



**Marine Mammal
Commission**

An independent agency of the U.S. Government

Survey of Federally-Funded Marine Mammal Research and Conservation



Fiscal Year 2015

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Executive Summary

Title II of the Marine Mammal Protection Act (MMPA) created the Marine Mammal Commission and directed it to undertake a continuing review of “research programs conducted or proposed to be conducted under the authority of the Act.” In 2010 the Commission initiated an online survey to assess funding for marine mammal research and conservation activities conducted or funded by federal agencies in fiscal year 2009. In the summer of 2016, the Commission requested that federal agencies provide data on marine mammal activities from fiscal year 2015 using its online survey tool. The survey collected information on the agencies’ marine mammal-related programs, projects, and grants, including the nature of the research, the species and geographic areas studied, the threats and issues addressed, and the funding amounts obligated during that fiscal year. Agencies reported their fiscal data to the survey in two ways: 1) total funding for marine mammals, including direct expenditures for projects and miscellaneous marine mammal activities, as well as the indirect expenditures to support the projects and other activities; and 2) direct project expenditures.

Agencies within the Departments of Commerce, Interior, Defense, Homeland Security, Energy, and Health and Human Services, and four independent agencies reported a combined total of \$144.2 million (M) (Figure 1). Those funds included \$94.8 M in direct expenditures associated with 539 projects, and \$49.4M associated with direct expenditures for other marine mammal non-project activities, and the indirect costs associated with the direct expenditures. The Department of Commerce’s NOAA Fisheries, which has lead responsibility for research and management of cetaceans, seals, fur seals, and sea lions, accounted for 47 percent of all federal funding for marine mammals (\$68.3M). The Department of the Interior’s U.S. Fish and Wildlife Service and U.S. Geological Survey, which have lead responsibility for research and management (respectively) of the West Indian manatee, polar bear, sea otter, and walrus, provided an additional five-six percent each (\$8.5M and \$7.5M, respectively). Together, these three agencies, which have lead regulatory, research and management responsibility to ensure the conservation of all marine mammals, accounted for 58 percent (\$84.3M) of the total funding reported. The Department of Defense (Navy, Army and Air Force), Department of Energy, Department of Interior (Bureaus of Ocean Energy Management, and Safety and Environmental Enforcement), and Department of Homeland Security (U.S. Coast Guard), all of which are responsible for mitigating the impact of their activities and policies affecting marine mammals, accounted for 33 percent (\$48.2M) for research and mitigation efforts. Other sources of funds included the Marine Mammal Commission (2 percent, \$3.3M), NOAA’s National Ocean Service (2 percent, \$2.3M), the National Science Foundation (1 percent, \$1.7M), the National Park Service (1 percent, \$1.5M), the Department of Defense’s ESTC and SERD Programs (1 percent, \$1.5M), the National Institutes of Health (1 percent, \$0.71M), the Smithsonian Institution (1 percent, \$0.57M), and the National Aeronautics and Space Administration (<0.5 percent, \$0.05M).

Funding differed substantially by region. NOAA Fisheries allocated 43 percent (\$24.6M) of its region-specific funding to the Alaska Region, 18 percent (\$10.4M) to the West Coast Region, 15 percent (\$8.8M) to the Greater Atlantic Region, 12 percent (\$6.6M) to the Pacific Islands Region, and 11 percent (\$6.5M) to the Southeast Region. The U.S. Fish and Wildlife Service and the U.S. Geological Survey distributed their regional funds roughly in proportion to the marine mammal species they manage and study: 70 percent (\$9.5M) went to the Alaska Region for the polar bear, walrus, and northern sea otter; 22 percent (\$3.0M) to the Southeast Region for the West Indian manatee; and seven percent (\$0.97M) to the West Coast Region

for the southern sea otter. Although regional boundaries used by NOAA Fisheries and the U.S. Fish and Wildlife Service / U.S. Geological Survey differ somewhat, these agencies allocated approximately 46 percent (\$28.9M) of their combined \$63.2M in regional funding for work based in Alaska, 26 percent (\$16.5 M) in the Atlantic and Gulf of Mexico, 18 percent (\$11.1M) in the contiguous Pacific coast states (i.e., Washington, Oregon and California), and 10 percent (\$6.6M) in the Pacific Islands Region (NOAA Fisheries only). The dispersal of funds by the Department of Defense and Bureau of Ocean Energy Management also varied by region, reflecting the distribution of their activities or leasing programs – Pacific and Atlantic for the Department of Defense and Alaska and Atlantic for the Bureau of Ocean Energy Management.

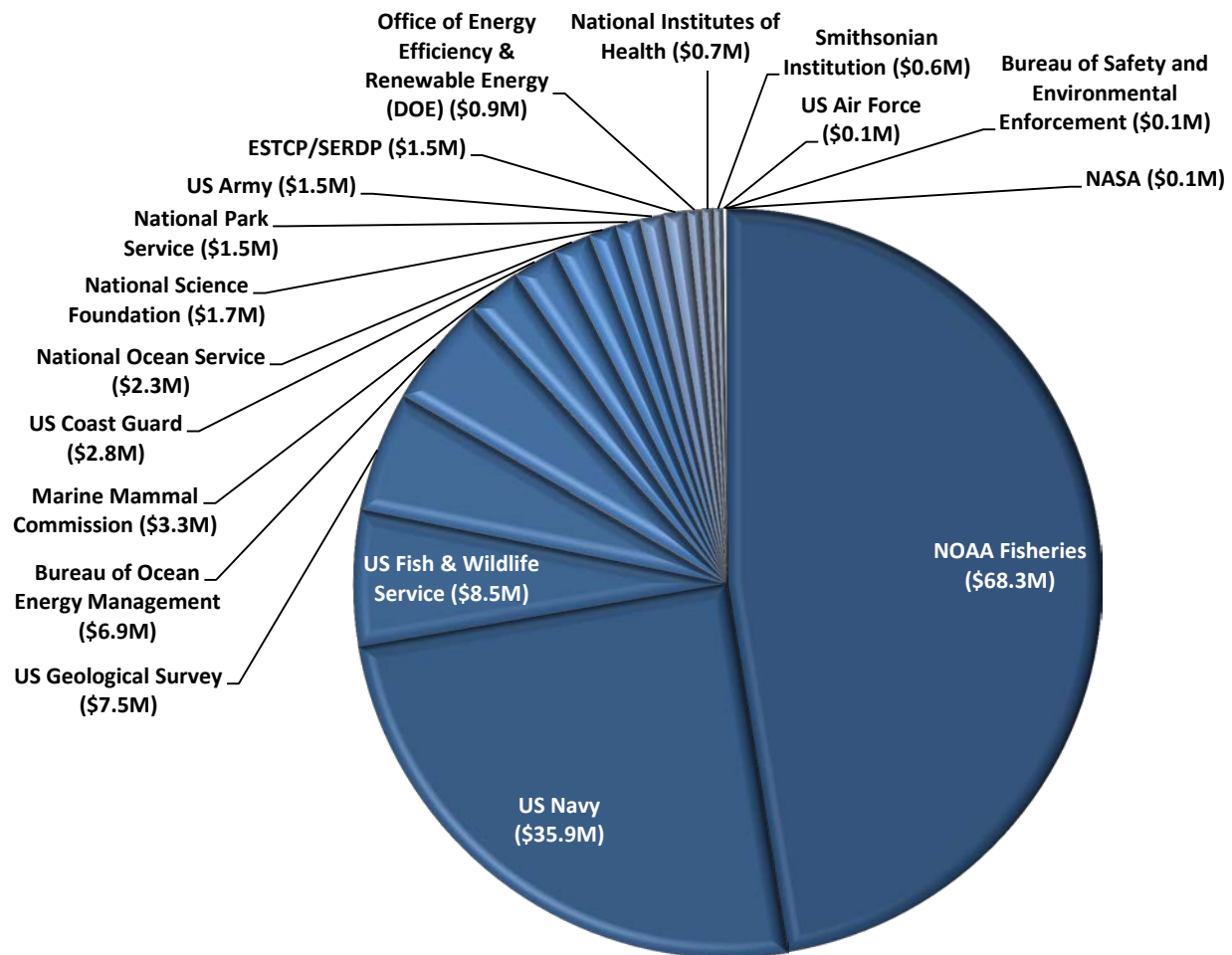


Figure 1. Fiscal year 2015 total funding reported by agencies.

Of the \$94.8M in direct expenditures reported by all agencies combined for the 539 projects, 22 percent (\$21.2M) was focused on population dynamics and stock assessment, 21 percent (\$20.2M) on studies of marine mammal biology and ecology, 19 percent (\$18.0M) on conservation, management and policy, and 14 percent (\$13.6M) of the total direct project expenditures toward projects related to the impact of human activities such as sound, military activities, fishing, pollution, and tourism. Federal agencies also

directed 10 percent (\$9.5M) to technology development, 8 percent (\$7.7M) to animal health, and 4 percent (\$3.9M) to communications, outreach and meetings.

Among the 539 projects (\$94.8M in direct project expenditures), agencies directed approximately \$91.4M in direct expenditures to projects focused on one or more of 130 individual marine mammal species reported in the survey. The remaining \$3.4M in direct project expenditures were of general benefit to all marine mammals (e.g., technology development, or general conferences). The eighteen species (14 percent of the 130 species reported) that received individually \$1.0M or more in funding accounted for 74% of all funding. Forty-two percent of the \$91.4M, (\$38.5M) was spent on just ten species (humpback whale, Steller sea lion, Hawaiian monk seal, walrus, common bottlenose dolphin, North Atlantic right whale, fin whale, West Indian manatee, blue whale, and harbor seal), which received amounts varying from approximately \$6.2M to \$2.4 each.

When the projects are broken down according to broad taxonomic or ecological groups, seven species of pinnipeds¹ received \$1.0M or more in direct expenditures (Steller sea lion, Hawaiian monk seal, walrus, harbor seal, northern fur seal, California sea lion, and spotted seal) for a total of 21 percent (\$19.1M) of the \$91.4M. Using the same funding cut-off, eight species of large whales (humpback, North Atlantic right, fin, blue, bowhead, sperm, common minke, and gray) accounted for 27 percent (\$24.3M) of the expenditures. The only U.S. species of large whale that did not receive at least \$1.0M in funding were the sei (\$907K), Bryde's (\$845K) and Endangered North Pacific right whales (\$336K). Direct expenditures for more than 11 species of toothed cetaceans² (common bottlenose dolphin; killer, sperm, Cuvier's beaked, Blainville's beaked, false killer, beluga, short-finned pilot, and Northern bottlenose whale; Risso's and short-beaked common dolphins) exceeded the cut-off (\$19.2M, 21 percent in total).

Of the direct project expenditures associated with particular species (\$91.4M), agencies directed 61 percent (\$55.6M) toward 32 species listed as endangered or threatened under the Endangered Species Act (ESA), or designated as depleted or categorized strategic under the MMPA. Of the \$55.6M, agencies directed 70 percent (\$38.8M) toward 21 endangered species, 13 percent (\$7.1M) toward eight threatened species, nine percent (\$8.1M) toward two strategic species,³ and 2 percent (\$1.6M) toward the single species designated as depleted.⁴ Of the 28 species listed as endangered or threatened, expenditures averaged \$1.6M (range: \$336K to \$6.2M) for the 19 species with the highest expenditures (>\$300K), all of which occur in U.S. waters. Expenditures for the other 9 species averaged \$102K (range: \$1.6K - \$232K).⁵

Survey respondents identified the geographic regions (coastal Large Marine Ecosystems (LMEs) and large open ocean areas) within which each project operated or was relevant to the project. Expenditures in the Pacific Ocean LMEs⁶ made up 43 percent of the total direct project expenditures associated with one or more particular regions (\$38.4M). The U.S. Arctic LMEs⁷ and adjacent areas accounted for 21 percent

¹ Seals, sea lions, fur seals, and walrus are all pinnipeds

² Toothed whales, dolphins and porpoises – the odontocetes

³ Designated strategic under the MMPA, but not listed under the ESA

⁴ Designated as depleted under the MMPA, but not listed under the ESA or designated as strategic under the MMPA

⁵ Only one of these species, Guadalupe fur seal, is found in U.S. waters

⁶ Northeast and northwest Pacific Ocean, California Current, Gulf of Alaska, and Insular Pacific – Hawaiian LMEs

⁷ Chukchi Sea, Beaufort Sea, East Bering Sea and West Bering Sea LMEs

(\$18.3M) of the total. The Southeast U.S. Continental Shelf, Gulf of Mexico and Caribbean LMEs combined accounted for 15 percent (\$13.3M) of the direct project expenditures. Expenditures in the Northeast U.S. Continental Shelf LME and its adjacent open ocean area accounted for another 14 percent (\$12.2M). The remaining 6.4M was expended elsewhere in the world.

Acknowledgements

The Marine Mammal Commission is grateful to the federal agencies that participated in the survey and for their efforts to provide accurate information on their marine mammal activities and funding. The Commission also gratefully acknowledges the time and effort contributed to the survey by the coordinators and respondents from those agencies. In addition, the Commission is thankful for agency comments on this and previous surveys, which have improved the survey and its usefulness substantially. Comments on this report and/or the survey are welcome and should be submitted to the Commission at surveyffr@mmc.gov and/or rpo@mmc.org.

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Introduction

Title II of the Marine Mammal Protection Act of 1972 (MMPA) directs the Marine Mammal Commission to conduct a continuing review of “...research programs conducted or proposed to be conducted under the authority of the Act....” From 1974 to 2000, the Commission fulfilled that duty, in part, by conducting an annual “Survey of Federally Funded Marine Mammal Research and Studies.”⁸ The Commission discontinued the survey in 2000 because of uncertainties as to whether the results were being used. In 2010 the Commission re-initiated the survey – now entitled the “Survey of Federally Funded Marine Mammal Research and Conservation” – to analyze data for fiscal year 2009.⁹

Following the fiscal year 2009 survey the Commission undertook a large-scale revision of the survey and the web-based survey tool.¹⁰ The redesign has enabled the collection of high quality data, and the new web-based survey tool has allowed participating agencies to enter their data quickly and efficiently. The Commission considers the survey an important source of information to inform decision-makers charged with evaluating and prioritizing resources needed to meet marine mammal research and conservation obligations.

The survey was designed to gather funding information from federal agencies¹¹ regarding their marine mammal research and conservation activities. Research may occur in the field, in a laboratory, or at a captive facility and may involve the surveying of wild populations, collection of biological samples, data analyses, computer simulations, or integration of traditional Native American knowledge. Topics may include anatomy, morphology, physiology, nutrition, metabolism, energetics, genetics, neurology, hearing, sound production, echolocation, dive physiology, cognition, parasitology, disease/health, and individual animal condition. Research may focus on species’ natural history traits such as breeding systems, foraging patterns and diet, diving patterns, movements and home range, or time budgets and seasonality of various behavioral activities. At the population level, it may focus on such things as distribution, stock structure and genetic exchange, abundance, trends, status, social structure, migration, demographics including vital rates (growth, birth, and death rates), life history traits, evolution, or taxonomy. At the ecosystem level, it may focus on such things as prey abundance, distribution, and availability; competition; predator avoidance, and habitat selection or use. For conservation purposes, it often focuses on marine mammal/human conflicts such as fishery interactions, ship strikes, disturbance, entanglement in marine debris, direct taking, and habitat degradation. Finally, research can involve the development, testing, and deployment of a wide range of scientific methods and technologies, such as line-transect, mark-recapture,

⁸ Scanned versions of those reports are available on the Commission web site (www.mmc.gov).

⁹ The report on the fiscal year 2009 survey also is available on the Commission web site.

¹⁰ Following the fiscal year 2009 survey the Commission revised the survey to capture more information, and in 2012 the Commission requested data from fiscal years 2010 and 2011. Following that survey the loss of the survey program manager and severe financial constraints associated with sequestration significantly delayed the processing and analysis of the data. At the same time, in response to strong feedback received from agencies on the FY2010-11 and FY2009 surveys, the Commission decided to redesign the survey and develop a new online survey app. The changes in the survey design mean that the FY2010-11 data could not be compared with data collected with the new survey. Because of this limitation and because the FY2010-11 data were by then out of date, the Commission decided not to report on those data, but instead to focus on the new application and collection of higher quality data from this point forward.

¹¹ In this report, the term “agency” refers generically to federal departments, administrations, bureaus, services, offices, programs, institutions, commissions, etc.

and photo-identification methods, the development and refinement of various types of tags, tracking devices, acoustic devices, tissue-sampling devices, analytical software, assessment models, and simulation software, and social science and economic studies of human interactions with marine mammals and their importance to society.

Conservation activities are primarily aimed at risks to marine mammals arising from human-related activities. They may involve the development of conservation regulations, policies, permits to mitigate activities that may take¹² marine mammals incidentally, development of mitigation and monitoring measures, enforcement, education and outreach, status reviews and listing decisions, recovery planning, section-7 consultations under the Endangered Species Act (ESA), co-management of subsistence hunting, stranding and entanglement response, rehabilitation, the application of new technologies/equipment (e.g., fishing gear), and evaluation of management. Supporting activities such as administration, infrastructure development and maintenance, capital investment, information/database development and maintenance, and communications (e.g. workshops, conferences) also are essential for marine mammal conservation.

This report describes the results of a survey of such activities by federal agencies for fiscal year 2015. It does not include related marine mammal studies funded by state agencies or funds dispersed from the Deepwater Horizon settlement funds. The results include funding levels and associated information reported by agencies and basic analyses of that information, such as funding by agency, region, project objective, taxonomic family, and conservation status of the focal species. Information of marine mammal research and conservation activities, and their funding, not provided in this report can be requested from the Marine Mammal Commission.¹³

Methods

In the summer of 2016, the Commission made an online data-entry application available to federal agencies to survey fiscal year 2015 data on their marine mammal activities. Federal agencies known to have funded, or that might have funded, research or conservation efforts for marine mammals in fiscal year 2015 were asked to participate.

The Commission identified all of the administrative ‘units’ within federal departments that were known to, or thought to, conduct or fund marine mammal activities. These ‘units’ were part of agencies –

- with lead responsibility for marine mammal research and management (NOAA Fisheries, US Fish and Wildlife Service, and US Geological Survey);
- conducting or managing activities that affect marine mammals (e.g., the Department of Navy, and the Bureau of Ocean Energy Management);
- with missions explicitly related to marine mammal conservation (e.g., NOAA Fisheries, NOAA’s National Ocean Service, and the US Fish and Wildlife Service); or
- that conduct/fund research involving marine mammals (e.g., National Institutes of Health, the Smithsonian Institution and the National Science Foundation).

¹² “Take” means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal (MMPA Sec. 3 (13)).

¹³ Use e-mail addresses surveyffr@mmc.gov or rpo@mmc.gov

The Commission recognized three sources of expenditures toward marine mammals: 1) discrete projects, 2) miscellaneous activities, and 3) support (indirect costs). Information on projects with the associated direct expenditures were collected and linked to the 'unit' within which the project operated, or received support or funding. For each 'unit' that conducted or funded projects or miscellaneous activities, the survey asked for an estimate of the total marine mammal funding for that unit, which included the direct expenditures for projects and miscellaneous activities, and the associated support or indirect costs.

Table 1. Project fields in the fiscal year 2015 online survey.

Project fields

- Title and description
- Fiscal year
- Principal investigator(s) name(s)
- Sponsoring agency
- Performing organization name/type
- Direct expenditures
- Objective(s) and allocation
- Species/stock(s) and allocation
- Location(s) (LMEs)¹⁴ and allocation
- Data disposition and products

For each project, the survey requested data that would indicate the effort and resources (i.e., number of projects and amount of funding) dedicated to marine mammal research and conservation relative to factors of interest (e.g., agency, objectives, region, species, and species conservation status; data fields are listed in Table 1). The survey asked respondents to specify 1) the objectives of each project (Table 2), 2) the species that were the focus of each project (for the full list of species that were reported on in the survey see Appendix B), and 3) locations in which the projects operated or where the work would be relevant. Locations were specified quite broadly as large marine ecosystems or open ocean areas (Appendix C). In addition, the survey asked that the respondent specify if the data/information generated by the project would be archived in a public database, and, if so, which types of data would be archived and which database(s) would be the recipient(s).

The Commission processed the survey data entered, and worked with respondents to resolve any discrepancies revealed during a quality assurance/control process. The Commission then completed a report that summarized the survey data, submitted the report in draft form to the agencies for their review, modified the draft as appropriate based on agency feedback, and finalized the report.

¹⁴ Large marine ecosystems

Table 2. The project objectives field in the fiscal year 2014 online survey.

Project Objectives		
<p>1) Biology</p> <ul style="list-style-type: none"> a) Anatomy / Morphology b) Behavior – social / reproductive c) Behavior – diving / foraging / feeding d) Behavior – kinematics / activity/energy budgets e) Bioacoustics – sound production f) Bioacoustics – sound reception g) Genetics/taxonomy h) Paleontological studies i) Physiology /endocrinology / neurology / biochemistry j) Reproduction / growth / aging <p>2) Ecology</p> <ul style="list-style-type: none"> a) Habitat characterization b) Habitat use c) Trophic interactions / diet / foraging ecology d) Behavioral ecology e) Population ecology f) Ecosystem / environmental studies g) Traditional ecological knowledge <p>3) Population Dynamics</p> <ul style="list-style-type: none"> a) Vital rates b) Age structure / sex ratio c) Size / abundance d) Distribution / movements e) Population dynamics f) Population genetics / stock delineation g) Stock assessment <p>4) Animal Health</p> <ul style="list-style-type: none"> a) Stranding response b) Care / rehabilitation c) Necropsy d) Sample collection e) Diagnostics f) Monitoring / assessment g) Contaminants h) Biotoxins i) Disease j) Body condition 	<p>5) Fishery Interactions</p> <ul style="list-style-type: none"> a) Bycatch – gill net / pot gear entanglement b) Bycatch – other gear c) Bycatch – mitigation d) Entanglement response e) Depredation f) Indirect / Competitive interactions <p>6) Anthropogenic Sound Impacts</p> <ul style="list-style-type: none"> a) Characterization / analysis of sound budges / soundscapes b) Military activities – sonar c) Military activities - explosions d) Energy development – seismic surveys e) Energy development – high-res geophysical surveys f) Energy development – drilling g) Energy development – platform removal d) Industrial activities - shipping e) Industrial activities - pile driving <p>7) Pollution Impacts</p> <ul style="list-style-type: none"> a) Hydrocarbon spills / leaks b) Persistent toxins c) Nutrient runoff / HABs d) Marine debris - plastics e) Marine debris – derelict fishing gear <p>8) Other Anthropogenic Impacts</p> <ul style="list-style-type: none"> a) Vessel strikes b) Tourism - observing c) Tourism – swim-with / feeding d) Disturbance e) Coastal development / dredging <p>9) Human Dimensions</p> <ul style="list-style-type: none"> a) Whaling / subsistence harvesting b) Marine mammals and coastal communities c) Social science d) Economics 	<p>10) Conservation, Management and Policy</p> <ul style="list-style-type: none"> a) Conservation b) Population protection / recovery c) Monitoring d) Surveillance / enforcement e) Regulatory compliance <p>11) Communication, Outreach, and Meetings</p> <ul style="list-style-type: none"> a) Publications b) Outreach c) Education d) Meetings / workshops, symposia / conferences <p>12) Technology development</p> <ul style="list-style-type: none"> a) Photo ID b) Tag / telemetry devices c) Acoustic devices d) Biological sampling devices e) Oceanographic sampling devices f) Sampling platforms g) Cameras h) Imaging / image analysis i) GIS j) Acoustic detection, classification and localization algorithms / models / software k) Acoustic density estimation models / software l) Line transect methodology m) Habitat mapping / modeling n) Mathematical / statistical / simulation models o) Database design / development / maintenance / archiving

Results

Funding by Federal Departments, Agencies and Offices

This section describes patterns in total funding by departments, agencies and offices, where total funding includes 1) direct project expenditures, 2) direct expenditures for miscellaneous marine mammal activities, and 3) the indirect or support costs associated with the two categories of direct expenditures.

Departments

Respondents from five federal departments (Commerce, Defense, Interior, Energy, Homeland Security, and Health and Human Services), and four independent agencies (National Science Foundation, Marine Mammal Commission, the Smithsonian Institution, and the National Aeronautics and Space Administration) provided data through the survey. Just over \$144M in total funding for marine mammal activities in fiscal year 2015 was reported across the federal government (Table 3). The bulk of that funding (93 percent) was accounted for by the Departments of Commerce, Defense and Interior.

Table 3. Fiscal year 2015 total funding reported by federal departments.

Department	Funding (millions)	Percent of total
Commerce	70.7	49
Defense	39.0	27
Interior	24.4	17
Independent agencies	5.7	4
Homeland Security	2.8	2
Energy	0.90	1
Health and Human Services	0.71	<0.5
Total	144.2	100

Within each department, one or more agencies or offices responded to the survey; the number of projects and total funding they reported is provided in Appendix A. The National Ocean Service's Office of Response & Restoration, the Department of Defense's Defense Advanced Research Projects Agency, and the U.S. Arctic Research Commission indicated that they did not conduct or fund any marine mammal activities in fiscal year 2014. The Bureau of Land Management reported that they would need more time to gather the requested information, but would participate in the survey in future years. NOAA Research (Office of Oceanic and Atmospheric Research) and the Department of State each indicated that they would participate in the Survey, but did not submit their data. The National Ocean Service's Office of Coastal Management did not respond to the Commission's request for data.

Agencies

Responding agencies reported 539 marine mammal projects, miscellaneous activities and support costs totaling \$144.2M (Figure 1, Table 4).¹⁵ The following is a summary of funding by agency, in order of each agency's total funding for marine mammal research and conservation in fiscal year 2015.

Table 4. Fiscal year 2015 total funding reported by federal agencies.		
Agency	Funding (millions)	Percent of total
NOAA Fisheries (Commerce)	68.3	47
Department of the Navy (Defense)	35.9	25
U.S. Fish & Wildlife Service (Interior)	8.5	6
U.S. Geological Survey (Interior)	7.5	5
Bureau of Ocean Energy Management (Interior)	6.9	5
Marine Mammal Commission (Independent)	3.3	2
U.S. Coast Guard (Homeland Security)	2.8	2
National Ocean Service (Commerce)	2.3	2
National Science Foundation (Independent)	1.7	1
National Park Service (Interior)	1.5	1
Environmental Research Programs – ESTCP/SERDP (Defense)	1.5	1
U.S. Army (Defense)	1.5	1
Office of Energy Efficiency & Renewable Energy (Energy)	0.90	1
National Institutes of Health (Health & Human Services)	0.71	<0.5
Smithsonian Institution (Independent)	0.57	<0.5
Department of the Air Force (Defense)	0.14	<0.5
Bureau of Safety and Environmental Enforcement (Interior)	0.09	<0.5
National Aeronautics and Space Administration (Independent)	0.05	<0.5
Total	144.2	100

¹⁵ The project details are provided in a "Project Details" companion document.

