



MAY 31 2012

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act (NEPA), an environmental review has been performed on the following action.

TITLE: Environmental Assessment for Issuance of Scientific Research Permit No. 16473 for Cetacean Research in the Atlantic Ocean

LOCATION: Atlantic Ocean

SUMMARY: NMFS proposes to issue Scientific Research Permit No. 16473 to authorize harassment of marine mammals, including five endangered species. Harassment would result from close vessel approach for behavioral observations and photo-identification. The primary research objectives are to: (1) document the presence of North Atlantic right and humpback whales in the mid-Atlantic and (2) describe the distribution and abundance of all cetaceans within specific geographic regions that are currently used for US Navy training activities, or may be in the future. Impacts from these activities would be short-term and minimal to individual animals and negligible to the species. A biological opinion concluded that the proposed action would not likely jeopardize the continued existence of the species and would not likely destroy or adversely modify designated critical habitat. The permit would be valid for five years.

**RESPONSIBLE
OFFICIAL:**

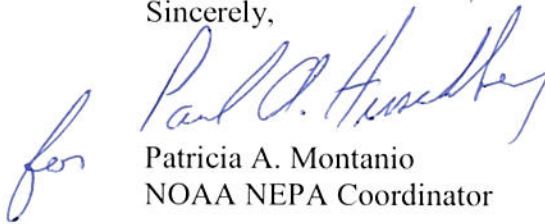
Helen M. Golde
Acting Director, Office of Protected Resources
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
1315 East-West Highway, Room 13821
Silver Spring, MD 20910
(301) 427-8400

The environmental review process led us to conclude that this action will not have a significant effect on the human environment. Therefore, an environmental impact statement will not be prepared. A copy of the finding of no significant impact (FONSI) including the supporting environmental assessment (EA) is enclosed for your information.



Although NOAA is not soliciting comments on this completed EA/FONSI we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the responsible official named above.

Sincerely,

A handwritten signature in blue ink, appearing to read "Patricia A. Montanio". To the left of the main signature is a small, separate handwritten mark that looks like "for".

Patricia A. Montanio
NOAA NEPA Coordinator

Enclosure



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

Environmental Assessment
For Issuance of Scientific Research Permit No. 16473 for Cetacean Research
in the Atlantic Ocean

May 2012

Lead Agency: USDC National Oceanic and Atmospheric Administration
National Marine Fisheries Service, Office of Protected
Resources

Responsible Official: Helen M. Golde, Acting Director, Office of Protected
Resources

For Further Information Contact: Office of Protected Resources
National Marine Fisheries Service
1315 East West Highway
Silver Spring, MD 20910
(301) 427-8400

Location: Atlantic Ocean

Abstract: The National Marine Fisheries Service (NMFS) proposes to issue a scientific research permit for takes of marine mammals in the wild, pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 *et seq.*) and the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq.*). The permit would be valid for five years from the date of issuance and would authorize level B harassment of marine mammals, including five species listed as endangered. The primary research objectives are: (1) To document the presence of North Atlantic right and humpback whales in the mid-Atlantic and (2) To describe the distribution and abundance of all cetaceans within specific geographic regions that are currently used for US Navy training activities or may be in the future. Research activities include photo-identification and behavioral observations.



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1.0 PURPOSE OF AND NEED FOR ACTION

Proposed Action

NMFS proposes to issue a scientific research permit that authorizes “takes”¹ of marine mammals in the wild pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 *et seq.*), the regulations governing the taking and importing of marine mammals (50 CFR Part 216), the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq.*), and the regulations governing the taking, importing, and exporting of endangered and threatened species (50 CFR Parts 222-226) to Ann Pabst, Ph.D.

Purpose of and Need for Action: The MMPA and ESA prohibit “takes” of marine mammals and of threatened and endangered species, respectively, with only a few specific exceptions. The applicable exceptions in this case are an exemption for *bona fide* scientific research under Section 104 of the MMPA and for scientific purposes related to species recovery under Section 10(a)(1)(A) of the ESA.

