	157	157	132			NBS/FWS	1887.7
																132		USGS	132
					10													OCRM	10
														3				MMC	3
Fin Fish/Cetacean Interactions	10																	NPFMC	10
	5		14.1		3													MMC	22.9
								68	718.8	337	635.6	231	344.9	615		505.5		NMFS	3355.7
														25				OCRM	25
Incidental Taking	10	12	64.9	28.8	11	4				16				5				MMC	149.7
	23		14.8	65	121.3	78.5	165.6		25	3007	1497.7	787.2	1167	1449	1402.4	194.7	798.1	NMFS	10782.3
			5															NPFMC	5
				20														NOPPO	20
																98.4		NSGCP	98.4
<b>Effects of OIVGae Development and Chemicals on Marine Mammals:</b>																			
Physiological Studies	1390.3	2485.5	1650.1		221.9		65.5	134.7										MMS	5948
								75	100	195	25	73.9						EPA	468.9
										425	425	425	425					ORCA	1700
														50				NMFS	50
Risk Analysis	184.4	51.8	617.6	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	109.2			FWS/NBS	3417.8
								30	50									NPS	80
									678.3	32	438.6	409	743	425	441.4			NMFS	3187.3
													423					ORCA	423
															2.4			OCRM	2.4
																75		USGS	75
																		NSGCP	157.6
																		EPA	1303.5



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

SPECIAL RESEARCH ISSUE	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FUNDING AGENCY	LINE TOTAL	
<b>Pilot Whales:</b>																				
Population Assessment						10.4												MMC	10.4	
									45	10								NMFS	55	
Biology										10	12.3							NMFS	22.3	
<b>Beluga:</b>																				
Population Assessment				4.6		0.2			84	79.6						27.7		MMS	191.3	
										25	184	275.5	172.8	185	205	405	205	MMC	5	
																		NMFS	1657.3	
Biology	134	130.3			224	250							171.7	387.4	115	5		MMS	264.3	
	102	100	182.5	219						54.6	57.1		107	209	146	108		Navy	1736.6	
																		NSF	679.7	
<b>Harbor Porpoise:</b>																				
Population Assessment	30	9.6	1			7	33	67	181	270	327	553.5	353	531.5	239.5	324.9	67	NMFS	3015	
		4			9	30												OCRM	43	
					10	5.8												MMC	15.8	
							5											NPS	5	
											24	12						NSGCP	36	
Biology										3								MMC	3	
												107.5	21.1					Navy	128.6	
															9			NMFS	9	
<b>Dall's Porpoise:</b>																				
Population Assessment	228	165	195	127.8	117		285	327	553.6	977								NMFS	2945.2	
<b>Bottlenose Dolphin:</b>																				
Population Assessment			15	4.5	13.5				1		3.5	5					1	MMC	43.6	
	248.3	236.5	246.5	292.9	177.7	208.8	62	137	172	31.9	105	65	750	845			722.1	NMFS	4302.7	
							8	100			23	10	55.5	5				EPA	201.5	
												66.3	82.7	82.7				NSGCP	251.7	
																		NASA	9	
																		NPS	9.5	
Biology	1074	1310	975.5	1130	1305.5	1848.1	1805.9	2318	677	864	525	676.5	785.5	1504.2	974.8	870.8	633.5	Navy	19078.4	
							84.7	86.5	97.3	108.9					35.4			DMHS	412.8	
	48.9	56.5	221.3	57.4	6.9				9.1	99.9	187.8				18	151	16.7	NSF	853.5	
	4						15.5		10.8									MMC	30.1	
		13.5					100	2		35	250			20			30.8	NMFS	451.3	
<b>Northern Fur Seal:</b>																				
Population Assessment	263.3	237.4	309.5	274.4	259.9	5	5.5		5.5	5.5	6	7	9	95	23.7	24.1	24.3	NMFS	1555.1	
		4.1																MMC	4.1	
Biology	285.4	237.4	309.5	274.4	252.5													74	NMFS	1441.2
			1.5																MMC	1.5
					7														OCRM	7
				112						15									MMS	127
															138				NSF	138
<b>Antarctic Seals:</b>																				
Population Studies	68.4	39.9	49.9	41.8			54.3						35	140		119		NSF	548.3	
							180	291	326.8	335	415	445	393.1	347	200				NMFS	3039.7
													20						DOS	20
Biology	168.5	179	292.9	159.7	231	311.2	242.5	225	115.5	51.4	377.2	333.7	174.9	6	8.8		234.6	NSF	3111.9	
									2								2		MMC	4
															1200				NMFS	1200

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

SPECIAL RESEARCH ISSUE	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FUNDING AGENCY	LINE TOTAL	
<b>Arctic Seals:</b>																				
Population Studies			65.7			88				10					366	9.7	340	MMS	871.4	
																		NPS	10	
																37.3	42.5	NSGCP	79.8	
																		NMFS	106.8	
Biology				19.9	3.5													MMC	23.4	
	157		292	60	75	250				144	25							MMS	1003	
				38.2						102.5	98.7							NSF	239.5	
		75.5																NMFS	75.5	
					70	70												DOE	140	
															172.3			Navy	172.3	
<b>Hawaiian Monk Seal:</b>																				
Population Assessment	28	15																FWS	43	
	102	311.7	300	340.6	326.4				417.9	447.6	731.2	717	519	1109	1450		789.3	NMFS	7541.7	
									3.7									MMC	3.7	
																30	8.8	Navy	38.8	
																		NPS	5	
Biology		150																MMC	150	
					2.5	18												SI	20.6	
									15	14.3	33.7							NSGCP	63	
									20									Army	20	
<b>Gray Seal:</b>																				
Population Studies		1.4																		
															30		23.9	NMFS	55.3	
														0.8				MMC	0.8	
<b>Harbor Seal:</b>																				
Population Studies				5.7	0.5	14			5	4					2					
			3.5					15		1.2	237				2	2	50	35	MMC	30.7
																			NPS	382.3
																			NSGCP	12.1
	20		0.7	1.3	29.2		29	33	33						20	590.3	702.3	838.4	NMFS	2698.6
			0.5	0.5	0.5														USAF	2
																			OCRM	19
Biology			7																MMC	7
																			Navy	66.3
		23.8				3.8					500	450	66.3		475				NMFS	1896.1
	15			39.4	12	14													OCRM	80.4
		2.5																	NSGCP	26.8
	50	20																	OMA	70
<b>Northern Elephant Seal:</b>																				
Population Studies			16		1	1														
											170	120				7	37	30	OCRM	18
																			NPS	394
																			EPA	12.1
Biology	45	51	61	65		43.3	42.8		142.9							10.9		13.6	NSF	465.2
	12				1.2	3			2										MMC	16.2
	38.4			45	39.8	149.3	131.7	30	63.4	70.3				52	45.4	53.2			DHHS	718.5
						20	25		57.5	27.5	25								MMS	165
																			Navy	968.3
														406.5	298.2	120	122.8	20.8	EPA	10
<b>California Sea Lion:</b>																				
Population Studies			15	15																
			3.5																	
																			OCRM	30
																			NPS	3.5
																			DHHS	13.2
Biology			124	164.4	174.8	285.5	209.9	447												
	11.8	22.4	42.5	42.5	30														Navy	1661.4
																			SI	149.2
																			OCRM	8

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

SPECIAL RESEARCH ISSUE	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94*	FY95	FY96	FY97	FY98	FUNDING AGENCY	LINE TOTAL
<b>Steller Sea Lion:</b>																			
Population Studies											<u>191.3</u>	<u>101</u>			<u>779.4</u>	<u>1580.4</u>	<u>1407</u>	NMFS	4059.1
		11.5																NPFMC	11.5
		5		6.8						2.5								MMC	14.3
										1.2	2		<u>15.5</u>			20	20	NPS	58.7
											24.6	20.4						NSGCP	45
Biology											689.9	712.5	750	591	895.3	304.3		NMFS	3943
<b>Walrus:</b>																			
Population Studies	<u>50</u>	<u>50</u>	<u>53.9</u>			94.7	201.6	201.1	146.2	195.4	183.6	166.6	163.9					FWS	1676
	150.1	25	19.6															MMS	104.7
					4				7		5	5						MMC	21
Biology													2					USGS	62
	77.2	60.5	66.8	15											188	5		MMC	2
									<u>38.6</u>									NSF	412.5
															189	120	20	MMS	38.6
																		NBS.USGS	309
<b>Manatees and Dugong:</b>																			
Population Studies	<u>150</u>	<u>100</u>	<u>211.8</u>	<u>142</u>	<u>112</u>	97	50.5	16.4			22.9					47.2	186	FWS	1137.8
				10	5.2	1.6	6.2	6	13.9	10	10	23.5	23.5	23.5	25.5	23.5	20	NASA	202.4
			4.6			2	16.5	35			3.3	12.5					3	MMC	76.6
																		USGS	231
Biology	<u>173</u>	<u>281.8</u>	<u>20</u>	<u>142</u>	<u>112</u>	275	345.9	368	419.8	437.2	716.4	681	694.3	619.9	483.5	152	2	FWS/NBS	5834.6
																409	234	USGS	643
				1.5	5		17.9	1			145.2				282	282		Army	709.2
					3.5						4		5.7					MMC	35.1
									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	330		Navy	704.5
<b>Polar Bear:</b>																			
Population Studies	<u>80</u>	<u>73.7</u>	<u>80.9</u>	135.8	174.9	602.2	692.9	690.6	673.8	638.5	605.9	657.5	465	423	374.4			FWS/NBS	6394.1
																343	355	USGS	698
																		MMC	33.2
Biology	<u>140</u>	<u>100</u>	<u>80.9</u>	125.1	437	85	168.1	135.4	126.8	122.3	112.2	121.8	133	257.8	276	2		FWS/NBS	2429.2
<b>Sea Otter:</b>																			
Population Studies	<u>100</u>	<u>185.2</u>	<u>120</u>	<u>144.8</u>	85	527.7	572.8	560.9	210.4	24.1	15.3	43	124	45	6.5	115.5		FWS/NBS	2890.2
																329	598.5	USGS	927.5
		770.8	66.1	249.6	96													MMS	1202.5
											360	360						NPS	720
														3				MMC	3
Biology	5.6	8.9	35.1	1.9		2				3						9.1	7	OCRM	16.1
	25																	MMC	56.5
	470	<u>403.9</u>	<u>196.8</u>	<u>190.7</u>	<u>396.9</u>	775.5	258.5	470	395.3	702.5	690.3	543.7	403	409	429	8	70.7	FWS/NBS	6813.8
																105	194.5	USGS	299.5
				149.5		44	44	44		174.3	122.4	122.4						NSF	700.8
					2		4											NPS	6
	124		463.2				90.7	<u>16</u>	83.9	6.8								MMS	784.8
													149					USAF	149
															2	5.3	6	OCRM	12.3

\* 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.

† See page vii for clarification of acronyms

## **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 FY78 through FY98 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)

Department of Commerce (NMFS)	AUTHORIZED	REQUESTED	APPROPRIATED
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
FY96	33128	34860	21686
FY97	33653	26091	21444
FY98	34200	21769	26269
<b>Department of the Interior (FWS, NBS, USGS)</b>			
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**

<b>Department of the Interior (cont.)</b>	<b>AUTHORIZED</b>	<b>REQUESTED</b>	<b>APPROPRIATED</b>
FY91	3240	3236	3236
FY92	3370	3632	3632
FY93	3500	3763	3763
FY94	8000	4742	4742
FY95	8600	4094	4094
FY96	9000	3891	3891
FY97	9400	4132	4132
FY98	9900	3428	3428
<hr/>			
<b>Marine Mammal Commission (MMC)</b>			
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	1384
FY96	1600	1425	1190
FY97	1650	1334	1190
FY98	1700	1384	1185

Note: Figures on this table reflect administrative and enforcement costs as well as research costs. In August 1997 for the Department of the Interior (FWS & USGS), data were corrected beginning with FY91 to include management (i.e., administrative), enforcement, and permit activities as well as research costs. The figures for FWS & USGS 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.

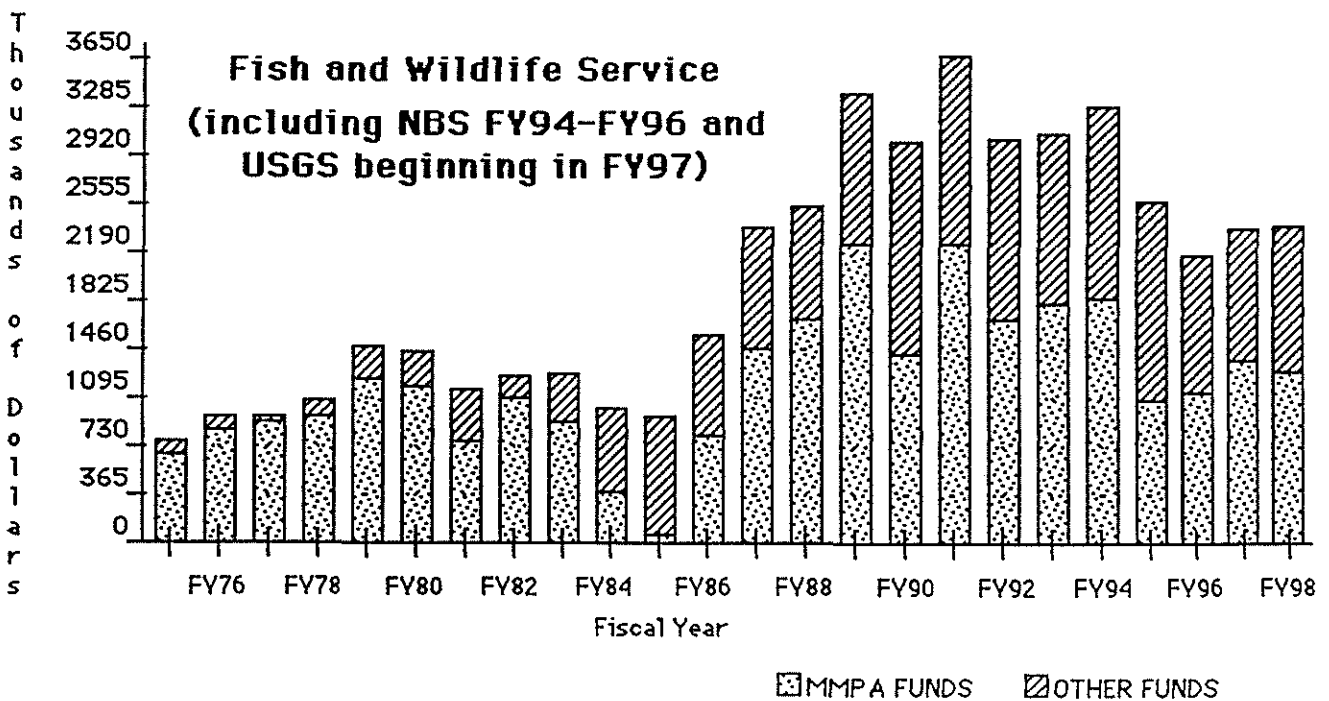
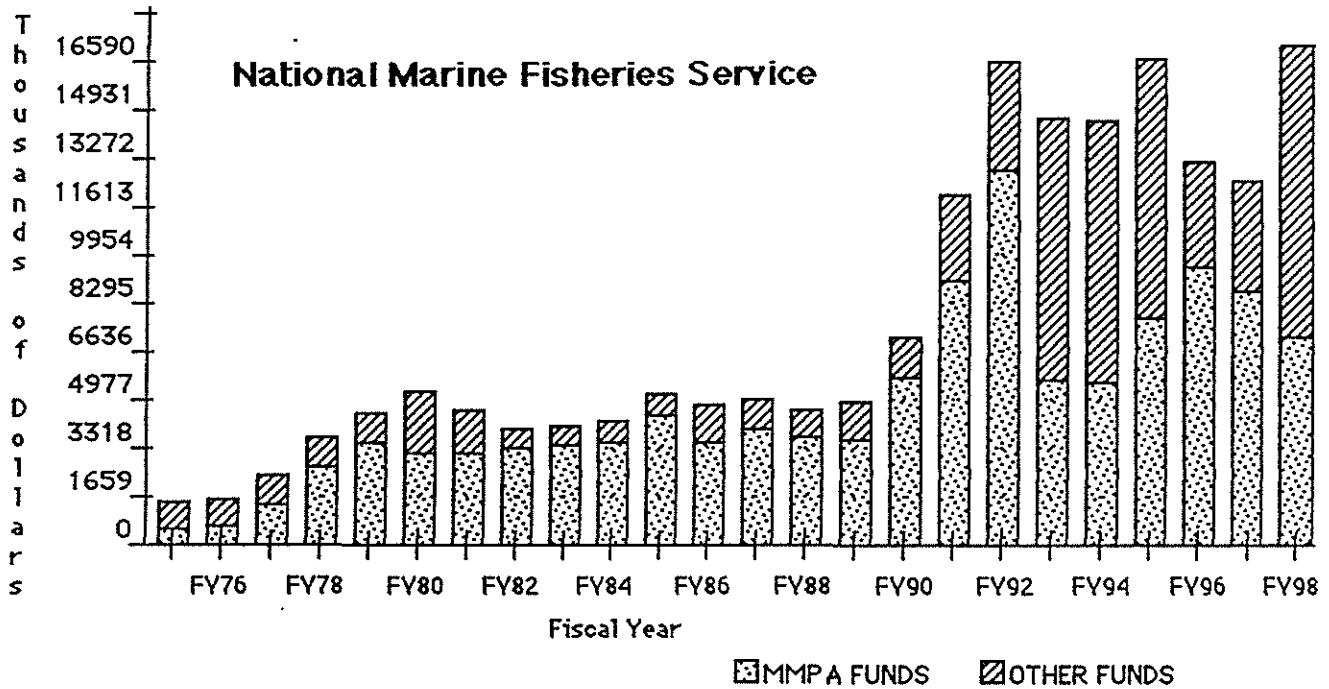
TABLE 8  
**FUNDS EXPENDED ON MARINE MAMMAL RESEARCH  
 OTHER THAN THOSE APPROPRIATED UNDER AUTHORITY OF THE  
 MARINE MAMMAL PROTECTION ACT**  
 (Thousands of Dollars)