Department of Commerce

The National Oceanic and Atmospheric Administration (NOAA), with its mission of “Science, Service, and Stewardship,” is responsible for researching, monitoring and managing our ocean. Marine mammal activities take place within three of its ‘line offices’ – NOAA Fisheries,¹⁶ the National Ocean Service and NOAA Research.¹⁷

NOAA Fisheries

In U.S. waters, NOAA Fisheries, also known as the National Marine Fisheries Service, is the primary agency responsible for research and conservation of most marine living resources, including the majority of marine mammal species. NOAA Fisheries’ research and conservation efforts focus generally on stock identification and assessment, management of human interactions with marine mammals (e.g., fisheries), health and stranding, and planning and implementation of recovery measures for species listed as endangered or threatened under the ESA or designated as depleted or categorized as strategic under the MMPA. The research activities of each regional science center focus on the marine mammals in that region and are intended to support the management needs of the corresponding regional office. Within each regional office, the Protected Resources Division assumes primary responsibility for marine mammal management, protection, and conservation activities.

At NOAA Fisheries headquarters, the Office of Science and Technology and the Office of Protected Resources play important roles in marine mammal research and conservation. The Office of Science and Technology provides broad oversight of scientific activities, including many of those aimed at marine mammals and the ecosystems of which they are a part. The Office of Protected Resources develops policies and regulations to implement provisions of the MMPA and ESA. It issues permits and authorizations for activities that take marine mammals, and it manages the Marine Mammal Health and Stranding Response Program and the John H. Prescott Marine Mammal Rescue Assistance Grant Program. The Office also is responsible for, or oversees, listing decisions and recovery activities such as developing recovery plans, designating critical habitat, managing a grants program under section 6 of the ESA, and conducting consultations under section 7 of the ESA.

In fiscal year 2015, NOAA Fisheries reported that it allocated \$68.3M (47 percent of the total federal funding reported; Table 5, Figure 2) to 130 marine mammal research and conservation projects, and other marine mammal activities. Within NOAA Fisheries funding was split between regional science centers (\$34.1M, 50 percent), regional offices (\$22.8M, 33 percent of the \$68.3M), and national programs (\$11.4M, 17 percent) (Figure 2, Table 5). On a regional basis, there were in effect three tiers of funding by NOAA Fisheries for marine mammal research and conservation (Table 5). The Alaska region reported 43 percent (\$24.6M) of the combined funding reported by all regional offices and science centers (\$56.9M). In the next tier, the West Coast and Greater Atlantic Regions reported significantly less funding: 18 percent (\$10.4M) and 15 percent (\$8.8M), respectively. In addition, in the third tier, the Pacific Islands and Southeast Regions reported even less – 12 and 11 percent (\$6.6M and \$6.5M), respectively. Most of the

¹⁶ Also known as the National Marine Fisheries Service

¹⁷ Also known as the Office of Ocean and Atmospheric Research

funding expended by national programs (92 percent; \$10.4M) was reported by the Office of Protected Resources at NOAA Fisheries' headquarters in Silver Spring, Maryland.

Table 5. Fiscal year 2015 total funding reported by various headquarters programs, regional offices, and science centers, and by region, within NOAA Fisheries. ¹⁸			
NOAA Fisheries	Funding (millions)	Percent of sub-total	Percent of agency total
Fisheries science centers			
Alaska	13.5	40	20
Southwest	5.6	16	8
Northeast	5.2	15	8
Pacific Islands	4.6	14	7
Southeast	3.4	10	5
Northwest	1.7	5	3
Sub-total	34.1	100	50
Regional offices			
Alaska	11.0	48	16
Greater Atlantic	3.6	16	5
West Coast	3.1	14	5
Southeast	3.1	14	5
Pacific Islands	2.0	9	3
Sub-total	22.8	100	33
Programs			
Office of Protected Resources	10.4	92	15
Office of Science and Technology	0.80	7	1
Office of International Affairs	0.10	<0.5	<0.5
Sub-total	11.4	100	17
Total	68.3		100
By regions (regional offices and science centers combined, programs excluded)			
Alaska	24.6		43
West Coast ¹⁹	10.4		18
Greater Atlantic ²⁰	8.8		15
Pacific Islands	6.6		12
Southeast	6.5		11
Total	56.9		100

¹⁸ For regional totals (offices and science centers combined), the far right column lists the percent of the combined funding directed toward the regions (\$56.9M).

¹⁹ Includes the West Coast Regional Office, and the Northwest and Southwest Fisheries Science Centers

²⁰ Includes the Northeast Regional Office and Northeast Fisheries Science Center

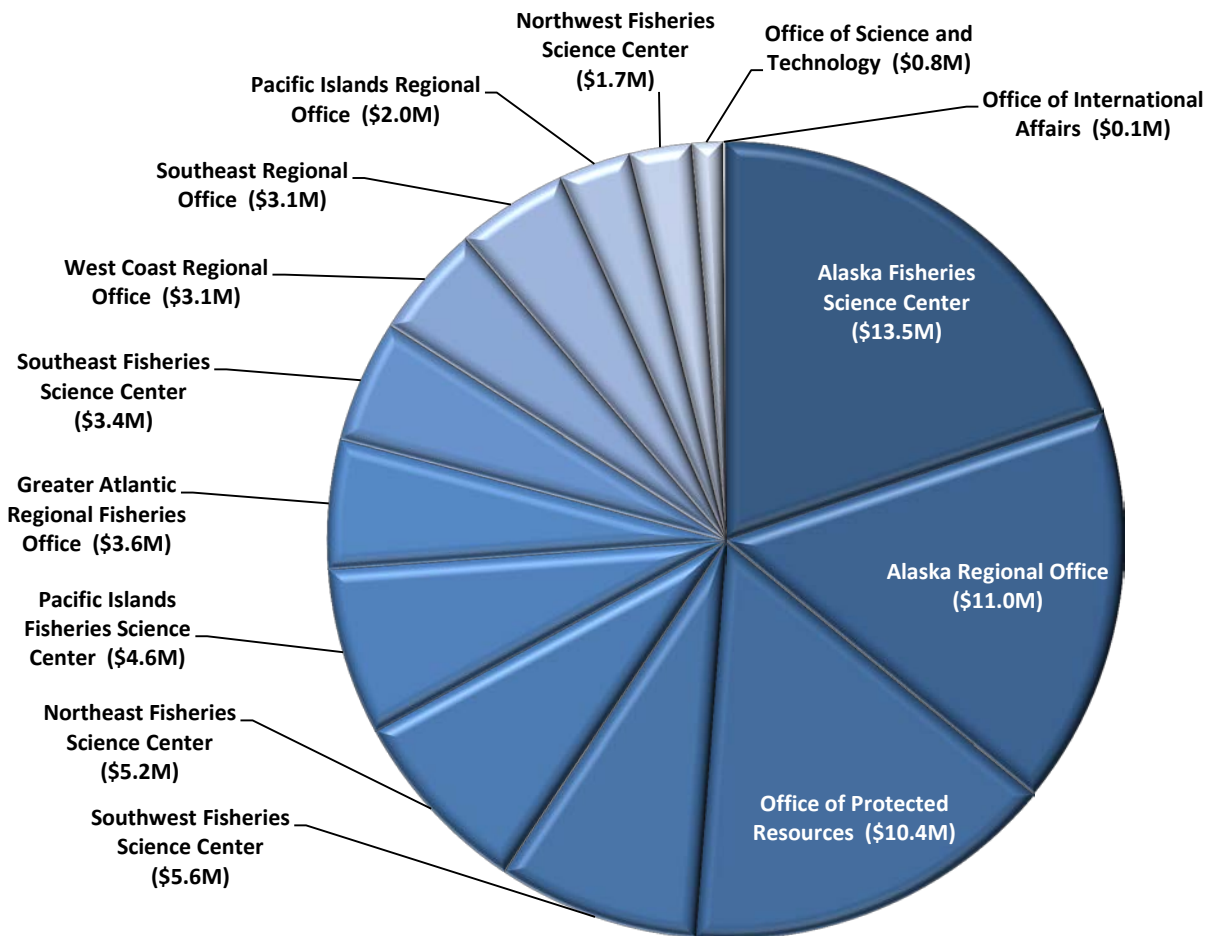


Figure 2. Fiscal year 2015 total funding reported by NOAA Fisheries programs, regional offices, and science centers.

National Ocean Service

The National Ocean Service is comprised of nine centers, programs, and offices, five of which have conducted or supported activities relevant to marine mammal research or conservation in the past:

- The National Centers for Coastal Ocean Science (NCCOS) provide local and national coastal managers with the science, information and tools they need to support research, monitoring and assessment and to address coastal issues, especially harmful algal blooms, pollution, climate change, and ecosystem management;
- The Office of National Marine Sanctuaries supports marine mammal research and conservation activities at most of its 13 marine sanctuaries and one marine national monument; the sanctuaries and monument exist to protect, conserve, and enhance the ecological integrity of special marine ecosystems and the organisms that live within them, including marine mammals;

- The Office for Coastal Management (OCM) unifies private sector, nonprofit, scientific and governmental efforts to make coastal communities more resilient; OCM delivers a wide variety of coastal data, tools and training to coastal communities to address environmental challenges such as protecting endangered species, and protecting coastal communities from hurricanes and sea-level rise;
- The Office of Response and Restoration (OR&R) provides scientific information for responding to coastal hazards, such as oil and chemical spills, and restoring affected ecosystems; OR&R provides the science and information needed to support the U.S. Coast Guard during spills and in coordinating with federal, state, and tribal natural resource trustees to restore coastal resources damaged by those spills; and
- The Integrated Ocean Observing System Program (IOOSP); part of the larger interagency Integrated Ocean Observing System, it provides ocean-related information, investigative tools, and forecasts to ocean users, managers, and emergency responders.

For fiscal year 2015, the National Ocean Service reported a total of 16 projects and \$2.3M in funding for those projects and other marine mammal activities. Four National Marine Sanctuaries²¹ reported \$1.9M in funding, and NCCOS reported the remaining \$440K. The other offices (OCM and OR&R) did not have any marine mammal activities to report for fiscal year 2015.

NOAA Research

NOAA Research, also known as the Office of Oceanic and Atmospheric Research, conducts or supports research on environmental phenomena such as ocean currents, El Niño and La Niña events, fisheries productivity, deep sea thermal vents, climate variability, and coastal ecosystem health – all topics indirectly related, but highly relevant, to marine mammals. The Office’s research network includes the following:

- NOAA Research Laboratories collaborate with universities and non-profit organizations to conduct a broad range of ocean research. The Pacific Marine Environmental Laboratory (PMEL) has been involved in research on acoustics, the Arctic, and Arctic climate disruption, much of which is highly relevant to the conservation and management of Arctic marine mammals;
- The Office of Ocean Exploration and Research is dedicated to increasing ocean knowledge through the exploration, research, and the use of undersea technologies. Research activities conducted by, or with the support of, this office promote understanding of the marine environment and often provide insights into the natural history of marine mammals and their use of specific marine environments;
- The Climate Program Office provides strategic guidance and oversight for NOAA's climate science and services programs. This office funds programs that focus on understanding the climate system, predicting climate variability and change, and improving society’s ability to adapt to such change. Studies conducted or supported by this Office also provide insights into the potential effects of climate disruption on marine mammals; and

²¹ Channel Islands, Cordell Bank, Gray’s Reef, Greater Farallones, Hawaiian Islands Humpback Whale, Monterey Bay, Papahānaumokuākea, and Stellwagen Bank National Marine Sanctuaries

- The National Sea Grant College Program works with universities and research institutions to support scientific studies of ocean resources. State Sea Grant organizations occasionally fund marine mammal studies.

Although NOAA Research reported funding for its National Sea Grant Program in fiscal year 2014, it did not respond to the Commission's fiscal year 2015 call for data.

Department of Defense

The Mission of the Department of Defense is "to provide the military forces needed to deter war and to protect the security of our country." Preparations and training to fulfill this mission can have impacts on the environment and marine mammals. Several components of the Department of Defense are focused on understanding, monitoring and mitigating those impacts.

Department of the Navy

The Navy funds marine mammal research and conservation activities to meet its environmental compliance obligations under the MMPA, ESA, and National Environmental Policy Act (NEPA), and to fulfill its responsibilities as a steward of the marine environment. A review of the research and conservation activities undertaken by the Navy indicates that these activities are aimed largely at three particular needs. The first is to conduct studies related to the abundance, distribution, foraging, reproduction, physiology, hearing and sound production, behavior, and ecology of marine mammals. The second is to understand the potential effects on marine mammals from Navy training and testing activities, particularly from the use of mid-frequency active sonar and underwater detonations, in order to improve impact analysis. The third is to monitor and report on Navy training and testing activities involving the use of active sonar and underwater detonations. Overall, the Navy reported allocating \$35.9M (25 percent of all federal funding reported) for 186 marine mammal research and conservation projects, and other activities, in fiscal year 2015 (Figure 1, Table 4). Within the Navy, research and conservation of marine mammals is funded primarily by the Office of Naval Research (ONR), the Living Marine Resources (LMR) program, the Navy's Atlantic and Pacific Fleets, and its Systems Commands²² (Figure 3, Table 6).

ONR supports a wide range of basic and early-stage applied research and technology development related to understanding the physiological, behavioral, ecological, and demographic effects of sound on marine mammals. In fiscal year 2015, ONR reported directing \$10.1M to 93 marine mammal research and conservation projects (Figure 3, Table 6). Under the Chief of Naval Operations, the Fleets and System Commands reported allocating \$16.4M for 67 projects aimed at mitigating and monitoring their activities to avoid, minimize, and/or document the potential effects on marine mammals during training and testing activities.

²² Naval Air Systems Command and Naval Sea Systems Command

Table 6. Fiscal year 2015 total funding reported by the Navy.

Office	Funding (millions)	Percent of total
Office of Naval Research (ONR)	10.1	28
Atlantic Fleet (LANTFleet)	7.9	22
At-Sea Compliance Program (ASCP)	4.4	12
Living Marine Resources (LMR)	3.9	11
Pacific Fleet – West Coast (PacFleet – WC)	3.0	8
Naval Sea Systems Command (NAVSEA)	2.8	8
Pacific Fleet – Hawaii and Marianas (PacFleet – H&M)	1.4	4
SURTASS LFA	1.0	3
Naval Air Systems Command (NAVAIR)	0.71	2
Naval Facilities Engineering Command Northwest (NAVFAC NW)	0.21	1
Naval Facilities Engineering Command Mid-Atlantic (NAVFAC MIDLANT)	0.18	1
Naval Facilities Engineering Command Southeast (NAVFAC SE)	0.14	<0.5
Space and Naval Warfare Systems Command (SPAWAR)	0.07	<0.5
Naval Facilities Engineering Command Southwest (NAVFAC SW)	0.04	<0.5
Total	35.9	100

The Navy's At-Sea Compliance Program, which serves and is funded by the Fleets and System Commands, expended \$4.4M on six projects. Also under the Chief of Naval Operations, the Living Marine Resources (LMR) Program, which supports applied research and technology development to improve understanding of the consequences for marine species occurring near Navy at-sea training and testing activities, reported allocations of \$3.9M for 20 projects, many of which focused on passive acoustic monitoring technologies and methods, hearing studies, and the SOCAL behavioral response study.

Department of the Army

Two agencies within the Department of the Army reported marine mammal activities totaling \$1.5M (three projects) in fiscal year 2015.

The U.S. Army Corps of Engineers serves as the nation's engineers, working with other federal agencies, state agencies, non-governmental organizations, and academic institutions. It builds, supports, and manages dams, levees, and waterways; supports military activities with construction and infrastructure needs; assists in various ways with natural resource management and restoration; assists with disaster response; and undertakes various development projects to support the national economy. In fiscal year 2015 the Corps reported \$1.5M in funding for three projects and numerous other activities related to marine mammal research and conservation in 14 of their districts.²³ Almost all of those funds were to

²³ Alaska, Baltimore, Charleston, Jacksonville, Los Angeles, Mobile, New England, New Orleans, New York, Philadelphia, Savannah, Seattle, Vicksburg and Wilmington

protect specific marine mammal species during Corps navigation projects. In addition, the Program Executive Office for Simulation, Training, and Instruction funded one project for \$56K.

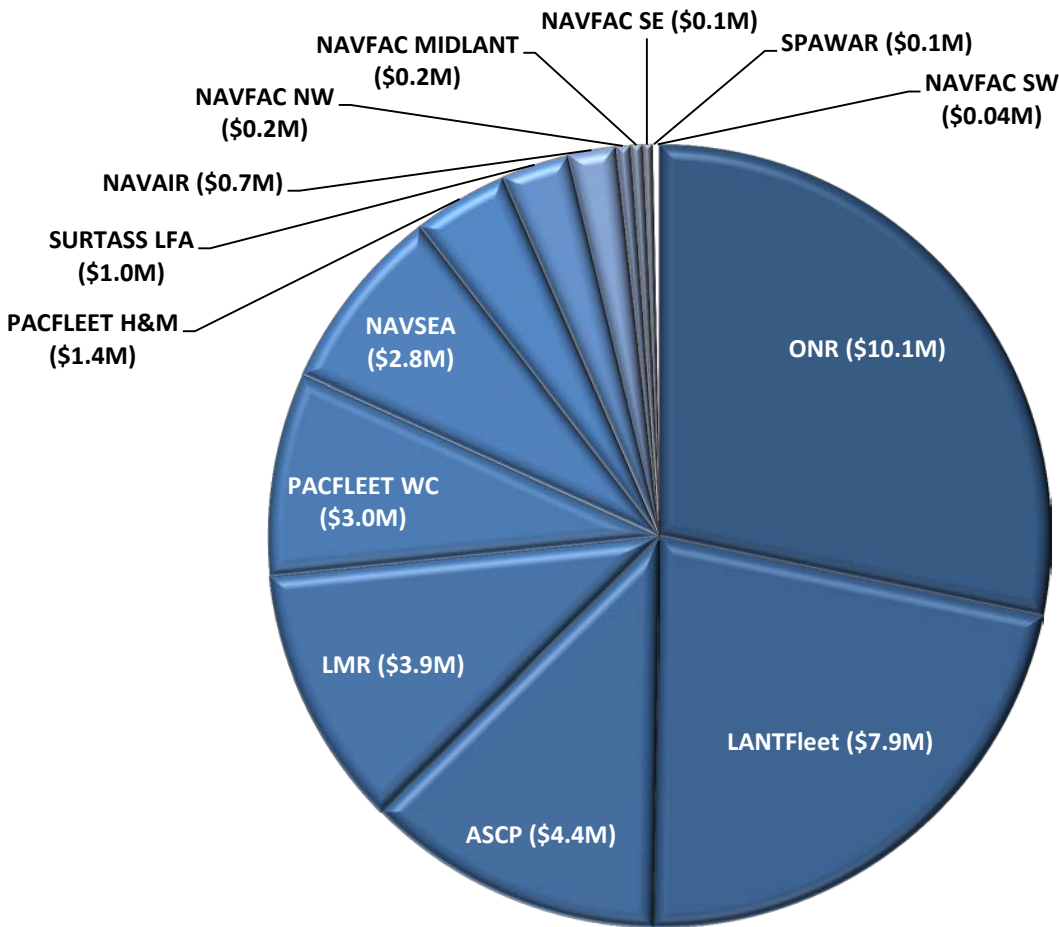


Figure 3. Fiscal year 2015 total funding reported by the Navy.

Environmental Research Programs

The Strategic Environmental Research and Development Program (SERDP) is the Department of Defense's science and technology program for assessing the impact of military activities on the environment, including marine mammals. In addition, SERDP manages and protects the natural resources, including threatened and endangered species, on Department of Defense lands and ocean training ranges. SERDP achieves its goals by working with the Department of Energy, the Environmental Protection Agency and other relevant federal agencies. The Environmental Security Technology Certification Program (ESTCP) identifies cost-effective technologies that address the Department of Defense's highest environmental priorities. The program promotes the transfer of innovative technologies that have successfully established proof of concept to field or production use. The combined funding by the Department of Defense for two ESTCP projects, four SERDP projects and other activities during fiscal year 2015 was \$1.5M.

Department of the Air Force

Elgin and Vandenberg Air Force bases reported \$142K in funding and three projects focused on surveying, monitoring or mitigation.

Department of the Interior

The Department of the Interior protects and manages the nation's natural resources and cultural heritage, provides scientific and other information about those resources, and honors the nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities. The Department has a diverse set of agencies that conduct or fund marine mammal projects and activities. The U.S. Fish and Wildlife Service (FWS) is responsible for managing polar bears, walrus, sea otters and West Indian manatees, and the U.S. Geological Survey (USGS) provides much of the scientific research necessary to support that management. The Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) working cooperatively manage the impact of the energy sector on the ocean, including that on marine mammals, in U.S. federal waters. The National Park Service manages a large number of National Seashores and coastal National Parks, and similarly the FWS manages numerous coastal National Wildlife Refuges. In fiscal year 2015, the Department of the Interior, through these agencies, reported allocations of \$24.5M for 153 marine mammal projects and other activities (Table 7).

U.S. Fish and Wildlife Service

The FWS has primary responsibility for the conservation and management of the polar bear, West Indian manatee, Pacific walrus, and sea otter populations that occur within the U.S. Exclusive Economic Zone. The Service also supports the protection and conservation of these species and others²⁴ in foreign and international waters. The FWS includes a number of offices or programs that have a role in marine mammal research or management:

- The Division of Management Authority reviews applications and issues permits for scientific research, enhancement, public display, and import/export of marine mammal parts and products;
- The Division of International Conservation coordinates international activities for the marine mammal species the FWS is responsible for and that occur in foreign or international waters;
- The Endangered Species staff at FWS headquarters coordinate activities for species under the ESA, including listing, down-listing or delisting, critical habitat determination, and recovery planning;
- The National Wildlife Refuge System has 180 coastal and marine refuges, most having at least some marine mammal presence. Refuge personnel are responsible for managing marine mammal populations and habitat. Refuge staff assists during stranding and entanglement events, marine mammal surveys and assessments, and other aspects of marine mammal conservation.

²⁴ West African manatee, Amazonian manatee, dugong, Atlantic walrus, Western sea otter, and marine otter

- The National Marine Mammal Coordinator at FWS headquarters provides national consistency for marine mammal-related activities;
- The Marine Mammal Management office in Anchorage, Alaska, has the responsibility to manage and conserve polar bears, Pacific walruses, and northern sea otters in Alaska;
- The Washington Fish and Wildlife Office manages northern sea otters in Washington state;
- The Ventura Fish and Wildlife Office manages southern sea otters in California;
- The North Florida Ecological Services Field Office manages the Florida subspecies of the West Indian manatee;
- The Caribbean Field Office manages the Antillean subspecies of the West Indian manatee in Puerto Rico; and
- The FWS regional offices provide support to these field offices for their work with partners to census populations, assess population health, develop and implement conservation plans, promulgate regulations, and create cooperative relationships.

In fiscal year 2015 FWS reported allocating \$8.5M (Table 7) to 36 projects and other activities related to the marine mammals under its purview. Most of those funds (\$5.2M) were reported by the Marine Mammals Management office for the management of polar bears, walruses and sea otters in Alaska (Table 7). By contrast to the Alaska region with three species to manage, FWS allocated \$1.8M in the Atlantic, Gulf of Mexico and Caribbean to manatees, and \$266K to sea otters along the Pacific Coast.²⁵

Table 7. Fiscal year 2015 total funding reported by agencies, centers, and offices, and by region, within the Department of the Interior.

Department of the Interior	Funding (millions)	Percent of sub-total	Percent of total
Fish and Wildlife Service			
Marine Mammals Management Office, Alaska	5.2	61	21
Crystal River NWR	0.88	10	4
North Florida ES Office	0.69	8	3
International Affairs Program - Permits	0.58	7	2
Headquarters - Ecological Services (ES) Program	0.42	5	2
International Affairs Program - International Conservation	0.26	3	1
Ventura (CA) ES Office	0.16	2	1
Caribbean ES Office	0.13	2	1
Washington ES Office	0.07	1	1
Region 4 ES	0.07	1	<0.5
Farallon NWR	<0.10	<0.5	<0.5
Texas Coast ES Office	<0.10	<0.5	<0.5
Oregon Coast NWR	<0.10	<0.5	<0.5
Alaska Maritime NWR	<0.10	<0.5	<0.5
Sub-total	8.5	100	35

²⁵ Washington and California

Table 7 (continued).

Department of the Interior	Funding (millions)	Percent of sub-total	Percent of total
Fish and Wildlife Service (continued)			
U.S. Geological Survey			
Alaska Science Center	4.3	58	17
Wetland and Aquatic Research Center	1.2	16	5
Headquarters	0.92	12	5
Western Ecological Science Center	0.71	9	4
Patuxent Wildlife Research Center	0.15	2	1
Leetown Science Center	0.12	2	<0.5
Fort Collins Science Center	<0.10	1	<0.5
National Wildlife Health Center	<0.10	<0.5	<0.5
Sub-total	7.5	100	31
Bureau of Ocean Energy Management			
Alaska Outer Continental Shelf Office	4.3	63	18
Atlantic Outer Continental Shelf Office	1.9	28	8
Pacific Outer Continental Shelf Office	0.25	4	1
Gulf of Mexico Outer Continental Shelf Office	0.22	3	1
Headquarters	0.17	3	1
Sub-total	7.1	100	28
National Park Service			
Glacier Bay NP	0.52	34	2
Kenai Fjords NP	0.21	14	1
Alaska Region	0.18	11	1
Inventory and Monitoring Division	0.17	11	1
New Bedford Whaling NHP	0.16	10	1
Pacific West Region	0.13	8	1
Point Reyes NS	<0.1	4	<0.5
Biological Resources Division	<0.1	3	<0.5
Redwood NP	<0.1	1	<0.5
Cape Cod NS	<0.1	1	<0.5
Katmai NP and Preserve	<0.1	1	<0.5
Natural Sounds and Night Skies Division	<0.1	1	<0.5
Everglades NP	<0.1	1	<0.5
Cape Hatteras NS	<0.1	<0.5	<0.5
Fire Island NS	<0.1	<0.5	<0.5
Channel Islands NP	<0.1	<0.5	<0.5
Gateway NRA	<0.1	<0.5	<0.5
Canaveral NS	<0.1	<0.5	<0.5
Cumberland Island NS	<0.1	<0.5	<0.5

Table 7 (continued).			
Department of the Interior	Funding (millions)	Percent of sub-total	Percent of total
National Park Service (continued)			
Cabrillo NM	<0.1	<0.5	<0.5
Haleakala NP	<0.1	<0.5	<0.5
Olympic NP	<0.1	<0.5	<0.5
Kaloko-Honokohau NHP	<0.1	<0.5	<0.5
Gulf Islands NS	<0.1	<0.5	<0.5
Golden Gate NRA	<0.1	<0.5	<0.5
Southeast Region	<0.1	<0.5	<0.5
Water Resources Division	<0.1	<0.5	<0.5
Padre Island NS	<0.1	<0.5	<0.5
Sub-total	1.5	100	6
Bureau of Safety and Environmental Enforcement			
Environmental Enforcement Division	0.09		<1
Total	24.4		100
By region (agencies, centers, and offices combined)			
Alaska	14.7		60
Atlantic and Gulf of Mexico	5.3		22
National	3.0		12
Pacific	1.4		6
Total	24.4		100

U.S. Geological Survey

The USGS works with the FWS, other federal and state agencies, and conservation and academic organizations to study the biology, population dynamics, and ecology of polar bears, walruses, sea otters, and West Indian manatees. The Survey is strictly a research organization and has no management or regulatory authority over these species. The agency conducts marine mammal research within its Ecosystems Mission Area. The USGS makes the results of its research available to management agencies, such as the FWS, to inform management decisions. In fiscal year 2015 the USGS reported allocations of \$7.5M (Table 7) for 39 projects and other activities to assess the status and health of the polar bear, walrus, sea otter, and West Indian manatee, to ascertain their vulnerability to natural and human-related risk factors, and to advise on management measures needed to protect and conserve them.