The purpose of the permit is to provide the applicant with an exemption from the take prohibitions under the MMPA and ESA for harassment (including level A and B harassment as defined under the MMPA²) of marine mammals, including those listed as threatened or endangered, during conduct of research that is consistent with the MMPA and ESA issuance criteria.

The need for issuance of the permit is related to the purposes and policies of the MMPA and ESA. NMFS has a responsibility to implement both the MMPA and the ESA to protect, conserve, and recover marine mammals and threatened and endangered species under its jurisdiction. Facilitating research about species’ basic biology and ecology or that identifies, evaluates, or resolves specific conservation problems informs NMFS management of protected species.

Scope of Environmental Assessment: This EA focuses primarily on the effects of the proposed action on five marine mammal species listed as endangered under the ESA: humpback (*Megaptera novaeangliae*), fin (*Balaenoptera physalus*), sperm (*Physeter macrocephalus*), North Atlantic right whales (*Eubalaena glacialis*), and sei whales (*B. borealis*).

The National Oceanic and Atmospheric Administration (NOAA) has, in NOAA Administrative Order 216-6 (NAO 216-6; 1999), listed issuance of permits for research on marine mammals and

¹ Under the MMPA, “take” is defined as to “harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect.” [16 U.S.C. 1362(18)(A)] The ESA defines “take” as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The term “harm” is further defined by regulations (50 CFR §222.102) as “an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including breeding, spawning, rearing, migrating, feeding, or sheltering.”

² “Harass” is defined under the MMPA as “Any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing a disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B harassment).”

threatened and endangered species as categories of actions that “do not individually or cumulatively have a significant effect on the human environment...” and which therefore do not require preparation of an environmental assessment (EA) or environmental impact statement (EIS). A possible exception to the use of these categorical exclusions is when the action may adversely affect species listed as threatened or endangered under the ESA (NAO 216-6 Section 5.05c).

There is no evidence from prior analyses³ of the effects of permit issuance, or from monitoring reports submitted by permit holders⁴, that issuance of research permits for take of marine mammals listed under the ESA results in adverse effects on stocks or species. Nevertheless, NMFS has prepared this EA, with a more detailed analysis of the potential for adverse impacts on threatened or endangered species resulting from takes of a specified number of individual whales, to assist in making the decision about permit issuance under the MMPA and ESA.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

Alternative 1- No Action

Under the No Action alternative, Permit No. 16473 would not be issued and the applicant would not receive an exemption from the MMPA and ESA prohibitions against take. It is unlikely the applicant would conduct the proposed research in the absence of a permit that exempts take.

Alternative 2 – Proposed Action (Issuance of permit with standard conditions)

Under the Proposed Action alternative, a five-year research permit would be issued for takes of marine mammals, including five species listed as endangered, during activities proposed by the applicant. The permit would include terms and conditions standard to such permits issued by NMFS.

The research activities as proposed by the applicant would include aerial and close vessel approaches for: surveying, photo-identification, and behavioral observations. No research-related mortalities would be authorized. Proposed species and take numbers are listed in Appendix A and in the application materials and draft permit.

The following is a summary of the applicant’s request.

Methods:

The research protocols are described in detail in the application on file for this action (see page 1 for contact information). Proposed research would take place throughout the year, from Delaware Bay to Cape Canaveral, Florida out to 120 nm offshore. Most effort would be:

3 Since 2005, NMFS has prepared over 100 EAs for issuance of permits under the MMPA and ESA. In every case, the EA supported a finding of no significant impact regardless of the nature of the permitted take or the status of the species that were the subject of the permit or batched permits. These EAs were accompanied by Biological Opinions prepared pursuant to interagency consultation under section 7 of the ESA and further document that such permits are not likely to adversely affect listed species. A listing of recently completed EAs is provided in Appendix B.

4 All NMFS permits for research on marine mammals require submission of annual reports, which include information on responses of animals to the permitted takes.

1. From northern North Carolina to Delaware Bay
2. Off North Carolina and southern Virginia, from Onslow Bay north to the mouth of the Chesapeake Bay (focus at Cape Hatteras)
3. At the proposed undersea warfare training range (USWTR) site off Jacksonville, Florida.