	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	
<b>Department of Commerce, NOAA</b>																					
<b>National Marine Fisheries Service</b>																					
Fur Seal Act Authorization	595	595	595	595	595	619	620	654	654	477	368	448									
Reprogramming and Reserves																					
Endangered Species Act Appropriation	294	1428	775					500	250	350	799	803	2899	3609	8821	8812	8430	3474	3770	9710	
<b>NMFS TOTAL</b>	<b>889</b>	<b>2023</b>	<b>1370</b>	<b>595</b>	<b>595</b>	<b>619</b>	<b>620</b>	<b>1154</b>	<b>904</b>	<b>827</b>	<b>1167</b>	<b>1251</b>	<b>2899</b>	<b>3609</b>	<b>8821</b>	<b>8812</b>	<b>8430</b>	<b>3474</b>	<b>3770</b>	<b>9710</b>	
<b>Department of the Interior</b>																					
<b>Fish and Wildlife Service,</b>																					
<b>National Biological Service (re FY94-96) and</b>																					
<b>U.S. Geological Survey (re FY97-present)</b>																					
FWS/NBS Appropriation		82.2															298	298			
Endangered Species Act Appropriation	213.1	162	362.9	123	348	614	879	736.3	891	825	1125	1170	1398	1348	1253	1050	1050	872	945	1037	
National Wildlife Refuge System Administration Act Appropriation				11	5																
Oil Spill Damage Assessment												414				63					
<b>FWS/NBS/USGS TOTAL</b>	<b>213.1</b>	<b>244.2</b>	<b>362.9</b>	<b>134</b>	<b>353</b>	<b>614</b>	<b>879</b>	<b>736.3</b>	<b>891</b>	<b>825</b>	<b>1125</b>	<b>1584</b>	<b>1398</b>	<b>1348</b>	<b>1253</b>	<b>1411</b>	<b>1348</b>	<b>872</b>	<b>945</b>	<b>1037</b>	

FIGURE 2

**FUNDS EXPENDED ON MARINE MAMMAL RESEARCH  
BY THE NATIONAL MARINE FISHERIES SERVICE AND THE  
FISH AND WILDLIFE SERVICE, FY75-FY98\***

(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 FISH AND WILDLIFE SERVICE, FY78-FY98\*

## National Marine Fisheries Service\*\*

	FY78	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98
Administrative	8	88.5		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	9.5	20.3	70.1
Research	20	48.9		60.7	61.2	42.7	78.3	75.8	76.3	63.5	67.3	70.2	80.5	98.4	134.8	131.2	125.3	120.1	51	66.5	92.1
NMFS Total	28	135.4	166.1	94.2	88.3	58.7	98.2	98.8	98.1	75.3	89.6	93.3	118.8	150.1	193.5	184.5	185	178.6	60.5	86.8	162.2

## Fish and Wildlife Service (incl. National Biological Service FY94-FY96 and U.S. Geological Survey FY97-present) \*\*\*

	FY78	FY79	FY80	FY81	FY82	FY83	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98
Administrative	17.1	20.3	24.8	23.3	21.5	6	18.1	21.1	19.6	13.5	13.5	13.5	13.5	19.5	19.5	19.5	17.5	17.5	22.5	23.5	32.3
Research	13.2	17.2	17.4	17.8	16.5	18	17.6	17.8	16.5	27.7	29.1	31.4	29.8	37.3	30.2	28.1	29	29	21.3	18.6	29.3
FWS Total	30.3	37.5	42	41.1	38	22	35.7	38.9	36.1	41.2	42.6	44.9	43.3	56.8	49.7	47.6	46.5	46.5	43.8	42.1	61.6

\* Figures provided by the agencies.

\*\* The National Marine Fisheries Service has periodically 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  
 Conservation Biology  
 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  
 Marine Mammal Science  
 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  
 U. S. Department of the Interior, National Biological Service:  
 a) Information and Technology Reports  
 b) Our Living Resources Report  
 Veterinary Clinical Pathology  
 Wildlife Society Bulletin  
 Zoomorphology

**Geological Survey**

A variety of scientific journals, bulletins, and proceedings, including:  
 Alaska Dept. Fish, Game, and Wildlife Technical Bulletins  
 Arctic  
 Audubon Wildlife Report  
 Canadian Journal of Zoology  
 Charleston Museum Publications  
 Ecological Applications  
 Ecology  
 Endangered Species Bulletin  
 Journal of Wildlife Management  
 Marine Mammal Science  
 Society for Marine Mammalogy, Special Publications  
 Smithsonian Institution Contributions to Paleontology  
 Systematic Zoology  
 U. S. Geological Survey: a) Information and Technology Reports b) Our Living Resources  
 Veterinary and Human Toxicology

**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 (also...to Paleontology...to Zoology)  
 Systematic Zoology

## **APPENDIX B**

### **LISTING OF MARINE MAMMAL RESEARCH AND STUDY PROJECTS, PRINCIPAL INVESTIGATORS, AND FUNDING LEVEL FOR FY90-FY98\***

**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 AgricultureFY90-FY95

(No projects)

FY96

Gilbert, J. R. (Univ. Maine) Role of Harbor and Grey Seals in the Coastal Gulf of Maine Ecosystem (ME08660)	\$-?
Mate, B. R. (Oregon State Univ.) Whale Behavior and Habitat Assessment from Satellite-Monitored Radio Tags (OR00914)	\$-?
Reep, R. L. (Univ. Florida) Comparative Organization of Mammalian Cerebral Cortex (includes manatee) (FLAV-CO-00173)	\$-?

FY97

Altman, N. S. (Cornell Univ.) Semiparametric Techniques for Time and Spatially Related Data (NYC-151410)	\$-?
Gilbert, J. R. (Univ. Maine) Role of Harbor and Grey Seals in the Coastal Gulf of Maine Ecosystem (ME08660)	\$-?
Mate, B. R. (Oregon State Univ.) Whale Behavior and Habitat Assessment from Satellite-Monitored Radio Tags (ORE-00914)	\$-?
Reep, R. L. (Univ. Florida) Comparative Organization of Mammalian Cerebral Cortex (includes manatee) (FLAV-CO-00173)	\$-?
Comparative Organization and Evolution of Mammalian Brain and Behavior (FLAV-CO-00200)	\$-?

FY98

Gilbert, J. R. (Univ. Maine) Role of Harbor and Grey Seals in the Coastal Gulf of Maine Ecosystem (ME08660)	\$-?
Mate, B. R. (Oregon State Univ.) Whale Behavior and Habitat Assessment from Satellite-Monitored Radio Tags (ORE-00914)	\$-?

Reep, R. L. (Univ. Florida)  
 Comparative Organization and Evolution of Mammalian Brain  
 and Behavior (FLAV-CO-00200) \$-?

**Department of Commerce**

**1. National Marine Fisheries Service**

**A. Alaska Fisheries Science Center**

FY90

Bengtson, J. (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. (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. (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. (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

FY94

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

FY95

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

FY96

Bengtson, J. L. (NMML) Antarctic Ecosystem Program (AKC NM03)	\$200K
Braham, H. W. (NMML) Program Management Support (AKC NM01)	\$644K
Marine Mammal Assessment Program (AKC NM08)	\$1613K
DeLong, R. L. (NMML) California Current Ecosystem Program (AKC NM05)	\$368K
DeMaster, D. P. (NMML) Arctic Ecosystem and Oceanography Program (AKC NM04)	\$543K
Fowler, C. W. (NMML) Ecosystem and Population Assessment Program (AKC NM06)	\$161K
Loughlin, T. R. (NMML) Alaska Ecosystem Program (AKC NM02)	\$297K
Steller Sea Lion Program (AKC NM09)	\$591K

FY97

Bengtson, J. L. (NMML) Polar Ecosystem Program (FS6442)	\$209.4K
Braham, H. W. (NMML) Program Management Support (FS6440)	\$604.8K
DeLong, R. L. (NMML) California Current Ecosystem Program (FS6444)	\$766.9K
DeMaster, D. P. (NMML) Cetacean Assessment and Ecology Program (FS6443)	\$556K
Fowler, C. W. (NMML) Ecosystem Ecology and Assessment Program (FS6445)	\$252.9K

Loughlin, T. R. (NMML)  
Alaska Ecosystem Program (FS6441) \$1152.9K

FY98

Bengtston, J. L. (NMML)  
Polar Ecosystem Program (FS6442) \$213.6K

DeLong, R. L. (NMML)  
California Current Ecosystem Program (FS6444) \$361.2K

DeMaster, D. P. (NMML)  
Program Management Support (FS6440) \$304.5K

Fowler, C. W. (NMML)  
Ecosystem Ecology and Assessment Program (FS6645) \$236.3K

Loughlin, T. R. (NMML)  
Alaska Ecosystem Program (FS6441) \$830.1K

Moore, S. E. (NMML)  
Cetacean Assessment and Ecology Program (FS6443) \$505.5K

**B. Alaska Regional Office**FY90

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

FY91

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

FY92

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) Investigate the 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) 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

FY96

Alaska Beluga Whale Committee Beluga Whale Research	\$190K
Alaska Eskimo Whaling Commission Cooperative Agreement to Manage the Bowhead Harvest and Conduct Research	\$315K
Calkins, D. (Alaska Dept. Fish and Game) Cooperative Agreement to Conduct Research on Steller Sea Lions	\$739.5K
Finau, G. (Bureau of Indian Affairs) Alaska Native Cooperative Management Plans	\$26.3K
Lowry, L. and J. Lewis (Alaska Dept. Fish and Game) Investigations of Harbor Seals in Alaska	\$460.3K
Merklein, M. Cook Inlet and Southeast Alaska Observer Feasibility Program	\$24.8K
Morris, R. Cook Inlet Beluga Harvest Monitoring and Tissue Sampling	\$15K
Riedel, M. (Rural Alaska Community Action Program) Support of Alaska Native Harbor Seal Commission	\$5K
Spraker, T. (Colorado State University) Humane Observer Studies of the Northern Fur Seal Subsistence Harvest	\$4.5K
Trites, A. (North Pacific Universities Marine Mammal Consortium) Research into the Causes of the Steller Sea Lion Decline in the North Pacific	\$304.3K
Wolfe, R. (Alaska Dept. Fish and Game) Alaska Native Marine Mammal Subsistence Study	\$226.5K
Alaska Native Harbor Seal Tissue Sampling	\$40K
Subsistence Seal and Sea Lion Research -- Bering Sea North of Cape Newenham	\$188.6K

Williams, M. (St. George Island) Alaska Native Subsistence -- Steller Sea Lion Tissue Sampling and Take Reduction Project	\$39.9K
Saint George Fur Seal Subsistence Harvest	\$16.7K
Zacharof, N. D. (Aleut Community of St. Paul) Provide Assistance in the Collection of 1995/1996 Subsistence Harvest Data	\$2.5K
<u>FY97</u>	
Ahmaogak, M. (Alaska Eskimo Whaling Commission) Cooperative Agreement to Manage the Bowhead Harvest and Conduct Research	\$315K
Alaska Beluga Whale Committee Beluga Whale Research	\$190K
Albert, T. (North Slope Borough) Alaska/Chukotka (Russia) Bowhead Whale Research	\$97.6K
Calkins, D. (Alaska Dept. Fish and Game) Cooperative Agreement to Conduct Research on Steller Sea Lions	\$750K
Car, D. (North Slope Borough) Grant to Alaska Beluga Whale Committee	\$190K
Finau, G. (Bureau of Indian Affairs) Alaska Native Cooperative Management Plans	\$20K
Lowry, L. and B. Small (Alaska Dept. Fish and Game) Investigations of Harbor Seals in Alaska	\$506K
Mahoney, B. (Cook Inlet Marine Mammal Commission) Cook Inlet Beluga Harvest Monitoring and Tissue Sampling	\$10K
Morris, R. Cook Inlet Beluga Harvest Monitoring and Tissue Sampling	\$15K
Pitcher, K. (Alaska Dept. Fish and Game) Cooperative Agreement to Conduct Research on Steller Sea Lions	\$739.5K
Reidel, M. (Alaska Native Harbor Seal Commission) Support of Alaska Native Harbor Seal Commission	\$97.6K
Spraker, T. (Colorado State University) Humane Observer Program	\$4.9K
Trites, A. (North Pacific Universities Marine Mammal Consortium) Research Into the Causes of the Steller Sea Lion Decline	\$304.3K
Williams, M. (St. George Island) Alaska Native Subsistence--Steller Sea Lion Tissue Sampling and Take Reduction Projects	\$39.9K

St. George Fur Seal Subsistence Harvest	\$16.7K
Wolfe, R. (Alaska Dept. Fish and Game) Subsistence Harbor Seal and Steller Sea Lion Research, Bering Sea North of Cape Newenham	\$102K
Alaska Native Marine Mammal Subsistence Study	\$317.2K
Zacharof, N. D. (Aleut Community of St. Paul) Provide Assistance in the Collection of 1997-1998 Subsistence Harvest Data	\$2.5K
<u>FY98</u>	
Ahmaogak, M. (Alaska Eskimo Whaling Commission) Cooperative Agreement with the Alaska Eskimo Whaling Commission to Manage the Bowhead Whale Harvest and Conduct Research	\$385K
Car, D. (North Slope Borough) Grant to Alaska Beluga Whale Commission (beluga whale research)	\$190K
Finau, G. Alaska Native Cooperative Management Plans (subsistence species)	\$50K
Mahoney, B. (Cook Inlet Marine Mammal Commission) Cook Inlet Beluga Harvest Monitoring and Tissue Sampling	\$10K
Pitcher, K. (Alaska Dept. Fish and Game) Cooperative Agreement for Steller Sea Lions	\$739.5K
Small, B. (Alaska Dept. Fish and Game) Harbor Seal Research	\$506K
Spraker, T. (Colorado State Univ.) Humane Observer Studies (northern fur seal)	\$5K
Sundseth, K. St. George Fur Seal Harvest (northern fur seal)	\$16.8K
Tribal Government of St. Paul Standing Response for Disentanglement (northern fur seal)	\$1.5K
Trites, A. (North Pacific Universities Marine Mammal Consortium) Research into the Causes of the Steller Seal Lion Decline	\$304.3K
Wolfe, R. (Alaska Dept. Fish and Game) Alaska Native Marine Mammal Subsistence Study (harbor seal, Steller sea lion)	\$317.2K
Subsistence Seal and Steller Sea Lion Research North of Cape Newenham	\$237K
Zacharof, N. D. (Aleut Community of St. Paul) Northern Fur Seal Subsistence Data Collection	\$2.5K

Zimmerman/Ragen (NMFS/PSMFC)  
Recovery Program Research Peer Review (Steller sea lion) \$86.1K

**C. Northeast Fisheries Science Center**

FY90

Brault, S. (National Research Council)  
Pilot Whale Population Dynamics (OP.4) \$45K

Finn, J. (Univ. Massachusetts)  
North American Right Whale Program:  
Population Dynamics (OP.1.4) \$18K

Katona, S. (College of the Atlantic)  
Humpback Whale Individual Identification (OP.3.2) \$23K

Kraus, S. (New England Aquarium)  
North American Right Whale Program:  
Individual Identification (OP.1.3) \$79K

Mayo, C. A. (Center for Coastal Studies)  
Distribution and Habitat Usage of Large Cetaceans (OP.3.1) \$41K