Bureau of Ocean Energy Management and the Bureau of Safety & Environmental Enforcement

The safe development of the nation's offshore energy and mineral resources is under the purview of BOEM. BOEM's Office of Environmental Programs, three regional offices (Alaska, Pacific, and Gulf of Mexico), and its Office of Renewable Energy Programs (currently focused on the Atlantic outer continental shelf, OCS, region) plan and initiate research needed to comply with the Outer Continental Shelf Lands Act, MMPA,

ESA, NEPA, and other legislation. The research is organizationally divided into regions of the U. S. outer continental shelf: the Alaska, Pacific, Gulf of Mexico, and Atlantic OSC regions. During fiscal year 2015 BOEM allocated \$6.9M (Table 7) for 26 projects and other activities, most of which were designed to assess the distribution, movements, relative abundance, and ecology of marine mammals in areas where offshore energy development (oil and gas exploration and extraction, and wind and hydrokinetic electrical generation) was scheduled to occur, in development, or already underway. BOEM also assess possible adverse impacts from sand and gravel extraction in U. S. federal waters. The regional distribution of funds within BOEM was extremely uneven in fiscal year 2015. The Gulf of Mexico and Pacific regions reported just 1.9 percent (\$466K), combined, of the funds that the agency directed toward marine mammals. In contrast, the Alaskan region reported 63 percent (\$4.3M; 12 projects) of the agency's marine mammal budget, and the Atlantic region reported 28percent (\$1.9M). In the Alaska region those funds were focused on the CHAOS study of acoustics, oceanography and zooplankton in the Chukchi Sea, Arctic marine mammals (e.g., bowhead whales, walrus, polar bears and "ice" seals), and the Arctic Marine Biodiversity Observing Network. BSEE reported \$90K (1 project) in funding for research associated with environmental enforcement activities.

National Park Service

The National Park Service contributes to research and management of marine mammals in waters and on lands under its authority. Its activities include conducting section 7 consultations under the ESA, ensuring compliance with NEPA, and undertaking marine mammal conservation efforts. NPS functions in a critical junction between marine mammal science and public education. The Park Service is a leader in marine mammal conservation and education at sites such as the Channel Islands and Kenai Fjords National Parks, Point Reyes and Cape Cod National Seashores, and Golden Gate and Gateway National Recreational Areas. Cultural and educational displays, like those at New Bedford Whaling National Historic Park, tell the collective human and marine mammal histories, including native subsistence activities continuing in present day. National Park Service Research and Learning Centers, like the Ocean Alaska Science and Learning Center, conduct marine mammal research in collaboration with other federal agencies, state partners, and universities, and connect students and volunteers to marine mammal conservation through hands-on science. Additionally, the National Park Service also supports capacity building and training of its resource managers, who participate in marine mammal stranding networks, health and disease monitoring, disentanglement operations, and necropsies. Regional Inventory and Monitoring (I&M) Network staff provide guidance, technical assistance, and logistical support to NPS units by conducting natural resource inventories and monitoring and integrating data into NPS planning, management, and decision making. The National Park Service considers marine mammals to be a focal point of its Migratory Species Program, which was established in 2009. In fiscal year 2015, the National Park Service allocated \$1.5M for 51 studies of marine mammal ecology and other activities in eight of its National Parks, eight of its National Seashores, six other units (e.g., National Historic Parks, National Monuments), and several of its regional offices or national programs (e.g., the Biological Resources Division, Inventory and Monitoring Division) (Table 7).

Independent Agencies

Marine Mammal Commission

The Marine Mammal Commission (the Commission) supports research and studies pertaining to the conservation and protection of marine mammals in accordance with the provisions of the MMPA, ESA, and NEPA. The Commission manages its research program to avoid redundancy with studies conducted by other agencies and to fill information gaps. Through its support of research and conservation projects, it seeks to develop pro-active solutions to emerging human/marine mammal issues before they become crises requiring more costly solutions. The Commission fills an important role in the marine mammal community, funding small-scale but important projects, of which some are innovative studies looking for seed money and others support low budget but vital research and conservation activities in developing countries. In fiscal year 2015 the Commission was allocated a total \$3.3M to carry out its duties (Figure 1, Table 4), including \$121K in expenditures for five projects covering a wide range of marine mammal species and related topics. The bulk of the Commission's expenditures went to fulfilling its duties,²⁶ which include 1) reviewing federal marine mammal activities; 2) reviewing the condition of marine mammal stocks, their protection and conservation, humane means for their taking, and federal research programs; 3) undertaking or funding studies necessary to the conservation and protection of marine mammals; 4) making recommendations to the Secretaries of Commerce (NOAA Fisheries, in effect) and Interior (U.S. Fish and Wildlife Service, in effect), and other federal officials, regarding actions necessary for the protection and conservation of marine mammals; 5) making recommendations to the Secretary of State regarding appropriate policies for the protection and conservation of marine mammals internationally; 6) making recommendations to the Secretaries Commerce and Interior appropriate revisions to the endangered species list; and 7) making recommendations to appropriate federal officials and Congress relative to the furtherance of the Marine Mammal Protection Act, including provisions pertaining to native Americans that may be affected adversely.

National Science Foundation

The National Science Foundation (NSF) supports research projects that examine aspects of marine mammal habitats such as large marine ecosystems, including in the Antarctic and Arctic ecosystems, and provides support for a number of basic studies on marine mammal physiology, behavior, and ecology. In addition, NSF supports ocean research in disciplines considered important to marine mammals as well as research on methods to mitigate, monitor, and assess the potential effects of certain human activities and natural environmental factors on marine mammals and their habitats.

In fiscal year 2015, NSF reported \$1.7M (Figure 1, Table 4) in funding for 11 projects involving research on a wide variety of topics, including dive physiology, cetacean phylogeny, geomagnetic navigation, ecosystems, dolphin language, and passive acoustic monitoring.

²⁶ The survey reported herein is one element related to the first two duties.

The Smithsonian Institution

The Smithsonian reported seven projects totaling \$573K in expenditures by the National Zoo, Museum of Natural History, Tropical Research Institute and Environmental Research Center. Project foci included studies of sea otter nutrition, marine traffic separation schemes, monitoring manatee population and habitat in Panama, phylogenetics of *Lagenorhynchus* dolphins, and the evolution of sound reception in cetaceans.

National Aeronautics and Space Administration

NASA reported project expenditures of \$50,000 for the monitoring of manatees near the Kennedy Space Center.

Department of Homeland Security

U.S. Coast Guard

The U.S. Coast Guard (USCG) is the only agency within the Department of Homeland Security that expends resources on issues related to marine mammals. The USCG focuses primarily on compliance with and enforcement of the nation's maritime laws and regulations and on emergency response to both natural (e.g., hurricanes) and human-related crises (e.g., distressed vessels). The Coast Guard supports some marine mammal research and conservation activities through its Marine Protected Species Program, which aligns its goals and objectives closely with those of the National Marine Fisheries Service and Fish and Wildlife Service. In fiscal year 2015, the USCG reported programs in eight of its district that were focused on the protection of marine mammals, totaling approximately \$2.8M (Figure 1, Table 4).

Department of Energy

Office of Energy Efficiency & Renewable Energy

The Department of Energy occasionally supports marine mammal research. Studies have focused primarily on sustainable energy development in aquatic ecosystems, and on problems related to monitoring marine mammals. For fiscal year 2015 survey the Office of Energy Efficiency & Renewable Energy's Wind and Water Power Technologies Office reported the allocation of just over \$900K for seven research projects and other activities related to marine mammals (Figure 1, Table 4). Research was focused on the development of tools needed to measure and monitor impacts of renewable energy systems on marine mammals, and gather baseline information off the U.S. East Coast and Oregon.

Department of Health and Human Services

National Institutes of Health

The National Institutes of Health (NIH) in the Department of Health and Human Services is the nation's medical research agency and consists of 27 Institutes and Centers. It supports basic research on a wide

range of topics, some of which are relevant to marine mammal health. Similarly, the health of marine mammals is considered a potential factor in disease processes that may affect humans and/or domestic animals. In fiscal year 2015, NIH reported three projects pertinent to marine mammal physiology and toxin exposure totaling approximately \$707K (Figure 1, Table 4).

Project Expenditures

Total funding by departments, agencies and offices was described in the previous sections, where total funding included direct project expenditures, direct expenditures for miscellaneous marine mammal activities and the indirect or support costs associated with these two categories of expenditures. This section summarizes the projects reported to the survey in terms of their objectives, focal species, and geographical coverage, using the number of projects and direct expenditures as measures of importance.

Project Objectives

The survey asked respondents to specify the objectives for each project and the allocation of the project funding among objectives. Of the 539 projects reported to the survey, 134 listed a single objective, and another 263 listed two to five objectives. Ninety-two projects listed 6-10 objectives, and 50 projects listed more than 10 objectives.

Objective Category	Funding (millions)	Percent of total
Populations Dynamics and Stock Assessment	21.2	22
Conservation, Management and Policy	18.0	19
Ecology	11.7	12
Technology Development	9.5	10
Anthropogenic Sound Impacts	9.5	10
Biology	8.5	9
Animal Health	7.7	8
Communication, Outreach, and Meetings	3.9	4
Fishery Interactions	2.7	3
Other Anthropogenic Impacts	1.0	1
Human Dimensions	0.68	1
Pollution Impacts	0.43	0.5
Total	94.8	100

Categories representing activities focused on assessing and understanding the status of marine mammals (Population Dynamics and Stock Assessment; Conservation, Management and Policy; Ecology; Technology Development; Biology; and Animal Health) were associated with the largest expenditures (\$21.2M to \$7.7M per category; Figure 4; Table 8). In contrast, expenditures for projects that focused on the impacts of human activities on marine mammals were much lower. The largest expenditures within this group were for objectives associated with the impacts of anthropogenic sound (\$9.5M), which reflects the Navy's

concern regarding sonar, and BOEM's concerns with seismic surveys, pile-driving, large ships, and any other significant anthropogenic sound source. Expenditures for Fishery Impacts were \$2.7M, which is small given that fisheries bycatch is widely acknowledged as the largest source of direct mortality and serious injury for marine mammals.

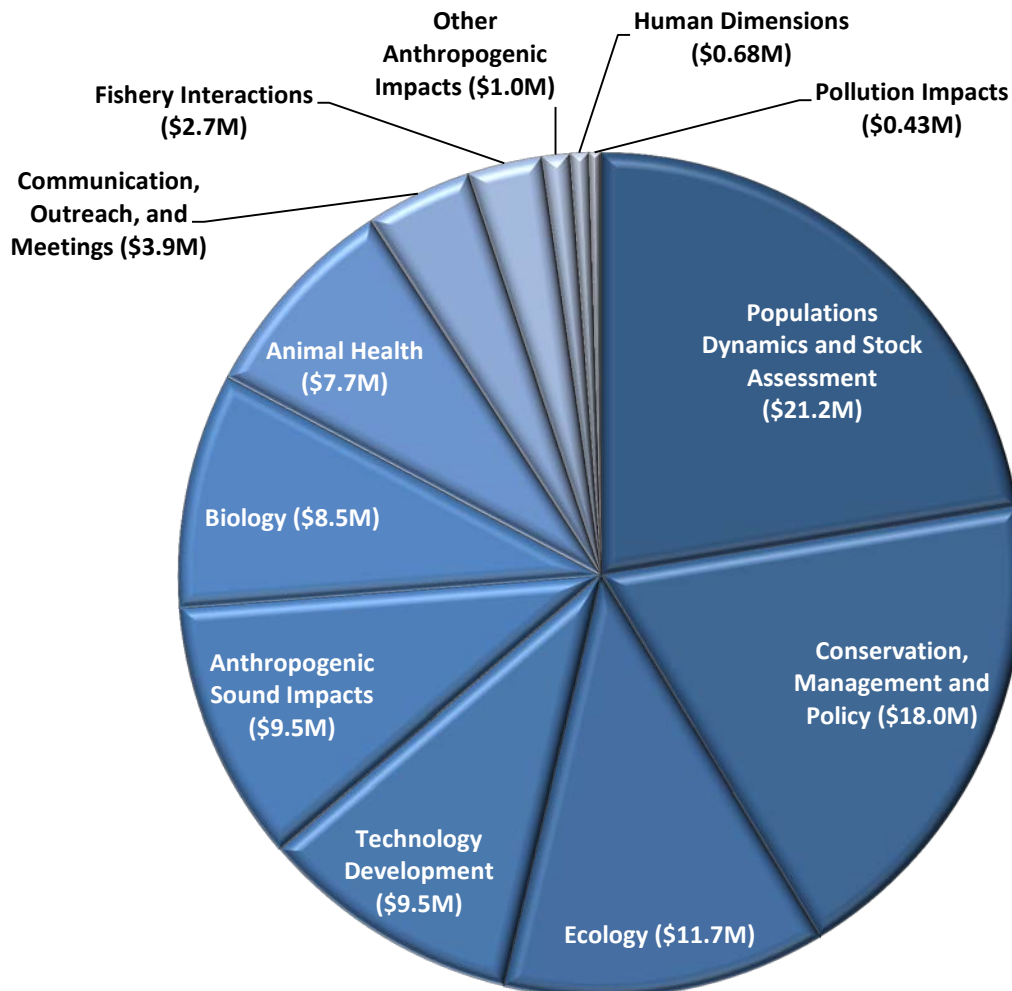


Figure 4. Fiscal year 2015 project expenditures reported by project objective.

With regard to the objective categories, Population Dynamics and Stock Assessment ranked first with direct expenditures of 21.2M, which accounted for 22 percent of the \$94.8M in direct project expenditures (Figure 4, Table 8). Within this category, 58 percent (\$12.2M) of expenditures were directed toward Distribution and Movements, Population Size/Abundance, and Trends (Table 9). Another 32 percent (\$6.7M) was directed toward Vital Rates, Population Dynamics, and Stock Assessment. The last 11 percent (\$2.3M) was devoted to studies of Population Structure, Genetics and Stock Delineation.

The second ranked category was Conservation, Management and Policy, with direct expenditures of \$18.0M. Within this category, expenditures were spread widely, with Monitoring, Surveillance and

Enforcement accounting for 23 percent (\$4.1M), Conservation and Population Protection/Recovery 16 percent (\$2.9M), and several management objectives accounting for 61 percent (\$11.0M; Table 9).

Project objective		Funding (millions)	Percent of sub-total
Population Dynamics and Stock Assessment	Distribution and movements	5.6	26
	Size / abundance	4.8	23
	Vital rates	2.6	12
	Stock assessment	2.2	10
	Population dynamics	1.9	9
	Trends	1.8	8
	Population delineation	1.4	7
	Population structure	0.84	4
	Sub-total	21.2	100
Conservation, Management, and Policy	Monitoring	3.2	18
	Permitting / authorization	2.9	16
	Consultation / listing-delisting / NEPA	2.7	15
	Conservation	1.9	10
	Regulatory compliance	1.8	10
	Management	1.5	9
	Population protection / recovery	1.0	6
	Policy	1.0	6
	Surveillance / enforcement	0.83	5
	Co-management	0.82	5
	Governance	0.15	1
	Sub-total	18.0	100
Ecology	Habitat use	3.3	28
	Trophic interactions	3.1	27
	Ecosystems	1.4	12
	Habitat characterization	1.3	11
	Population ecology	1.2	10
	Behavioral ecology	1.1	9
	Traditional knowledge	0.28	2
	Sub-total	11.7	100
Technology Development	Tags/telemetry devices	2.2	23
	Acoustic detection, classification & location	1.3	14
	Mathematical / statistical / simulation models	1.2	13
	Acoustic devices	1.2	12
	Sampling platforms	1.0	10
	Acoustic density estimation models	0.50	5

Table 9 (continued).			
Project objective		Funding (millions)	Percent of sub-total
Technology Development (continued)	Database design / maintenance / archiving	0.47	5
	Cameras	0.33	4
	Biological sampling devices	0.29	3
	Oceanographic sampling devices	0.28	3
	Photo-ID	0.22	2
	Biological testing methodologies	0.22	2
	Imaging / Image analysis	0.16	2
	Line transect methodology	<0.01	1
	GIS	<0.01	<0.5
	Habitat mapping / modeling	<0.01	<0.5
	Sub-total	9.5	100
Anthropogenic Sound Impacts	Military activities – sonar	5.3	56
	Military activities – explosions	3.0	32
	Industrial activity – shipping	0.63	7
	Characterization/Analysis of sound budgets	0.31	3
	Industrial activity – pile driving	0.16	2
	Energy development – seismic surveys	<0.01	<0.5
	Energy development – drilling	<0.01	<0.5
	Energy development – platform removal	<0.01	<0.5
	Energy development – non-seismic surveys	<0.01	<0.5
	Sub-total	9.5	100
General Biology	Behavior – diving / foraging / feeding	2.4	28
	Physiology / endocrinology / neurology / etc.	1.6	19
	Genetics / taxonomy	1.5	17
	Bioacoustics – sound production	0.96	11
	Bioacoustics – sound reception	0.69	8
	Behavior – kinematics	0.51	6
	Behavior – social / reproductive	0.40	5
	Anatomy / Morphology	0.32	4
	Reproduction / Growth / Aging	0.13	2
	Paleontological studies	<0.10	1
	Sub-total	8.5	100
Animal Health	Monitoring/assessment	1.2	15
	Stranding response	1.1	15
	Body condition	1.0	13
	Disease	0.93	12
	Care and rehabilitation	0.88	11
	Sample collection	0.83	11

Table 9 (continued).			
Project objective		Funding (millions)	Percent of sub-total
Animal Health (continued)	Diagnostics	0.60	8
	Necropsy	0.40	5
	Biotoxins	0.39	5
	Contaminants	0.36	5
	Sub-total	7.7	100
Communication, Outreach and Meeting	Outreach	1.5	40
	Education	1.2	31
	Meetings/workshops/conferences	0.77	20
	Publications	0.34	9
	Sub-total	3.9	100
Fishery Interactions	Entanglement response	0.73	27
	Bycatch – mitigation	0.55	20
	Bycatch – other fishing gear	0.55	20
	Bycatch – gillnet / pot gear entanglement	0.49	18
	Depredation	0.30	11
	Indirect fishery interactions	<0.10	3
	Sub-total	2.7	100
Other Anthropogenic Impacts	Disturbance	0.33	33
	Tourism - observing	0.24	24
	Vessel strikes	0.24	23
	Pile driving	0.13	13
	Tourism – swim-with / feeding	<0.10	7
	Coastal development / dredging	<0.10	<0.5
	Sub-total	1.0	100
Human Dimensions	Marine mammals and coastal communities	0.50	73
	Whaling / subsistence harvesting	0.16	24
	Social science	<0.10	2
	Economics	<0.10	1
	Sub-total	0.68	100
Pollution Impacts	Hydrocarbon spills/leaks	0.23	54
	Nutrient runoff / HABs	0.11	26
	Marine debris	<0.10	9
	Persistent toxins	<0.10	8
	Marine debris - plastics	<0.10	3
	Sub-total	0.43	100
Total		94.8	

The Ecology objectives category garnered \$11.7M in direct expenditures with two objectives, Habitat Use and Habitat Characterization, amounting to 39 percent (\$4.6M) of the total. Studies of Trophic Interactions, Diet and Foraging Ecology received 27 percent (\$3.1M) of the funding, with a wide range of other ecological studies accounting for most of the rest of the expenditures (31 percent, \$3.7M). Expenditures for Traditional Ecological Knowledge amounted to just \$276K (Table 9). Technology Development accounted for \$9.5M in direct expenditures, which were spread fairly evenly across numerous objectives (Table 9). The development of Tags and Telemetry Devices was allocated 23 percent (\$2.2M) of the total expenditures. The development of algorithms for the Detection, Classification and Location of marine mammal vocalizations, and models/analyses for a variety of purposes received 35 percent (\$3.3M) of the \$9.5M. The development of various types of devices (e.g., sampling platforms, acoustic devices, cameras, etc.) accounted for another 32 percent (\$3.2M) of direct expenditures.

Anthropogenic sounds from a variety of sources, such as seismic surveys, military activities and shipping, impact marine mammals directly and affect the suitability of their environments. Projects that addressed Anthropogenic Sound Impacts accounted for \$9.5M in direct project expenditures (Table 9). Studies related to the use of Military Sonar and Explosion accounted 88 percent (\$8.3M) of the expenditures. Studies related to Shipping accounted for another 7 percent (\$627K). No other category accounted for more than three percent of the expenditures.

General Biology, a traditional and important area of marine mammal research, accounted for \$8.5M in direct expenditures. Diving, Foraging and Feeding Behavior was the largest focus of general biology research, 28 percent (\$2.4M) of the total, while other behavioral studies accounted for another 11 percent (\$908K). Physiology, Reproduction, Growth and Aging research received 21 percent (\$1.8M), while Genetics, Anatomy, Morphology and Taxonomy accounted for another 21 percent (\$1.8M; Table 9). Studies of the production and reception of sound by cetaceans accounted for another 19 percent (\$1.7M).

Expenditures for Animal Health totaled \$7.7M. Marine Mammal Stranding Response, including necropsies of dead animals and the care and rehabilitation of live strandings received 31 percent (\$2.4M) of the Animal Health expenditures (Table 9). Various activities involved with assessing and monitoring the condition and health of wild marine mammals accounted for another 47 percent (\$3.6M), and studies of Contaminants, Disease and Biotoxins accounted for an additional 22 percent (\$1.7M).

Projects addressing Communication, Outreach and Meetings accounted for \$3.9M in expenditures, with Outreach, Education and Publications receiving 80 percent (\$3.1M) of the total, and the remaining expenditures going toward Meetings, Workshops, and Conferences (Table 9).

The objectives category, Fisheries Interactions, accounted for \$2.7M in direct expenditures (Table 9), with bycatch projects accounting for most of that amount (86 percent; \$2.3M).

A variety of other anthropogenic impacts (\$1.0M) were the subject of other projects (Table 9). Disturbance accounted for 33 percent (\$333K) of the expenditures, Tourism for 30 percent (\$310K), and Vessel Strikes for 23 percent (\$236K).

Projects in the Human Dimensions category²⁷ accounted for approximately \$684K in direct expenditures (Table 9). Studies of the interactions between growing populations of Marine Mammals and Coastal Communities accounted for 73 percent (\$499K) of those expenditures. Historic Whaling and contemporary Subsistence Harvesting accounted for 24 percent (\$164K), while Social Science and Economics studies garnered just 3 percent (\$20K) of the total project expenditures in this category.

Projects within the Pollution Impacts category accounted for approximately \$430K, with the bulk of those funds (53 percent; \$229K) being allocated to studies on Hydrocarbon Spills and Leaks (Table 9).

Species and Species Groupings

One hundred and twenty-eight species were listed as at least the partial focus of one or more projects. Roughly half of all projects (267) focused on just one species, and another 129 listed two to five species as the targets of the project. Forty-five projects listed 6-10 species, and 30 listed 11-20. In contrast, because surveys of the distribution and abundance of marine mammals and stranding programs are a standard part of the activities of several agencies, 68 projects listed over 20 species.

Almost all species were listed as the focus of multiple projects. Only 16 species²⁸ were listed on three or fewer projects. At the other end of the spectrum, 12 species – humpback, fin, blue, sperm whale, killer, Cuvier's beaked Short-finned pilot and minke whale, common bottlenose and Risso's dolphin, harbor seal, harbor porpoise – were at least a partial focus of more than 15 percent of the projects.

The 61 projects that were not focused on any particular species and were potentially applicable to all species accounted for \$3.4M in direct expenditures by federal agencies in fiscal year 2015. Examples of such projects are:

- Marine Mammal Monitoring and Stranding Response at Olympic National Park;
- Animal Telemetry Network Data Assembly Center;
- The Development of Advanced Passive Acoustic Monitoring Systems Using Micromars Technology;
- Support for Society for Marine Mammalogy 2015 Biennial Conference;
- Development of an Interim Passive Ocean Acoustic Waveguide Remote Sensing System for Instantaneous Continental-Shelf Scale Marine Mammal Monitoring, Localization and Species Classification in Near Real Time;
- Marine Mammal Protection Act Compliance and Reporting;
- Marine Mammal Effects from Testing and Evaluation on Ocean Ranges;
- Collection and Exchange of Marine Mammal Parts;
- Marine Mammal Observer Lookout Effectiveness Study;
- Marine Mammal Stomach Analyses; and
- Fine-Scale Marine Mammal Surveys and Data Analysis.

²⁷ Whaling and subsistence harvesting, marine mammals and coastal communities, social science, and economics

²⁸ Amazonian manatee, Dugong, marine otter, , Juan Fernandez fur seal, Japanese sea lion, Subantarctic fur seal Mediterranean monk seal, Galapagos sea lion, New Zealand fur seal, Caribbean monk seal, New Zealand seal lion, Galapagos fur seal, and South American fur seal

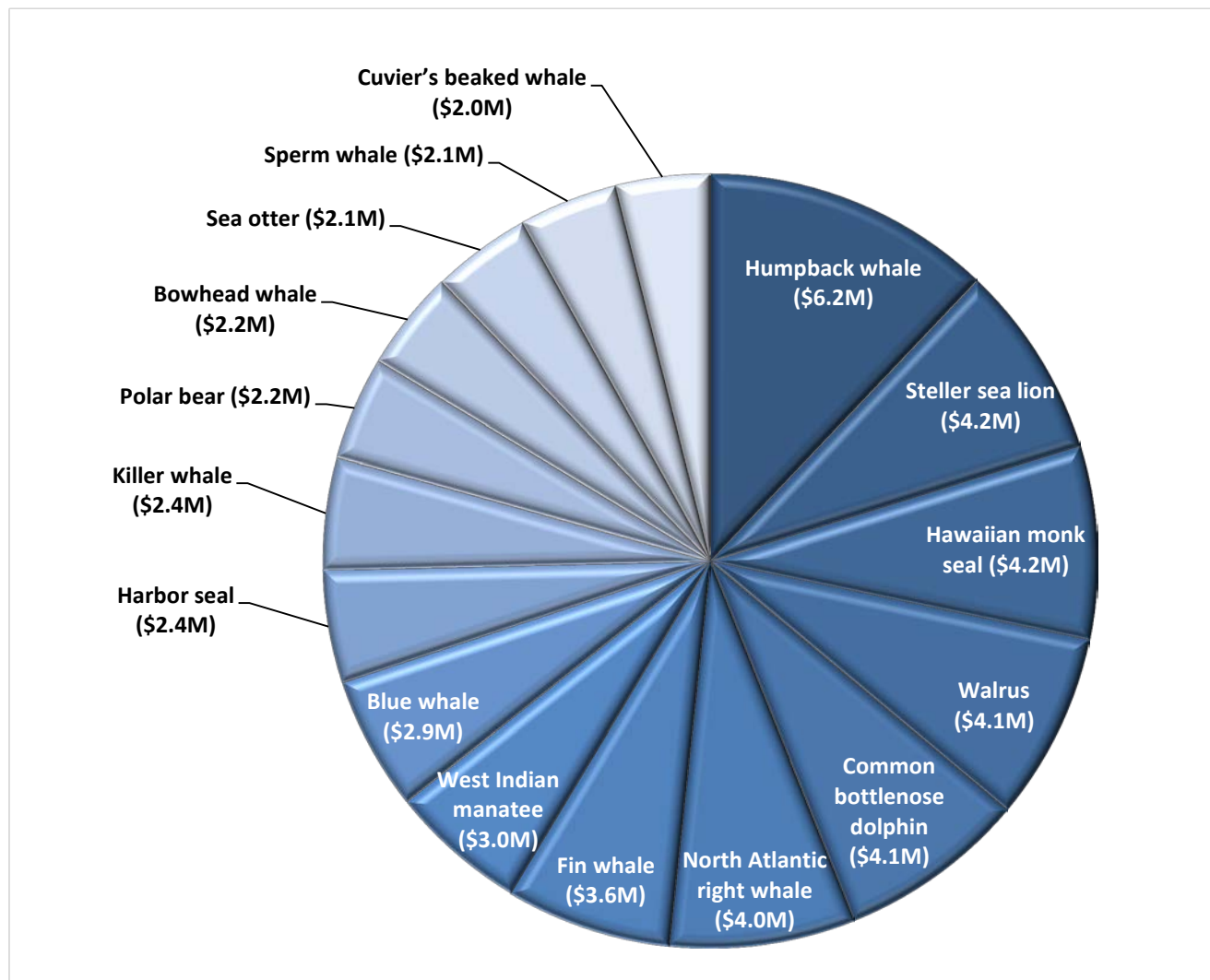


Figure 5. Species with more than \$2.0M in direct project expenditures in fiscal year 2015.