The applicant has two primary research objectives:

1. To document the presence of North Atlantic right and humpback whales in the mid-Atlantic. These surveys would be focused between November and June, from the Maryland-Virginia border to the North Carolina-South Carolina border. Surveys would occur every good weather day available; in the past tracklines have been flown 3 to 12 times per survey season.
2. To describe the distribution and abundance of all cetaceans within specific geographic regions that are currently used for US Navy training activities or may be in the future. These would be year-round surveys, two to four days per month per site, of the proposed USWTR site off Jacksonville, Florida, and of the waters off North Carolina and southern Virginia, with most effort focused at Cape Hatteras. Surveys might occur in other areas.

Aerial Surveys

Aerial surveys would be conducted in accordance with NOAA Fisheries Southeast Region (SER) Minimum Aircraft and Crew Provisions Right Whale Data Collection Activities or the NOAA Northeast Region's Atlantic Marine Assessment Program for Protected Species (AMAPPS). In the southeast, surveys would be carried out in over-wing, twin-engine aircraft, Cessna 337 airplanes. Surveys would be flown at an altitude at or above 305 m (1,000 ft) and airspeed of 185 km/hr. The surveys would follow pre-set tracklines (described in the application).

When carrying out right whale surveys, all non-target (i.e., non-large whale) marine mammals, sea turtles, and other large vertebrates would be recorded, but track would not normally be broken and altitude will be maintained at or above 305 m (1,000 ft). At this altitude, permit coverage is not required; therefore it is not part of the proposed action.

When right or other large whales are encountered, the track would be broken to approach the whale(s). As is possible and safe, each whale would be circled and photographed, and its size, behavior, possible entanglement evidence, and any interactions with vessels recorded. This process may result in aircraft altitude periodically decreasing below 305 m, to a minimum of 244 m (800 ft). Based on past right whale sightings, encounters can last up to 30 minutes and involve 10-20 circling events. In all cases, the encounter would take the shortest time possible to collect photo-documentation of the sighting. In the mid-Atlantic, the same individual right whale is rarely seen more than once in a season, but it is possible that some individuals would be photographed more than once. It is not always possible to identify an individual until photographs have been inspected and compared to a catalog of photographs.

Line transect surveys to record the distribution and abundance of cetaceans within specific geographic regions that are used for US Navy training activities, or may be in the future, would be conducted as described above.

In addition to these surveys, Dr. Pabst would partner with the Virginia Aquarium and Marine Science Center from northern North Carolina to southern New Jersey to monitor and photo-document large whales. These efforts would be coordinated with other researchers to fill in gaps in on-going survey efforts and avoid duplication of effort. These surveys would be conducted using survey protocols outlined in NOAA AMAPPS and would be carried out in a DeHavilland Twin Otter DHC-6 aircraft. Track lines would be flown 183 m (600 ft) above the water surface, at about 200 kph (110 knots), when Beaufort sea state conditions are below five, and when there is at least two miles of visibility.

As described above, the minimum time possible would be spent to gather photos and assure species identification and counts (for small cetaceans), and individual identification (if possible, but in all cases for right whales) and inspection for human interaction (for large whales). Smaller cetaceans require less sighting time, and average 5-7 minutes and 3-5 circling events.

Vessel Surveys

Dr. Pabst would partner with the Virginia Aquarium and Marine Science Center from northern North Carolina to southern New Jersey to monitor and photo-document large whales, to assist in the development of spatial planning maps for placement of offshore energy platforms. The surveys would most likely take place in 2013-2015. The exact design of these surveys has not yet been finalized, but will likely be line-transect surveys conducted throughout the year. The sampling intensity would depend upon available funding.

Surveys would be conducted from a 13 m diesel engine vessel. The vessel would travel parallel to the individual or group to match their speed, and to obtain images at a perpendicular angle to the photographer. Vessel distance would be maintained at as far a distance as possible to obtain images for species identification, individual identification (if possible), and observations on any evidence of human interaction. All efforts would be to maintain distances of greater than 50-100 meters, and to spend the shortest time possible on photo-documentation efforts. If the whale(s) change direction or speed of travel the follow would end.