North American Right Whale Program:  
Habitat Requirements (OP.1.2) \$33K

Nicolas, J. (NEFSC)  
Marine Mammal Biological Sampling (ER.2) \$23K

Payne, P. M. (Manomet Bird Observatory)  
Fishery Resource and Marine Mammal Sighting Surveys (ER.1.1) \$46K

Polacheck, T. (NEFSC)  
Harbor Porpoise Program: Sighting Survey (OP.2.2) \$75K

Polacheck, T. and D. Potter (NEFSC)  
Harbor Porpoise Program: Sighting Survey Methods (OP.2.2) \$49K

Smith, T. D. (NEFSC)  
Marine Mammal By-Catch Estimation (HI.2) \$25K

North American Right Whale Program (OP.1) \$12K

Harbor Porpoise Program (OP.2) \$25K

North Atlantic Humpback Whale Program (OP.3) \$6K

Waring, G. T. (NEFSC)  
Predation and Spatial Co-Occurrence (ER.1) \$49K

Cetacean Habitat Survey (ER.1.2) \$19K

Winn, H. and R. Kenney (Univ. Rhode Island)  
North American Right Whale Program: Sighting Data and Habitat Use (OP.1.1) \$93K



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
<u>FY94</u>	
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., Harrisburg) 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	\$252K
Winn, H. (Univ. Rhode Island) Report on State-of-the-Art Acoustic Studies of Cetaceans (40-ENNF-500255)	\$8K
<u>FY96</u>	
Gilbert, J. (Univ. Maine) Harbor Seal Distribution and Abundance	\$55K
Hain, J. (NEFSC) MMPA Right Whale Studies	\$149K
Right Whale Photo-Identification Catalog	\$90K
ESA Implementation of Right Whale Recovery Plan	\$20K
MMPA - Vital Rates Modeling of No. Atlantic Right Whale	\$51K
Humpback Whale Photo-Identification Catalog	\$40K
MMPA Humpback Whale Photo-ID Scanning System	\$40K
Katona, S. (College of the Atlantic) Maintain No. Atlantic Humpback Whale Catalog	\$36.1K
Photo Scanning (50EANF500092)	\$36.1K
Kenney, R. (Univ. Rhode Island) Right Whale Computer Database (NA37FE0434-03; NA17FE0415-03)	\$39.1K
Kraus, S. (New England Aquarium) Right Whale Photo-ID Catalog (50EANF400093)	\$40.8K
Kraus, S., S. Brault, and H. Caswell (New England Aquarium) Population Model (50EANF00093)	\$103.4K
Kraus, S. and M. Brown (New England Aquarium) Genetics (50EANF00093)	\$45.9K
Kraus, S. and F. T. Korsmeyer (New England Aquarium) Ship Strike Modeling (50EANF00093)	\$18.3K
Kraus, S. and C. Mayo (New England Aquarium) Cape Cod Bays Habitat (50EANF00093)	\$51K
Kraus, S. and A. Read (New England Aquarium) Satellite Tagging (50EANF00093)	\$41.8K

Nicolas, J. and K. Bisack (NEFSC)	
Harbor Porpoise Bycatch and Biology	\$200K
Pelagic Delphinid Bycatch and Biology	\$80K
Palka, D. (NEFSC)	
Harbor Porpoise Abundance and Distribution	\$239.5K
Evaluating Performance of Abundance Estimators	\$22.5K
Polacheck, T. (CSIRO)	
Abundance Estimators Performance Evaluation (40ENNF600447)	\$20K
Potter, D. (NEFSC)	
Pelagic Delphinid Necropsy Survey	\$161K
Vessel Charter (50EANF500059)	\$97.4K
Potter, D. and K. Bisack (NEFSC)	
Bycatch Reduction	\$174K
Read, A. (Woods Hole Oceanographic Institution)	
Life Histories of Small Cetaceans (NA57FL0557)	\$202.9K
Waring, G. T. (NEFSC)	
Harbor and Gray Seal Abundance	\$60K
<u>FY97</u>	
Gilbert, J. (Univ. Maine)	
Harbor Seal Population Status	\$0K
Katona, S. (College of the Atlantic)	
Maintain North Atlantic Humpback Whale Catalog (50EANF-1-00056)	\$48K
Kenney, R. (Univ. Rhode Island)	
Right Whale Photo Computer Database Maintenance (NA-67-FE-0383)	\$39.1K
Kraus, S. (New England Aquarium)	
Right Whale Photo-ID Catalog	\$97K
Right Whale Strandings	\$16.5K
Right Whale Genetics	\$45.8K
Right Whale Satellite Tagging	\$80.8K
Kraus, S. and S. Mayo (New England Aquarium and Center for Coastal Studies)	
Right Whale – Cape Cod Bay Habitat Analysis	\$51K
Palka, D. (NEFSC)	
Evaluation of the Performance of Abundance Estimators (40ENNF600447)	\$15.4K
Estimating g(0) for Aerial Surveys (40ENNF700128)	\$24.5K

Seasonal Distribution of Harbor Porpoise	\$71.4K
Potter, D. (NEFSC) Pelagic Cetacean Necropsy Survey	\$60.2K
Bycatch Reduction	\$50.8K
Read, A. (Duke Univ.) Harbor Porpoise Bycatch and Biology	\$131.5K
Smith, T. (NEFSC) Evaluation of the Status of North Atlantic Humpback Whales	\$82.2K
Waring, G. (NEFSC) Pelagic Cetacean Bycatch and Biology	\$89.3K

FY98

Christensen, D. (NEFSC/SEFSC) Mid-Atlantic Coast Gillnet Observer Program (M-98-NEC-125.1)	\$529.7K
New England Sink Gillnet Fishery Observers (M-98-NEC-127)	\$907K
Pelagic Drift Gillnet Fishery Observers (M-98-NEC-126)	\$90K
Clapham, P. (NEFSC) Recovery of the North Atlantic Right Whale (M-98-F-238)	\$300K
Palka, D. (NEFSC) Harbor Porpoise Seasonal Distribution (M-98-NEC-154)	\$87K
Potter, D. (NEFSC) Ecosystem Effects of Acoustic Harassment Devices (M-98-NEC-227)	\$14.8K
Smith, T. (NEFSC) Evaluation of Status of North Atlantic Humpback Whales (M-98-NEC-121)	\$85.6K
Humpback Whale Photo-ID & YONAh Tasks (M-98-NEC-120)	\$50K
IWC Support (M-98-NEC-121)	\$69.9K
Waring, G. (NEFSC) Harbor and Gray Seal Abundance (M-98-NEC-228)	\$47.9K
Waring, G. and D. Palka (NEFSC) Pelagic Cetacean Survey (M-98-NEC-237)	\$598K

**D. Northwest Fisheries Science Center**FY90

Varanasi, U. (NWFSC) Chemical and Biochemical Analyses of Marine Mammals	\$27.5K
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FY91

Varanasi, U. (NWFSC)  
Chemical and Biochemical Analyses of Marine Mammals \$54.5K

FY92

Varanasi, U. (NWFSC)  
National Marine Mammal Tissue Bank and Marine Mammal  
Contaminants Monitoring Projects \$250K

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 \$200K

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 \$90K

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 \$334K

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 \$371.4K

Stein, J. E. and L. Jones (NWFSC)  
Interaction of California Sea Lions and Pacific Harbor Seals with  
Salmonids in Washington, Oregon, and California \$20K

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

FY96

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 \$441.4K

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FY97

(No information received)

FY98

Stein, J. E. and M. M. Krahn (NWFSC)  
Marine Mammal Health and Stranding Response Program \$360K

**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 information received)

FY94

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

FY95-FY98

(No information received)

**F. Office of Oceanic and Atmospheric Research**

FY98

Beckman, K. (Univ. Alaska, Fairbanks)  
Toxicokinetics of Organochlorine Contaminants and Effects on Immune  
System Development in Tissues of Free-ranging Northern Fur Seals \$74K

Norton, D. (BASC)  
Human and Chemical Ecology of Arctic Pathways by Marine Pollutants \$100K

O'Hara, T. (North Slope Borough)  
Bowhead Whale as a Potential Indicator Species for Monitoring the Health  
of the Western Arctic/Bering Sea Ecosystem \$80K

**G. Office of Protected Resources**

FY98

Becker, P. (National Institute of Standards and Technology)

National Marine Mammal Tissue Bank	\$85K
National Marine Analytical Quality Assurance Program	\$60K
Burek, K. (Alaska Veterinary Pathologists Inc.) Marine Mammal Pathology	\$5K
Gulland, F. (The Marine Mammal Center) Domoic Acid Mortality Investigation	\$15K
Lipscomb, T. (Armed Forces Institute of Pathology) Marine Mammal Pathology	\$50K
Schmitt, B. (National Veterinary Services Laboratory, USDA) Disease Investigations and Quality Assurance	\$40K
Wells, R. (Chicago Zoological Society) Circulating Levels of Organochlorine Contaminants in Wild Bottlenose Dolphins	\$30.8K

#### H. 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
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
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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
<u>FY96</u>	
Hansen, L. (SEFSC) Marine Mammal Program Review	\$10K
Health Assessment	\$151K
Hohn, A. et al. (SEFSC) Strandings	\$80K
<u>FY97</u>	
Grimes, C. (SEFSC, Panama City) Panama City Laboratory Support for the SE U.S. Marine Mammal Stranding Network	\$10K
Hansen, L. and P. Rosel (SEFSC, Charleston) Comprehensive Molecular Analysis of Stock Structure of Inshore/Offshore and Local Populations of Bottlenose Dolphins	\$42K
Hohn, A. (SEFSC, Beaufort) Bottlenose Dolphins: Stock Structure Along the Mid-Atlantic Coast	\$322K
Coastal Gillnet Monitoring	\$254K
Marine Mammal Stranding Network (Beaufort Lab.)	\$10K
Hohn, A. and V. Thayer (SEFSC, Beaufort) Mid-Atlantic Bottlenose Dolphin Recovery	\$52K
Mase, B. and J. Tobias (SEFSC, Miami) Development, Coordination, and Management of the NMFS Southeast U.S. Marine Mammal Stranding Network	\$47.4K
Mullin, K. (SEFSC, Pascagoula) Gulf of Mexico Marine Mammal Assessments	\$527K

Survey Methods: Testing Shrimp Vessel for Abundance and Stock Structure Sampling	\$15.2K
Swartz, S. (SEFSC, Miami) MMPA Atlantic Scientific Review Group (SRG) Support	\$30K
Bottlenose Dolphin Population Assessment in South Florida and the Florida Keys National Marine Sanctuary	\$36K
Zimmerman, R. (SEFSC, Galveston) Support of Texas A&M University's Marine Mammal Research Program and SE U.S. Marine Mammal Stranding Network	\$10K

FY98

Hansen, L. (SEFSC, Charleston) Charleston Genetic Analysis (Atlantic and Gulf) ( <i>Tursiops</i> ) (8L2BIP03)	\$167K
Hohn, A. (SEFSC, Beaufort) Mid-Atlantic Coastal Fisheries Observers (8L2BIP06)	\$320K
Hohn, A. and L. Hansen (SEFSC, Beaufort and Charleston) Mid-Atlantic <i>Tursiops</i> Stock ID – Multiple Method Design (8L2BIP04)	\$350K
Mase, B and J. Tobias (SEFSC, Miami) SE Marine Mammal Stranding Network (8L2BIPST)	\$49K
Mullin, K. (SEFSC, Pascagoula) SE-NE Pelagic Cetacean Survey (8L1ASM01)	\$163.3K
Scott, G. (SEFSC, Miami) Shark Driftnet Fishery Observers (8L2BERSH)	\$60K
Swartz, S. (SEFSC, Miami) Baseline Marine Mammal Research and Monitoring (8LBIP02)	\$30K
Range-wide Bottlenose Dolphin Monitoring Project (8L2BIP08, 8L2BIPBB, 8L2BIP09, 8L2BIPEK, 8L2BIP07, 8L2BIP05, 8L2ASFP3)	\$166.9K

**I. Southeast Regional Office**FY90-FY94

(No information received)

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

FY96

Brooks, W. (Florida DEP)  
Implementation of Right Whale Recovery Plan: Section 6 Agreement  
with Florida \$40K

Harris, M. and B. Zoodsma (Georgia DNR)  
Implementation of Right Whale Recovery Plan:  
Section 6 Agreement with Georgia \$40K

Harris, M., B. Zoodsma, and W. Brooks (Georgia DNR; Florida DEP)  
Offshore Aerial Surveys for Northern Right Whales \$41.4K

Read, A. (Duke Marine Lab)  
Fishery Interaction Training Workshop/Video \$5K

FY97

Brooks, W. (Florida DEP)  
Implementation of Right Whale Recovery Plan: Section 6 Agreement  
with Florida \$40K

Harris, M. and B. Zoodsma (Georgia DNR)  
Implementation of Right Whale Recovery Plan: Section 6 Agreement with Georgia \$40K

Harris, M., B. Zoodsma, and W. Brooks (Georgia DNR; Florida DEP)  
Offshore Aerial Surveys for Northern Right Whales \$20K

Wang, K. (Univ. North Carolina & Duke Univ.)  
Mid-Atlantic Humpback Whale Study \$45.5K

FY98

Pabst, A., B. McLellan, A. Read, and R. Wells  
Atlantic Bottlenose Dolphin Conservation Plan (40GANF800119) \$38.2K

Thomas, C. and B. Zoodsma (Georgia DNR; Florida DEP)  
Implementation of Right Whale Recovery Plan in Southeast and  
Offshore Aerial Surveys (238.4) \$186K

Wang, K.  
Administration Functions Under the '94 MMPA Amendments (234.7) \$12K

**J. 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
<u>FY91</u>	
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

FY92

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

FY93

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

FY94

Barlow, J. and R. L. Brownell (SWFSC) Coastal Marine Mammal Program (540)	\$567.6K
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

FY96

Antonelis, G. A. and T. J. Ragen (SWFSC) Hawaiian Monk Seal Research and Recovery	\$1450K
Barlow, J. and R. L. Brownell, Jr. (SWFSC) Coastal Marine Mammal Program	\$753.6K

Brownell, R. L., Jr. (SWFSC) Marine Mammal Division Administration	\$213.8K
Dizon, A. and R. L. Brownell, Jr. (SWFSC) Population Identity Program	\$317.6K
Edwards, E. and R. L. Brownell, Jr. (SWFSC) Dolphin-Safe Research Program	\$237.5K
Gerrodette, T. and R. L. Brownell, Jr. (SWFSC) Dolphin Stock Assessment Program	\$90.2K
Holt, R. and R. Hewitt (SWFSC) Predator Monitoring Program	\$1200K
Perrin, W. F. (SWFSC) Senior Scientist Unit	\$138.2K
Perryman, W. and R. L. Brownell, Jr. (SWFSC) Photogrammetry Program	\$326.2K
Reilly, S. B. and R. L. Brownell, Jr. (SWFSC) Dolphin Ecology Program	\$465.2K

FY97

Barlow, J. (SWFSC) Coastal Marine Mammal Program	\$578.3K
Mortality Estimation and Population Studies of Marine Mammal Species Incidentally Caught in California Gillnet Fisheries	\$112.7K
Marine Mammal Protection Act Implementation: Administrative Functions Under the 1994 Amendments	\$29.8K
Brownell, R. L., Jr. (SWFSC) Marine Mammal Division Administration	\$203.6K
Dizon, A. (SWFSC) Population Identity Program	\$556.4K
Analysis of Harbor Seal Stock Structure in Alaska Using mtDNA Sequencing and Nuclear DNA Microsatellite Techniques	\$47.7K
Molecular Analysis of Stock Structure of Marine Mammals: The Collection and Use of Genetic Data in Management	\$159.3K
Edwards, E. (SWFSC) Dolphin Safe Technologies Program	\$237.2K
Gerrodette, T. (SWFSC) Dolphin Stock Assessment Program	\$92.2K

Perryman, W. (SWFSC)	
Photogrammetry Program	\$230.6K
Gray Whale Calf Production Survey	\$60.5K
Reilly, S. (SWFSC)	
Cetacean Ecology Program	\$325.8K
	<u>FY98</u>
Aguirre, A. (SWFSC, Honolulu)	
Hawaiian Monk Seal Health/Disease Assessment	\$208K
Antonellis, B. (SWFSC, Honolulu)	
Hawaiian Monk Seal Population Assessment	\$561.3K
Barlow, J. (SWFSC)	
Coastal Marine Mammal Program	\$225.8K
Mortality Estimation and Population Studies of Marine Mammal Species Incidentally Caught in California Gillnet Fisheries	\$91.8K
Abundance, Distribution, and Movement Patterns of Marine Mammals in the Vicinity of San Clemente Island Military Area	\$193.6K
MMPA Implementation: Administrative Functions Under the 1994 Amendments	\$35K
Brownell, R. (SWFSC)	
Marine Mammal Division Administration	\$208.3K
Aerial Survey for Northern Right Whales in the Southeastern Bering Sea	\$66.1K
Eastern Tropical Pacific Dolphin Studies: Research Required Under the International Dolphin Conservation Act	\$3600K
Dizon, A. (SWFSC)	
Analysis of Harbor Seal Stock Structure in Alaska Using mtDNA Sequencing and Nuclear DNA Microsatellite Techniques	\$31.3K
Molecular Analyses of Stock Structure of Marine Mammals: The Collection and Use of Genetic Data in Management	\$190.9K
Population Identity Program	307.8K
Analysis of Historical Japanese Sperm Whale Samples	\$15K
Edwards, E. (SWFSC)	
Dolphin Safe Technologies Program	\$228.3K
Gerrodette, T. (SWFSC)	
Dolphin Stock Assessment Program	\$99.5K