Sixty-four species received over \$200K in direct expenditures (Table 10), and 16 of those species had expenditures of over \$2.0M each (Figure 5), including six baleen whale species (humpback, North Atlantic right, fin, blue, and bowhead), four pinniped species (Steller sea lion, Hawaiian monk seal, walrus, and harbor seal), four odontocetes (common bottlenose dolphin, killer whale, sperm whale, and Cuvier's beaked whale), and West Indian manatees, polar bears, and sea otters.

Fiscal year 2015 funding by various taxonomic or ecological groups is presented in Figure 6. Of the \$91.4M that was directed at, or associated with, particular species or species groups, \$34.8M (38 percent) went to odontocetes (dolphins, beaked whales, sperm whales,²⁹ monodontids,³⁰ and porpoises), \$24.5M (27 percent) to the pinnipeds (true and eared seals, and walrus), \$24.5M (27 percent) to baleen whales

²⁹ Sperm whale, pygmy sperm whale and dwarf sperm whale

³⁰ Beluga and narwhal

(rorquals,³¹ right whales,³² and the gray whale), \$4.4M (5 percent) to the polar bear and sea otter combined, and \$3.1M (4 percent) to sirenians (manatees and dugongs).

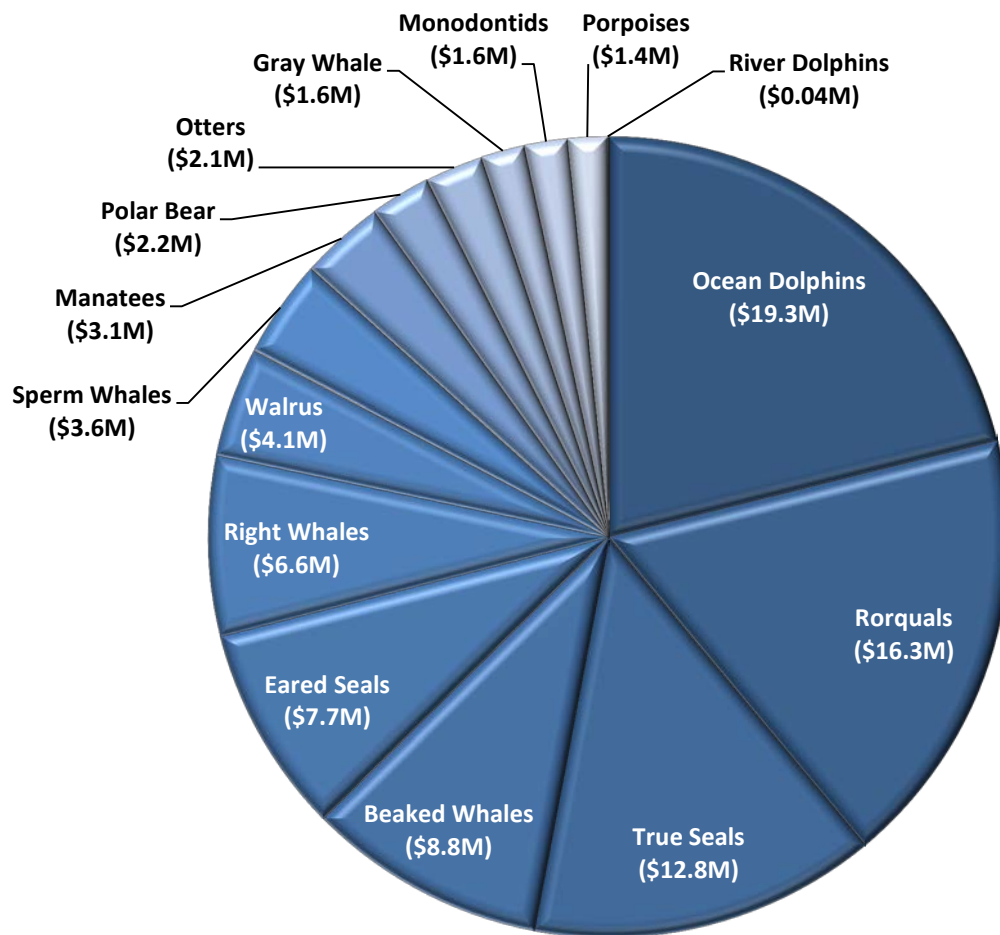


Figure 6. Fiscal year 2015 direct project expenditures reported by taxonomic or ecological grouping.³³

³¹ Humpback, blue, fin, sei, minke, and Brydes whales

³² North Atlantic, North Pacific, Southern and pygmy right whale

³³ Ocean dolphins are dolphins and small toothed whales of the family Delphinidae. The rorquals belong to the family Balaenopteridae. The true and eared seals are members of the families Phocidae and Otariidae, respectively. The beaked whales are members of the family Ziphiidae. The right whales include the members of the families Balaenidae and Neobalaenidae. The walrus is the sole member of the family Odobenidae. The polar bear is the only member of the family Ursidae that is considered a marine species. The sperm whales include the sperm whale, which is the sole member of the family Physeteridae, and the dwarf and pygmy sperm whales, which are members of Kogiidae, a closely related family. The manatees are members of the family Trichechidae within the order Sirenia; included in this grouping is the dugong, which is the sole living member of the other family within the Sirenia, Dugongidae. The gray whale is the sole species in the family Eschrichtiidae. The sea otter is the sole marine member of the family Mustelidae, for which any data were reported. The monodontids, narwhal and beluga whale, are members of the family Monodontidae. The porpoises are members of the family Phocoenidae. The river dolphins, which are linked by the habitat they occupy, belong to one of four families: Iniidae, Lipotidae, Pontoporiidae, and Platanistidae.

Conservation Status

Marine mammal conservation status is designated by NOAA Fisheries and the FWS in accordance with the provisions of the ESA and MMPA. The ESA defines a species as endangered if it is “in danger of extinction within the foreseeable future throughout all or a significant portion of its range” or threatened if it is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The MMPA defines a marine mammal “species or population stock [that] is below its optimal sustainable population level” as depleted. It defines a strategic marine mammal stock as one:

- (A) “for which the level of direct human caused mortality exceeds the potential biological removal level;
- (B) “which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act of 1973 ... within the foreseeable future; or
- (C) “which is listed as a threatened species or endangered species under the Endangered Species Act of 1973 ... or is designated as depleted... .”

Thus, any species listed as endangered or threatened under the ESA also will be designated as depleted and categorized as strategic under the MMPA, and any species designated as depleted will be categorized as strategic. However, not every species with one or more strategic stocks will necessarily be designated as depleted or listed as threatened or endangered.

In fiscal year 2015, federal agencies allocated \$91.4M in direct expenditures for research and/or conservation projects focused on particular species. Of this total, 61 percent (\$55.6M) was directed toward, or associated with, species listed as endangered or threatened, or designated as depleted or categorized as strategic (Figure 7). Species or stocks in this grouping included several that are at small population sizes and/or declining, such as Steller sea lion (\$4.2M), Hawaiian monk seal (\$4.2M), North Atlantic right whale (\$4.0M), killer whale (\$3.6M), sea otter (\$2.1M), and Northern fur seal (\$1.6M).

Funding ranged from about \$0.62M to \$6.2M dollars for each of the 21 most highly funded (<\$500K) species listed as endangered or threatened under the ESA, or designated as depleted or strategic under the MMPA. Funding for those 21 species totaled \$54.3M (average \$2.6M) compared to \$1.3M (average \$105K) for the remaining 12 listed/designated species. The other \$35.8M of direct expenditures that was focused on particular species was directed toward, or associated with, species not listed or designated in one of these categories. The species in this grouping that had substantial expenditures, typically because of their importance to coastal communities or susceptibility to human impacts, included the harbor seal (\$2.4M), Cuvier’s beaked whale (\$2.0M), Blainville’s beaked whale (\$1.8M), minke whale (\$1.7M), gray whale (\$1.6), California sea lion (\$1.6M), Risso’s dolphin (\$1.2M), Short-beaked common dolphin (\$1.1M), and Short-finned pilot whale (\$1.0M). However, not all species of importance to coastal communities or susceptible to human impacts received expenditures as substantial as these. For example, direct expenditures of \$890K were directed toward harbor porpoises, and \$745K to gray seals.

Expenditures for several Arctic species, which are important to Native communities and very susceptible to climate change impacts, were substantial (e.g., walrus \$4.1M, bowhead whale \$2.2M, spotted seal \$1.1M, bearded seal \$670K, and ringed seal \$619M).

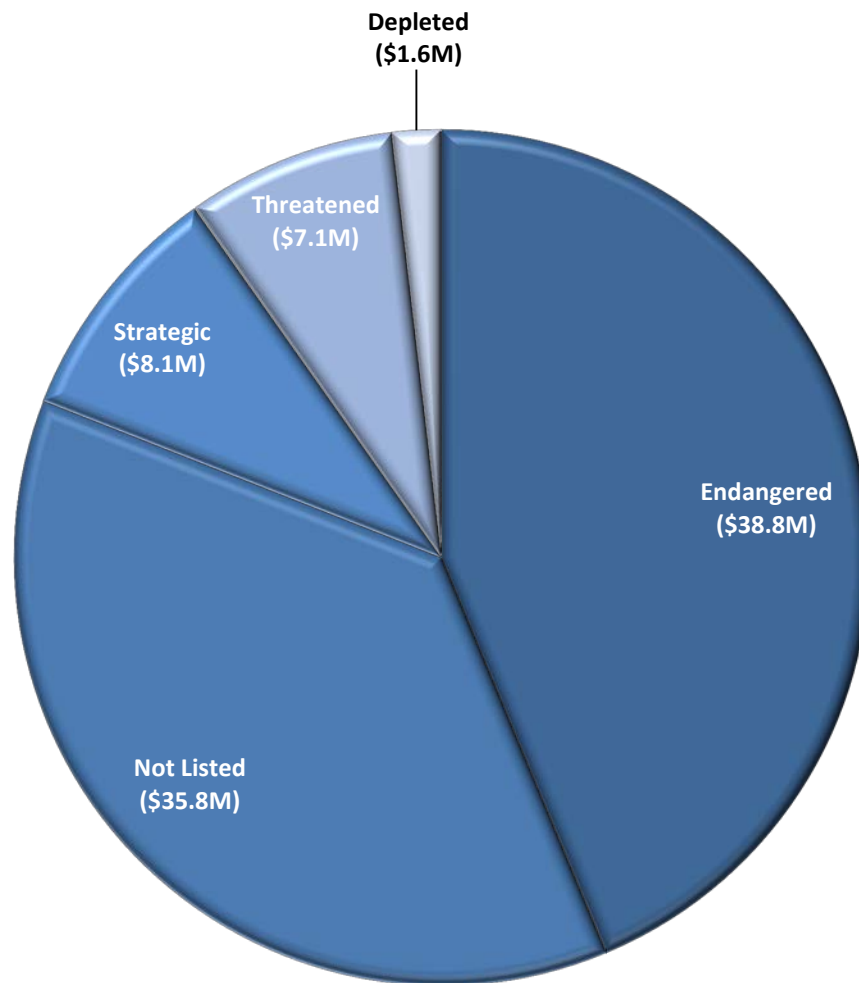


Figure 7. Fiscal year 2015 direct project expenditures reported by species' ESA and MMPA conservation status.³⁴

To further illustrate the variation in expenditures, for endangered large whales the combined funding for humpback,³⁵ North Atlantic right, bowhead, fin, blue and sperm whales averaged \$3.5M per species (\$21.0M in total; individual funding ranged from \$2.1M to \$6.2M), whereas that for the two remaining U.S. species – sei and North Pacific right whales – averaged \$622K per species (\$1.2 in total; individually \$907K and \$336K, respectively).

³⁴ The Strategic category does not include those stocks that are categorized as strategic automatically because they are listed as endangered or threatened under the ESA, only those not listed but categorized as strategic under the MMPA because the stock is declining and its rate of direct human-caused mortality exceeds its PBR.

³⁵ Humpback whales were endangered for most fiscal year 2015. Most populations DPSs were de- or down-listed in September 2016.

Geographic Region

Survey respondents identified the geographic regions within which each project operated or was relevant to the project. The options for geographic regions included the coastal Large Marine Ecosystems and large open ocean areas (Appendix C). Fifty-two Large Marine Ecosystems (LMEs) or open ocean areas were selected by respondents across the whole survey, amounting to \$88.6M in direct project expenditures. The 14 LMEs and open ocean areas with the greatest funding accounted for 93 percent (\$82.5M) of the total expenditures (Figure 8). The combined total for the U.S. Arctic LMEs³⁶ captured the largest portion of the funding (21 percent, \$18.4M). Two adjacent areas – the Gulf of Alaska LME and the Northwest Pacific Ocean – accounted for another 12 percent (\$10.8M). The single LME with the largest expenditures was the California Current (17 percent of the total; \$15.2M); the adjacent Northeast Pacific Ocean area accounted for another seven percent (\$6.1M) of the expenditures. Further to the west and south, the Insular Pacific – Hawaiian LME accounted for an additional 12 percent (\$10.3M) of the expenditures. Expenditures in the Northeast U.S. Continental Shelf LME accounted for 9 percent (\$8.1M) of the total, and the adjacent Northwest Atlantic Ocean area another five percent (\$4.1M). The Southeast U.S. Continental Shelf, Gulf of Mexico and Caribbean LMEs accounted for 15 percent (\$13.3) combined in direct project expenditures.

Discussion

The main purpose of this survey and report is to provide information to federal agencies, individually and as a community, to help ensure the wisest use of limited resources for marine mammal research and conservation. The Commission intends that this report, and those that follow, assist agencies in 1) matching their resources to their needs and responsibilities (i.e., setting priorities and distributing funds accordingly), and 2) identifying areas where they may better coordinate within and among agencies.

The Commission also believes that this and subsequent reports will provide a useful long-term record of federal resources allocated to marine mammal research and conservation.

The survey results provide an informative overview of the total amount of federal funding being used for marine mammal research and conservation. The results also provide a useful overview of the agencies contributing to that funding, their objectives, the distribution of the funding by region within agencies, the target species and species groups, and the conservation status of those species. That information should be useful for representatives of federal and state agencies, Congress, academic organizations, non-governmental conservation organizations, industries, American Natives, and the public who wish to learn more about the resources being directed toward marine mammal research and conservation.

The results will undoubtedly prompt the question of whether the total resources being directed toward marine mammal research and conservation are sufficient and are being used in the best possible way. By itself, this survey was not designed to address those questions. Indeed, answering those questions will require considerably more information about the threats to species and their habitat; their risks of decline, extirpation, or extinction; and the types of action needed to resolve research and conservation challenges.

³⁶ Chukchi Sea, Beaufort Sea, East Bering Sea and West Bering Sea LMEs

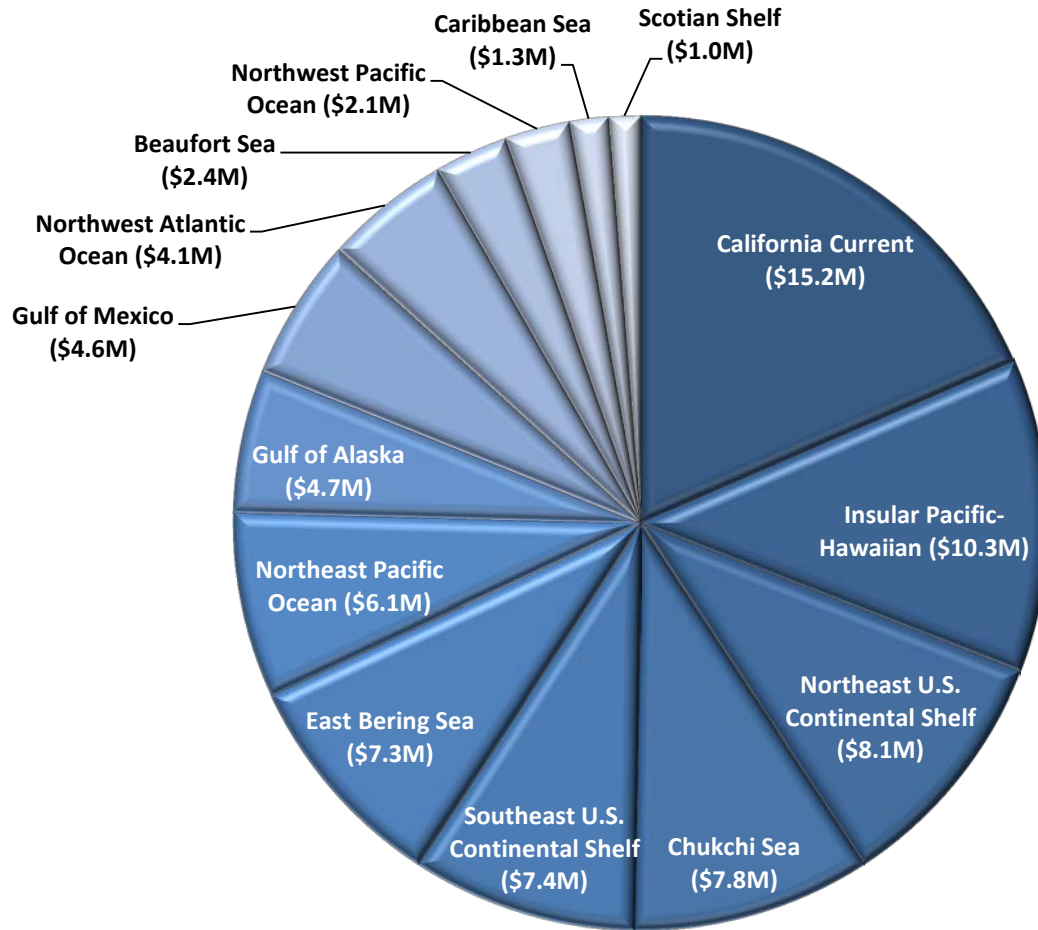


Figure 8. Fiscal year 2015 direct project expenditures reported by geographic location – Large Marine Ecosystems and open-ocean areas.

Next Steps

Although the Commission has made important changes and improvements to the design of the survey and the online survey tool, additional effort is needed to improve agencies' and respondents' understanding of the survey and to improve the consistency of data gathering and completeness. Doing so means learning more about the various ways agencies use and account for their resources.

Some issues to be addressed include—

- *Consistency in defining projects* — The number of projects supported or conducted by an agency is an imprecise measure of research and conservation effort because projects vary from the activities of a single person with few resources, to much larger projects involving multiple personnel and disciplines and requiring substantial resources such as vessels, aircraft, or extensive laboratory

facilities. In several cases, and in more than one agency, respondents entered entire programs as a single project when the survey design called for those activities to be entered as a series of projects. Such disparities should not have affected the overall funding estimates, but do affect the amount and resolution of information available, and its resolution for apportioning funds among species, taxonomic groups, species' status, regions, and project objectives.

- *Apportioning funds among objectives, species and locations* — The survey asks respondents who select more than one objective, species/stock or location for a project to apportion the funding for that project among the choices they made. In 2017, the Commission will be working with agencies to improve the options for selecting and apportioning funding among objectives, species and locations.
- *Total unit funding* — As with the fiscal year 2014 survey, the Commission again asked agencies to estimate their total marine mammal funding for each of the administrative units that conducted or funded such work. Feedback from some agencies indicates that some of these estimates may not be sufficiently accurate, and /or that too much time is required to generate the estimates. In addition, some agencies have found it to be very difficult to extract the information requested because their accounting systems do not capture project and expenditure in a compatible format. The Commission will be working closely with these agencies to improve the survey and to minimize these issues.
- *Incomplete reporting* — The lack of responses from a small set of agencies adds a source of bias to the amounts reported here as well as to the overall analyses and results. For instance, the lack of response from the Department of State means that funding for international marine mammal research and conservation is under-reported. Some agencies were able to report on work from some, but not all, of their units, and there is no doubt that some projects related to marine mammals were overlooked. The Commission will be working with agencies to improve the coverage of the survey in coming years.

Appendix A

Common and scientific names

Common and scientific names for marine mammals are included in this report or selected as the foci of one or more projects submitted to the 2015 Survey. The list is based on the Society for Marine Mammalogy's "List of Marine Mammal Species and Subspecies."³⁷ The codes in parentheses are used to indicate that the species does not occur in the U.S. Exclusive Economic Zone around the continental U.S., Alaska, or Hawaii, but rather occurs in foreign (F) or international waters (I), or in the waters of U.S. territories (T).

Common name	Scientific name
Amazon river dolphin (F)	<i>Inia geoffrensis</i>
Amazonian manatee (F)	<i>Trichechus inunguis</i>
Andrew's beaked whale (F)	<i>Mesoplodon bowdoini</i>
Antarctic fur sea (I)	<i>Arctocephalus gazella</i>
Antarctic minke whale (F, I)	<i>Balaenoptera bonaerensis</i>
Arnoux's beaked whale (F, I)	<i>Berardius arnuxii</i>
Atlantic humpback dolphin (F)	<i>Sousa teuszii</i>
Atlantic spotted dolphin	<i>Stenella frontalis</i>
Atlantic white-sided dolphin	<i>Lagenorhynchus acutus</i>
Australian sea lion (F)	<i>Neophoca cinerea</i>
Australian snubfin dolphin (F)	<i>Orcaella heinsohni</i>
Baikal seal (F)	<i>Phoca sibirica</i>
Baird's beaked whale	<i>Berardius bairdii</i>
Bearded seal	<i>Erignathus barbatus</i>
Beluga whale	<i>Delphinapterus leucas</i>
Blainville's beaked whale	<i>Mesoplodon densirostris</i>
Blue whale	<i>Balaenoptera musculus</i>
Bowhead whale	<i>Balaena mysticetus</i>
Bryde's whale	<i>Balaenoptera edeni</i>
Burmeister's porpoise (F)	<i>Phocoena spinipinnis</i>
California sea lion	<i>Zalophus californianus/wollebaeki</i>
Caspian seal (F)	<i>Phoca caspica</i>
Chilean dolphin (F)	<i>Cephalorhynchus eutropia</i>
Chinese river dolphin (F)	<i>Lipotes vexillifer</i>

³⁷ Available at <https://www.marinemammalscience.org/species-information/list-of-marine-mammal-species-subspecies/>

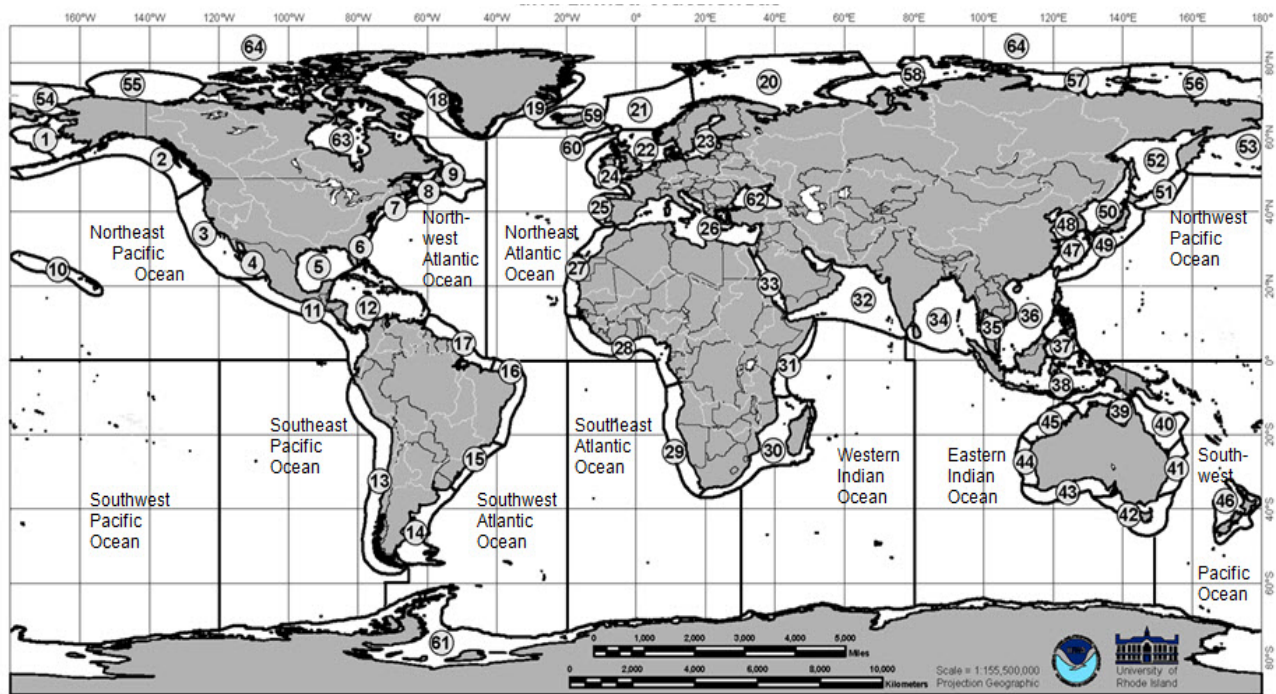
Common name	Scientific name
Clymene dolphin	<i>Stenella clymene</i>
Commerson's dolphin (F)	<i>Cephalorhynchus commersonii</i>
Common bottlenose dolphin (F)	<i>Tursiops truncatus</i>
Costero (F)	<i>Sotalia guianensis</i>
Crabeater seal (I)	<i>Lobodon carcinophaga</i>
Cuvier's beaked whale	<i>Ziphius cavirostris</i>
Dall's porpoise	<i>Phocoenoides dalli</i>
Dugong (F)	<i>Dugong dugon</i>
Dusky dolphin (F)	<i>Lagenorhynchus obscurus</i>
Dwarf sperm whale	<i>Kogia sima</i>
False killer whale	<i>Pseudorca crassidens</i>
Fin whale	<i>Balaenoptera physalus</i>
Finless porpoise (F)	<i>Neophocaena phocaenoides</i>
Franciscana (F)	<i>Pontoporia blainvillei</i>
Fraser's dolphin	<i>Lagenodelphis hosei</i>
Gervais' beaked whale	<i>Mesoplodon europaeus</i>
Ginkgo-toothed beaked whale	<i>Mesoplodon ginkgodens</i>
Gray seal	<i>Halichoerus grypus</i>
Gray whale	<i>Eschrichtius robustus</i>
Gray's beaked whale (F, I)	<i>Mesoplodon grayi</i>
Guadalupe fur seal	<i>Arctocephalus townsendi</i>
Harbor seal	<i>Phoca vitulina</i>
Harbor porpoise	<i>Phocoena phocoena</i>
Harp seal	<i>Pagophilus groenlandicus</i>
Hawaiian monk seal	<i>Monachus schauinslandi</i>
Heaviside's dolphin (F)	<i>Cephalorhynchus heavisidii</i>
Hector's beaked whale (F, I)	<i>Mesoplodon hectori</i>
Hector's dolphin (F)	<i>Cephalorhynchus hectori</i>
Hooded seal	<i>Cystophora cristata</i>
Hourglass dolphin (F, I)	<i>Lagenorhynchus cristata</i>
Hubb's beaked whale	<i>Mesoplodon carlhubbsi</i>
Humpback whale	<i>Megaptera novaeangliae</i>
Indo-Pacific bottlenose dolphin (F)	<i>Tursiops aduncus</i>
Indo-Pacific humpback dolphin (F)	<i>Sousa chinensis</i>