Vessel surveys would also be used to respond to opportunistic whale sightings year-round in the mid-Atlantic, with effort concentrated in the winter months. These surveys would be carried out in small (6-8 m) or larger (13-15 m) vessels, depending upon distance from shore. Vessel speeds and approach processes would be the same as described above.

Vessel surveys would be carried out in the AFAST monitoring site and at the proposed Jacksonville UWSTR site, to document cetacean species presence in these geographic areas of potential US Navy use. Photo-identification and count estimates of all species encountered during vessel surveys would be gathered. Emphasis would be on bottlenose dolphins (*Tursiops truncatus*), Atlantic spotted dolphins (*Stenella frontalis*) and pilot whales (*Globicephala spp.*), as these are the species that are the most abundant at these sights. Focal-animal sampling would also be used, primarily for work off Cape Hatteras and at the Jacksonville USWTR site. The focal animal follows may be short-term or long-term, depending on the protocol and the specific research question.

During small cetacean focal animal sampling, 6-8 hours would be spent collecting behavioral observations. Surveys would occur year-round, primarily in the spring, summer, and fall, for

approximately 10 days per month. Dr. Pabst estimates there would be no more than 150 survey days per year.

All of the above vessel-based activities are currently covered under Letter of Confirmation No. 16185 to Andrew Read, Ph.D., for species not listed as threatened or endangered under the ESA. The described surveys would be coordinated with Dr. Read, and the proposed takes would ensure that if endangered cetacean species are encountered during vessel surveys, they could legally be approached for photo-documentation and to inspect for any evidence of human interaction.

Photo-id effort would be conducted from both small (6-8 m) and large (15-25 m) vessels.

Vessel speed would be 10-14 knots (small vessel) or 8-12 knots (large vessels) while searching, when approaching animals speed would be reduced to 2-5 knots. Vessel speeds and approach processes would be the same as described above.

Permit Duration

The proposed permit would be valid for five years from the date of issuance. A single one-year extension of the permit may be authorized and would be considered a modification, pursuant to NMFS regulations at 50 CFR §222.306.

If granted, a one-year extension of the permit would allow takes that were not used in the fifth year of the permit to be carried forward into a sixth permit year, in which the Permit Holder could continue to conduct research that may result in the same kinds of take. The extension would not change any other terms or conditions of the permit. NMFS does not consider a one-year extension of this nature to represent a substantial change to the proposed action that involves changes in environmental impacts. As such, NMFS would not prepare a supplemental EA for the one-year extension unless substantial new information or circumstances relating to environmental impacts is available (e.g., a change in the status of the target species, listing of new threatened or endangered species in the project area).

3.0 AFFECTED ENVIRONMENT

Location

Proposed research would take place throughout the year, from Delaware Bay to Cape Canaveral, Florida out to 120 nm offshore. Most effort would be:

1. From northern North Carolina to Delaware Bay
2. Off North Carolina and southern Virginia, from Onslow Bay north to the mouth of the Chesapeake Bay (focus at Cape Hatteras)
3. At the proposed undersea warfare training range (USWTR) site off Jacksonville, Florida.

Biological Environment

Affected species/stocks:

The applicant's research would be directed at marine mammals, including five species listed as endangered. These species are considered part of the affected biological environment. Specific

species that would be taken during the proposed action are listed in Appendix A. A brief description of the species and stocks targeted for research under the proposed action is below, summarized from NMFS Stock Assessment Reports (SARS); additional information on the status of these species can be found in the SARS and in the NMFS Recovery Plans for these species, available online at <http://www.nmfs.noaa.gov/pr/sars/species.htm> and <http://www.nmfs.noaa.gov/pr/recovery/plans.htm>, respectively. All marine mammal stocks/species listed under the ESA are also considered depleted under the MMPA.