Perryman, W. (SWFSC) Photogrammetry Program	\$178.2K
Gray Whale Calf Production Survey	\$65.1K
Reilly, S. (SWFSC) Cetacean Ecology Program	\$322.8K
<b>K. Southwest Regional Office</b>	
<u>FY90</u>	
Hanan, D. (California Dept. Fish and Game) California Coastal Marine Mammals (A90AB-H-FC411)	\$65K
<u>FY91</u>	
California Department of Fish and Game Category 1 Fishery Effort and Harbor Seal Monitoring	\$219K
Forestell, P. and J. Mobley Aerial Surveys of Hawaiian Humpback Whales	\$25K
<u>FY92-FY93</u>	
(No information received)	
<u>FY94</u>	
Hanan, D. (California Dept. Fish and Game) Coastal Marine Mammals Fisheries Interaction and Monitoring	\$180K
<u>FY95</u>	
Hanan, D. (California Dept. Fish and Game) Fishery Effort Studies	\$80K
<u>FY96</u>	
Beeson, M. (California Dept. Fish and Game) California Gillnet Fishing Effort Estimation	\$80K
Price, T. (NMFS/SWRO) California/Oregon Drift Gillnet Observer Program and Pinger Experiment	\$750K
<u>FY97</u>	
Lagomarsino, I (NMFS/SWRO) Deterrent Device for California Sea Lions Impacting Commercial Fisheries	\$50K
<u>FY98</u>	
Lagomarsino, I (NMFS/SWRO) Assessment of Pinniped Impacts on Salmonids in the San Lorenzo River	\$40K

Assessment of Pinniped Impacts on Salmonids in the Klamath River	\$50K
Economic Impacts of Pinniped Interactions with Salmon Troll Fishery; and Socioeconomic Impacts of Pinniped Interactions with CPFV's	\$55K
Testing of Pulsed Power Device to Deter Sea Lions from CPFV's	\$150K

## 2. National Ocean Service

### FY98

La Pointe, T., M. Shelby, and M. Orenca (NOAA, NOS, SEA Division) Marine Mammals Ashore: A Field Guide for Strandings (CD-ROM)	\$25K
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## 3. 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
Fay, F. and J. Kelley (Univ. Alaska) Behavior and Vocalizations of Transient Killer Whales (R/06-31)	\$32.3K

### FY92

Castellini, M. A. (Univ. Alaska) Physiological Health Status of Steller Sea Lions: Ecological Implications	\$24.6K
Elsner, R. (Univ. Alaska) Resistance to Hypoxia in the Seal Heart	\$18.3K
Grau, G. E. (Hawaii Inst. Marine Biology) Behavioral Modification of the Male Hawaiian Monk Seal	\$14.3K
Wynne, K. (Univ. Alaska) Regional Estimation of Harbor Seal and Harbor Porpoise in Alaska	\$48.3K

### FY93

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, <u>Stenella longirostris</u> : 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

FY94

Castellini, M. A. (Univ. Alaska) Physiological Health Status of Alaskan Marine Mammals (R/08-B)	\$88.1K
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

FY95

Castellini, M. (Univ. Alaska) Physiological Health Status of Alaskan Marine Mammals (R/08-B)	\$44K
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
Stegeman, J. (Woods Hole Oceanographic Institution) Molecular Biological Approaches for Non-Destructive Assessment of Chemical Effects on Marine Mammals	\$73.9K
Wynne, K. (Univ. Alaska) Monitoring Marine Mammal Mortality in Alaska (A/71-08P) Part I: Observer Program Considerations for Alaskan Coastal Fisheries Part II: Survey of Marine Mammal Mortality on the Copper River Delta [funded by NMFS]	\$121.5K



Würsig, B. (Texas A&M Univ.) Bottlenose Dolphins as Environmental Monitors	\$82.7K
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FY96

Stegeman, J. (Woods Hole Oceanographic Institution) Molecular Biological Approaches for Non-Destructive Assessment of Chemical Effects on Marine Mammals	\$157.6K
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FY97

Castellini, M. (Univ. Alaska) Conditions and Health of Alaskan Seals and Sea Lions	\$37.3K
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## Outreach

Atlantic Large Whale Take Reduction (Maine/New Hampshire)	\$73.7K
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Atlantic Large Whale Take Reduction Plan (Mid-Atlantic)	\$24.7K
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FY98

Atkinson, S. (Univ. Hawaii) Reproduction and Development in Captive Rough-toothed and Bottlenose Dolphins	\$25K
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Castellini, M. (Univ. Alaska, Fairbanks) Conditions and Health of Alaskan Seals and Sea Lions	\$42.5K
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Stegeman, J. (Woods Hole Oceanographic Institution) Molecular Biological Approaches for Non-destructive Assessment of Chemical Effects on Marine Mammals	\$84.7K
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**4. 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
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Jameson, R. (National Biological Service) Sea Otter Survey	\$-0-
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Mizroch, S. (NMFS/NMML) Humpback Photo ID	\$-0-
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Troutman, B. (Washington Dept. Fish and Wildlife) Marine Mammal Surveys Off Washington	\$-0-
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FY96

Baker, J. (NMFS/NMML) Fur Seal Surveys Off Washington	\$-0
Calambokidis, J. (Cascadia Research Collective) Humpback, Killer Whale, and Gray Whale Photo ID	\$5K
Costa, D., D. Croll, J. Harvey, and T. Williams (Moss Landing Marine Labs) Marine Mammal Studies in the Central California National Marine Studies (50ABNF500153)	\$25K
Harvey, J. and A. DeVogelaere (Moss Landing Marine Labs) Populations of Birds, Mammals, and Turtles in the Monterey Bay National Marine Sanctuary (NC-ND2320-6-00037)	\$2.4K
Jameson, R. (National Biological Service) Sea Otter Survey	\$-0
Kenner, M. (USGS, Biological Resources Div.) Sea Otter Subtidal Habitat Assessment	\$2K
Marinovic, B. (Univ. California, Santa Cruz) Temporal and Spatial Studies on the Distribution of Zooplankton as Related to Critical Marine Mammal Habitat	\$-0
Marinovic, B., D. Croll, and S. Benson (Moss Landing Marine Labs) Determining Critical Habitats for Blue Whales, Humpback Whales, Pacific White-sided Dolphins, and Harbor Porpoises in the Monterey Bay National Marine Sanctuary	\$-0
Rolett, J. (Texas A&M) Beach Watch	42K
Troutman, B. (Washington Dept. Fish and Wildlife) Marine Mammal Surveys Off Washington	\$-0

FY97

Calambokidis, J. (Cascadia Research Collective) Humpback, Gray, and Killer Whale Photo ID	\$4K
Channel Islands Sanctuary Channel Islands Geographic Information System	\$0.8K
Channel Islands Marine Ecosystem Survey	\$5.8K
Marine Mammal Filming	\$1K
Channel Islands and Monterey Bay Sanctuary Aerial Monitoring Program	\$3K
Ferrari, M. & D. Mother and Calif Pairs in Maalaea Bay, Maui	\$2K

Gulf of the Farallones and Cordell Bank Sanctuary Marine Mammal Surveys	\$ ?
Jameson, R. (USGS, Biological Resources Div.) Sea Otter Research (Olympic Coast)	\$9.1K
Kenner, M. (Santa Cruz Field Station, Univ. California) Sea Otter Subtidal Habitat Research	\$5.3K
Matilla, D. (Center for Coastal Studies) Humpback Whale Research Off of Penguin Banks (Hawaiian Islands)	\$2K
Mazzuca, L. Stranding Reports and Data for Hawaii	\$2K
Mobley, J. Completion of Aerial Survey Studies, 1993-1995 Data	\$2K
Monterey Bay Sanctuary Critical Habitats for Marine Mammals in Monterey Bay	\$75K
Monitoring Whales Using the Pt. Sur Acoustic Array -- A Feasibility Study	\$ ?
Monitoring the Coast for Beachcast Organisms	\$13K
New England Aquarium Right Whale Tagging (Gray's Reef)	\$ ?
Salden, D. (Hawaii Whale Research Foundation) Population Estimates Off of Penguin Banks (Hawaiian Islands)	\$2K
Stellwagen Banks Sanctuary Northern Right Whale Critical Habitat	\$25K
Troutman, B. (Washington Dept. Fish and Wildlife) Marine Mammal Surveys	\$ ?

FY98

Calambokidis, J. (Cascadia Research Cooperative) Humpback, Gray, and Killer Whale Photo ID	\$3K
Surveys of Blue and Humpback Whales	(use of 40 hours of NOAA plane time)
Croll, D., B. Marinovic, J. Harvey, and S. Benson (Univ. California, Santa Cruz, and Moss Landing Marine Laboratory) Critical Marine Mammal Habitats in the Monterey Bay	\$10K
Harvey, J., A. De Vogelaere, and S. Benson (Moss Landing Marine Laboratory) Monitoring Beachcast Organisms in the Monterey Bay National Marine Sanctuary	\$13K

Jameson, R. (USGS/BRD) Sea Otter Research	\$7K
Kenner, M. (Univ. California, Santa Cruz) Sea Otter Subtidal Habitat Research	\$5K
Mobley, J. (Univ. Hawaii, West Oahu) 1998 Aerial Survey	\$60K
Roletto, J., J. Mortenson, and L. Grella (Gulf of the Farallones National Marine Sancturay) Beach Watch (a long-term shoreline monitoring program)	\$78K
Roletto, J., J. Mortenson, M. Brown, and L. Grella (Gulf of the Farallones National Marine Sancturay) SEALS -- Sanctuary Education, Awareness, and Long-term Stewardship	\$19K
Troutman, B. (Washington Dept. Fish and Game) Marine Mammal Surveys	(14 days of NOAA ship support)
Waltenberger, B., M. Pickett, and E. Cassano Aerial Monitoring of Marine Mammals Around the Channel Islands National Marine Sancturay	\$20K
Wiese, M. and J. Harvey (Moss Landing Marine Laboratory) A Survey of California Sea Lions	(use of NOAA airplane; 8 hrs per month)

#### 5. Office of Ocean Resources, Conservation, and Assessment

##### FY90

Basta, D. J. (NOAA Ocean Assessments Division) Living Marine Resources Mapping Project: Marine Mammals	\$25K
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##### FY91

DeLong, R. L. (NMFS, AFSC, NMML) Determination of Injury to California Sea Lions from PCBs and DDTs	\$425K
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##### FY92

DeLong, R. L. (NMFS, AFSC, NMML) Determination of Injury to California Sea Lions from PCBs and DDTs	\$425K
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##### FY93

DeLong, R. L. (NMFS, AFSC, NMML) Determination of Injury to California Sea Lions from PCBs and DDTs	\$425K
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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-FY97

(No projects)

FY98

(This office no longer exists; see National Ocean Service for future contributions)

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
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Costa, D. P. (Univ. California, Santa Cruz) Marine Mammal Baseline Studies, California: Population and Behavioral Observation Studies for the Point Sur Area, Phase I	\$207K
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Marine Mammal Baseline Studies, California: Population and Behavioral Observation Studies for the Point Sur Area, Phase II	\$230K
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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
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Costa, D. P. (Univ. California, Santa Cruz), B. Mate (Oregon State Univ.), J. Harvey (Moss Landing Marine Lab.), and J. Calambokidis (Cascadia Research Collective)	
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Marine Mammal Baseline Studies, California: Aircraft- and Vessel-Derived  
Population and Behavioral Studies for the Pioneer Seamount Area \$477K

FY96

Clark, C. W. (Cornell Univ.)  
Cetacean Playback Studies, Behavioral Observations, and Baseline Studies \$424.7K

Costa, D. P. (Univ. California, Santa Cruz)  
Marine Mammal Population and Behavioral Observations \$719.5K

FY97

Chiu, C. S. (Naval Postgraduate School)  
Acoustical Monitoring -- Cetaceans \$9K

Clark, C. (Cornell Univ.)  
Behavioral Observations -- Cetaceans \$49.9K

Costa, D. P. (Univ. California, Santa Cruz)  
Marine Mammal Population and Behavioral Observations \$132.2K

Worcester, P. (Scripps Institute of Oceanography)  
Acoustic Monitoring -- Cetaceans \$59.3K

FY98

(No information received)

## 2. Air Force (Air Force Space 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

FY96

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) \$89K

FY97

Stewart, B., C. Cooper, and P. K. Yochem (Hubbs Marine Research Center)  
Pinniped and Endangered Species Monitoring at Vandenberg Air Force Base  
and Northern Channel Islands \$135.3K

FY98

Thorson, P. H., and J. K. Francine (SRS Technologies)  
Cumulative Effects of Rocket Launch Noise and Sonic Booms on  
California Sea Lions, Northern Elephant Seals, and Pacific Harbor Seals  
at Vandenberg AFB and the Northern Channel Islands \$100K

3. Army (Corps of Engineers)

FY90

(No projects)

FY91

Activities associated with planning, construction, operation, and

maintenance of civil works projects (\$K 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 (\$K 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(\$K 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

FY96

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

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

FY97-98

(No projects)

## 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

FY96

Kraus, S. (New England Aquarium) Aerial Survey Northern Right Whale	\$80K
Ragen, T. (NMFS) Hawaiian Monk Seal Relocation to Midway Atoll	\$8.8K

FY97-98

(No information received)

**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

FY96

Newcomer, M. (Continental Shelf Associates) Aerial Survey of Navy Test Ranges for NRW	\$-0-
Ridgway, S. H. (NRaD, NCCOSC, San Diego) Temporary Threshold Shift and Behavioral Responses of <u>Tursiops</u>	\$75K

FY97-98

(No information received)

**C. Naval Air Systems Command (NAVAIR)**FY97

Miller, M. (Physical Science Inc.) Marine Species Monitoring and Prediction System (SBIR-1)	\$70K
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FY98

(No information received)

**D. Navy Legacy Program**FY95

Dickerson, D. D. (Army Engineer Waterways Experiment Station) Demonstration of an Applied Acoustic Warning System to Protect Manatees ( <u>Trichechus manatus</u> ) 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

FY96

Dickerson, D. D. (Army Engineer Waterways Experiment Station) Demonstration of an Applied Acoustic Warning System to Protect Manatees ( <u>Trichechus manatus</u> ) from Collisions with Watercraft	\$330K
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FY97

Liechty, D. and R. Gisinier (Office of Naval Research) Northern Right Whale Monitoring Project (NRWEX)	\$970K
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FY98

Hain, J. (Associated Scientists at Woods Hole) An Aerostat/Elevated Antenna Component to Aid VHF Radiotelemetry and Tracking of Right Whales in Critical Habitats (99PRO4847)	\$25K
Kraus, Scott (New England Aquarium) VHF-Radio Telemetry Tracking of Right Whales in SE US Coastal Waters (08PRO7389)	\$59.9K
Moore, M. (Woods Hole Oceanographic Institution) Acoustic Analysis of Body Condition in the Northern Right Whale (98PRO7391)	\$25.1K

**E. Naval Undersea Warfare Center, Division Newport (NUWC DIVNPT)**FY98

D'Alteris, J. (NUWC DIVNPT) Northern Right Whale Distribution and Calving Habitat Characterization on the Southeastern Continental Shelf	\$65K
DeBlois, B. (NUWC DIVNPT) East Coast Shallow Water Training Range Marine Mammal Acoustic Impact Analysis	\$90K
McClellan, W. A. and D. A. Pabst (Univ. North Carolina and Wallops Island,	