Common name	Scientific name
Irrawaddy dolphin (F)	<i>Orcaella brevirostris</i>
Killer whale	<i>Orcinus orca</i>
Long-beaked common dolphin	<i>Delphinus capensis</i>
Long-finned pilot whale	<i>Globicephala melas</i>
Longman's beaked whale	<i>Indopacetus pacificus</i>
Marine otter (F)	<i>Lontra felina</i>
Melon-headed whale	<i>Peponocephala electra</i>
Minke whale	<i>Balaenoptera acutorostrata</i>
Narwhal	<i>Monodon monoceros</i>
North Atlantic right whale	<i>Eubalaena glacialis</i>
North Pacific right whale	<i>Eubalaena japonica</i>
Northern bottlenose whale	<i>Hyperoodon ampullatus</i>
Northern elephant seal	<i>Mirounga angustirostris</i>
Northern fur seal	<i>Callorhinus ursinus</i>
Northern right whale dolphin	<i>Lissodelphis borealis</i>
Omura's whale (F, I)	<i>Balaenoptera omurai</i>
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>
Pantropical spotted dolphin	<i>Stenella attenuata</i>
Peale's dolphin (F, I)	<i>Lagenorhynchus australis</i>
Perrin's beaked whale	<i>Mesoplodon perrini</i>
Polar bear	<i>Ursus maritimus</i>
Pygmy beaked whale	<i>Mesoplodon peruvianus</i>
Pygmy killer whale	<i>Feresa attenuata</i>
Pygmy right whale (F, I)	<i>Caperea marginata</i>
Pygmy sperm whale	<i>Kogia breviceps</i>
Ribbon seal	<i>Histiophoca fasciata</i>
Ringed seal	<i>Pusa hispida</i>
Risso's dolphin	<i>Grampus griseus</i>
Ross seal (I)	<i>Ommatophoca rossii</i>
Rough-toothed dolphin	<i>Steno bredanensis</i>
Sea otter	<i>Enhydra lutris</i>
Sei whale	<i>Balaenoptera borealis</i>
Shepherd's beaked whale (F, I)	<i>Tasmacetus shepherdi</i>
Short-beaked common dolphin	<i>Delphinus delphis</i>

Common name	Scientific name
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>
South African fur seal (F, I)	<i>Arctocephalus pusillus</i>
South American sea lion (F)	<i>Otaria flavescens</i>
South Asian river dolphin (F)	<i>Platanista gangetica</i>
Southern bottlenose whale (F, I)	<i>Hyperoodon planifrons</i>
Southern elephant seal (F, I)	<i>Mirounga leonina</i>
Southern right whale (F, I)	<i>Eubalaena australis</i>
Southern right whale dolphin (F, I)	<i>Lissodelphis peronii</i>
Sowerby's beaked whale	<i>Mesoplodon bidens</i>
Spade-toothed beaked whale (F, I)	<i>Mesoplodon traversii</i>
Spectacled porpoise (F, I)	<i>Phocoena dioptrica</i>
Sperm whale	<i>Physeter macrocephalus</i>
Spinner dolphin	<i>Stenella longirostris</i>
Spotted seal	<i>Phoca largha</i>
Stejneger's beaked whale	<i>Mesoplodon stejnegeri</i>
Steller sea lion	<i>Eumetopias jubatus</i>
Strap-toothed beaked whale (F, I)	<i>Mesoplodon layardii</i>
Striped dolphin	<i>Stenella coeruleoalba</i>
True's beaked whale	<i>Mesoplodon mirus</i>
Tucuxi (F)	<i>Sotalia fluviatilis</i>
Vaquita (F)	<i>Phocoena sinus</i>
Walrus	<i>Odobenus rosmarus</i>
Weddell seal (I)	<i>Leptonychotes weddellii</i>
West African manatee (F)	<i>Trichechus senegalensis</i>
West Indian manatee	<i>Trichechus manatus</i>
White-beaked dolphin	<i>Lagenorhynchus albirostris</i>

Appendix B

Large Marine Ecosystems and Open-Ocean Areas [2015]



LMEs / Open Ocean Areas Selected in the Survey	Number of Projects
01. East Bering Sea	45
02. Gulf of Alaska	69
03. California Current	168
04. Gulf of California	5
05. Gulf of Mexico	53
06. Southeast U.S. Continental Shelf	83
07. Northeast U.S. Continental Shelf	68
08. Scotian Shelf	13
09. Newfoundland-Labrador Shelf	7
10. Insular Pacific-Hawaiian	47
11. Pacific Central-American	4
12. Caribbean Sea	16
13. Humboldt Current	2
14. Patagonian Shelf	1
15. South Brazil Shelf	1
17. North Brazil Shelf	1
18. West Greenland Shelf	3

LMEs / Open Ocean Areas Selected in the Survey	Number of Projects
19. East Greenland Shelf	2
20. Barents Sea	1
21. Norwegian Sea	10
25. Iberian Coastal	1
26. Mediterranean	2
27. Canary Current	1
28. Guinea Current	4
30. Agulhas Current	1
31. Somali Coastal Current	1
34. Bay of Bengal	2
40. Northeast Australia	1
41. East-Central Australia	1
44. West-Central Australia	1
51. Oyashio Current	2
52. Sea of Okhotsk	3
53. West Bering Sea	13
54. Chukchi Sea	55
55. Beaufort Sea	38
56. East Siberian Sea	2
57. Laptev Sea	1
58. Kara Sea	1
59. Iceland Shelf	2
60. Faroe Plateau	1
61. Antarctic	6
62. Black Sea	1
63. Hudson Bay	2
64. Arctic Ocean	2
Northeast Atlantic Ocean	3
Northeast Pacific Ocean	12
Northwest Atlantic Ocean	29
Northwest Pacific Ocean	11
Southwest Atlantic Ocean	1
Southwest Pacific Ocean	3
Western Indian Ocean	2
N/A (e.g., all or any areas, or unknown)	59

Appendix C

Departments, Agencies and Offices

This table lists the federal departments, agencies within departments, and offices within agencies that responded to the 2015 survey, along with their total funding and the number of projects they reported.

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National Aeronautics and Space Administration.....	47
Department of Homeland Security	47
US Coast Guard.....	47
Department of Energy.....	48
Office of Energy Efficiency and Renewable Energy	48
Department of Health & Human Services.....	48
National Institutes of Health	48

Department Agency Office	Number of Projects	Total Funding
Department of Commerce	146	\$70,666,619
NOAA Fisheries	130	\$68,322,619
Alaska Fisheries Science Center (AFSC)	7	\$13,538,254
Alaska Regional Office (AKRO)	32	\$11,030,652
Office of Protected Resources (OPR)	37	\$10,436,577
Southwest Fisheries Science Center (SWFSC)	6	\$5,575,504
Northeast Fisheries Science Center (NEFSC)	4	\$5,249,504
Pacific Islands Fisheries Science Center (PIFSC)	8	\$4,635,650
Greater Atlantic Regional Fisheries Office (GARFO)	5	\$3,573,035
Southeast Fisheries Science Center (SEFSC)	4	\$3,403,320
West Coast Regional Office (WCRO)	7	\$3,144,105
Southeast Regional Office (SERO)	1	\$3,092,110
Pacific Islands Regional Office (PIRO)	8	\$1,991,749
Northwest Fisheries Science Center (NWFSC)	4	\$1,710,229
Office of Science and Technology (S&T)	7	\$844,388
Office of International Affairs (OIA)	1	\$97,542
National Ocean Service	16	\$2,344,084
ONMS - Hawaiian Islands Humpback Whale NMS	1	\$1,562,200
NCCOS - Headquarters	5	\$440,484
ONMS - Channel Islands NMS	6	\$306,400
ONMS - Monterey Bay NMS	3	\$33,000
ONMS - Gray's Reef NMS	1	\$2,000

Department Agency Office	Number of Projects	Total Funding
Department of Defense	198	\$38,971,844
US Navy	186	\$35,881,505
Office of Naval Research (ONR)	93	\$10,145,364
Atlantic Fleet	16	\$7,880,878
At-Sea Compliance Program	6	\$4,426,646
Living Marine Resources (LMR) Program	20	\$3,875,965
Pacific Fleet - West Coast	11	\$3,009,080
Naval Sea Systems Command (NAVSEA)	5	\$2,783,754
Pacific Fleet - Hawaii & Marianas	7	\$1,413,586
SURTASS LFA	0	\$1,000,000
Naval Air Systems Command (NAVAIR)	9	\$713,327
Naval Facilities Engineering Command Northwest (NAVFAC NW)	6	\$210,764
Naval Facilities Engineering Command Mid-Atlantic (NAVFAC MIDLANT)	8	\$179,680
Naval Facilities Engineering Command Southeast (NAVFAC SE)	2	\$135,190
Space and Naval Warfare Systems Command (SPAWAR)	1	\$68,000
Naval Facilities Engineering Command Southwest (NAVFAC SW)	2	\$39,271
US Army	3	\$1,479,318
USACE - Jacksonville District	1	\$537,395
USACE - Alaska District	0	\$425,284
USACE - Savannah District	1	\$147,721
USACE - Seattle District	0	\$109,043
USACE - New England District	0	\$83,900
Program Executive Office for Simulation, Training, and Instrumentation	1	\$56,250
USACE - Wilmington District	0	\$53,975
USACE - Charleston District	0	\$38,390
USACE - Mobile District	0	\$13,602

Department Agency Office	Number of Projects	Total Funding
Department of Defense		
US Army (continued)		
USACE - New York District	0	\$7,200
USACE - Los Angeles District	0	\$2,000
USACE - Baltimore District	0	\$1,800
USACE - Philadelphia District	0	\$1,800
USACE - Vicksburg District	0	\$760
USACE - New Orleans District	0	\$198
Environmental Research Programs	6	\$1,469,280
Strategic Environmental Research and Development Program	4	\$822,358
Environmental Security Technology Certification Program	2	\$646,922
US Air Force	3	\$141,741
Eglin AFB	1	\$101,000
Vandenberg AFB	2	\$40,741
Department of the Interior	153	\$24,447,004
US Fish & Wildlife Service	36	\$8,486,221
Marine Mammals Management Office (AK)	15	\$5,174,354
Crystal River NWR	1	\$880,000
North Florida ES Office	1	\$688,000
International Affairs Program - Permits	1	\$575,541
Headquarters - Ecological Services (ES) Program	0	\$418,781
International Affairs Program - International Conservation	5	\$255,890
Ventura (CA) ES Office	3	\$158,746
Caribbean ES Office	2	\$133,829
Washington ES Office	0	\$67,790
Region 4 ES	2	\$65,309

Department Agency Office	Number of Projects	Total Funding
Department of the Interior		
US Fish & Wildlife Service (continued)		
Farallon NWR	1	\$33,263
Texas Coast ES Office	3	\$26,273
Oregon Coast NWR	2	\$5,945
Alaska Maritime NWR	1	\$2,500
US Geological Survey	39	\$7,460,970
Alaska Science Center	16	\$4,303,371
Wetland and Aquatic Research Center	10	\$1,214,688
Headquarters	3	\$924,765
Western Ecological Science Center	3	\$708,790
Patuxent Wildlife Research Center	5	\$148,100
Leetown Science Center	1	\$116,990
Fort Collins Science Center	0	\$38,000
National Wildlife Health Center	1	\$6,266
Bureau of Ocean Energy Management	26	\$6,867,882
Alaska OCS Region	12	\$4,333,362
Atlantic OCS Region	4	\$1,895,000
Pacific OCS Region	2	\$250,000
Gulf of Mexico OCS Region	4	\$216,000
Headquarters	4	\$173,520
National Park Service	51	\$1,541,931
Glacier Bay NP	5	\$522,390
Kenai Fjords NP	1	\$209,400
Alaska Region	2	\$176,597
Inventory and Monitoring Division	2	\$165,300

Department Agency Office	Number of Projects	Total Funding
Department of the Interior		
National Park Service (continued)		
New Bedford Whaling NHP	1	\$159,000
Pacific West Region	2	\$130,000
Point Reyes NS	4	\$65,000
Biological Resources Division	1	\$40,000
Redwood NP	1	\$15,000
Cape Cod NS	5	\$11,000
Katmai NP and Preserve	1	\$10,000
Everglades NP	1	\$8,000
Natural Sounds and Night Skies Division	1	\$8,000
Cape Hatteras NS	2	\$6,000
Fire Island NS	1	\$4,000
Kalaupapa NHP	1	\$4,000
Channel Islands NP	3	\$3,000
Gateway NRA	2	\$2,300
Canaveral NS	1	\$2,000
Cumberland Island NS	1	\$2,000
Cabrillo NM	1	\$1,744
Haleakala NP	1	\$1,000
Olympic NP	4	\$150
Kaloko-Honokohau NHP	1	\$50
Golden Gate NRA	2	\$0
Gulf Islands NS	1	\$0
Headquarters	1	\$0
Padre Island NS	1	\$0

Department Agency Office	Number of Projects	Total Funding
Department of the Interior		
National Park Service (continued)		
Southeast Region	1	\$0
Water Resources Division	1	\$0
Bureau of Safety and Environmental Enforcement	1	\$90,000
Bureau of Safety and Environmental Enforcement	1	\$90,000
Independent Agencies	24	\$5,669,433
Marine Mammal Commission	5	\$3,340,000
Marine Mammal Commission	5	\$3,340,000
National Science Foundation	11	\$1,706,433
Geosciences (GEO) Directorate	7	\$972,995
Biological Sciences (BIO) Directorate	2	\$610,364
Mathematical & Physical Sciences (MPS) Directorate	1	\$123,074
Education & Human Resources (EHR) Directorate	1	\$0
Smithsonian Institution	7	\$573,000
National Zoo (NZP)	1	\$300,000
Museum of Natural History (SMNH)	3	\$160,000
Tropical Research Institute (STRI)	2	\$105,000
Environmental Research Center (SERC)	1	\$8,000
National Aeronautics and Space Administration	1	\$50,000
Kennedy Space Center	1	\$50,000
Department of Homeland Security	8	\$2,804,005
US Coast Guard	8	\$2,804,005
(LMR) Pacific Area	4	\$2,415,999
(LMR) Atlantic Area	4	\$388,006

Department Agency Office	Number of Projects	Total Funding
Department of Energy	7	\$900,000
Office of Energy Efficiency and Renewable Energy	7	\$900,000
Wind and Water Power Technologies Office	7	\$900,000
Department of Health & Human Services	3	\$707,060
National Institutes of Health	3	\$707,060
National Institute of Environmental Health Sciences (NIEHS)	2	\$363,736
National Institute of Deafness and other Communication Disorders (NIDCD)	1	\$343,324
Grand Total	539	\$146,166,049

Appendix D

Project Details

This table provides basic information on the 539 projects reported to the fiscal year 2015 survey, arranged by the sponsoring Department, Agency and Office. Sponsoring Department, Agency and Office are ordered alphabetically, and projects are ordered within Offices by Funding Amount in descending order. Each record provides the project's Title, Performing Organization, Type of (Performing) Organization, Funding Amount, and for those that contributed data to a publicly accessible database the Database Data Types that were made public. Because the database is relational, space limitations prevent the display of the data on Objectives, Species and Locations for each project, but that information can be requested from the Commission; write surveyffr@mmc.gov or rpo@mmc.gov.

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Western Ecological Research Center	45

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
National Ocean Service				
NCCOS - Headquarters				
Tools for Detecting Sublethal Effects to Support Improved Injury Assessment: Endocrine Hormone and Detoxification Pathway Responses in Remotely Collected Skin and Blubber from Cetaceans	NOS National Centers for Coastal Ocean Science	Federal	\$221,920	
Injury Assessment for Estuarine and Coastal Marine Mammals Following the Deepwater Horizon Oil Spill	NOS National Centers for Coastal Ocean Science	Federal	\$162,000	
Development of National Guidelines for Marine Mammal Natural Resource Damage Assessments	NOS National Centers for Coastal Ocean Science	Federal	\$30,000	
Dolphin Teeth/Age Analyses for the Gulf of Mexico Unusual Mortality Event Investigation and the Deepwater Horizon/Natural Resource Damage Assessment Dolphin-Health Assessment	NOS National Centers for Coastal Ocean Science	Federal	\$23,000	
Coastal Marine Mammal Stranding Assessments 2014 and Beyond	NOS National Centers for Coastal Ocean Science	Federal	\$3,564	
ONMS - Channel Islands NMS				
Vessel Speed Reduction Trial To Reduce the Risk of Whale Ship Strikes in the Santa Barbara Channel	Channel Islands National Marine Sanctuary	Federal	\$173,900	
Channel Islands Naturalist Corp: Citizen Science Recording of Whale Locations	Channel Islands National Marine Sanctuary	Federal	\$75,000	
Whale Advisory Zones to Slow Ship Traffic and Monitoring of Large Vessel Traffic	Channel Islands National Marine Sanctuary	Federal	\$27,500	
Marine Shipping Working Group	Channel Islands National Marine Sanctuary	Federal	\$22,500	
Marine Mammal Entanglement or Stranding Response	Channel Islands National Marine Sanctuary	Federal	\$6,000	
Permitting for Marine Mammal Research within the Channel Islands National Marine Sanctuary	Channel Islands National Marine Sanctuary	Federal	\$1,500	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
National Ocean Service (continued)				
ONMS - Gray's Reef National Marine Sanctuary				
North Atlantic Right Whale Education and Outreach Projects	Gray's Reef National Marine Sanctuary	Federal	\$2,000	
ONMS - Hawaiian Islands Humpback Whale National Marine Sanctuary				
Protection, Research and Education for Humpback Whales and their Habitats in the Hawaiian Islands Humpback Whale National Marine Sanctuary	Hawaiian Islands Humpback Whale National Marine Sanctuary	Federal	\$1,562,200	
ONMS - Monterey Bay NMS				
Hydrophone Sound Analyses of Marine Mammals - Monterey Bay Observation Network	Monterey Bay Aquarium Research Institute	Non-Profit	\$20,000	
Marine Mammal Aerial Surveys at Davidson Seamount	Monterey Bay National Marine Sanctuary	Federal	\$8,000	Meta, Summary
Coastal Ocean Mammal and Bird Education and Research Survey - Data Transfer	Moss Landing Marine Laboratories	Academic	\$5,000	Meta, Summary
NOAA Fisheries				
Alaska Fisheries Science Center (AFSC)				
Steller Sea Lion Ecology and Behavior Research	AFSC Marine Mammal Laboratory	Federal	\$3,155,860	Meta, Raw
Northern Fur Seal Stock Assessment and Ecological Research	AFSC Marine Mammal Laboratory	Federal	\$1,077,609	Meta, Raw
Loss of Sea Ice: Surveys of Ice-Associated Seals	AFSC Marine Mammal Laboratory - Polar Ecosystems Program	Federal	\$908,900	Meta, Raw, Summary
Harbor Seal Surveys, Assessment, and Co-management	AFSC Marine Mammal Laboratory - Polar Ecosystems Program	Federal	\$811,600	Meta, Raw, Summary
Ecology of Ice-Associated Seals in the Bering Sea	AFSC Marine Mammal Laboratory - Polar Ecosystems Program	Federal	\$729,000	Meta, Raw
Ice Seal Assessment and Co-management	AFSC Marine Mammal Laboratory - Polar Ecosystems Program	Federal	\$378,600	
Cetacean ecology studies	AFSC Marine Mammal Laboratory	Federal	\$340,321	Meta