Virginia) East Coast Shallow Water Training Range Marine Mammal Survey	\$250K
McCarthy, Elena (NUWC DIVNPT) International Regulation of Underwater Sound	\$12K
Ocean Inhabitant Forecasting System (N00178-97-C-3031)	\$70K
McCarthy, E. and S. LaShomb (NUWC DIVNPT) A Study of Target Response for Two Species of Whales (01406 SWADC)	\$20K
McCarthy, E., J. Boisvert, J. Miller, and D. Potter (NUWC DIVNPT, Univ. Rhode Island, and NMFS) Target Strength Determination of the Critically Endangered Northern Right Whale (798B22)	\$25K
McCarthy, Emily (NUWC DIVNPT) Range-Dependent Acoustic Modeling Applied to Marine Mammal Impact Assessments (01406 SWADC)	\$22K
Merlin, M. (NUWC DIVNPT) Marine Species Monitoring and Prediction System (N00178-97-C-3031)	\$70K
Petipas, L. (NUWC DIVNPT) ISO 14001 Environmental Management System	\$35K
<b>F. Office of Naval Research</b>	
<u>FY90</u>	
Nachtigall, P. E. (NOSC) Dolphin Echolocation: Cognitive and Perceptual Processing Models (Tursiops) (4424262-01)	\$160K
<u>FY91</u>	
Nachtigall, P. E. (NOSC) Dolphin Echolocation: Cognitive and Perceptual Processing Models (Tursiops) (4424262-01)	\$200K
<u>FY92</u>	
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
Katsouros, M. H. (National Academy of Sciences) Low Frequency Sound and Marine Mammals	\$50K
Mate, B. R. (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 on Pacific White-sided Dolphins	\$57.7K
<u>FY93</u>	
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
Dzjelski, 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)	\$75.1K
Mate, B. R. (Oregon State Univ.) Development of an ARGOS Transmitter to Evaluate the Response of Marine Mammals to Low Frequency Sound Signals (3414217-04)	\$102K
Mattlin, R. H. (Victoria Univ. of Wellington, New Zealand) Effects of Low Frequency Sound on Seasonal Foraging (34114228-03)	\$19.2K
Mayo, C. A. (Center for Coastal Studies) Studies of Cetacean Behavior	\$14.5K
Moore, P. W. B. and T. Cranford (NCCOSC, San Diego) Three Studies in Toothed Whale Acoustics (3412166-03)	\$22K
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)	\$500K
Nachtigall, P. E. (NCCOSC, Hawaii) Effects of Loud Low Frequency Sounds on Marine Mammal Behavior, Hearing, and Physiology (3414211-04)	\$220K
Nachtigall, P. E. and P. W. B. Moore (NCCOSC) Dolphin Echolocation (703-696-2085)	\$87K
Pabst, D. A. (James Madison Univ.) Functional Morphology of Vascular Structures in the Dolphin Dorsal Fin (4412167-01)	\$43K
Functional Design of Dolphin Blubber (3412152-03)	\$74.2K
Ridgway, S. H. and D. A. Carter (NCCOSC, San Diego) Low Frequency Sound and Marine Mammal Hearing (703-696-2085)	\$90K
Schusterman, R. J. (California State Univ., Hayward) Low Frequency Sound Hearing of Pinnipeds	\$120K
St. Aubin, D. and J. Geraci (Univ. Guelph) Biocompatibility of Materials Implanted Percutaneously in Bottlenose Dolphins (4412172)	\$86.5K
Stewart, B. A. and P. Thorson (Hubbs Marine Research Center) Development of a Satellite-Linked Radio-Transmitter Package for Small Cetaceans (4412169)	\$74.5K
Thomas, J. A. (Western Illinois Univ.) Low Frequency Audiometric Studies on Pacific White-sided Dolphins (4414212)	\$60.1K

Testa, J. W. (Univ. Alaska) Technical Workshop on Analysis of TDR and SLTDR (4414227)	\$4.1K
Tyack, P. and R. S. Wells (Woods Hole and Mote Marine Laboratory) Reactions of Bottlenose Dolphins to Low Frequency Sound (4424306)	\$15K
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

FY94

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 Bocuf, 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 Bottlenose 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. R. (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 Baleen 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

FY96

Altes, R. (CHIRP Corp.) Image & Signal Proc. for Bioacoustic Class. (97PR03004)	\$50K
Benson, R. H. and W. E. Evans (Texas A&M Univ., Galveston) Effects of Low-Frequency Tomographic Signals on SpermWhales (97PR02544)	\$99.4K

Chotiros, N. P. (Univ. Texas, Arlington) Sediment Penetration of UW Mammal Sonar (97PR03789)	\$100K
Clark, C. W. (Cornell Univ.) Potential Effects of Low Frequency Sound on Marine Mammals (22ba22B)	\$34.8K
Analysis of Cory Chouest Marine Mammal Acoustic Data (96PR06444)	\$464.8K
Cranford, T. W. (NRaD, NCCOSC, San Diego) Investigations of the Dolphin Biosonar Apparatus (97PR03049)	\$135K
Croll, D. A. (Univ. California, Santa Cruz) Role of Low Frequency Sound in the Foraging Ecology and Behavior of Balaenopteran Whales (96PR04643)	\$190.1K
Dobeck, G. J. (Navy - CSS) Benefits of a Dolphin-Like Transmit Signal (97PR03910)	\$125K
Dolphin, W. F. (Boston Univ.) Auditory Processing of Low Frequency Complex Sound (97PR02602)	\$75K
D'spain, G. and W. Kuperman (Univ. California, San Diego) Use of Marine Mammal Vocalizations for 3-D Tracking (97PR02601)	\$228.8K
Fish, F. E. (West Chester Univ.) Examination of Swimming Performance by Dolphins (4203413)	\$17.6K
Goodyear, J. D. (Univ. British Columbia) Study of the Relationships Between Anthropogenic Sounds, Whale Sounds, and Behavior and Physiology of Free-swimming Whales (96PR04586)	\$119.8K
Greene, C. H. (Cornell Univ.) Bioacoustical Oceanography Workshops: Top Predators and Their Prey in the Marine Environment (96PR04647)	\$60K
Harvey, J. T. (Moss Landing Marine Laboratories) Development of a New Delivery and Attachment System for Tagging Large Cetaceans (97PR02604)	\$63.2K
Heath, Martha (BioDiversity Research) Whale: Physiology at Depth (97PR03052)	\$41.1K
Herzing, D. L. and W. W. L. Au (Wild Dolphin Project, Juniper, FL) Measurement of Echolocation Signals of Wild Dolphins Foraging for Bottom and Buried Prey (97PR05077)	\$77K
Jones, D. R. and R. D. Andrews (Univ. British Columbia) 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)	\$172.3K

Ketten, D. R. (Harvard Medical School) Three-Dimensional Digital Sectioning and Analysis of Multi-modal Marine Mammal Ear Data (97PR02627))	\$44.9K
Ketten, D. R. and W. F. Dolphin (Harvard Medical School) Measures of Auditory Function in Stranded Marine Mammals (96PR04580)	\$75K
Laitman, J. and Reidenberg (Mt. Sinai School Medicine) Anatomy of Low Frequency Sound Production by Mysticetes (97PRo2630)	\$30K
Le Boeuf, B. J. (Univ. California, Santa Cruz) Low Frequency Sound in the Environment of the Elephant Seal (97PR02807)	\$100K
Liechty, D. and R. Gisiner (Navy/ONR) Northern Right Whale Monitoring Project	\$0.2K
Losey, G. and P. Nachtigall (Univ. Hawaii) Training Minority Institution Students Through the Marine Mammal Research Program (96PR04530)	\$223K
Marine Mammal Echolocation and Signal Processing (97PR03472)	\$223K
Mate, B. R. (Oregon State Univ.) Gray Whale Movements in Acoust. Changing Nearshore (97PR02622)	\$124.7K
Moore, P. W. B. (NRaD, NCCOSC, San Diego) Alternative Mine Detection and Classification (602351)	\$220K
Acoustic Characterization of Anti-Invasion Mines (96PR02275)	\$58K
Dolphin Echo: Resonance Scattering Approach (96PR04685)	\$142.2K
Muir, T. G. (Univ. Texas, Arlington) Role of Nonlinear Acoustics in Biosonar (97PR03690)	\$100K
Nachtigall, P. E. (Univ. Hawaii & NRaD, NCCOSC, San Diego) Effects of Loud Low Frequency Sounds on Marine Mammal Behavior, Hearing, and Physiology (97PR02629)	\$189.2K
Pabst, D. A. (Univ. North Carolina, Wilmington) Functional Design of Dolphin Blubber (97PR05201)	\$99.1K
Ridgway, S. H. (NRaD, NCCOSC, San Diego) Isolating Delphinoid Pulse Groupings (97PR03048)	\$200K
Romano, T. (Texas A&M Univ.) Investigation of Immune Function in Naval Marine Mammals (120767)	\$50K
Schmid, C. (Acoustic Society of America) BioAcoustics Short Course (96PR05437)	\$10K
Schmidt, H. and P. Miller (Woods Hole Oceanographic Institution) Marine Mammal Component Haro Strait Frontal Dynam. Expt. (96PR03989)	\$44.9K

Schusterman, R. J. (Univ. California, Santa Cruz) Effects of Low Frequency Sound on Pinnipeds: Auditory Fatigue and Masking (96PR04867)	\$90K
Tyack, P. L. (Woods Hole Oceanographic Institution) Low Frequency Sound in the Marine Acoustic Environment of the Northern Elephant Seal (96PR04680)	\$20K
Williams, T. M. (Univ. California, Santa Cruz) Dolphins as Models for Cost Efficient Autonomous Underwater Vehicles 96PR01727)	\$60K
Effect of Body Size and Environmental Temperature on Swim Efficiency (96PR06609)	\$94.6K
<u>EY97</u>	
Benson, R. (Texas A&M Univ., Galveston) Effects of Low Frequency Sound on Sperm Whales (97PR02544)	\$100.3K
Bryant, M. (Service ARGOS, Inc.) ARGOS Satellite Telemetry Services	\$3.9K
Burrus, C. (SPAWAR Systems Center, San Diego) Assessing and Mitigating the Effect of Fleet Sonar Operations on Protected Marine Resources (97PR01952)	\$393K
Costa, D. (Univ. California, Santa Cruz) Acoustic Ecology of the Minke Whale (97PR07534)	\$6.3K
Cranford, T. W. (Quantitative Morphology Consulting) Investigations of the Dolphin Biosonar Apparatus (97PR03049)	\$100.4K
D'Spain, G. and W. Kuperman (Scripps Institute of Oceanography) Use of Marine Mammal Vocalizations for Tracking in Three Dimensions and Geophysical Inversions (97PR02601)	\$72.4K
Greene, C. H. (Cornell Univ.) Workshop: Top Predators and Their Prey in the Marine Environment (98PR00452)	\$75K
Harvey, J. (San Jose State Univ.) New Delivery Systems for Tagging Large Whales (97PR02604)	\$63.2K
Heath, M. E. (BioDiversity Research) Whale Physiology at Depth (98PR00455)	\$80.1K
Herzing, D. L. and W. W. L. Au (Wild Dolphin Project, Juniper, FL) Echolocation Signals of Wild Dolphins Foraging for Bottom and Buried Prey (97PR05077)	\$17.4K
Jones, D. and R. Andrews (Univ. British Columbia) Use of Low Frequency Sound by Beluga Whales in the Arctic (96PR02276)	\$5K

Ketten, D. (Harvard Univ.) Hearing Adaptations in Deep Divers: 3-D Functional Analysis of Ears in Pelagic Cetaceans (97PR02627)	\$45K
Experimental Measures of Blast and Acoustic Trauma in Marine Mammals (98PR01658)	\$100K
Kuperman, W. (Scripps Institute of Oceanography) AASERT: Using Marine Mammal Vocalizations for Anatomical and Behavioral Information (97350-0225)	\$121.2K
Laitman, J. (Mt. Sinai Medical Center) Anatomy of Low Frequency Sound Production by Mysticetes (97PR02630)	\$29K
Le Boeuf, B. (Univ. California, Santa Cruz) Low Frequency Sound in the Environment of the Elephant Seal (97PR02807)	\$97.6K
Mate, B. (Oregon State Univ.) Gray Whale Movement in Acoustically Changing Nearshore Environments (97PR02622)	\$143K
Nachtigall, P. (Univ. Hawaii, Manoa) Effects of Low Frequency Sound on Marine Mammal Behavior, Hearing, and Physiology (97PR02629)	\$297K
University of Hawaii Biosonar Program (ONR 342HH)	\$150K
University of Hawaii Biosonar Program HBC/MI (ONR 342JD)	\$150K
Pabst, D. A. (Univ. North Carolina) Blubber: An Elastic Storage System Functioning in Parallel to the Swimming Muscles of Dolphins (98PR00476)	\$96.4K
Ridgway, S. H. (SPAWAR Systems Center, San Diego) Isolating Delphinoid Pulse Groupings (97PR03048)	\$118.1K
Support for Sea Lion Deep Hear Project (97PR07780)	\$32K
Prediction of Acoustic Safety Criteria for Marine Mammals (97PR01957)	\$300K
Romano, T. (Texas A&M Univ.) Investigation of Immune Function in Naval Marine Mammals (98PR00488)	\$100K
Schmidt, H. (Woods Hole Oceanographic Institution) Marine Mammal Component of the Haro Strait PRIMER Experiment (96PR03989)	\$4.7K
Schusterman, R. J. (Univ. California, Santa Cruz) Effects of Low Frequency Sound on Pinnipeds: Auditory Fatigue and Masking (97PR02849)	\$154.9K
Effects of Diving on the Auditory Sensitivity of Pinnipeds (97PR07533)	\$21.6K
Spiesberger, J. (Pennsylvania State Univ.) AASERT: Acoustic Tomography with Navy Sonars and Calling	

Whales (97350-0242)	\$165.3K
Tyack, P. (Woods Hole Oceanographic Institution) Low Frequency Sound in the Marine Acoustic Environment of the Northern Elephant Seal (96PR04680)	\$25.2K
Williams, T. M. (Univ. California, Santa Cruz) Dolphins as Models for Cost Efficient Underwater Vehicles (98PR03004)	\$56K
<u>FY98</u>	
Altes, R. (CHIRP Corp.) Image-based Processing for Biosonar (98PR04653)	\$90K
Brill, R., D. Helweg, and P. Moore (SPAWAR Systems Center, San Diego) Alternative Mine Detection and Classification Technology (99PR00731)	\$400K
Burrus, C. (SPAWAR Systems Center, San Diego) Assessment and Mitigation of Fleet Sonar Operations on Protected Living Marine Resources (98PR01347)	\$4667K
Costa, D. (Univ. California, Santa Cruz) Acoustic Ecology of the Minke Whale (97PR07534)	\$16.6K
Supplemental Research on the Effects of the LFA Source on Northern Elephant Seals (98PR06931)	\$20.8K
Acoustic Ecology and Remote Acoustic Monitoring of a Minke Whale Population (98PR07562)	\$16.6K
Croll, D. (Univ. California, Santa Cruz) The Role of Low Frequency Sound in the Ecology and Behavior of Balaenoptera Whales (97PR11029)	\$31.3K
Dolphin, W. (Boston Univ.) Auditory Processing of Low Frequency Complex Sound (99PR01656)	\$74.2K
Gaspin, J., J. Clark, and J. Young (Carderock Div., Naval Surface Warfare Center) Synthesizing Distant Signatures of Underwater Explosives for Sea Mammal Hearing Studies	\$110K
Greene, C. (Cornell Univ.) Bioacoustical Oceanography Workshop: Top Predators and Their Prey in the Marine Environment (98PR00452)	\$75K
Harvey, J. (The Society for Marine Mammalogy) Request for the Support of the World Marine Mammal Science Conference (98PR01762)	\$7.5K
Heath, M. (BioDiversity Research and Application Assoc.) Whale Physiology at Depth (98PR00455)	\$110.1K
Helweg, D. (Biosonar Research Program Detail (98PR01602) Biosonar Research Program Detail	\$88K



Laitman, J. and J. Reidenberg (Mt. Sinai Medical Center) Low Frequency Sound Production by Mysticetes (Anatomy) (97PR02630)	\$-0-
Liechy, D. and R. Gisiner (Navy/ONR) NRW NE Area Feasibility Study (ONR code 32)	\$45K
McGehee, D. (TRACOR Aerospace, Inc.) 3-D Analysis of Sperm Whale Tracks from the SWAPS97 Cruise (99PR02519)	\$55K
Moore, P. (SPAWAR Systems Center, San Diego) Dolphin-based Biosonar Minehunting Principles SSC (99PR03796)	\$125K
Nachtigall, P. (Univ. Hawaii) Marine Mammal Echolocation and Signal Processing (ONR 342HH/342JD)	\$200K
Low Frequency Odontocete Hearing (99PR04851)	\$86.6K
Pabst, A. (Univ. North Carolina) Blubber: An Elastic Energy Storage System in Parallel with the Swimming Muscles of Dolphins (98PR00476)	\$154.2K
Ridgway, S. (SPAWAR Systems Center, San Diego) Support for Sea Lion Deep Hear (99PR04732)	\$68K
OM&N Support for Animals (N45-1)	\$300K
Prediction of Acoustic Safety Criteria for Marine Mammals (98PR01346)	\$300K
Isolating Delphinoid Pulse Groupings (98PR06047)	\$203K
Romano, T. (Texas A&M Univ.) Investigation of Immune Function in Naval Marine Mammals (98PR00488)	\$80K
Schusterman, R. (Univ. California, Santa Cruz) Bioacoustics of Monterey Bay Pinnipeds: Auditory Fatigue and Masking (99PR02539)	\$123.6K
Effects of Diving on the Auditory Sensitivity of Pinnipeds (99PR02739)	\$78.8K
Sigurdson, J. (SPARWAR Systems Center, San Diego) Analysis of Dolphin Biosonar VSW Search and Detection Data (98PR03888)	\$35.5K
Thomas, J. (Western Illinois Univ.) International Conference on Biological Sonars (98PR03887)	\$7.5K
Tyack, P. (Woods Hole Oceanographic Institution) Responses of Whales to Experimental Playback of Low Frequency Sound from the Navy SURTASS LFA (98PR03857)	\$300.1K
Williams, T. (Univ. California, Santa Cruz) Dolphins as Models for Cost Efficient AUV's (98PR00492)	\$70K

**G. SPAWAR Systems Center**

{formerly Naval Ocean Systems Center (NOSC) then the Naval Command, Control, and Ocean Surveillance Center (NCCOSC)}

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)	\$-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)	\$-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)	\$-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-FY96

(Projects reported under Office of Naval Research)

FY97

Tyack, P. (Woods Hole Oceanographic Institution)  
 Response of Whales to Experimental Playback of Low Frequency Sound  
 From the Navy SURTASS LFA System (97PR07759) \$200K

FY98

Spikes, C. (Marine Acoustics, Inc.)  
 Scientific Research Program to Assess the Effects of the SURTASS LFA  
 Sonar on Marine Mammals (LFASRP-1) \$1,000K

Testing of Marine Mammal Detection and Avoidance Sonar (LFASRP-2) \$1,200K

**H. U.S. Atlantic Fleet**FY97

Philips, N. (Continental Shelf Associates)  
 Aerial Surveys for Marine Mammals and Sea Turtles on the Atlantic  
 Coast of the U.S. (LANTFLT) \$2,000K

FY98

Viada, S. (Continental Shelf Associates)  
 Aerial Surveys for Northern Right Whales (N6246797D0910) \$350K

**5. Strategic Environmental Research and Development Program (SERDP)**FY93

Conlon, D. and R. Gisinier (Space and Naval Warfare Systems Command/NCCOSC)  
 Fishing Enforcement/Whale Monitoring Using Integrated Undersea  
 Surveillance System (IUSS) \$2,000K

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

FY96

Clark, C. W. and C. Spikes (Cornell Univ. and MAI Corp.)  
Atlantic Database and SOSUS Groundtruth (SERD-06) \$428.4K

Cox, D. (NFWF/SERF)  
Declassified SOSUS Database: Bermuda Reactivation (SERD-01) \$500K

Fox, C. and J. Barlow (NOAA/NMFS)  
Acoustic and Visual Studies of NE Pacific Whales (97PR0NMFS) \$425K

Gisiner, R. C. (NRaD, NCCOSC, San Diego)  
Tracking Humpback Whales with IUSS (SERD03) \$241K

Griffith, I. and D. Morin (NRaD, NCCOSC, San Diego)  
SOSUS Signal Proc./SNI Array Reactivation (SERD-02) \$125K

Messerschmidt, J. (MITRE Corp.)  
Auto Whale Detect Based on Incoherent Correl (SERD-05) \$50K

Munk, W. and C. Clark (Univ. California, San Diego)  
Potential Effects of Low Frequency Sound on Marine Mammals (97PR05372) \$600K

Nishimura, C. (Navy/NRL)  
Dual Users Activity Center (SERD-05) \$215K

Watkins, W. (Woods Hole Oceanographic Institution)  
NE Pacific SOSUS Whale Database (97PR05373) \$100K

FY97

Chiu, C. (Naval Postgraduate School)  
Monitoring Whales Using the Pt. Sur Acoustic Array -- A Feasibility Study (97PR05646) \$140K

Clark, C. (Cornell Univ.)  
Responses of Marine Mammals to Experimental Playback of Low-Frequency Sound from the Navy LFA SURTASS (98PR03787) \$300K

Clark, C. and W. Munk (Univ. California, San Diego) Potential Effects of Low Frequency Sound on Marine Mammals (97PR05372)	\$600K
Croll, D. (Univ. California, Santa Cruz) The Effects of Human-Produced Low Frequency Sound on the Foraging Ecology of Balaenoptera Whales (97PR07756)	\$75.8K
Fox, C. (Department of Commerce, NOAA) Acoustic and Visual Studies of Large Pacific Whales (97PR007124)	\$397.4K
Hildebrand, J. (Scripps Institute of Oceanography) Sperm Whale Acoustic Census in the Eastern North Pacific: Sonabouy Studies in Collaboration with NMFS (97PR05368)	\$63K
Kuperman, W. and G. D'Spain (Scripps Institute of Oceanography) Use of Marine Mammal Vocalizations for Measuring Impact of Manmade Sounds, Geophysical Inversions, Acoustic Censusing, and SOSUS Array Calibration (97PR07129)	\$160.2K
Morin, D. and D. Helweg (SPAWAR Systems Center, San Diego) Monitoring the Effects of SUTASS LFA on Marine Mammals Using SOSUS (97PR07128)	\$183K
Watkins, W. (Woods Hole Oceanographic Institution) Northeast Pacific SOSUS Whale Database (97PR05373)	\$200.7K
<u>FY98</u>	
Chiu, C. (Naval Postgrad. School) Monitoring Whales Using the Pt. Sur Acoustic Array -- A Feasibility Study (98PR06184)	\$138.2K
Clark, C. and D. Croll (Cornell Univ.) Responses of Blue and Fin Whales to Experimental Playback of Low Frequency Sound from the Navy SURTASS LFA	\$135K
Clark, C. and W. Munk (Univ. California, San Diego) Potential Effects of Low Frequency Sounds on Marine Mammals (98PR08005)	\$800K
Fox, C. (NOAA PMEL) Acoustic and Visual Studies of Large Pacific Whales (99PR02637)	\$244.6K
Helweg, D. (SPAWAR Systems Center, San Diego) Information and Technology Tools for Assessment and Prediction of the Potential Effects of Military Noise on Marine Mammals (CS-1082)	\$325K
Kuperman, W. (Scripps Institute of Oceanography) Use of Marine Mammal Vocalizations for Measuring Impact of Manmade Sounds, Geophysical Inversions, Acoustic Censusing, and SOSUS Array Calibration (99PR02634)	\$115.7K
Young, E. T. (Univ. Washington) Request for an Intergovernmental Personnel Act (98PR07265)	\$149.5K

Department of EnergyFY90-FY98

(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
Wichman, H. A. (Univ. Idaho) Mammalian Genomes: Stasis and Change (R29 GM38727-05)	\$90.8K

Wicham, G. M. (Northeastern State Univ., QK) Computer Based Image Analysis of Iris Sections (R15 EY085450-1)	\$95.4K
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
<u>FY92</u>	
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 information received)

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

Hoezel, 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
<u>FY96</u>	
Bossart, G. (Univ. Miami) Immune System of Atlantic Bottlenose Dolphin (P30-ES05705-06)	\$35.4K
Fathman, C. G. (Stanford Univ. School of Medicine) Study of a Ternary Complex That Drives T Cell Activation (R01-CA65237-08)	\$259.4K
Hastings, D. A. (Univ. Texas Medical Branch, Galveston) Use of Genetic Biomarkers with California Sea Lions (F32-GM18908-01)	\$13.2K
Ortiz, C. L. (Univ. California, Santa Cruz) Developmental Physiology of Elephant Seal Pups During Natural, Prolonged Fasts (S06-GM08132-21)	\$53.2K
<u>FY97</u>	
Baldwin, R. L. (Stanford Univ.) Protein Folding Pathways (R37-GM19988-37)	\$ ?
Bossart, G. (Univ. Miami) Immune System of Atlantic Bottlenose Dolphin (P30-ES05705-07)	\$ ?
Fathman, C. G. (Stanford Univ.) Study of a Ternary Complex That Drives T Cell Activation (R01-CA65237-09)	\$ ?
Garrison, L. M. (Univ. California, San Diego) Population Genetics of the Spinner Dolphin (F31-GM18924-01)	\$ ?
Gunther, M. (NIEHS, NIH) Protein Derived Radicals (Z01-ES50139-03)	\$ ?
Hastings, D. A. (Univ. Texas Medical Branch, Galveston) Use of Genetic Biomarkers with California Sea Lions (F32-GM18908-02)	\$ ?
Jennings, P. A. (Stanford Univ.) Time Resolved Small Angle X-ray Scattering Studies of Refolding of Sperm Whale Apomyoglobin (P41-RR01209-18)	\$ ?
Jonas, J. (Univ. Illinois, Urbana) High Pressure NMR Studies of Proteins (R01 GM442452-09)	\$ ?
Lecomte, J. T. (Pennsylvania State Univ.) Mechanisms of Stabilization of B Heme proteins (R01 GM54217-08)	\$ ?
Ortiz, C. L. (Univ. California, Santa Cruz) Developmental Physiology of Elephant Seal Pups During Natural, Prolonged Fasts (S06-GM08132-22)	\$ ?

Pelc, N. (Stanford Univ.) MR Imaging of Elephant Seals: Hypoxia (P41-RR09784-03)	\$ ?
Yonetani, T. (Univ. Pennsylvania) Relaxation Processes in Protein Function: Photo-Induced Transients of Hemoprotein-Ligand Complexes (P01 GM48130-05)	\$ ?
<u>FY98</u>	
Baldwin, R. L. (Stanford Univ.) Protein Folding Pathways (R32GM19988-37)	\$ ?
Bossart, G. (Univ. Miami, Coral Gables) Pilot-Immune System of Atlantic Bottlenose Dolphin (P30ES05705-08-0003)	\$ ?
Fathman, C. G. (Stanford Univ.) Study of a Tertiary Complex That Drives T Cell Activation (R01CA65237-10)	\$ ?
Garrison, L. M. (Univ. California, San Diego) Population Genetics of the Spinner Dolphin (F31GM18924-02)	\$ ?
Grandjean, P. A. (Boston Univ.) Neurobehavioral Effects of Environmental PCB Exposure (R01ES06894-03)	\$ ?
Hastings, D. A. (Univ. Texas) Use of Genetic Biomarkers with California Sea Lions (F31GM18908-03)	\$ ?
Jennings, P. A. (Stanford Univ.) Time-Resolved Small-Angle X-ray Scattering Studies of Refolding Sperm Whale Apomyoglobin (P41RR01209-19)	\$ ?
Lecomte, J. T. (Pennsylvania State Univ.) Mechanisms of Stabilization of B Hemeproteins (R01GM54217-09)	\$ ?
Ortig, C. L. (Univ. California, Santa Cruz) Developmental Physiology of Elephant Seal Pups During Natural Prolonged Fasts (S506GM08132-230009)	\$ ?

### 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)	\$32.4K

Relationships Between Polar Bears, Sea Ice, and Pagophilic Seals (204.03)	\$47.8K
<b>Brownell, R. (NERC)</b>	
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
<b>DeGange, A. (AFWRC)</b>	
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
<b>Garner, G. (AFWRC)</b>	
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
<b>Hills, S. and L. F. Pank (AFWRC &amp; Maine Cooperative Fish and Wildlife Research Unit)</b>	
Techniques to Monitor Walrus Population Dynamics and Refine Estimates of Numbers (214.01)	\$195.4K
<b>Kitchens, W. (Florida Cooperative Fish and Wildlife Research Unit)</b>	
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
<b>FY93</b>	
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
Garner, 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
Lefebvre, L. (National Biological Service, Gainesville) Study of Manatee Movements Along the Atlantic Coast of Florida and Puerto Rico (1448-0004-95-931)	\$152K

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

FY96

FWS Field Office (Ventura, California) Collection and Transport of Southern Sea Otter Carcasses for NBS Research	\$9.2K
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Lefebvre, L. (National Biological Service, Gainesville)  
 Study of Manatees, Including Movements Along the Atlantic Coast of  
 Florida and Puerto Rico \$152K

FY97

Florida Marine Research Institute, Florida Dept. of Environmental Protection  
 Manatee Entanglement Review \$10K

Harris, M.  
 Stranded Southern Sea Otter Program -- Carcass Collection \$6.5K

Lefebvre, L. (USGS/BRD Sirenia Project)  
 Assess Manatee Biology, Movements, Population, and Habitat Along  
 Florida's Atlantic Coast and Puerto Rico \$152K

Mignucci, T.  
 Manatee Telemetry Study \$15K

Nottingham, B. (FWS Ten Thousand Islands NWR)  
 Manatee Distribution and Abundance Study \$6.8K

Sansing, H. (FWS Lower Suwanee NWR)  
 Manatee Distribution and Abundance Study \$4.5K

Thomas, N. (USGS/BRD/National Wildlife Health Lab)  
 Studies of Infectious Diseases in Southern Sea Otter \$8K

Tyson, S.  
 Brevard County Boating Compliance Study \$10K

Wooding, J. and R. McCarthy (Florida Fish and Wildlife Coop.)  
 Human Interactions with Manatees at Three Sisters Spring,  
 Citrus County, Florida \$0.9K

FY98

Bossart, G. and M. Lowe (Univ. Miami and Homosassa Springs State  
 Wildlife Park)  
 Manatee Papilloma Virus Assessment \$4K

Burn, D. (USFWS/MMM)  
 Application of Remote Sensing to Walrus Studies in Alaska \$8K

Dickerson, L. (USFWS/MMM)  
 Walrus Harvest Monitoring Project \$70K

Estes, J. (USGS/BRD)  
 Studies of Southern Sea Otter Entrapment in Fishing Gear \$15K

Evans, T. (USFWS/MMM)  
 Investigation of Metal and Organochlorine Concentrations in Polar Bear  
 Tissues \$25K

Florida Department of Environmental Protection Fishery Entanglement Review	\$20K
Gorbics, C. and L. Comerci (USFWS/MMM) Sea Otter Biological Sampling Program	\$35K
Gorbics, C. and K. Trust (USFWS/MMM) Investigation of Contaminants in Sea Otter Tissue	\$58K
Harris, M. Stranded Southern Sea Otter Program: Carcass Collection	\$7K
Stranded Southern Sea Otter Program: Carcass Shipment	\$0.5K
Jessup, D. (California Dept. Fish and Game) Studies of Infectious Diseases in Southern Sea Otter	\$60.7K
Kelly, B., L. Quakenbush, and J. Garlich-Miller (Univ. Alaska and USFWS) Age/Sex Composition of the Pacific Walrus Population	\$10K
Lapkass, S., M. Hinkes, and J. Wollington (USFWS/MMM, Togiak NWR, and Alaska Dept. Fish and Game) Walrus Haulout Monitoring	\$90K
Lefebvre, L. (USGS Sirenia Project) Study of Manatees, Including Movement Along the Atlantic Coast of Florida and Puerto Rico	\$152K
Lefebvre, L. and B. Powell (USGS Sirenia Project) Index Manatee Habitat Water Temperature Profiles	\$2K
Thomas, N. (USGS/BRD National Wildlife Health Lab) Studies of Infectious Diseases in Southern Sea Otter	\$10K
Tyson, S. Brevard County Manatee Protection Speed Zone Boating Compliance Study	\$10K
Zoodsma, B. (Georgia Department of Natural Resources) Monitoring Winter Use of Industrial Warm Water Outfalls in Georgia	\$1K

## 2. Geological Survey

### FY90-FY96

(No information received)

### FY97

Amstrup, S. C. (Alaska Science Center) Ecosystem Dynamics of Polar Bears in the Polar Basin (00059)	\$243K
Becker, P. and S. Wise (Army Engineer Waterways Exper. Station; NIST, Chemical Science and Technology Laboratory)	