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries (continued)				
Alaska Regional Office (AKRO)				
Monitoring Steller Sea Lion Status in Russia	AFSC Marine Mammal Laboratory	Federal	\$210,000	Meta, Summary
National Fish & Wildlife Foundation Cooperative Agreement for Cook Inlet Beluga Photo Identification	National Fish & Wildlife Foundation	Non-Profit	\$150,000	Meta, Raw, Summary
Fur Seal Satellite Tags	AFSC Marine Mammal Laboratory	Federal	\$140,000	
Acoustician Assistance for Cook Inlet Analyses	Pacific States Marine Fisheries Commission	State/Local	\$120,000	Summary
Cook Inlet Beluga Biopsy Collection and Analysis	LGL, Ltd	Non-Profit	\$120,000	Summary
Advanced Cameras for Ice Seal Aerial Surveys	AFSC Marine Mammal Laboratory	Federal	\$95,000	Meta, Summary
St. George Fur Seal Pup Harvest Monitoring	Inupiaq Alaska Group, LLC	For Profit	\$80,000	Summary
Alaska Stranding Program Data Manager and Health Specialist Contractor	Alaska Biosystems Inc.	For Profit	\$75,000	Meta, Raw, Summary
Monitoring of Incidental Take of Steller Sea Lion in Russian Fisheries	AFSC Marine Mammal Laboratory	Federal	\$75,000	Summary
North Pacific Right Whale Acoustic Records Analysis	AFSC Marine Mammal Laboratory	Federal	\$75,000	Summary
Right Whale Research Cruise	AFSC Marine Mammal Laboratory	Federal	\$65,000	Summary
Cook Inlet Beluga Live Stranding Response Supplies and Support	Wildlife Computers, Inc.; Alaska Aerial Media	For Profit	\$60,000	Summary
Eastern Distinct Population Segment Steller Sea Lion Post Delisting Monitoring Brand/Resight Work	AFSC Marine Mammal Laboratory	Federal	\$60,000	Meta, Summary
Western Aleutian Steller Sea Lion Vital Rates Imagery	AFSC Marine Mammal Laboratory	Federal	\$60,000	Raw
Steller Sea Lion Captures in Washington and California	AFSC Marine Mammal Laboratory	Federal	\$40,000	Meta, Summary
Steller Sea Lion Western Distinct Population Segment Critical Habitat - Public Hearings	Pacific States Marine Fisheries Commission	State/Local	\$40,000	Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries (continued)				
Alaska Regional Office (AKRO)				
Improve Cook Inlet Beluga Scientific Sightings Database/Mapper	Axiom Data Science, LLC	For Profit	\$37,237	Meta, Raw, Summary
Harmful Algal Bloom Testing for Stranded Marine Mammals	Northwest Fisheries Science Center	Federal	\$30,000	Summary
Veterinary and Pathology Services Support for Stranding Network	Alaska Veterinary Pathology Services	For Profit	\$28,000	Summary
Comment Analysis for Cook Inlet Beluga Recovery Plan	Azura Consulting, LLC	For Profit	\$27,425	Summary
Northern Fur Seal Foraging and Pollock Distribution	AFSC Marine Mammal Laboratory	Federal	\$25,000	Meta, Summary
Acoustic Propagation Modelling for Lease Sale 193	URS	For Profit	\$23,000	Summary
Marine Mammal Stomach Analyses	Alaska Department of Fish and Game	State/Local	\$20,000	
Ringed Seal Critical Habitat Analyses	Pacific States Marine Fisheries Commission	State/Local	\$20,000	Meta, Summary
Steller Sea Lion Carcass Surveys as an Index of Fishery Interaction	NMFS Alaska Regional Office	Federal	\$20,000	Summary
Acoustics Training	JASCO	For Profit	\$15,000	
Cook Inlet Beluga Outreach and Education	AFSC Marine Mammal Laboratory	Federal	\$15,000	Summary
Large Whale Entanglement Response Partnership	NOS National Marine Sanctuary Program	Federal	\$15,000	Meta, Raw, Summary
Marine Mammal Stranding Program Flight Support	DOI/OAS	Federal	\$15,000	Meta, Raw, Summary
Eastern Distinct Population Segment Steller Sea Lion Post Delisting Monitoring Pup Counts to Detect Possible UME	AFSC Marine Mammal Laboratory	Federal	\$10,000	Summary
Aleutian Islands Steller Sea Lion Pup Health Assessment	AFSC Marine Mammal Laboratory	Federal	\$8,000	Summary
Support for Pinniped Entanglement Group	NOAA Fisheries	Federal	\$4,300	Summary
Greater Atlantic Regional Fisheries Office (GARFO)				
Large Whale Take Reduction and Disentanglement (Including Right Whale Activities)	Greater Atlantic Regional Fisheries Office	Federal	\$1,592,662	Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries				
Greater Atlantic Regional Fisheries Office (GARFO) (continued)				
Whale Watching program, Marine Mammal Authorization, and List of Fisheries	Greater Atlantic Regional Fisheries Office	Federal	\$798,256	Summary
Cooperative State Plans	Greater Atlantic Regional Fisheries Office	Federal	\$541,852	Summary
Conservation with States	Greater Atlantic Regional Fisheries Office	Federal	\$350,400	Summary
Marine Mammal Protection	Greater Atlantic Regional Fisheries Office	Federal	\$200,808	Summary
Northeast Fisheries Science Center (NEFSC)				
Right Whale Photo-Identification Catalog	New England Aquarium	Non-Profit	\$450,000	Meta, Raw
Right Whale Sightings Database	University of Rhode Island	Academic	\$100,000	Meta, Raw
Right whale Unmanned Aerial Vehicle Studies	Woods Hole Oceanographic Institution - CINAR	Academic	\$99,000	
Developing a Bio-Compatible Large Whale Tracking Tag	Woods Hole Oceanographic Institution CINAR	Academic	\$47,000	
Image Analysis from Pinniped Surveys	Integrated Statistics	For Profit	\$28,000	Meta, Summary
Adapt Custom-Built Algorithms for Modeling Detection Range and Site-Specific Detection Probability for Baleen Whales for Northeast Fisheries Science Center	Space and Naval Warfare Systems Command - Systems Center Pacific	Federal	\$20,000	
Bycatch Analyses of Marine Mammals in Observed Fisheries in the Northeast and Mid-Atlantic U.S.	Integrated Statistics	For Profit	\$20,000	Meta, Raw, Summary
Northwest Fisheries Science Center (NWFSC)				
Southern Resident Killer Whale Recovery Needs Research	Northwest Fisheries Science Center	Federal	\$623,228	Meta, Raw, Summary
Research on ESA-listed Salmon and Marine Mammal Interaction	Northwest Fisheries Science Center	Federal	\$91,805	Meta, Raw, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries				
Northwest Fisheries Science Center (NWFSC) (continued)				
Marine Mammal Protection Act Priority Research in the Northwest U.S.	Northwest Fisheries Science Center	Federal	\$75,799	Meta, Raw, Summary
Research to Improve Stock Assessment of Marine Mammals in the U.S. Northwest Region	Northwest Fisheries Science Center	Federal	\$56,123	Meta, Raw, Summary
Office of International Affairs				
Pinniped Entanglement Investigation and Response in the Northeastern U.S.	International Fund for Animal Welfare	Non-Profit	\$97,542	Summary
Office of Protected Resources (OPR)				
Strengthening Efforts to Minimize and Mitigate the Incidental Take of False Killer Whales (<i>Pseudorca crassidens</i>)	Hawaii Department of Land and Natural Resources	State/Local	\$340,800	
Dedicated Support to Maintain Enhanced Operations and Coverage for Marine Mammal Stranding Response, Rehabilitation and Data Collection in Ventura County	Channel Islands Marine and Wildlife Institute	Non-Profit	\$100,000	Meta, Raw, Summary
Response and Investigating Causes of Mortality in Washington Marine Mammals	Washington Department of Fish & Wildlife	State/Local	\$100,000	Meta, Raw, Summary
Support for Facility Operation to Maintain Response, Treatment and Data Collection of Live and Dead Marine Mammals in New York State.	Riverhead Foundation for Marine Research and Preservation	Non-Profit	\$100,000	Meta, Raw, Summary
Tracking the Role of Human Interaction and Disease in the Northern Oregon - Southern Washington Marine Mammal Stranding Program	Portland State University	Academic	\$100,000	Meta, Raw, Summary
Supporting marine mammal stranding response, education and outreach along the east coast of central Florida: A region of repeated Unusual Mortality Events	Hubbs-Sea World Research Institute	Non-Profit	\$99,996	Meta, Raw, Summary
Marine Mammal Stranding Response, Rescue and Recovery; Enhancing Operations, Rapid Response, and Sample Collection Along the Louisiana Coast	Louisiana Department of Wildlife and Fisheries	State/Local	\$99,992	Meta, Raw, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries				
Office of Protected Resources (OPR) (continued)				
Marine mammal stranding response in Puget Sound and Washington Outer Coast, and for large cetaceans throughout Washington State, 2016-2018	Cascadia Research Collective	Non-Profit	\$99,969	Meta, Raw, Summary
Supporting and Enhancing the Capabilities of the Oregon Marine Mammal Stranding Network	Oregon State University	Academic	\$99,964	Meta, Raw, Summary
Live Marine Mammal Response in Alaska: Rehabilitation & Readiness for Unusual Events	Seward Association for the Advancement of Marine Science	Non-Profit	\$99,945	Meta, Raw, Summary
Coordinating Expert Response, Rehabilitation, and Data Collection for Stranded Marine Mammals in Virginia	Virginia Aquarium; Marine Science Center Foundation, Inc.	Non-Profit	\$99,703	Meta, Raw, Summary
Support for Hawaiian Monk Seal Rehabilitation Project Designed to Enhance Survival of Critically Endangered Seals	The Marine Mammal Center	Non-Profit	\$99,465	Meta, Raw, Summary
Response to and Coordination of Marine Mammal Strandings in North Carolina with Special Emphasis on Bottlenose Dolphin Post-Unusual Mortality Event and Human Interaction Monitoring	University of North Carolina - Wilmington	Academic	\$98,295	Meta, Raw, Summary
Continued Strengthening of Alaska's Marine Mammal Stranding Program through Collaborative Level B and C Reporting; Diagnostic Support and Continuing Education for Stranding Network Members	University of Alaska, Anchorage	Academic	\$97,998	Meta, Raw, Summary
Marine Mammal Stranding Response in Central Coastal and Inland North Carolina and Continued Bottlenose Dolphin Post-Unusual Mortality Event Surveillance	North Carolina Department of Environmental Quality	State/Local	\$95,385	Meta, Raw, Summary
Support of the Texas Marine Mammal Stranding Network Rehabilitation and Research Program for Enhanced Investigation of Stranding Events along the Texas Coast	Texas Marine Mammal Stranding Network	Non-Profit	\$90,407	Meta, Raw, Summary
Investigating Causes of Mortality in Pacific Cetaceans	Hawaii Pacific University	Academic	\$90,000	Meta, Raw, Summary
Enhancement to the Channel Islands Cetacean Research Unit's Bio-Surveillance and Cetacean Health Monitoring Program	Channel Islands Cetacean Research Unit	Non-Profit	\$87,078	Meta, Raw, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries				
Office of Protected Resources (OPR) (continued)				
Enhanced Stranding Response and a Continued Response Partnership Between The Long Marine Lab and Moss Landing Stranding Networks	University of California, Santa Cruz	Academic	\$85,983	Meta, Raw, Summary
Vehicle and Programmatic Support for the Humboldt State University Marine Mammal Stranding Program serving Del Norte, Humboldt and Mendocino Counties in Northern California	Humboldt State University Sponsored Programs Foundation	Academic	\$81,724	Meta, Raw, Summary
The South Carolina Marine Mammal Stranding Network: Restoring Stranding Response Capacity	Coastal Carolina University	Academic	\$80,661	Meta, Raw, Summary
Mass stranding capacity building for equipment and training, and rapid detection, response and recovery of stranded cetaceans in Southwest Florida	More Marine Lab, Inc.	Non-Profit	\$80,389	Meta, Raw, Summary
Improving Staff and Volunteer Qualifications in Order to Enhance Response and Data Collection from Dead Stranded Marine Mammals in Southern Mendocino and Sonoma counties, California	California Academy of Sciences	Non-Profit	\$79,957	Meta, Raw, Summary
Support and Enhancement for the Marine Mammal Stranding Program at Sea Research Foundation's Mystic Aquarium	Sea Research Foundation	Non-Profit	\$79,933	Meta, Raw, Summary
Stranding Response and Disease Surveillance in San Juan County, Washington	The Whale Museum	Non-Profit	\$78,634	Meta, Raw, Summary
Marine Mammal Rehabilitation Facility Upgrades and Consistent Coverage	California Wildlife Center	Non-Profit	\$73,667	Meta, Raw, Summary
Programmatic Support for Pinniped Rehabilitation in Northern New England: Enhancing Data Collection and Preparedness for Emergency Events	The National Marine Life Center, Inc.	Non-Profit	\$70,041	Meta, Raw, Summary
A National Service Center for Post-Release Monitoring of Small Cetaceans	Chicago Zoological Society, Inc.	Non-Profit	\$58,316	Meta, Raw, Summary
Continuing the Marine Mammal Morphological Parasite Laboratory	The National Marine Life Center, Inc.	Non-Profit	\$51,734	Meta, Raw, Summary
Development and Deployment of an Incident Management Team Through the Continued Support of the Specially Trained Animal Response Team	Riverhead Foundation for Marine Research and Preservation	Non-Profit	\$50,000	Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries				
Office of Protected Resources (OPR) (continued)				
Multi-Regional Harmful Algal Bloom Toxin Diagnostics for the Marine Mammal Stranding Network	Florida Institute of Technology, Inc.	Academic	\$49,888	Meta, Raw, Summary
Level 1 and Level 2 Necropsy Training for Increasing Quality of Level A, B, and C Data Collection by the Southeast Cetacean Stranding Network	Florida Fish & Wildlife Conservation Commission	State/Local	\$33,080	Meta, Raw, Summary
The Juan de Fuca Marine Mammal Stranding Network: Response and Volunteer Training	Feiro Marine Life Center	Non-Profit	\$25,226	Meta, Raw, Summary
Diagnostic Tools and Technologies for Assessing effects of Contaminants and Pathogens in Marine Wildlife	NOS National Centers for Coastal Ocean Science	Federal	\$20,000	
Building on the Success of the Seacoast Science Center -the New Stranding Response Program	Seacoast Science Center, Inc.	Non-Profit	\$15,000	Meta, Raw, Summary
Marine Mammal Risk Assessment Along the Southeast and Mid-Atlantic Coast	NOS National Centers for Coastal Ocean Science	Federal	\$6,136	
Research Proposals Review and Comment	Gray's Reef National Marine Sanctuary	Federal	\$0	
Office of Science and Technology (S&T)				
Protected Species Toolbox	Fisheries Science Center	Federal	\$400,000	
Fine-Scale Marine Mammal Surveys and Data Analysis	Fisheries Science Center	Federal	\$159,196	
Passive Acoustic Ocean Observing: Marine Mammals and Anthropogenic Sound from the High Arctic to the Bering Sea	Fisheries Science Center	Federal	\$74,500	
An ocean-noise Budget for the Rapidly Changing Arctic: Quantifying the Contribution of Vessel Traffic and Seismic Exploration	Fisheries Science Center	Federal	\$59,992	
Mapping Ocean Noise off Southern California: A Meso-scale Operational Test of a Pelagic Buoy-based Recording System	Fisheries Science Center	Federal	\$55,700	
Passive Acoustics Data Archive	Fisheries Science Center	Federal	\$50,000	
Design of an Inexpensive and Easily Deployable Acoustic Recorder to Establish Shallow-Water Ocean Noise Reference Stations in National Marine Sanctuaries and National Parks	Fisheries Science Center	Federal	\$45,000	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries (continued)				
Pacific Islands Fisheries Science Center (PIFSC)				
Hawaiian Monk Seal Research Program (Research, Enhancement, and Emergency Response)	PIFSC Hawaiian Monk Seal Research Program	Federal	\$2,891,000	Meta, Raw, Summary
Cetacean Research - Stock Assessment of occurrence, distribution, abundance and, where possible: stock structure and anthropogenic impacts	Pacific Islands Fisheries Science Center	Federal	\$806,440	Meta, Raw, Summary
Cetacean Research Program - Mariana Islands Range Complex: Small Boat Surveys for Cetaceans around the Islands of Guam, Rota, Saipan, Tinian, and Aguijan	PIFSC Cetacean Research Program	Federal	\$494,962	Meta, Raw, Summary
Cetacean Research Program - Passive Acoustics Including: Deployment, Recovery; Towing Hydrophone Arrays and Development of an Improved Array Design and Glider Technology	PIFSC Cetacean Research Program	Federal	\$443,248	Meta, Summary
Hawaiian Monk Seal Monitoring at Kalaupapa National Historical Park	Kalaupapa National Historical Park	Federal	\$4,000	Meta, Raw, Summary
Pacific Islands Regional Office (PIRO)				
Management of West Hawaii Marine Mammal Response Network	Ocean Associates, Inc.	For Profit	\$110,000	
Hawaiian Monk Seal Response Team Management: Grant to Hawaiian Monk Seal Foundation	Monk Seal Foundation	Non-Profit	\$65,000	
Project Kia'i Kai: Marine Mammal Stewardship and Research	Pacific American Foundation	Non-Profit	\$18,300	
Hawaiian Monk Seal Recovery Team Meetings and Facilitation	Malama Learning Center	Non-Profit	\$18,300	
Sounding the Call for the Recovery of the Hawaiian Monk Seal Through the Voices of Our Youth	The Kohala Center	Non-Profit	\$18,300	
Hawaiian Monk Seal Response Network Support (Hawaii Island)	The Marine Mammal Center	Non-Profit	\$10,000	
Furthering Quality Cetacean Stranding Investigations in the Pacific Islands	NMFS Pacific Islands Regional Office	Federal	\$9,000	
Implementation of Dolphin SMART in Hawaii	Hawaii Pacific University	Academic	\$6,000	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries (continued)				
Southeast Fisheries Science Center (SEFSC)				
Stock Assessment Improvement Plan	Southeast Fisheries Science Center	Federal	\$776,000	Meta, Raw, Summary
Marine Mammal Protection Act Wide Ranging Research Activities	Southeast Fisheries Science Center	Federal	\$665,000	Meta, Raw, Summary
North Atlantic Right Whales Passive Acoustic Monitoring	Southeast Fisheries Science Center	Federal	\$574,000	Meta, Raw, Summary
Gulf of Mexico Bryde's Whale Research	Southeast Fisheries Science Center	Federal	\$221,000	Meta, Raw, Summary
Southeast Regional Office (SERO)				
Right Whale Southeast Implementation Team	NMFS Southeast Regional Office	Federal	\$5,000	
Southwest Fisheries Science Center (SWFSC)				
International Dolphin Conservation Program Migration Patterns and Tuna Tracking and Verification Program	SWFSC Marine Mammal and Turtle Division	Federal	\$2,728,190	Meta, Raw, Summary
Endangered Species Act-Listed Species Research for Endangered Species Act Section 7 Analyses	SWFSC Marine Mammal and Turtle Division	Federal	\$1,048,019	Meta, Raw, Summary
Marine Mammal Protection - National Marine Fisheries Service Program Oversight and Direction	SWFSC Marine Mammal and Turtle Division	Federal	\$601,612	Meta, Raw, Summary
Protected Species Stock Assessment to Inform Marine Mammal Protection Act and Endangered Species Act Assessments	SWFSC Marine Mammal and Turtle Division	Federal	\$210,883	Meta, Raw, Summary
Stock Assessment Data Collection for the Recovery of Endangered Large Whales	SWFSC Marine Mammal and Turtle Division	Federal	\$203,415	Meta, Raw, Summary
Dolphin Interaction with Yellowfin Tuna Fishery Research	SWFSC Marine Mammal and Turtle Division	Federal	\$194,497	Meta, Raw, Summary
West Coast Regional Office (WCRO)				
Outreach and Oversight to Reduce Pinniped Interactions with People and Salmon	NMFS West Coast Regional Office; State of Washington; State of Oregon	Federal	\$245,000	
West Coast Gray Whales: Genetics and Surveys for Research and Management	Southwest Fisheries Science Center; Alaska Fisheries Science Center	Federal	\$85,500	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Commerce				
NOAA Fisheries				
West Coast Regional Office (WCRO) (continued)				
Research Support for Southern Resident Killer Whale Recovery Program	NWFSC; SWFSC	Federal	\$68,000	
U.S. West Coast pinniped life history studies	AFSC Marine Mammal Laboratory	Federal	\$67,000	
Large Whale Threat Reduction: Fishery Interactions and Ship Strikes	NMFS West Coast Regional Office	Federal	\$46,147	
Harbor Porpoise Aerial Surveys	AFSC Marine Mammal Laboratory	Federal	\$42,500	
West Coast Region Marine Mammal Stranding Network	NMFS West Coast Regional Office	Federal	\$39,618	Raw
Department of Defense				
ESTCP/SERDP				
Environmental Security Technology Certification Program				
Autonomous Real-Time Passive Acoustic Monitoring of Baleen Whales for Mitigating Interactions with Naval Activities	Naval Facilities Engineering Command - Atlantic	Federal	\$426,559	
Integrated Measurement of Naval Sonar Operations and Precise Cetacean Locations	Naval Undersea Warfare Center	Federal	\$220,363	
Strategic Environmental Research and Development Program				
Behavioral Ecology of Cetaceans: The Relationship of Body Condition with Behavior and Reproductive Status	University of St. Andrews	Academic	\$596,892	
Behavioral Ecology of Deep-Diving Odontocetes in the Bahamas	Bahamas Marine Mammal Research Organisation	Non-Profit	\$106,700	
Odontocete Cetaceans: Quantifying Behavioral Ecology and Response to Predators Using a Multi-Species Approach	Duke University	Academic	\$60,499	
Deep Mapping Teuthivorous Whales and Their Prey Fields	Oregon State University	Academic	\$58,267	
US Air Force				
Eglin AFB				
Eglin Gulf Test and Training Range Mitigation Actions	Eglin Air Force Base Natural Resources Office	Federal	\$101,000	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Air Force				
Vandenberg AFB				
Marine Mammal Monitoring, Potential Impacts of Rocket and Missile Launches	30th Civil Engineer Squadron/CEIEA	Federal	\$26,741	
Marine Mammal Surveys (Recurring) - Fiscal Year 2015	30th Civil Engineer Squadron	Federal	\$14,000	
US Army				
Program Executive Office for Simulation, Training, and Instrumentation				
Marine Mammal Effects from Testing and Evaluation on Ocean Ranges	Space and Naval Warfare Systems Command - Systems Center Pacific	Federal	\$56,250	
USACE - Jacksonville District				
Right Whale Aerial Surveys - Georgia Early Warning system	Florida Fish and Wildlife Conservation Commission	State/Local	\$63,200	Summary
USACE - Savannah District				
Right Whale Aerial Surveys - Georgia Early Warning system	Florida Fish and Wildlife Conservation Commission	State/Local	\$63,200	Summary
US Navy				
Atlantic Fleet				
Navy Acoustic Effects Model	Naval Undersea Warfare Center	Federal	\$2,013,000	Summary
Exercise Data Collection, Mitigation Analysis and Reporting	Navy Undersea Warfare Development Center	Federal	\$1,450,000	Summary
Baseline Aerial Surveys within U.S. Navy Atlantic Operating Areas	University of North Carolina - Wilmington	Academic	\$808,000	Meta, Raw, Summary
Baseline Passive Acoustic Monitoring within U.S. Navy Atlantic Operating Areas	Duke University	Academic	\$659,000	Meta, Summary
Assessment of Deep Diving Cetacean Behavior	Duke University	Academic	\$518,000	Meta, Raw, Summary
Marine species Density Models for the Arctic Ecosystem Integrated Survey Study Area	HDR/Duke University	For Profit	\$422,308	Meta, Summary
Tagging and Tracking of Endangered North Atlantic Right Whales in Florida Waters	Duke University	Academic	\$405,000	Meta, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Atlantic Fleet (continued)				
Marine Species Density Data Gap Assessments and Update for the Atlantic Fleet Training and Testing Study Area	Duke University	Academic	\$299,895	Meta, Summary
Mid-Atlantic Humpback Whale Monitoring	HDR, Inc.	For Profit	\$259,000	Meta, Raw, Summary
Baseline Vessel Surveys within U.S. Navy Atlantic Operating Areas	Duke University	Academic	\$248,000	Meta, Raw, Summary
Marine Species Monitoring Program Oversight and Management	NAVFAC Atlantic	Federal	\$190,000	Meta, Raw, Summary
Sonar Positional Reporting System	U.S. Fleet Forces Command	Federal	\$169,000	
Data Gap Analysis and Data Collection for Marine Species Density Models in the Mediterranean Sea	HDR/Duke University	For Profit	\$165,275	
Acoustic Monitoring and Evaluation of <i>Tursiops</i> Response to Mine Exercise Training Activities	Oceanwide Science Institute	Non-Profit	\$125,000	Meta, Raw, Summary
Haul-Out Counts and Photo-Identification of Pinnipeds in Chesapeake bay, VA and Narragansett Bay, RI	NAVFAC Atlantic; NUWC Newport	Federal	\$104,000	Meta, Raw, Summary
Ice Exercise - Endangered Species Act Consultations	U.S. Fleet Forces Command	Federal	\$45,400	
At-Sea Compliance Program				
Hawaii-Southern California Training and Testing Environmental Impact Statement	Naval Facilities Engineering Command - Pacific	Federal	\$1,970,000	Summary
Atlantic Fleet Training and Testing Environmental Impact Statement	Naval Facilities Engineering Command - Atlantic	Federal	\$1,289,646	Summary
Northwest Training and Testing Environmental Impact Statement	Naval Facilities Engineering Command - Northwest	Federal	\$322,000	Summary
Mariana Islands Training and Testing Environmental Impact Statement	Naval Facilities Engineering Command - Pacific	Federal	\$311,000	Summary
Marine Mammal Protection Act Compliance and Reporting	SPAWAR	Federal	\$300,000	
Gulf of Alaska Navy Training Activities Supplemental Environmental Impact Statement	Naval Facilities Engineering Command - Northwest	Federal	\$234,000	Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy (continued)				
Living Marine Resources Program				
Southern California Behavioral Response Study	Cascadia Research Collective; SEA, Inc.	Non-Profit	\$1,163,294	Summary
Marine Mammal Monitoring on Navy Ranges	Naval Undersea Warfare Center - Division Newport	Federal	\$488,981	Summary
Integrated Real-time Autonomous Passive Acoustic Monitoring System	Ocean Acoustical Services and Instrumentation Systems, Inc.	For Profit	\$421,892	Summary
Technology Demonstration for Navy Passive Acoustic Monitoring	Scripps Institution of Oceanography	Academic	\$270,480	Summary
Database and Metrics for Testing Automated Signal Processing for Passive Acoustic Monitoring	Scripps Institution of Oceanography	Academic	\$243,200	Raw, Summary
Jawphone Simulations to Maximize the Utility of Psychoacoustic and Auditory Evoked Potentials Experiments	San Diego State University	Academic	\$185,101	Summary
Improving the Navy's Automated Methods for Passive Underwater Acoustic Monitoring of Marine Mammals	Space and Naval Warfare Systems Command - Systems Center Pacific	Federal	\$135,000	
Simple Performance-Characterized Automatic Detection of Marine Mammal Sounds	Oregon State University	Academic	\$100,000	Raw, Summary
U.S. National Park Service Participation in the Southern California Behavioral Response Study	Naval Postgraduate School	Federal	\$95,986	
Standardization of AEP Audiometry Methods to Ensure Comparable Data Inclusion in a National Marine Mammal Auditory Evoked Potentials Database	National Marine Mammal Foundation	Non-Profit	\$89,237	Summary
Passive Acoustic Density Estimation of Baleen Whales: using Sonobuoys to Estimate Call-Rate Correction Factors	Southwest Fisheries Science Center	Federal	\$68,750	Summary
Demonstration of High-Performance Passive Acoustic Monitoring Glider and Profiler Float	Oregon State University	Academic	\$64,350	Summary
The Effects of Noise on Marine Mammals	Curtin University	Academic	\$57,840	Summary
Behavioral Audiometry in Multiple Killer Whales (<i>Orcinus orca</i>)	National Marine Mammal Foundation, Inc.	Non-Profit	\$40,688	Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Living Marine Resources Program (continued)				
Improving the Navy's Automated Methods for Passive Underwater Acoustic Monitoring of Marine Mammals	Space and Naval Warfare Systems Command - Systems Center Pacific	Federal	\$24,097	Summary
Primary Audiograms of Hearing in Baleen Whales: A Model System for Mitigating Sound Impacts	Woods Hole Oceanographic Institution; Boston University	Academic	\$21,836	Summary
Acoustic Metadata Management for Navy Fleet Operations	San Diego State University	Academic	\$20,033	
Behavioral Dose-Response Relationship and Temporary Threshold Shift in Harbor Porpoises (<i>Phocoena phocoena</i>)	Sea Mammal Research Company	For Profit	\$9,000	Summary
Density Estimation for Cetaceans from Acoustic Fixed Sensors in Testing and Evaluation Areas	University of St. Andrews	Academic	\$5,207	Summary
Blue and Fin Whale Density Estimation in the U.S. Pacific Fleet Southern California Offshore Range Using Passive Acoustic Monitoring Data	University of California, San Diego	Academic	\$5,000	Summary
Naval Air Systems Command (NAVAIR)				
Atlantic Fleet Training and Testing Environmental Impact Statement	Naval Facilities Engineering Command -Atlantic	Federal	\$318,552	Summary
Atlantic Fleet Training and Testing Environmental Impact Statement	Naval Air Warfare Center	Federal	\$81,100	Summary
Northwest Training and Testing Environmental Impact Statement	Naval Air Warfare Center	Federal	\$75,375	Summary
Hawaii-Southern California Training and Testing Environmental Impact Statement	Naval Air Warfare Center	Federal	\$69,500	Summary
Aerial Surveys for Whale Densities	Aspen Helicopters	For Profit	\$60,000	
Visual aerial surveys around target points prior to live-fire events	Aspen Helicopters	For Profit	\$50,000	
Behavioral Effects of Missile Launches on Hauled-Out Pinnipeds	Naval Air Warfare Center - Weapons Division	Federal	\$30,000	
Effects of Missile Launch Sounds on Hauled-Out Pinnipeds	Greeneridge Sciences, Inc.	For Profit	\$15,000	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Naval Air Systems Command (NAVAIR) (continued)				
Mariana Islands Training and Testing Environmental Impact Statement	Naval Air Warfare Center	Federal	\$13,800	Summary
Naval Facilities Engineering Command Mid-Atlantic (NAVFAC MIDLANT)				
Baseline Nearshore Surveys for Several Mid-Atlantic Installations	Contractor	For Profit	\$87,078	
Incidental Harassment Authorization Application for Waterfront Improvements Project at Portsmouth Naval Shipyard	Contractor	For Profit	\$44,192	Summary
Incidental Harassment Authorization Application for New London Pier 32 Replacement	Contractor	For Profit	\$35,258	Summary
Baseline Nearshore Surveys for several Mid-Atlantic Installations	Contractor	For Profit	\$5,152	
In-House Acoustic Modeling for Berth Replacement	Naval Facilities Engineering Command - Mid-Atlantic	Federal	\$2,000	
In-House Acoustic Modeling for Boat Ramp Repair at Joint Expeditionary Base - Little Creek	Naval Facilities Engineering Command - Mid-Atlantic	Federal	\$2,000	
In-House Acoustic Modeling for Breasting Dolphin Repairs at Craney Island	Naval Facilities Engineering Command - Mid-Atlantic	Federal	\$2,000	
In-House Acoustic Modeling for Fender Pile Repairs at Naval Station Norfolk	Naval Facilities Engineering Command - Mid-Atlantic	Federal	\$2,000	
Naval Facilities Engineering Command Northwest (NAVFAC NW)				
New Wharf Construction - Naval Base Kitsap	Contractor	For Profit	\$134,645	
Naval Base Kitsap Bremerton Pier 6 Acoustic Monitoring	Naval Surface Warfare Center - Carderock Division	Federal	\$35,000	
Environmental Documentation of Planned Service Pier Construction - Naval Base Kitsap	Naval Facilities Engineering Command - Northwest	Federal	\$22,565	
Navy Region Northwest Pinniped Monitoring	Naval Facilities Engineering Command - Northwest	Federal	\$10,000	
Compliance Documentation for Pile Repairs	Naval Facilities Engineering Command - Northwest	Federal	\$6,554	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Naval Facilities Engineering Command Northwest (NAVFAC NW) (continued)				
Naval Magazine Indian Island Ammo Wharf Pile Repair Monitoring Report	Naval Facilities Engineering Command - Northwest	Federal	\$2,000	
Naval Facilities Engineering Command Southeast (NAVFAC SE)				
Environmental Assessment and Application for a Letter of Authorization for Wharf Repairs / Pile Driving at SUBASE Kings Bay	Naval Facilities Engineering Command - Southeast / CNRSE	Federal	\$70,000	Summary
Bottlenose Dolphin Surveys - Naval Support Activity Panama City	Gulf South Research Corporation	For Profit	\$65,190	Summary
Naval Facilities Engineering Command Southwest (NAVFAC SW)				
San Nicolas Island Sub-Tidal Habitat Surveys	USGS Western Ecological Research Center	Federal	\$36,169	Meta, Raw, Summary
Naval Base Point Loma Marine Mammal Surveys	Space and Naval Warfare Systems Command - Systems Center Pacific	Federal	\$3,102	
Naval Sea Systems Command (NAVSEA)				
Environmental Compliance Efforts for At-Sea Testing	Naval Facilities Engineering Command; Naval Undersea Warfare Center	Federal	\$2,086,372	Summary
Littoral Combat Ship Shock Trial Mitigation Monitoring and Compliance Documentation	Various Navy commands and contractors	Federal	\$472,000	Summary
Visual Survey of Marine Mammals Near Panama City, Florida	NOAA Hollings Marine Lab	Federal	\$112,882	Meta, Raw
Puget Sound Aerial Marine Mammal Surveys	HDR, Inc.; Smultea Inc.	For Profit	\$100,000	Meta, Summary
Visual surveys before and after sonar test event	Naval Undersea Warfare Center - Division Keyport	Federal	\$12,500	Summary
Office of Naval Research (ONR)				
Off-Range Beaked Whale Studies: Baseline Data and Tagging Development for Northern Bottlenose Whales (<i>Hyperoodon ampulatus</i>) off Jan Mayen, Norway	University of St. Andrews	Academic	\$419,225	
Acoustic Moorings for Integrated Cetacean-Prey Studies	Scripps Institution of Oceanography	Academic	\$398,676	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Office of Naval Research (ONR) (continued)				
Cetacean Community Ecology in the Waters of Sri Lanka and the Bay of Bengal	Woods Hole Oceanographic Institution	Academic	\$362,299	
Development of the Population Consequences of Acoustic Disturbance Model to Assess Biological Significance of Acoustic Disturbance	University of California, Santa Cruz	Academic	\$292,851	
Linking Deep Water Prey Fields with Odontocete Population Structure and Behavior	Oregon State University	Academic	\$284,613	
High Risk Behaviors in Marine Mammals: Linking Behavioral Responses to Anthropogenic Disturbance to Biological Consequences	University of California, Santa Cruz	Academic	\$280,639	
Comparing Manned Aerial Surveys to Unmanned Aerial Surveys for Cetacean Monitoring in the Arctic	Dahlgren	Federal	\$250,000	
Marine Arctic Ecosystem Study: Pilot Project on Marine Mammal Tagging and Tracking	Stantec Consulting, Ltd	Non-Profit	\$250,000	
A Commercially Available Broadband Acoustic Monitoring Instrument	Woods Hole Oceanographic Institution	Academic	\$224,634	
Pathophysiologic Mechanism of Ammonium Urate Nephrolithiasis in Navy Dolphins	University of Texas Southwestern Medical Center - Dallas	Academic	\$200,633	Summary
Breath Metabolites for Personalized Medicine in U.S. Navy Marine Mammal Program	National Marine Mammal Foundation	Non-Profit	\$200,445	Summary
Young Investigator Program Expansion: Ocean Basin Impact of Ambient Noise on Marine Mammal Detectability, Distribution and Acoustic Communication	Pennsylvania State University	Academic	\$200,000	
Improving Large Cetacean Implantable Satellite Tag Designs to Maximize Tag Robustness and Minimize Health Effects to Individual Animals	Cascadia Research Collective	Non-Profit	\$199,259	
Building a Virtual Model of a Baleen Whale: Phase 3	Quantitative Morphology Consulting	For Profit	\$186,986	
Behavioral Context of Blue and Fin Whale Calling for Density Estimation	Scripps Institution of Oceanography	Academic	\$182,292	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Office of Naval Research (ONR) (continued)				
Multi-Study Ocean Acoustics Human Effects Analysis	University of St. Andrews	Academic	\$179,269	
Blood Oxygen Conservation in Diving Sea Lions: How Low Does Oxygen Really Go?	Scripps Institution of Oceanography	Academic	\$179,184	
Using an Interim Population Consequence of Disturbance Protocol to Assess the Effects of Disturbance Associated with U.S. Navy Exercises on Marine Mammal Populations	SMRU Marine Ltd	For Profit	\$170,169	
Acquisition of Oceanographic Measurements from Baleen Whales: Field Deployments of Tags	Aarhus University	Academic	\$163,500	
Behavioral and Physiological Response of Baleen Whales to Ships and Ship Noise	Cascadia Research Collective	Non-Profit	\$149,826	
Characterization of a New Adiponectin Assay for the Assessment of Metabolic Syndrome in Bottlenose Dolphins	Medical University of South Carolina	Academic	\$148,825	Summary
Animal Telemetry Network Data Assembly Center: Phase 2	Stanford University	Academic	\$148,300	
Acoustic Behavior of North Atlantic Right Whale (<i>Eubalaena glacialis</i>) Mother-Calf Pairs	Syracuse University	Academic	\$141,561	
Development of Novel Noninvasive Methods of Stress Assessment in Baleen Whales	New England Aquarium	Non-Profit	\$139,707	
Beaked Whale Group Deep Dive Behavior from Passive Acoustic Monitoring	Naval Undersea Warfare Center	Federal	\$136,000	
An Investigation of Fin and Blue Whales in the northeast Pacific Ocean Using Data from Cascadia Initiative Ocean Bottom Seismometers	University of Washington	Academic	\$134,086	
Finalizing the DTAG: Implementation and testing of design improvements for reliability and availability	Woods Hole Oceanographic Institution	Academic	\$129,258	
Comparative and Cumulative Energetic Costs of Odontocete Responses to Anthropogenic Disturbance	Northwest Fisheries Science Center	Federal	\$126,594	
Behavioral Response Research Evaluation Workshop	University of St. Andrews	Academic	\$123,173	
Development and Validation of a New Technique for Detection of Stress and Pregnancy	University of Alaska	Academic	\$121,258	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Office of Naval Research (ONR) (continued)				
Cetacean Social Behavioral Response to Sonar Exposure	Kelp Marine Research	Non-Profit	\$119,473	
Large Scale Density Estimation of Blue and Fin whales: Utilizing Sparse Array Data to Develop and Implement a New Method for Estimating Blue and Fin Whale Density	University of St. Andrews	Academic	\$119,266	
Dolphin Echolocation Processing	Space and Naval Warfare Systems Command - Systems Center Pacific	Federal	\$118,100	
Field Testing and Performance Evaluation of the Long-Range Acoustic Real-Time Sensor for Polar Areas	Cornell University	Academic	\$115,831	
Finalizing the DTAG: Implementation and testing of design improvements for reliability and availability	University of Michigan	Academic	\$111,729	
Understanding the Foraging Ecology of Beaked and Short- Finned Pilot Whales in Hawaiian Waters	University of Hawaii	Academic	\$110,217	
Molecular Indicators of Chronic Stress in a Model Pinniped - the Northern Elephant Seal	National Marine Mammal Foundation	Non-Profit	\$109,928	
Determining Baseline Stress-Related Hormone Values in Large Cetaceans	Baylor University	Academic	\$109,297	
Investigation of the Molecular Response of Belugas to "Stressors"	Mystic Aquarium	Non-Profit	\$100,381	
Application of Density Estimation Methods to Datasets Collected from a Glider	Portland State University	Academic	\$100,001	
Design of a Multi-Week Sound and Motion Recording and Telemetry Tag for Behavioral Studies on Whales	Wildlife Computers, Inc.	Non-Profit	\$99,999	
Environmental DNA Barcoding: Using Next Generation Sequencing of Environmental DNA for Detection and Identification of Cetacean Species	Oregon State University	Academic	\$99,994	
Design of a Multi-Week Sound and Motion Recording and Telemetry Tag for Behavioral Studies on Whales	University of St. Andrews	Academic	\$99,615	
A Study to Interpret the Biological Significance of Behavior Associated with 3S Experimental Sonar Exposures	University of St. Andrews	Academic	\$98,779	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Office of Naval Research (ONR) (continued)				
Cumulative Effects of Human Activities on Marine Mammal Populations	The National Academy of Sciences	Non-Profit	\$95,000	
Determining Risk Factors for Diabetes to Prevent and Treat Chronic Diseases in Navy Bottlenose Dolphins (<i>Tursiops truncatus</i>)	National Marine Mammal Foundation	Non-Profit	\$94,945	Summary
Large Scale Density Estimation of Blue and Fin Whales	The Pennsylvania State University	Academic	\$90,000	
Does Depth Matter? Examining Factors that Could Influence the Acoustic Identification of Odontocete Species on Bottom-Moored Recorders	Oceanwide Science Institute	Non-Profit	\$89,747	
Using Passive and Active Acoustics to Examine Relationships of Cetacean and Prey Densities	Scripps Institution of Oceanography	Academic	\$85,000	
A Population Consequence of Acoustic Disturbance Model for Cuvier's Beaked Whale (<i>Ziphius cavirostris</i>) in Southern California	Naval Undersea Warfare Center	Federal	\$84,400	
Understanding the Onset of Health Impacts Caused by Disturbances	University of Aberdeen	Academic	\$83,574	