Alaska Marine Mammal Tissue Archival Project (17909)	\$75K
Bodkin, J. (Alaska Science Center) Interactions Between Sea Otters and Fisheries in Alaska (00024)	\$132K
Bodkin, J. and B. Ballachey (Alaska Science Center) Biological Information Necessary to Establish a Zonal Management Program for Sea Otters in Alaska (00023)	\$45K
Estes, J. and R. Jameson (California Science Center) Population Biology, Status, and Trends of Sea Otters in California and Washington (51001)	\$284K
Interactions Between Sea Otters and Nearshore Ecological Communities (51002)	\$105K
Garner, G. W. (Alaska Science Center) Population Definition and Estimation of Survival, Recruitment, and Number of Polar Bears in Northwestern and Northern Alaska (00021)	\$100K
Garner, G. S., S. Farley, and S. Amstrup (Alaska Science Center) Population Status and Trends in Marine Mammals (00058)	\$135K
Garner, G. W. and C. Jay (Alaska Science Center) Bering-Chukchi Sea Ecosystem Initiative (00086)	\$138K
Garner, G. W., C. Jay, and S. Farley (Alaska Science Center) Dynamics of Marine Ecosystems in the Bering and Chukchi Seas (00085) (This includes \$235K for the Minerals Management Service project "Sensitive Non-Endangered Mammals and Marine Birds in the Chukchi and Beaufort Seas")	\$400K
Lefebvre, L. (Florida and Caribbean Science Center) Ecological Studies of Manatees and Dugongs (00406)	\$409K
Scribner, K. (Alaska Science Center) Use of DNA to Define Populations of Birds, Mammals, and Fish of Alaska (00043)	\$65K
Thomas, N. J. (National Wildlife Health Center) Laboratory Diagnosis of Wildlife and Endangered Species Mortality (00103)	\$20K

FY98

Amstrup, S. C. (Alaska Biological Science Center) Mapping Polar Bear Dens (3403-3020E-1212.01A)	\$25K
FLIR Den Surveys (3403-3020E-1223.01A)	\$180K
Polar Bear Population Ecology (3403-3020E-1214.01A)	\$150K
Beck, C. A. et al. (Florida Caribbean Science Center) Reproductive Traits and Population Dynamics of Florida Manatees Based on Photo-identification Techniques (200.19)	\$124K
Bodkin, J. L. (Alaska Biological Science Center) Sea Otter and Coastal Marine Communities (3403-3020E-1234.01A)	\$221K

Sea Otter Population Assessment (3403-3020E-1256.01A)	\$60K
Sea Otter Recovery Following the Exxon Valdez Oil Spill (30N91-1228)	\$123K
Deutsch, C. J. et al. (Florida Caribbean Science Center) Movements, Spatial Use Patterns, and Habitat Utilization of Radio-tagged West Indian Manatees Along the Atlantic Coast of Florida and Georgia (200.12)	\$80K
Estes, J. and R. Jameson (Western Ecological Research Center) Population Biology and Behavior of Sea Otters (5002737)	\$194.5K
Interactions Between Sea Otters and Nearshore (5002736)	\$194.5K
Farley, S. D. and C. V. Jay (Alaska Biological Science Center) Determination of Walrus Dietary Habits from Stable Isotope Concentrations (3403-3020E-WMM-3)	\$20K
Farley, S. D., G. P. Landis, and C. V. Jay (Alaska Biological Science Center) Heavy Metal Contaminants in Pacific Walrus (3403-3020E-WMM-4)	\$13K
Garcia-Rodriguez, A. I., R. K. Bonde, and L. W. Lefebvre (Florida Caribbean Science Center) Genetic Analysis of the West Indian Manatee (200.10)	\$43K
Garner, G. W., L. McDonald, and B. Manly (Alaska Biological Science Center) Symposium on Surveys, Status, and Trends (3403-3020E-WMM-2)	\$50K
Jay, C. V. and S. D. Farley (Alaska Biological Science Center) Walrus Telemetry Studies in Bristol Bay, AK (3403-3020E-WMM-1)	\$39K
Lefebvre, L. W. et al. (Florida Caribbean Science Center) Evaluation of Releases of Captive-born and Captive-reared Manatees (200.15)	\$64K
Manatee Response to Elimination of a Thermal Refuge North of the Species Natural Winter Range (200.15)	\$65K
Lefebvre, L. W., C. A. Beck, and D. E. Easton (Florida Caribbean Science Center) Seagrass Ecology in Selected Manatee Feeding Areas; and Determination and Quantification of the Diet of Florida Manatees in High-use Habitats (200.11/200.13)	\$54K
Reid, J. P. and L. W. Lefebvre (Florida Caribbean Science Center) Determination of Manatee Use Patterns and Characterization of Seagrass Areas Important to Manatees in Puerto Rico and Vieques Island (200.16)	\$35K
York, G. W. and S. C. Amstrup (Alaska Biological Science Center) Alaska Marine Mammal Tissue Archival (3403-3020E-3225.01A)	\$60K

### 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 -- Coeditor (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. R. (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 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)	\$-0-
Normal Behavior of Davis Strait Bowheads: A Control Group for the Western Arctic Stock (14-12-0001-30390)	\$-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)	\$-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)	\$-0-
Winn, H. E. (Univ. Rhode Island) South Channel Ocean Productivity Experiment (SCOPEX) (PO 14669) (co-funded with NSF)	\$-0-

FY91

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. R. (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) Delimitation, 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
Teacy, 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. P. (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. R. (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 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 Kaseguluk 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. R. (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

FY94

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, <i>Phoca largha</i> , in Kaseguluk Lagoon (PO 16576)	\$-0
Mate, B. R. (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

FY95

Gorbics, C. (USFWS, Anchorage) Gulf of Alaska: Sea Otters (IA-05059)	\$78K
Mate, B. R. (Oregon State Univ.) Application of Remote Methods of Large Cetacean Tracking (14-12-0001-30411)	\$-0

Richardson, 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

FY96

Frost, K. J. (Alaska Dept. Fish and Game) Monitoring Distribution and Abundance of Ringed Seals in Northern Alaska (14-35-0001-30810)	\$368K
Gorbics, C. (USFWS, Anchorage) Gulf of Alaska: Sea Otters (IA-05059)	\$-0-
Mate, B. R. (Oregon State Univ.) Application of Remote Methods of Large Cetacean Tracking (14-12-0001-30411)	\$-0-
McCrary, M., M. Pierson, and M. Bonnell (MMS; Univ. California, Santa Cruz; California Dept. Fish and Game) Aerial Surveys of Distribution and Abundance of Marine Birds and Mammals in the Santa Barbara Channel and Santa Maria Basin	\$43K
Richardson, J. (LGL Ecological Research Associates) Effects of Production Activities on Arctic Whales (14-12-0001-30412)	\$58.7K
Schell, D. M. (Coastal Marine Institute, Univ. Alaska) Testing Conceptual Models of Marine Mammal Trophic Dynamics Using Carbon and Nitrogen Stable Isotope Ratios (14-35-0001-30661)	\$75.2K
Treacy, S. D. (MMS/Environmental Studies Unit) Bowhead Whale Aerial Survey Project (MMS-001; 14-35-0001-05052)	\$482K

FY97

Bell, R. (MMS/Canada Fisheries Joint Mgt. Committee, Inuvik, NWT, Canada) Tagging and Satellite Tracking of Bowhead and Belukha Whales (P.O. 14190)	\$53.2K
Frost, K. J. and L. F. Lowry (Alaska Dept. Fish and Game) Monitoring Distribution and Abundance of Ringed Seals in Northern Alaska (14-35-0001-30810)	\$9.7K
Gorbics, C. (USFWS, Anchorage) Gulf of Alaska: Sea Otters (IA-05059)	\$-0-
Hansen, D. and J. Hubbard (MMS/Alaska OCS Region/Office of Aircraft Services) Distribution and Abundance of Cook Inlet Belukha Whales ( <u>Delphinapterus</u> <u>leucas</u> ) in Winter (I.A. 05052)	\$1.1K

McCrary, M. D. and M. O. Pierson (MMS/ Pacific OCS Region) MMS Seabird and Marine Mammal Surveys of the Santa Barbara Channel and Vicinity	\$30K
Richardson, W. J. (LGL Ecological Research Associates) Bowhead Whale Feeding in the Eastern Alaskan Beaufort Sea: Update of Scientific and Traditional Information (1435-01-97-CT-30842)	\$625K
Schell, D. M. (Coastal Marine Institute, Univ. Alaska) 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 Section) Bowhead Whale Aerial Survey Project (MMS-001; 14-35-0001-05052)	\$458K

FY98

Benner, C. (MMS) Predictions of Through-water Shock Parameters from a Platform Leg Explosive Charge (GM-98-x03)	\$67K
Calambokidis, J. (USGS) Effect of Airgun Noise on Marine Mammals: Response as a Function of Received Sound Level and Distance (IA 15955)	\$25K
Frost, K. J. and L. F. Lowry (Alaska Dept. Fish and Game) Monitoring Distribution and Abundance of Ringed Seals in Northern Alaska (30810)	\$165K
Kelly, B. and L. Quakenbush (Coastal Marine Institute) Correction Factor for Ringed Seal Survey in Northern Alaska (15162)	\$175K
McCrary, M. D. and M. O. Pierson (MMS/CDFG-OSPR/UCSC) MMS Seabird and Marine Mammal Surveys of the Santa Barbara and Vicinity (PC 95-03)	\$24K
Mullin, K. (NMFS) Marine Mammal and Sea Turtle Observations from NMFS Ichthyoplankton Cruises (1998-2000) (GM-98-x11, IA 15958)	\$67K
Richardson, W. J. (LGL Limited) Bowhead Whale Feeding in the Eastern Alaskan Beaufort Sea: Update of Scientific and Traditional Information (CT-30842)	\$376K
Treacy, S. (MMS/Alaska OCS Region) Bowhead Aerial Survey Project (AK 87-03)	\$450K

## 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
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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. E., 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)	\$440.3K
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. E., S. Amstrup, J. Bodkin, and G. Garner, (Alaska Science Center) Population Status and Trends in Marine Mammals (00058)	\$214.5K

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)	\$441K
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) Diagnosis of Wildlife and Endangered Species Mortality (00103)	\$20K

FY96

Amstrup, S. C. (Alaska Science Center) Ecosystem Dynamics of Polar Bears in the Polar Basin (00059)	\$243K
Ballachey, B., S. Amstrup, J. Bodkin, and G. Garner, (Alaska Science Center) Population Status and Trends in Marine Mammals (00058)	\$108K
Becker, P. and S. Wise (Army Engineer Waterways Exper. Station; NIST, Chemical Science and Technology Laboratory) Alaska Marine Mammal Tissue Archival Project (AMMTAP) (17909)	\$100K
Bodkin, J. (Alaska Science Center) Interactions Between Sea Otters and Fisheries in Alaska (00024)	\$132K

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)	\$45K
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)	\$131.4K
Dynamics of Marine Ecosystems in the Bering and Chukchi Seas (00085)	\$276K
Garner, G. W. and C. Jay (Alaska Science Center) Bering-Chukchi Sea Ecosystem Initiative (00086)	\$138K
Garner, G. W., C. Jay, and B. Ballachey (Alaska Science Center) Sensitive Non-Endangered Mammals and Marine Birds in the Chukchi and Beaufort Seas	\$120K
Lefebvre, L. (Southeastern Biological Science Center) Ecological Studies of Manatees and Dugongs (00406)	\$331.5K
Scribner, K (Alaska Science Center) Use of DNA to Define Populations of Birds, Mammals, Fish of Alaska (00043)	\$65K
Thomas, N. J. (National Wildlife Health Center) Laboratory Diagnosis of Wildlife and Endangered Species Mortality (00103)	\$20K

FY97

(see USGS in this and subsequent years)

**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

FY91

Gabriele, C. (NPS) Humpback Whale Monitoring, Glacier Bay National Park, Alaska	\$20.9K
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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

FY92

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. (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. (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
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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. (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
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Obernesser, R. and M. Reynolds (Cape Cod National Seashore)  
Sea Mammal/Sea Turtle Strandings \$4K

FY96

Allen, S. G. (Point Reyes National Seashore)  
Long-term Monitoring of Harbor Seal Colonies, Point Reyes National Seashore \$2K

Long-term Monitoring of Elephant Seal Colonization of Point Reyes  
National Seashore \$7K

Pinniped Monitoring \$0.5K

Hopkins, G. (Gulf Islands National Seashore)  
Marine Mammal Stranding Survey \$14K

Kumer, J. (Assateague Island National Seashore)  
Marine Mammal Stranding and Salvage Program \$3.2K

Obernesser, R. and M. Reynolds (Cape Cod National Seashore)  
Sea Mammal/Sea Turtle Strandings \$4K

FY97

Allen, S. G. (NPS)  
Long-term Monitoring of Pacific Harbor Seals at Point Reyes National Seashore \$10K

Long-term Monitoring of Northern Elephant Seals at Point Reyes National  
Seashore \$37K

Long-term Monitoring of Pinnipeds at Point Reyes National Seashore \$5K

Cumberland Island National Seashore  
Marine Mammal Strandings (5630) \$-0-

DeLong, R. (NMFS)  
Monitoring Marine Mammals at Channel Islands National Park \$2.4K

Gabriele, C. M. (Glacier Bay National Park)  
Monitor Humpback Whale Populations in Glacier Bay National Park \$65K

Develop a Humpback Whale Catalog and Database \$5K

Mathews, E. (Glacier Bay National Park)  
Steller Sea Lion/Vessel Interactions and Population Monitoring \$20K

Monitor Harbor Seal Populations \$40K

Matkin, C. O. (North Gulf Oceanic Society)  
Comprehensive Killer Whale Investigation: Report 97012A \$ ? K

National Marine Fisheries Service/Beaufort Lab.  
Mid-Atlantic Beach Based Marine Mammal Observer Program \$260K

Withrow, D. (NOAA/NMFS)  
Harbor Seal Investigation in Aiatik Bay, Alaska \$ ? K

FY98

Allen, S. G. (Point Reyes National Seashore)  
Colony Expansion of Northern Elephant Seals \$30K

Long-term Monitoring of Pinnipeds \$5K

Gabriele, C. M. and J. L. Doherty (Glacier Bay National Park)  
Population Monitoring of Humpback Whales \$70K

Mathews, C. M. and L. Dzinich (Univ. Alaska, Southeast and NPS/GLBA)  
Biomonitoring of Harbor Seals \$30K

Biomonitoring of Steller Sea Lions \$20K

Potts, R. (Kalaupapa National Historic Park, Hawaii)  
Monitoring and Protection of Hawaiian Monk Seals \$5K

Snow, R. W. (Everglades National Park)  
Bottlenose Dolphin Monitoring \$9.5K

Manatee Monitoring (post-release monitoring) \$10K

Manatee Monitoring (aerial survey) \$1K

Tetreau, M. (Kenai Fjords National Park)  
Harbor Seal Counts in Northwestern Fjord \$5K

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
<u>FY92</u>	
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
<u>FY93</u>	
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
<u>FY94</u>	
Baker, C. S. (Univ. Auckland) Monitoring Environmental Change and Recovery of Mysticete Whales in the Southern Hemisphere	\$25K
Bengtson, J. (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
<u>FY95</u>	
Brownell, R. (NMFS, NMML) Status of Okhost Sea Populations of Gray Whales	\$24K
Galster, S. (Global Security Investigative Network) Russian Marine Mammal Commission	\$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
<u>FY96</u>	
Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$11.9K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$1000.2K
<u>FY97</u>	
Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$14.2K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$979.1K
<u>FY98</u>	
Gambell, R. (International Whaling Commission) Research Fund of the International Whaling Commission	\$22.3K
Joseph, J. (Inter-American Tropical Tuna Commission) Porpoise/Tuna Investigations	\$1,091K

Department of Transportation

## Coast Guard

FY94

Blaylock, R. (NMFS, SEFSC) Aerial Surveys to Monitor Presence of Northern Right Whales in the Southeastern U.S. Calving and Wintering Grounds	\$80K
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FY95

Southeast Right Whale Recovery Implementation Team Right Whale Early Warning System	\$80K
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FY96

Southeast Right Whale Recovery Implementation Team Right Whale Early Warning System	\$80K
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FY97

Southeast Right Whale Recovery Implementation Team  
Right Whale Early Warning System \$80K

FY98

Southeast Right Whale Recovery Implementation Team  
Right Whale Early Warning System \$80K

Northeast Right Whale Recovery Implementation Team  
Right Whale Early Warning System \$60K

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	\$-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. Taubenberger (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 Texas A&M Univ.) Collection and Analysis of Blood and Milk from Northern Elephant Seals	\$12.1K



FY95

Fisher, W. S. and J. K. Taubenberger (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	\$-0-
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

FY96

Colburn, T. and W. S. Fisher (World Wildlife Fund and EPA Gulf Ecology Division) Baseline Assessment of Global Marine Contamination	\$1303.5K
Haebler, R. and J. Lake (EPA Atlantic Ecology Division) Sentinel Species	\$75K

FY97

Colburn, T. and W. S. Fisher (World Wildlife Fund and EPA Gulf Ecology Division) Baseline Assessment of Global Marine Contamination	\$-0-
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FY98

Colburn, T. and W. S. Fisher (World Wildlife Fund and EPA Gulf Ecology Division) Baseline Assessment of Global Marine Contamination (CR820227)	\$-0-
Twiss, J. R. and W. S. Fisher (Marine Mammal Commission and EPA Gulf Ecology Division) Workshop on "Marine Mammals and Persistent Ocean Contaminants: Identification and Determination of the Most Effective Means for Resolving Critical Uncertainties"	\$35K