Quantifying Stress in Marine Mammals: Measuring Biologically Active Cortisol in Cetaceans and Pinnipeds	University of Toronto	Academic	\$75,619	
Interactions among Behavioral Responses of Baleen Whales to Acoustic Stimuli, Oceanographic Features and Prey Availability	Southall Environmental Associates, Inc.	For Profit	\$74,613	
Photogrammetry with an Unmanned Aerial System to Assess Body Condition and Growth of Blainville's Beaked Whales	Bahamas Marine Mammal Research Organisation	Non-Profit	\$74,492	
Develop a General Framework for Estimating Cetacean Density from Data Collected by Slow-Moving Autonomous Ocean Vehicles, Investigating Key Aspects of Survey Design, Data Collection and Data Analysis	University of St. Andrews	Academic	\$72,762	
Metabolic Studies to Formulate Prevention and Treatment Strategies for Ammonium Urate Nephrolithiasis in Navy Dolphins	National Marine Mammal Foundation	Non-Profit	\$72,579	Summary
Behavioral Ecology of Narwhals in a Changing Arctic	University of Washington	Academic	\$69,399	
Comparative and Cumulative Energetic Costs of Odontocete Responses to Anthropogenic Disturbance	University of California, Santa Cruz	Academic	\$68,755	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Office of Naval Research (ONR) (continued)				
Measuring Compartment Size and Gas Solubility in Marine Mammals	Woods Hole Oceanographic Institution	Academic	\$67,171	
Anesthesia Ventilator for Atlantic Bottlenose Dolphins and California Sea Lions	Innovative Veterinary Medicine, Inc.	For Profit	\$64,811	Summary
Quantifying the Effects of Propagation on Classification of Cetacean Vocalizations	Dalhousie University	Academic	\$63,377	
Modeling Soundscapes in Pacific and Atlantic Oceans	Heat, Light, and Sound Research, Inc.	For Profit	\$62,500	
Improving the Utility of the Computed Axial Tomography Scan Video Cam and Tri-Axial Accelerometer for Examining Foraging in Top Marine Predators	Stanford University	Academic	\$61,896	
Assessing Beaked Whale Reproduction and Stress Response Relative to Sonar Activity at the Atlantic Undersea Test and Evaluation Center	Southwest Fisheries Science Center	Federal	\$60,932	
Variability of Hormonal Stress Markers and Stress Responses in a Large Cross-Sectional Sample of Elephant Seals	Sonoma State University	Academic	\$59,750	
Comparing the Foraging Efficiency of Beaked Whales On and Off Naval Ranges	University of St. Andrews	Academic	\$56,543	
Characterization and Treatment of Metabolic Syndrome and Iron Overload in Navy Bottlenose Dolphins	National Marine Mammal Foundation	Non-Profit	\$56,180	Summary
A Power Analysis and Recommended Study Design to Directly Detect Population-Level Consequences of Acoustic Disturbance	Southwest Fisheries Science Center	Federal	\$54,956	
Measuring and Validating Levels of Steroid Hormones in the Skin of Bottlenose Dolphins (<i>Tursiops truncatus</i>)	Aarhus University	Academic	\$53,105	
Probiotics for Maintaining Dolphin (<i>Tursiops truncatus</i>) Health and the Readiness of the U.S. Navy's Marine Mammal Systems	Accacia International, Inc.	For Profit	\$49,411	Summary
Interactions among Behavioral Responses of Baleen Whales to Acoustic Stimuli, Oceanographic Features and Prey Availability	University of California, Santa Cruz	Academic	\$48,817	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Office of Naval Research (ONR) (continued)				
Marine bioacoustics: Soundtracks for the Future	Kohala Center	Non-Profit	\$48,697	
Predicting Trophic Interactions and Habitat Utilization in the California Current ecosystem	University of California - Santa Cruz	Academic	\$46,767	
Cetacean Social Behavioral Response to Sonar	Kelp Marine Research	For Profit	\$45,036	
Evaluation of Non-Lethal Effects of Nitrogen Bubbles on Marine Mammal Health and the Potential Role of Immune Activity in Facilitating the Development of Dive Related Injury	Mystic Aquarium	Non-Profit	\$43,237	
Atlantic Fleet Training and Testing Environmental Impact Statement	Naval Facilities Engineering Command - Atlantic	Federal	\$39,395	Summary
Variability of Hormonal Stress Markers Collected from a Managed Dolphin Population	National Marine Mammal Foundation	Non-Profit	\$37,502	
Trackplot Enhancements: Support for Multiple Animal Tracks and Gyros	University of New Hampshire	Academic	\$34,518	
The Development of Advanced Passive Acoustic Monitoring Systems Using Micromars Technology	Desert Star Systems, LLC	Non-Profit	\$34,225	
Behavioral Response Studies of Cetaceans to Naval Sonar Signals in Norwegian Waters	University of St. Andrews	Academic	\$32,395	
Support for Society for Marine Mammalogy 2015 Biennial Conference	The Marine Mammal Center	Non-Profit	\$30,000	
Workshop on the Detection, Classification, Localization and Density Estimation of Marine Mammals Using Passive Acoustics – 2015	Scripps Institution of Oceanography	Academic	\$25,960	
A Population Consequence of Acoustic Disturbance Model for Cuvier's Beaked Whale (<i>Ziphius cavirostris</i>) in Southern California	University of St. Andrews	Academic	\$25,418	
Development of Automated Whistle and Click Classifiers for Odontocete Species in the Northwest Atlantic Ocean and the Waters Surrounding Hawaii	Bio-Waves, Inc.	For Profit	\$24,828	
Unsupervised Learning (Clustering) of Odontocete Echolocation Clicks	San Diego State University	Academic	\$24,228	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Office of Naval Research (ONR) (continued)				
A Population Consequence of Acoustic Disturbance Model for Cuvier's Beaked Whale (<i>Ziphius cavirostris</i>) in Southern California	Cascadia Research Collective	Non-Profit	\$23,460	
Development of Atlantic Bottlenose Dolphin Cytokine Assays as Diagnostic Markers of Infection, and to Monitor Immune Function or Responses to Vaccination	USDA Agricultural Research Service - Ames	Federal	\$22,650	Summary
Behavioral and Physiological Response of Baleen Whales to Ships and Noise	Southwest Fisheries Science Center	Federal	\$19,200	
Modeling Gas Dynamics in California Sea Lions	Texas A&M University, Corpus Christi	Academic	\$16,171	
Beaked Whale Group Deep Diving Behavior from Passive Acoustic Monitoring	Bahamas Marine Mammal Research Organisation	Non-Profit	\$15,782	
A Power Analysis and Recommended Study Design to Directly Detect Population-Level Consequences of Acoustic Disturbance	Naval Undersea Warfare Center	Federal	\$11,620	
Beaked Whale Group Deep Dive Behavior from Passive Acoustic Monitoring	University of St. Andrews	Academic	\$9,999	
Movements and Habitat Use of Dwarf and Pygmy Sperm Whales Using Remotely-Deployed LIMPET Satellite Tags	Cascadia Research Collective	Non-Profit	\$8,070	
Pacific Fleet – Hawaii & Marianas				
Baseline Visual Surveys and Analysis of Archived Passive Acoustic Monitoring Data	Pacific Islands Fisheries Science Center	Federal	\$495,000	Meta, Summary
Passive Acoustic Monitoring Using Pacific Missile Range Facility Hydrophones Including Behavioral Response and Long-Term Data Recording/Analysis	Space and Naval Warfare Systems Command	Federal	\$460,000	Meta, Summary
Visual Survey, Satellite Tag Data Collection, Aerial Surveys in Conjunction with Training Events and Analysis for Marine Species Monitoring at Pacific Missile Range Facility	HDR, Inc.; NUWC	For Profit	\$260,000	Meta, Summary
Puuloa range acoustic data analysis	Naval Facilities Engineering Command Engineering; Expeditionary Warfare Center	Federal	\$97,000	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Pacific Fleet – Hawaii & Marianas (continued)				
Surveying Marine Mammals with High-Powered Bigeye Binoculars from a Shore-Based Platform in the Marianas	HDR, Inc.	For Profit	\$68,000	Meta, Summary
Marine Mammal Observer Lookout Effectiveness Study	National Underwater Warfare Center - Newport	Federal	\$30,000	Meta, Summary
Photographic Aerial Monitoring Survey of the Kaula Islet	Normandeau	For Profit	\$3,586	
Pacific Fleet - West Coast				
Distribution and Movement Patterns of Blue and Fin Whales in the Eastern Pacific	Oregon State University	Academic	\$1,094,000	
Blue Whale, Fin Whale, Humpback Whale, and Cuvier's Beaked Whale/Vocalization/Echolocation and Impact Assessment from Anthropogenic Sounds	Scripps Institution of Oceanography	Academic	\$620,000	
Southern Resident Killer Whale Offshore Movement	Northwest Fisheries Science Center	Federal	\$403,000	
Gulf of Alaska and Pacific Northwest Passive Acoustic Monitoring	Scripps Institution of Oceanography	Academic	\$280,000	
Puget Sound Aerial Marine Mammal Surveys	HDR, Inc.; Smultea Inc.	For Profit	\$241,000	Meta, Summary
Density estimation of Cuvier's Beaked Whales in Southern California Using Passive Acoustic Monitoring	Scripps Institution of Oceanography	Academic	\$120,000	
Acoustic Monitoring Study Underwater Detonation Range Northwest Training and Testing	Naval Undersea Warfare Command	Federal	\$104,000	
Marine Mammal Surveys During California Cooperative Oceanic Fisheries Investigations	Scripps Institution of Oceanography	Academic	\$102,000	
San Diego Bay and Silver Strand Training Complex Marine Mammal Surveys	Space and Naval Warfare Systems Command - Systems Center Pacific	Federal	\$35,000	
Silver Strand Training Complex and San Diego Bay Marine Mammal Surveys	Space and Naval Warfare Systems Command	Federal	\$10,080	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Defense				
US Navy				
Pacific Fleet - West Coast (continued)				
Fin Whale And Cuvier's Beaked Whale Vocalization/Echolocation And Impact Assessment From Anthropogenic Sounds at Navy's Southern California Offshore Antisubmarine Warfare Range	Naval Undersea Warfare Center - Division Newport	Federal	\$0	
Space and Naval Warfare Systems Command (SPAWAR)				
Blue Whale Compliance Surveys in the San Diego Arc	Space and Naval Warfare Systems Command - Systems Center Pacific	Federal	\$68,000	
Department of Energy				
Office of Energy Efficiency & Renewable Energy				
Wind and Water Power Technologies Office				
Tethys: Environmental Effects of Wind and Water Power Technologies Database	DOE Pacific Northwest National Laboratory	Federal	\$500,000	Meta, Summary
Marine and Hydrokinetic Turbine Strike Severity Analysis	Sandia National Lab and Pacific Northwest National Lab	Federal	\$400,000	Summary
An Intelligent Adaptable Monitoring Package for Marine Renewable Energy Projects	University of Washington	Academic	\$0	Summary
Marine Mammal Behavioral Response to Tidal Turbine Sound	University of Washington	Academic	\$0	Summary
Modeling Wildlife Densities and Movements across Temporal and Spatial Scales on the Mid-Atlantic Continental Shelf	Biodiversity Research Institute	Non-Profit	\$0	Meta, Raw, Summary
Nekton Interaction Monitoring System	DOE Pacific Northwest National Laboratory	Federal	\$0	Summary
Unobtrusive Multi-static Serial LiDAR Imager for Wide-area Surveillance and Identification of Marine Life at Marine and Hydro-Kinetic Installations	Florida Atlantic University	Academic	\$0	Summary
Department of Health & Human Services				
National Institutes of Health				
National Institute of Deafness and other Communication Disorders (NIDCD)				
Comparative Genetics of Sweet Taste in Carnivora	Monell Chemical Senses Center	Non-Profit	\$343,324	Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Health & Human Services				
National Institutes of Health (continued)				
National Institute of Environmental Health Sciences (NIEHS)				
A Novel Antibody Based Biomarker for Toxicity of Chronic Domoic Acid Exposure	University of Washington	Academic	\$245,871	Summary
Does in Utero Exposure to Domoic Acid Cause Temporal Lobe Epilepsy?	Stanford University	Academic	\$117,865	Summary
Department of Homeland Security				
US Coast Guard				
(LMR) Atlantic Area				
District 5, U.S. Coast Guard Marine Mammal Enforcement and Conservation	U.S. Coast Guard	Federal	\$239,273	
District 7, U.S. Coast Guard Marine Mammal Enforcement and Conservation	USCG District 7	Federal	\$70,844	
District 8, U.S. Coast Guard Marine Mammal Enforcement and Conservation	USCG District 8	Federal	\$34,676	
District 1, U.S. Coast Guard Marine Mammal Enforcement and Conservation	USCG District 1	Federal	\$34,574	
(LMR) Pacific Area				
District 14, U.S. Coast Guard Marine Mammal Enforcement and Conservation	USCG District 14	Federal	\$1,721,417	
District 17, U.S. Coast Guard Marine Mammal Enforcement and Conservation	USCG District 17	Federal	\$284,777	
District 11, U.S. Coast Guard Marine Mammal Enforcement and Conservation	USCG District 11	Federal	\$267,164	
District 13, U.S. Coast Guard Marine Mammal Enforcement and Conservation	USCG District 13	Federal	\$142,641	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Independent Agencies				
Marine Mammal Commission				
Assessing High Cetacean Diversity and Omura's Whale Distribution in Northwest Madagascar during the Western Indian Ocean Oil and Gas Boom	New England Aquarium	Non-Profit	\$43,048	
Connectivity Between Indian Ocean Humpback Dolphin Populations in East Africa: What is the Most Appropriate Unit for Conservation?	Wildlife Conservation Society	Non-Profit	\$37,010	
Investigating Factors for Unusual Dolphin Mortalities on the U.S. Atlantic Coast: Focus on the Immune System	University of Connecticut	Academic	\$29,942	
The Impacts of Noise on Reproductive Advertisement of an Aquatically Breeding Pinniped	Syracuse University	Academic	\$9,111	
8th Workshop for the Coordinated Research and Conservation of the Franciscana	Projeto Toninhas	Non-Profit	\$2,000	
National Aeronautics and Space Administration				
Kennedy Space Center				
Long Term Monitoring of the Abundance and Distribution of Manatees on the Kennedy Space Center	KEMCON/Ecological Program	For Profit	\$50,000	
National Science Foundation				
Biological Sciences (BIO) Directorate				
Instrument Development for Biological Research - Type B: Refinement of a Miniature Oceanographic Data Recorder that Can Be Carried by Marine Mammals and other Pelagic Species for Commercial Production	Texas A&M University, Main Campus	Academic	\$536,366	Meta, Summary
The Phylogeny and Evolution of Cetacea: Resolution of Rapid Radiations and a Molecular Blueprint for Modern Whales, Dolphins, and Porpoises	University of California, Riverside	Academic	\$73,998	Raw
Education & Human Resources (EHR) Directorate				
Understanding Biotic Response to Environmental Change in Tropical Ecosystems Through a Place-Based Context	University of Hawaii, Hilo	Academic	\$0	Meta, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Independent Agencies				
National Science Foundation				
Geosciences (GEO) Directorate				
Unraveling the Genomic and Molecular Basis of the Dive Response: Nitric Oxide Signaling and Vasoregulation in the Weddell Seal	Massachusetts General Hospital	Non-Profit	\$440,830	Meta, Raw
Development of an Interim Passive Ocean Acoustic Waveguide Remote Sensing System for Instantaneous Continental-Shelf Scale Marine Mammal Monitoring, Localization and Species Classification in Near Real Time	Northeastern University	Academic	\$218,051	
How Development and Behavior Interact to Change Skull Form: Exploring and Sharing Evolutionary Insights from the Fossil Record of Cetaceans (Whales, Dolphins, and Porpoises)	New York Institute of Technology	Academic	\$81,682	Meta, Summary
Collaborative Research: Geomagnetic Navigation by Weddell Seals Beneath Antarctic Ice	Texas A & M University	Academic	\$79,443	Meta, Summary
Collaborative Research: Geomagnetic Navigation by Weddell Seals Beneath Antarctic Ice	University of Texas, Austin	Academic	\$79,000	Meta, Summary
Collaborative Research: Geomagnetic Navigation by Weddell Seals Beneath Antarctic Ice	University of California, Santa Cruz	Academic	\$73,989	Meta, Summary
Long-Term Ecological Research Palmer, Antarctica: Land-Shelf-Ocean Connectivity, Ecosystem Resilience and Transformation in a Sea-Ice Influenced Pelagic Ecosystem	Lamont-Doherty Earth Observatory	Academic	\$0	Meta, Raw, Summary
Mathematical & Physical Sciences (MPS) Directorate				
In Search of Dolphin Language	Rockefeller University	Academic	\$123,074	
Smithsonian Institution				
Environmental Research Center (SERC)				
Feeding Behavior, Diet, and Energetic Balances in Sea Otters	Smithsonian Environmental Research Center	Federal	\$8,000	
Museum of Natural History (SMNH)				
Collection and Exchange of Marine Mammal Parts	Smithsonian National Museum of Natural History	Federal	\$110,000	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Independent Agencies				
Smithsonian Institution				
Museum of Natural History (SMNH) (continued)				
Evolution of the Sound Reception Pathway in Cetaceans	Smithsonian National Museum of Natural History	Federal	\$25,000	
Phylogenetics, Biogeography, and Conservation of <i>Lagenorhynchus acutus</i> , <i>L. albirostris</i> , and <i>L. obliquidens</i> in U.S. Waters	Smithsonian National Museum of Natural History	Federal	\$25,000	
National Zoo (NZP)				
American Trail - Education and Outreach on Conservation	Smithsonian National Zoological Park	Federal	\$300,000	
Tropical Research Institute (STRI)				
Eastern Pacific Marine Traffic Separation Schemes: Planning for Expansion and Measuring Compliance and Acoustic Impact	Smithsonian Tropical Research Institute	Federal	\$75,000	
Monitoring Changes in Population and Habitat of Manatee (<i>Trichechus manatus</i>) in Rio Changuinola and Area of Influence, Bocas del Toro, Panama	Smithsonian Tropical Research Institute	Federal	\$30,000	
Department of Interior				
Bureau of Ocean Energy Management				
Alaska OCS Region				
Chukchi Acoustic, Oceanography and Zooplankton Extension Study)	AFSC Marine Mammal Laboratory; Pacific Marine Environmental Laboratory	Federal	\$1,287,805	Meta, Raw, Summary
Arctic Whale Ecology Study: Use of the Chukchi Sea by Endangered Baleen and Other Whales	AFSC Marine Mammal Laboratory; Pacific Marine Environmental Laboratory	Federal	\$865,000	Meta, Raw, Summary
Distribution and Relative Abundance of Marine Mammals in the Chukchi Sea and the Fall Migration of Bowhead Whales in the Beaufort Sea	AFSC Marine Mammal Laboratory	Federal	\$840,951	Meta, Raw, Summary
Satellite Tracking of Bowhead Whales: Habitat Use, Passive Acoustic and Environmental Monitoring	Alaska Department of Fish and Game	State/Local	\$510,660	Meta, Raw, Summary
Initiating an Arctic Marine Biodiversity Observing Network for Ecosystem Monitoring	University of Alaska, Fairbanks	Academic	\$500,000	Meta, Raw, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
Bureau of Ocean Energy Management				
Alaska OCS Region (continued)				
Pinniped Movements and Foraging: Walrus Habitat Use in the Potential Drilling Area in the Chukchi Sea	Alaska Department of Fish and Game	State/Local	\$229,326	Meta, Raw, Summary
Field Evaluation of an Unmanned Aircraft System for Studying Cetacean Distribution, Density, and Habitat Use in the Arctic	AFSC Marine Mammal Laboratory	Federal	\$82,620	
Marine Mammal/Physical Oceanography Synthesis - Synthesis of Arctic Research	OAR Pacific Marine Environmental Laboratory	Federal	\$17,000	
Demography and Behavior of Polar Bears Summering on Shore in Alaska (Beaufort Sea)	FWS Marine Mammals Management Office	Federal	\$0	Meta, Raw, Summary
Demography and Behavior of Polar Bears Summering on Shore in Alaska (Beaufort, Chukchi)	USGS Alaska Science Center	Federal	\$0	Meta, Raw, Summary
Ice Seal Movements and Foraging: Village-based Satellite Tracking and Acoustic Monitoring of Ringed, Bearded, and Spotted Seals	Alaska Department of Fish and Game	State/Local	\$0	Meta, Raw, Summary
Walrus Adaptability and Long-term Responses; Using multi-proxy data to project Sustainability	University of Alaska, Fairbanks	Academic	\$0	Meta, Raw, Summary
Atlantic OCS Region				
Atlantic Marine Assessment Program for Protected Species II	Northeast Fisheries Science Center	Federal	\$1,750,000	Meta, Raw, Summary
Atlantic Marine Assessment Program for Protected Species - Aerial Survey	Southeast Fisheries Science Center	Federal	\$145,000	Meta, Raw, Summary
Determining Offshore Use by Marine Mammals and Ambient Noise Levels Using Passive Acoustic Monitoring	Maryland Department of Natural Resources	State/Local	\$0	Meta, Raw, Summary
Understanding Whale Presence in the Virginia Offshore Wind Energy Area	Cornell Laboratory of Ornithology, Bioacoustics Research Program	Academic	\$0	Meta, Raw, Summary
Gulf of Mexico OCS Region				
Florida Manatee Movement and Habitat Use in the Northern Gulf of Mexico	USGS Wetland and Aquatic Research Center	Federal	\$216,000	Meta, Raw, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
Bureau of Ocean Energy Management				
Gulf of Mexico OCS Region (continued)				
Passive Acoustic Monitoring Program for the Northern Gulf of Mexico	TBD	TBD	\$0	Meta, Raw, Summary
Pressure Wave and Acoustic Properties Generated by the Explosive Removal of Offshore Structures: Potential Effects on Protected Species	CSA Ocean Sciences	For Profit	\$0	
Sperm Whales and Bottlenose Dolphins in the Gulf of Mexico	Southeast Fisheries Science Center	Federal	\$0	Meta, Raw, Summary
Headquarters				
Assessment of the Cumulative Effects of Anthropogenic Stressors on Marine Mammals	National Academy of Sciences	Non-Profit	\$173,520	Raw, Summary
Behavioural Response of Australian Humpback Whales to Seismic Surveys	University of Sydney - Institute of Marine Science	Academic	\$0	Meta, Raw, Summary
Examination of Health Effects and Long-Term Impacts of Deployments of Multiple Tag Types on Blue, Humpback, and Gray whales in the Eastern North Pacific	Cascadia Research Collective	Non-Profit	\$0	Meta, Raw, Summary
Understanding Propagation of Seismic Noise and Effects to Marine Mammals at Larger Temporal and Spatial Scales	TBD	TBD	\$0	
Pacific OCS Region				
A Demonstration Marine Biodiversity Observation Network for Ecosystem Monitoring	University of California, Santa Barbara - Marine Science Institute	Academic	\$250,000	Meta, Raw, Summary
Characterizing and Quantifying Sea Lion and Seal Use of Offshore Man-made Structures off California	AFSC Marine Mammal Laboratory	Federal	\$0	Meta, Raw, Summary
Bureau of Safety and Environmental Enforcement				
Environmental Studies Program				
Effects Of Oil, Chemical Dispersant, and Dispersed Oil on the Functional Characteristics of Mysticete Whale Baleen	NOAA Office of Response and Restoration	Federal	\$90,000	Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
National Park Service				
Alaska Region				
Investigating the Effects of Vessel Traffic on Marine Mammal Vocalizations in Glacier Bay National Park and Preserve	Oregon State University	Academic	\$176,597	
National Ocean Coordinator: Alaska Region	NPS - Alaska Region	Federal	\$0	Summary
Biological Resources Division				
National Park System Marine Mammal Technical Support and Coordination	NPS Biological Resources Division, Wildlife Conservation Branch and Wildlife Health Branch - Water Resources Division	Federal	\$40,000	Summary
Cabrillo NM				
Gray Whale Education and Outreach	Cabrillo National Monument	Federal	\$1,744	
Canaveral NS				
Manatee Monitoring and Stranding Response	Canaveral National Seashore	Federal	\$2,000	Summary
Cape Cod NS				
Seal Scouts: Education and Outreach at Cape Cod National Seashore	Cape Cod National Seashore	Federal	\$11,000	
Cape Cod Stranding Network: Marine Mammal Strandings at Cape Cod National Seashore	International Fund for Animal Welfare	Non-Profit	\$0	
Ecology of Harbor Seals and Gray Seals in Southern New England waters	Northeast Fisheries Science Center	Federal	\$0	
Gray seal (<i>Halichoerus grypus</i>) Live Capture, Sampling, and Tagging.	Northeast Fisheries Science Center	Federal	\$0	
Installation of a Vessel Automatic Identification System Receiver Station at the Cape Cod National Seashore Province Lands Visitor Center	Stellwagen Bank National Marine Sanctuary	Federal	\$0	Summary
Cape Hatteras NS				
Marine Mammal Stranding Response at Cape Hatteras National Seashore	Cape Hatteras National Seashore - Outer Banks Group	Federal	\$6,000	Meta, Raw, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
National Park Service				
Cape Hatteras NS (continued)				
Using Camera Traps and Sightings Data to Assess the Presence and Haulout Behavior of Harbor Seals in Pamlico Sound	Duke Marine Lab	Academic	\$0	
Channel Islands NP				
Ship Strike Mitigation and Monitoring	Channel Islands National Park	Federal	\$3,000	
Bioacoustics of the Northern Elephant Seal	University of California, Santa Cruz	Academic	\$0	
Interpretation at Channel Islands National Park	Channel Islands National Park	Federal	\$0	Summary
Cumberland Island NS				
Marine Mammal Research and Stranding Response	Cumberland Island National Seashore	Federal	\$2,000	Summary
Everglades NP				
Manatee Research and Monitoring at Everglades National Park	Everglades National Park	Federal	\$8,000	Summary
Fire Island NS				
Stranding Program with the Riverhead Foundation	Riverhead Foundation for Marine Research and Preservation	Non-Profit	\$4,000	
Gateway NRA				
Marine Mammal Monitoring and Public Education	Gateway National Recreation Area	Federal	\$2,300	Summary
Protecting Horseshoe Crabs (<i>Limulus polyphemus</i>) and Other Wildlife from Fences and Planting Activities at the Rulers Bar and Black Wall Saltmarsh Restoration Sites, Jamaica Bay, NY	American Littoral Society	Non-Profit	\$0	
Glacier Bay NP				
Population Characteristics of Humpback Whales in Glacier Bay and Adjacent Waters	Glacier Bay National Park and Preserve	Federal	\$263,000	
Quantifying Frequency and Severity of Interactions between Cruise Ships and Marine Mammals in Glacier Bay National Park	Glacier Bay National Park and Preserve	Federal	\$143,000	
Monitoring Harbor Seal Population Status in Glacier Bay National Park, Alaska	Glacier Bay National Park and Preserve - Coastal Program	Federal	\$114,500	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
National Park Service				
Glacier Bay NP (continued)				
Killer Whale Population Assessment and Photo-Identification of Winter Humpback Whales in Northern Southeastern Alaska	North Gulf Oceanic Society	Non-Profit	\$1,000	
Underwater Acoustic Monitoring in Glacier Bay	Glacier Bay National Park and Preserve	Federal	\$890	
Golden Gate NRA				
Harbor Seal Monitoring at Point Bonita	Golden Gate National Recreation Area; Point Reyes National Seashore; Pacific Coast Science and Learning Center	Federal	\$0	Summary
Marine Mammal Stranding Response	The Marine Mammal Center; California Academy of Sciences	Non-Profit	\$0	Summary
Gulf Islands NS				
Educational Field Trip - University of Southern Mississippi - Gulf Coast Research Laboratory - Whale and Dolphin Behavior	Gulf Islands National Seashore	Federal	\$0	
Haleakala NP				
Monk Seal Monitoring at Haleakalā National Park	Haleakalā National Park	Federal	\$1,000	
Headquarters				
Quantification of Microplastic on National Park Beaches	Clemson's Baruch Institute of Coastal Ecology and Forest Science	Academic	\$0	
Inventory and Monitoring Division				
Development of a Statistical Adaptive Monitoring Framework for Sea Otters in Glacier Bay National Park, Alaska	NPS SEAN Inventory and Monitoring Program	Federal	\$144,300	
Channel Islands Pinniped Surveys	NOAA	Federal	\$21,000	Summary
Kaloko-Honokohau NHP				
Monk Seal Monitoring at Kaloko-Honokohau National Historical Park	Kaloko-Honokohau National Historical Park	Federal	\$50	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
National Park Service				
Katmai NP and Preserve				
Sea Otter Research and Monitoring In Katmai National Park and Preserve	Katmai National Park and Preserve	Federal	\$10,000	
Kenai Fjords NP				
Nearshore Marine Vital Signs Monitoring	Kenai Fjords National Park; U.S. Geological Survey	Federal	\$209,400	Meta, Raw, Summary
Natural Sounds and Night Skies Division				
Soundscapes and Marine Mammals	NPS Natural Sounds and Night Skies Division	Federal	\$8,000	Summary
New Bedford Whaling NHP				
Whaling, Maritime History, and Whale Conservation at New Bedford Whaling National Historical Park	New Bedford Whaling National Historical Park	Federal	\$159,000	
Olympic NP				
Marine Mammal Monitoring and Stranding Response at Olympic National Park	Olympic National Park	Federal	\$150	Summary
Annual Range-Wide Sea Otter, Seal and Sea Lion Surveys in Washington	Washington State Department of Fish and Wildlife	State/Local	\$0	
Fall-Winter Supplemental Washington Sea Otter Aerial Survey	Seattle Aquarium	Non-Profit	\$0	
The Impacts of a Reintroduced Keystone Predator on the Nearshore Marine Environment on the Olympic Coast of Washington State	University of Washington	Academic	\$0	
Pacific West Region				
Regional Ocean Coordinator: Pacific West Region	NPS - Pacific West Region	Federal	\$130,000	
Padre Island NS				
Marine Mammal Monitoring and Stranding Response	Padre Island National Seashore	Federal	\$0	Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
National Park Service				
Point Reyes NS				
Monitoring Pinnipeds at Point Reyes National Seashore	NPS - Inventory and Monitoring Division	Federal	\$60,000	
Marine Mammal Stranding Response at Point Reyes National Seashore	Point Reyes National Seashore	Federal	\$5,000	Raw
Reproductive and Foraging Behavior of Elephant Seals	University of California - Santa Cruz	Academic	\$0	
Vertebrate Paleontology of the Miocene-Pliocene Purisima Formation and Santa Margarita Sandstone	University of Otago	Academic	\$0	Summary
Redwood NP				
Marine Mammal Monitoring, Stranding Response, and Contamination Study	Yurok Tribe	Native	\$15,000	
Southeast Region				
Regional Ocean Coordinator: Southeast Region	NPS - Southeast Region	Federal	\$0	
Water Resources Division				
National Park Service Water Resources: Fisheries, Marine Protected Areas, Water Quality, and Sea-Level Rise	NPS Ocean and Coastal Resources Branch	Federal	\$0	Summary
US Fish & Wildlife Service				
Alaska Maritime National Wildlife Refuge				
Marine Mammal Observation and Reporting Alaska Maritime National Wildlife Refuge	Alaska Maritime National Wildlife Refuge	Federal	\$2,500	
Caribbean Ecological Services Office				
Manatee Recovery, Rescue, Rehabilitation and Release Program	FWS Caribbean Ecological Services Office	Federal	\$93,829	
Puerto Rico Department of Natural and Environmental Resources Marine Mammal Rescue Program	Puerto Rico Department of Natural and Environmental Resources	State/Local	\$40,000	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
National Park Service				
Crystal River National Wildlife Refuge				
Manatee Conservation at Crystal River National Wildlife Refuge	Crystal River National Wildlife Refuge	Federal	\$880,000	
Farallon National Wildlife Refuge				
Monitor Marine Mammals on Farallon National Wildlife Refuge	Point Blue Conservation Science	Non-Profit	\$33,263	
International Affairs Program - International Conservation				
Training and Mentoring of Manatee Conservationists in Central African Nations	Sea to Shore Alliance; African Aquatic Conservation Fund	Non-Profit	\$116,200	
Ensuring the long-term protection of Conkouati Douli National Park, Republic of Congo: A Five Year Cooperative Agreement between the U.S. Fish and Wildlife Service and the Wildlife Conservation Society	Wildlife Conservation Society	Non-Profit	\$38,450	
Cultivating an Ethos of Stewardship through Citizen Science and Educational Outreach in the Municipalities of Petatlan and Zihuatanejo, Guerrero	Whales of Guerrero Research Project	Non-Profit	\$20,000	
Environmental Education and Training Program in the Winter Breeding Habitat of the Humpback Whale in the States of Nayarit and Jalisco, Mexico	Ecologia y Conservacion de Ballenas, A.C.	Non-Profit	\$20,000	
Reducing Trade of Bushmeat from Protected Species in the Lake Region of Gabon	Organisation Ecotouristique du Lac Oguemoué	Non-Profit	\$15,096	
International Affairs Program - Permits				
Administration of Marine Mammal Protection Act, Endangered Species Act, and Convention of International Trade in Endangered Species Permits for Marine Mammals	FWS International Affairs Program - Permits	Federal	\$447,720	
Marine Mammals Management Office				
Pacific Walrus Genetic Mark-Recapture	FWS Marine Mammals Management Office	Federal	\$1,311,963	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
National Park Service				
Marine Mammals Management Office (continued)				
Managing Human-Polar Bear Interactions	FWS Marine Mammals Management Office	Federal	\$244,618	
International Research and Management for Conservation of Polar Bears in the Chukchi Sea	FWS Marine Mammals Management Office	Federal	\$182,354	Summary
Pacific Walrus Co-Management	FWS Marine Mammals Management Office - Walrus Program	Federal	\$165,019	
Implementation of the U.S. Russia Bilateral Agreement for the Alaska-Chukotka Polar Bear Population	FWS Marine Mammals Management Office	Federal	\$142,664	
Survey of Northern Sea Otters in the Aleutian Islands, Alaska to Estimate Abundance and Distribution	FWS Marine Mammals Management Office	Federal	\$130,754	
Pacific Walrus Harvest Monitoring	FWS Marine Mammals Management Office	Federal	\$55,091	
Sea Otter Bio-sampling	FWS Marine Mammals Management Office	Federal	\$33,795	
Pacific Walrus Cooperative Haulout Monitoring and Management	FWS Marine Mammals Management Office - Walrus Program	Federal	\$32,266	Meta
Aerial Survey of Sea Otters in Cook Inlet	FWS Marine Mammals Management Office	Federal	\$28,131	
Finalizing and Implementing the Conservation Management Plan for Polar Bears	FWS Marine Mammals Management Office	Federal	\$21,899	Summary
International Research and Management for Conservation of Polar Bears in the Chukchi and Beaufort Seas	FWS Marine Mammals Management Office	Federal	\$10,647	Summary
Southern Beaufort Sea Subpopulation of Polar Bear Research and Management	FWS Marine Mammals Management Office	Federal	\$6,066	Summary
Stock Recovery Planning Meeting	FWS Marine Mammals Management Office	Federal	\$4,548	
Sea Otter Co-Management Meetings	FWS Marine Mammals Management Office	Federal	\$870	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
National Park Service				
North Florida Ecological Services Office				
Manatee Protection Area Markers, Maintenance and Repair	Florida Fish and Wildlife Conservation Commission - Department of Law Enforcement	State/Local	\$250,000	
Oregon Coast National Wildlife Refuge				
Pinniped Research Coordination with the National Oceanic and Atmospheric Administration and the Oregon Department of Fish and Wildlife	Oregon Coast National Wildlife Refuge	Federal	\$3,000	
Marine Mammal Interpretation/Education	Oregon Coast National Wildlife Refuge	Federal	\$2,945	
Region 4 Ecological Services Office				
Implementation of Comprehensive Management Plan for Georgia	Georgia Department of Natural Resources	State/Local	\$25,000	
Study of Habitat Use and Populations of Manatees in Mobile Bay - Increase Awareness and Share Info	Alabama Department of Conservation and Natural Resources	State/Local	\$22,500	
Texas Coast Ecological Services Office				
Rescue of Manatee in Texas and Repatriation to Florida	FWS Ecological Services, Clear Lake; FWS Law Enforcement, Houston	Federal	\$12,673	
Monitoring Texas Manatee Sightings	FWS Texas Coast Ecological Services Office	Federal	\$7,000	
Protection of Manatees in Texas Via Section 7 Consultation and as Part of U.S. Army Corps of Engineers' Permitting	FWS Texas Coast Ecological Services Office	Federal	\$6,600	
Ventura Ecological Services Office				
Southern Sea Otter Recovery and Ecosystem Health in Elkhorn Slough	USGS Western Ecological Research Center	Federal	\$30,500	
Elkhorn Slough Sea Otter Population Study	USGS Western Ecological Research Center	Federal	\$23,924	Meta, Raw
Patterns and Consequences of Shark Bite Mortality in Southern Sea Otters	USGS Western Ecological Research Center	Federal	\$0	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
US Geological Survey				
Alaska Science Center				
Understanding and Forecasting the Response of Sea-Ice Dependent Marine Mammals to a Rapidly-Diminishing Arctic Sea-Ice Environment: Polar Bears	USGS Alaska Science Center	Federal	\$761,473	Meta, Summary
Nearshore Marine Ecosystems Research Program	USGS Alaska Science Center	Federal	\$352,503	Meta, Summary
Understanding and Forecasting the Response of Sea-Ice Dependent Marine Mammals to a Rapidly Diminishing Arctic Sea-Ice Environment: Pacific Walrus	USGS Alaska Science Center	Federal	\$290,000	Meta, Summary
U.S. Geological Survey Changing Arctic Ecosystems Initiative: Developing Demographic Parameters Estimated from Walrus Teeth and Observations At-Sea and Onshore Walrus Aggregations to Inform Conservation Models	USGS Alaska Science Center	Federal	\$201,179	Meta, Summary
U.S. Geological Survey Changing Arctic Ecosystems Initiative: Potential effects of Declining Sea Ice on Polar Bear Nutritional Ecology	USGS Alaska Science Center	Federal	\$191,111	Meta, Summary
U.S. Geological Survey Changing Arctic Ecosystems Initiative: Demography and Ecology of Polar Bears on the North Slope of Alaska	USGS Alaska Science Center	Federal	\$185,599	Meta, Summary
Gulf Watch Alaska: Monitoring Nearshore Benthic Systems in the Gulf of Alaska for Long Term Status and Recovery	USGS Alaska Science Center	Federal	\$181,331	Meta, Summary
U.S. Geological Survey Changing Arctic Ecosystems Initiative: Documenting Walrus Behaviors and Habitat Associations in the Chukchi Sea to Inform Conservation	USGS Alaska Science Center	Federal	\$139,149	Meta, Summary
U.S. Geological Survey Changing Arctic Ecosystems Initiative: Developing Coupled Models of Walrus Population Dynamics and Bioenergetics to Inform Conservation	USGS Alaska Science Center	Federal	\$120,707	Meta, Summary
U.S. Geological Survey Changing Arctic Ecosystems Initiative: Evaluation of Next Generation DNA sequencing to Quantify Walrus Diet from Fecal Material	USGS Alaska Science Center	Federal	\$118,192	Meta, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
US Geological Survey				
Alaska Science Center (continued)				
U.S. Geological Survey Changing Arctic Ecosystems Initiative: The Effects of Declining Sea Ice on Polar Bear Behaviors and Energetic Rates	USGS Alaska Science Center	Federal	\$79,456	Meta, Summary
Mapping Polar Bear Den Habitat in the National Petroleum Reserve – Alaska	USGS Alaska Science Center	Federal	\$70,732	Meta, Summary
U.S. Geological Survey Changing Arctic Ecosystems Initiative: Gene transcription in Polar Bears (<i>Ursus maritimus</i>): Refining a Diagnostic Tool for Polar Bear and Ecosystem Health	USGS Western Ecological Research Center	Federal	\$30,000	Meta, Summary
Nutritional Ecology of Chukchi Sea Polar Bears	USGS - Fort Collins Science Center	Federal	\$19,000	Summary
Polar Bears as a Sentinels for Emerging Wildlife Zoonoses with Implications for Public Health in Alaska: Determining Past and Present Occurrence of <i>Brucella</i> spp., <i>Coxiella burnetii</i> , and <i>Toxoplasma gondii</i> in Southern Beaufort Sea Polar Bears	USGS Alaska Science Center	Federal	\$590	Meta, Summary
Evaluating Chronic Exposure of Sea Otters to Lingering Exxon Valdez Oil in Western Prince William Sound to Assess Population Recovery	USGS Alaska Science Center	Federal	\$0	Meta, Summary
Headquarters				
Understanding Walrus Seasonal Distribution and Habitat Use in the Eastern Chukchi Sea	USGS Alaska Science Center	Federal	\$586,771	Meta, Summary
An Age Structure Survey to Estimate Current Demographics of the Pacific Walrus	USGS Alaska Science Center	Federal	\$286,861	Meta, Summary
Documenting the Importance of Mussels in Sea Otter Foraging Ecology in Kenai Fjords National Park	USGS Alaska Science Center	Federal	\$51,133	Meta, Summary
Leetown Science Center				
Genetic Structure of Pacific walrus: Development of Molecular Markers to Identify Individual Walrus	USGS Leetown Science Center	Federal	\$100,000	Meta, Summary
National Wildlife Health Center				
Investigations of Morbidity and Mortality for Sea Otters from Washington State	USGS National Wildlife Health Center	Federal	\$4,437	Raw, Summary

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
US Geological Survey				
Patuxent Wildlife Research Center				
Development of Polar Bear Recovery Plan	USGS Patuxent Wildlife Research Center	Federal	\$86,200	
Analyzing the Population Status and Threats for the Florida Manatee (<i>Trichechus manatus latirostris</i>) in the Atlantic and Gulf of Mexico	USGS Patuxent Wildlife Research Center	Federal	\$30,400	
Global Review of the Effects of Small Carnivores on Threatened Species - Chapter in Small Carnivore Book	USGS Patuxent Wildlife Research Center	Federal	\$12,000	
Modelling and Assessing the Impacts of Whale-Watching Activities on Cetacean Behavior and Physiology	USGS Patuxent Wildlife Research Center	Federal	\$12,000	
The Effects of Body Size and Climate on Post Weaning Survival of Elephant Seals at Heard Island	USGS Patuxent Wildlife Research Center	Federal	\$7,500	
Wetland and Aquatic Research Center				
Characterizing Manatee Distribution and Habitat Use in the Northern Gulf of Mexico	USGS Wetland and Aquatic Research Center	Federal	\$266,410	
The Manatee Individual Photo-identification System, a Multi-Institution Database to Monitor and Assess Manatee Population Dynamics	FWS Southeast Ecological Science Center	Federal	\$152,236	
Development of Population Models and Decision-Support Tools to Assess Recovery and Status of the Florida Manatee	USGS Wetland and Aquatic Research Center	Federal	\$134,480	
Use of Functional Genomics and Microsatellite DNA Markers to Define Population Structure and Fitness Parameters in the West Indian Manatee (<i>Trichechus manatus</i>)	USGS Wetland and Aquatic Research Center	Federal	\$115,760	
Habitat Use of Antillean Manatees at Naval Station Guantanamo Bay, Cuba	FWS Wetland and Aquatic Research Center	Federal	\$114,098	
Establishing Baselines for Landscape and Macrosystems Ecological Research: Modeling Past Spatial and Temporal Variation in Florida Manatee Survival, Breeding and Movements Rates	USGS Wetland and Aquatic Research Center	Federal	\$58,544	
Marine Mammal Health Assessment	USGS Wetland and Aquatic Research Center	Federal	\$57,235	

Project Title	Performing Organization	Type of Organization	Funding Amount	Database Data Types
Department of Interior				
US Geological Survey				
Wetland and Aquatic Research Center (continued)				
Winter Aggregations of Florida Manatees and Their Habitat Use	USGS Wetland and Aquatic Research Center	Federal	\$54,768	
DNA-Based Diet Analysis of Florida Manatees (<i>Trichechus manatus</i>) Associated with the 2012-2013 Brevard County Unusual Mortality Event	USGS Leetown Science Center	Federal	\$13,882	
Picayune Strand Restoration Project: Monitoring and Assessing Effects of Hydrologic Restoration on the Florida Manatee	USGS Wetland and Aquatic Research Center	Federal	\$11,594	
Western Ecological Research Center				
Coastal Ecosystem Research	USGS Western Ecological Research Center	Federal	\$328,163	Meta, Raw, Summary
Sea Otter Population Biology	USGS Western Ecological Research Center	Federal	\$164,482	Meta, Summary
Pacific Continental Shelf Environmental Assessment to Document Species Occurrence and Abundance of the Northern California Current System	USGS Western Ecological Research Center	Federal	\$2,481	Meta, Raw



Marine Mammal Commission

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