Marine Mammal CommissionFY90

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)	\$3K
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)	\$1.1K
Review of Navy Briefing on the Bombing of Sea Lion Rock (T75134736)	\$1.4K
Matkin, C. O. (North Gulf Oceanic Society, Homer, AK) Alaska Killer Whale Species Account (T75135023)	\$5.4K
Miles, E. (Univ. Washington) Workshop to Identify Issues Meriting Priority Attention by the Newly- Formed North Pacific Marine Science Organization (T75136420)	\$5.4K
Mizroch, S., C. S. Baker, and J. Calambokidis (NMFS; Univ. Wellington; and Cascadia Research Collective, Olympia, WA) Humpback Whale Calf Mortality Workshop (T75136352)	\$3.5K

Nail, D. L. (Eckerd College, St, Petersburg, FL) Selected International Agreements and Domestic Legislation Affecting Marine Resources and Marine Habitat (T75135573)	\$2.3K
Northridge, S. Second Order Effects of Large-scale High-seas Driftnet Fisheries on the North Pacific Marine Ecosystem (T75135269, T75136200)	\$16K
Read, A. (Dolphin Biology Research Associates, Sarasota, FL) Harbor Porpoise Age Determination by Tooth Sectioning (T75136381)	\$3K
Sherman, K. (NMFS) Symposium on the Northeast Atlantic Shelf Ecosystem: Stress, Mitigation, and Sustainability (T75135654) (co-funded with MMS)	\$2K
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)	\$0.5K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T75136103)	\$3.5K
Wilson, W. (LGL Alaska Research Associates, Inc.) Amendments to the Bering Sea/Aleutian Islands Ground Fish Fishery Management Plan (T75135010)	\$5K
Worthy, G. A. J. (Texas A&M Univ., Galveston) Energetic Studies of Manatee Calves and Mothers (T75136365)	\$4K
<u>FY92</u>	
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 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 (Year 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 (Lahaina, HI)  
Hawaii 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
<u>EY94</u>	
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

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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 (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, 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)]

Chapin, T. G. and J. R. Gilbert (Univ. Maine)  
Report on Feeding Gray Whales in the Russian Chukchi Sea (T30917671) \$1K

Fisheries Management Foundation (Seattle, WA)  
Bycatch Reduction Workshop (T30917846) \$2K

Gerber, L. R. (Seattle, WA)  
Analysis of Sea Otter/Fisheries Conflicts in Washington State (T30917202) \$3K

Hale Kohola, House of the Whale (Lahaina, HI)  
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

Mattilla, 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)]	

FY96

Dorsey, E. M. (Conservation Law Foundation, Boston) Assessment of Right Whale Entanglement in Fishing Gear Along the East Coast of North America (T53696898)	\$0.8K
Knowlton, A. R. (New England Aquarium) Assessment of Data Concerning Right Whale Mortality Along the East Coast of the United States (T53696937)	\$0.8K
Kraus, S. D. (New England Aquarium) Conduct a Workshop to Address the Right Whale/Ship Collision Issue (T53696940)	\$5K
Read, A. J. (Duke Univ. Marine Laboratory) Possible Application of New and Developing Technologies to the Study of Marine Mammals (T30919695)	\$2K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T5369603)	\$4.5K

FY97

Huntington, H. P. (Huntington Consulting, Eagle River, AK) Review and Evaluation of U.S. Involvement in Implementing the Arctic Environ- mental Protection Strategy and Establishment of the Arctic Council (T53698333)	\$7.5K
Report of the Sixth Meeting of the Working Group for the Conservation of Arctic Flora and Fauna (T53699196)	\$5K

Moore, M. J. (Woods Hole Oceanographic Institution) An Assessment of Large Whale Stocks North of Subantarctic South Georgia Island (T53698016)	\$16K
Testa, J. W. (Polar Biological Research and Consulting, Anchorage) Review and Evaluation of Canada's Polar Bear Management Program	\$2K
Wallace, R. L. (Lexington, VA) Updating the Commissions Compendium of Selected Treaties and International Agreements (T53598430)	\$3.5K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally-Funded Marine Mammal Research (T53699523)	\$4.5K
Yablokov, A. V. (Center for Democracy, Washington, D.C.) Analysis of Soviet Antarctic Whaling Data (1949-1972) and Soviet North Pacific Ocean Humpback Whale Catches (1950-1965) (T53699222)	\$5K
<b>FY98</b>	
Craig, B. A. (Purdue Univ.) Analysis of Population Trends of Florida Manatees Using Warm-water Discharges as Winter Refuges (T74463110)	\$3K
Geraci, J. R. (National Aquarium, Baltimore) Workshop on the Introduction of Disease to Antarctic Wildlife (T53700959)	\$2K
Huntington, H. P. (Huntington Consulting) Assessment of Activities by the Arctic Council and Its Subsidiary Groups (T53700292) (funded by \$20K from NMFS)	
National Fish and Wildlife Foundation Workshop on Marine Mammals and Persistent Ocean Contaminants (T74463068) (funded by \$35K from EPA and \$42.9K from NMFS)	
Peach, R. Establishment of the National Whale Conservation Fund (T74463835)	\$1.7K
Samuels, A. (Woods Hole Oceanographic Institution) Pilot Study of Interactions Between Humans and Wild Bottlenose Dolphins Near Panama City, Florida (T53700894) (funded in part by \$4.9K from NMFS)	\$0.3K
Samuel, A. (Chicago Zoological Society) Review and Analysis of Information on Interactions Between Humans and Marine Mammals and Humans and Other Wild Mammal Species (T74463123) funded in part by \$23.2K from NMFS)	\$0.7K
Waring, G. H. (Southern Illinois Univ., Carbondale) Survey of Federally Funded Marine Mammal Research (T53700674)	\$4.5K
Zemsky, V. A. (Marine Mammal Council of the Russian Federation) Support of the Marine Mammal Council of the Russian Federation (T53700577) (funded in part by \$35K from NMFS)	\$3.1K

National Aeronautics and Space AdministrationFY90

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
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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) \$23.5K

FY96

Provancha, J. A. (NASA, Ecological Programs, Kennedy Space Center, FL)  
 Platform Test: Comparing Manatee Sightability From UH-1 Helicopter to Lake Amphibian Aircraft (NAS10-12180) \$2K

Provancha, J. A., M. J. Provancha, R. Lowers, 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 (NAS10-12180) \$23.5K

FY97

Provancha, J. A. (NASA, Ecological Programs, Kennedy Space Center, FL)  
 Platform Test: Comparing Manatee Sightability From UH-1 Helicopter to Lake Amphibian Aircraft (NAS10-12180) \$-0-

Provancha, J. A., M. J. Provancha, R. Lowers, 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 (NAS10-12180) \$23.5K

FY98

Lowers, R. H., J. A. Provancha, D. M. Scheidt, and R. A. Reddick (NASA, Ecological Programs, Kennedy Space Center, FL)  
 Long Term Monitoring of the Abundance and Distribution of Manatees on Kennedy Space Center, Florida (NAS10-12180) \$20K

Mota, M. J., D. M. Scheidt, R. H. Lowers, and M. A. Corsello (NASA, Ecological Programs and Dynamac)  
 Behavior and Photo Documentation Surveys of Atlantic Bottlenose Dolphins in the Surrounding Waters of Kennedy Space Center, Florida (NAS10-12180) \$9K

Mota, M. J., D. M. Scheidt, R. H. Lowers, J. A. Provancha, and M. A. Corsello (NASA, Ecological Programs and Dynamac)  
 Southeastern United States Marine Mammal Stranding Network (NAS10-12180) \$2K

National Science FoundationFY90

Beardsley, R. C. and R. Limeburner (Woods Hole Oceanographic Institution) Springtime Circulation in the Great South Channel (SCOPEX) (OCE-8713988)	\$83.3K
Frost, B. and M. Macauley (Univ. Washington) Acoustics of Copepods and Micronekton in the Great South Channel (OCE-8915844)	\$27K
Hain, J. H. W. (Woods Hole Oceanographic Institution) Airships in Cetacean Research (OCE-9009431)	\$48.6K
LeBoeuf, B. (Univ. California, Santa Cruz) Diving Studies of Northern Elephant Seals (BSR-89169677) (co-funded with MMS)	\$55K
Biological Studies of Northern Elephant Seals (BSR-8919933)	\$70K
Diving and Foraging Behavior of Northern Elephant Seals (INT-9016374)	\$17.9K
Miyamoto, M. (Univ. Florida) Molecular Systematics of Eutherian Mammals and Other Species (BSR-8945103)	\$25K
Palumbi, S. R. (Univ. Hawaii) Genetic Diversity of Endangered Populations of Mysticete Whales: Mitochondrial DNA and Historical Demography (BSR-9000006)	\$130K
Smuts, B. (Univ. Michigan) Social Behavior in Apes and Dolphins (BNS-885769)	\$66.5K
Testa, J. (Univ. Alaska) Dispersal and Diving Behavior of Seals Determined by Satellite Telemetry (DPP-88-16567)	\$115.5K
Tyack, P. and L. Sayigh (Woods Hole Oceanographic Institution) Development of Signature Whistles in Free-Ranging Bottlenose Dolphins (BNS-9014545)	\$9.1K
Winn, H. E. et al. (Univ. Rhode Island) South Channel Ocean Productivity Experiment (SCOPEX) (OCE-8915844)	\$173K

FY91

Beardsley, R. C. and R. Limeburner (Woods Hole Oceanographic Institution) Springtime Circulation in the Great South Channel (SCOPEX) (OCE-9101034)	\$200.2K
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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 Phocid 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)	\$-0-
Herman, L. M. (Univ. Hawaii) Integration of Visual and Echoic Information (IBN-9121331)	\$-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)	\$-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. P. (Univ. California, Santa Cruz) The Importance of Foraging Pattern on Reproductive Success in the Northern Fur Seal, <u>Callorhinus ursinus</u> (OPP-95000720)	\$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 Beluga, <u>Delphinapterus leucas</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
Siniff, D. B. (Univ. Minnesota) Possible Linkages Between Ecosystem Measures and the Demographics of a Weddell Seal Population (OPP 9420818)	\$140K
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
<u>FY96</u>	
Castellini, M. (Univ. Alaska) Physiological Development and Survival of Juvenile Weddell Seals (OPP-9119885)	\$8.8K
Felten, D., V. Quarauta, and T. Romano (Univ. Rochester) Neural-Immune Interactions in Beluga, <u>Delphinapterus leucus</u> (MCB-9317267)	\$107K
Flynn, J. J. (Field Museum of Natural History) Support for the Field Museum Fossil Mammal Collection: A New Collection Facility (DEB-9631431)	\$500.7K
Heath, M. (Naval Medical Research Institute) Diving Physiology in White Whales (IBN-9616662)	\$39K
Palumbi, S. R. (Univ. Hawaii) CRB: Molecular Identification of Threatened Species: Does Theory Predict the Utility of Nuclear vs. Mitochondrial Sequences? (DEB-9622182)	\$110K
Sayigh, L. (Univ. North Carolina, Wilmington) Research Planning Grant: Structure and Function of Signature Whistles of Adult Female Bottlenose Dolphins (IBN-9629528)	\$18K
Slatkin, M. W. and J. C. Garza (Univ. California, Berkeley) Dissertation Research: Population Biology and Genetics of the Northern Elephant Seal, <u>Mirounga angustirostris</u> (DEB-9622770)	\$10.9K
Thewissen, J. G. and S. Hussain (Northeastern Ohio Univ.) Toward the Origin of Whales: Eocene Cetacea From Pakistan (EAR-9526686)	\$190K
Welker, W. (Univ. Wisconsin, Madison) Collaborative Research: Accessing Comparative Brain Collections (IBN-9528327)	\$69.7K
<u>FY97</u>	
Berta, A. (San Diego State Univ.) Collaborative Research: Phylogenetic and Functional Analysis of Fossil and Living Walruses (DEB-9419802)	\$5K
Bengtson, J. (National Marine Fisheries Service) Workshop on the Role of Pack Ice Seals in Antarctic Ecosystems (OPP-9615719)	\$39K
Davis, R. (Texas A&M Univ.) Collaborative Research: Weddell Sea Foraging: Behavior and Energetic Strategies for Hunting (OPP-9614857)	\$55K

Flynn, J. (Field Museum of Natural History) Support of the Field Museum Fossil Mammal Collection: A New Collection Facility (DEB-9631431)	\$5K
Fuiman, L. (Univ. Texas) Collaborative Research: Weddell Sea Foraging: Behavior and Energetic Strategies for Hunting (OPP-9708151)	\$20K
Heath, M. (Naval Medical Research Institute) Diving Physiology in White Whales (IBN-9616662)	\$106K
Kelly-Jaakkola, R. (Woods Hole Oceanographic Institute) NSF Minority Postdoctoral Research Fellowship: An Experimental Technique for Testing if Dolphin Whistles Are Used as Names (DBI-9707843)	\$80K
Kenagy, G. (Univ. Washington) Collection Improvement for the Mammal Collection at the Burke Museum (DBI-9709442)	\$150K
Kvitek, R. (California State Univ., Monterey Bay) RUI: Influence of Harmful Algal Blooms on the Distribution and Ecology of High Level Marine Predators (OCE-9726263)	\$250K
Ramus, J. (Duke Univ.) FSML: Living Resources Care System (DBI-9713927)	\$124K
Robinson, P. (Univ. Maryland, Baltimore) Molecular Characterization of Visual Pigments in the Bottlenose Dolphin (IBN-9604105)	\$71K
Siniff, D. (Univ. Minnesota) Possible Linkages Between Ecosystem Measures and the Demographics of a Weddell Seal Population (OPP-9741415)	\$80K
Williams, T. (Univ. California, Santa Cruz) Collaborative Research: Weddell Sea Foraging: Behavior and Energetic Strategies for Hunting (OPP-96183840)	\$40K

FY98

Davis, R. W. (Texas A&M Univ.) Collaborative Research: Weddell Seal Foraging: Behavior and Energetic Strategies for Hunting (OPP-9614857)	\$41.4K
Fuiman, L. A. (Univ. Texas, Austin) Collaborative Research: Weddell Seal Foraging: Behavior and Energetic Strategies for Hunting (OPP-9708151)	\$21.2K
LeBoeuf, B. J. (Univ. California, Santa Cruz) Predator-prey Interactions Among White Sharks and Northern Elephant Seals (IBN-9841968)	\$3.5K
LeBoeuf, B. J., M. Wainstein, and C. L. Ortiz (Univ. California, Santa Cruz) Dissertation Research: Paternity and Mating Success in Elephant Seals	

IBN-9801553)	\$10K
Mann, J. (Georgetown Univ.) POWRE: Communication During Separations in Wild Bottlenose Dolphin Mothers and Infants (IBN-9841602)	\$3.2K
Payne, R. B. (Univ. Michigan) Dissertation Research: Paternity Assessment in a Population of Humpback Whales (IBN-9801452)	\$10K
Robinson, P. R. (Univ. Maryland, Baltimore County) Molecular Characterization of Visual Pigments in the Bottlenose Dolphin (IBN-9842741)	\$10K
Sayigh, L. S. (Univ. North Carolina, Wilmington) Research Planning Grant: Structure and Function of Signature Whistles of Adult Female Bottlenose Dolphins (IBN-9841793)	\$3.5K
Siniff, D. B. (Univ. Minnesota) Use of Long-Term Data Base and Molecular Genetic Techniques to Examine the Behavioral Ecology and Dynamics of a Weddell Seal Population (OPP-9725820)	\$131K
Williams, T. M. (Univ. California, Santa Cruz) Collaborative Research: Weddell Seal Foraging: Behavior and Energetic Strategies for Hunting (OPP-9618384)	\$41K

**Smithsonian Institution**

**FY90**

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
Mead, J. G. (Museum of Natural History) Marine Mammal Program (82337100)	\$115.9K

150

FY94

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

FY95

Boness, D. J., R. C. Fleischer, K. Ralls, O. T. Oftedal, and D. Wildt  
(National Zoological Park)  
Marine Mammal Research \$94.6K

Mead, J. G. and C. Potter (Museum of Natural History)  
Marine Mammal Program (82337100) \$144K

FY96

Boness, D. J., S. J. Insley, R. C. Fleischer, K. Ralls, O. T. Oftedal,  
and E. A. Perry (National Zoological Park)  
Marine Mammal Research (pinnipeds) \$115K

Mead, J. G. and C. Potter (Museum of Natural History)  
Marine Mammal Program (82337100) \$154.3K

FY97

Mead, J. G. and C. Potter (Museum of Natural History)  
Marine Mammal Program (82337100) \$155K

FY98

Mead, J. G. and C. Potter (Museum of Natural History)  
Marine Mammal Program (82337100) \$170.6K