ESA-Listed Species

Fin whale: Fin whales occur in all major oceans worldwide, primarily in temperate to polar latitudes, and less commonly in the tropics. They occur year-round in a wide range of latitudes and longitudes, but the density of individuals in any one area changes seasonally.

During the summer, fin whales feed on krill, small schooling fish (e.g., herring, capelin, and sand lance), and squid. Fin whales fast in the winter while they migrate to warmer waters.

Fin whales seasonally migrate between temperate and polar waters (Perry et al 1999). For management purposes under the MMPA, one stock is recognized in Atlantic U.S. waters: the Western North Atlantic stock.

Western North Atlantic stock: The best population estimate is 3,985 animals with a PBR of 6.5 (Waring et al. 2011). For the period 2004 through 2008, the minimum annual rate of human-caused mortality and serious injury to fin whales was 3.2 per year (U.S. waters, 2.4; Canadian waters, 0.8) (Waring et al. 2011).

Current threats include reduced prey abundance due to overfishing, habitat degradation, disturbance from low-frequency noise and the possibility that illegal whaling or resumed legal whaling would cause removals at biologically unsustainable rates. Of all species of large whales, fin whales are most often reported as hit by vessels (Jensen and Silber 2003).

Humpback whale: The humpback whale occurs throughout the world's oceans, generally over continental shelves, shelf breaks, and around some oceanic islands (Balcomb and Nichols 1978; Whitehead 1987). Humpback whales exhibit seasonal migrations between warmer temperate and tropical waters in winter and cooler waters of high prey productivity in summer.

Humpback whale reproductive activities occur primarily in winter. Cows nurse their calves for up to 12 months. The age distribution of the humpback whale population is unknown, but the portion of calves in various populations has been estimated at about 4 to 12 percent (Chittleborough 1965; Herman et al. 1980; Whitehead 1982; Bauer 1986; Clapham and Mayo 1987). Sources and rates of natural mortality are generally unstudied, but potential sources of mortality include parasites, disease, predation (killer whales, false killer whales, and sharks), biotoxins, and ice entrapment.

NMFS is conducting a status review of humpback whales under the ESA to ensure that the listing classification of the species is accurate. The status review would be based on the best available scientific and commercial data.

The four recognized stocks (based on geographically distinct winter ranges) of humpback whales in the United States are: the Gulf of Maine stock, the eastern North Pacific stock, the central North Pacific stock, and the western North Pacific stock. Only the Gulf of Maine stock is part of the proposed action.

Gulf of Maine stock: The Western North Atlantic population of humpback whales includes relatively discrete sub-populations which feed during summer in the waters of the Gulf of Maine, the Gulf of St. Lawrence, Newfoundland/Labrador, and western Greenland (Katona and Beard 1990). Other North Atlantic feeding grounds occur off Iceland and northern Norway (Christensen et al. 1992). In the winter, whales from all six feeding areas (including the Gulf of Maine) mate and calve primarily in the West Indies, where spatial and genetic mixing among sub-populations occurs (Clapham et al. 1993; Katona and Beard 1990; Stevick et al. 1998). Humpback whales also use the Mid-Atlantic as a migratory pathway and apparently as a feeding area, at least for juveniles. Since 1989, observations of juvenile humpbacks in that area have been increasing during the winter months, peaking January through March, particularly in the vicinity of the Chesapeake and Delaware Bays (Swingle et al. 1993). Biologists theorize that non-reproductive animals may be establishing a winter feeding range in the Mid-Atlantic because they are not participating in reproductive behavior in the Caribbean.

Data suggests that up to 11,570 whales may reside within the entire North Atlantic (Palsbøll et al. 1997). In the Gulf of Maine, the best population estimate is 847 whales with a PBR of 1.1 whales annually (Waring et al. 2009). Barlow and Clapham (1997) estimated a rate of population increase of at 6.5 percent for this stock. Although the most recent abundance estimates indicate continued population growth, the size of the Gulf of Maine humpback whale stock may be below the optimum sustainable population in the U.S. Atlantic EEZ.

The total level of human-caused mortality and serious injury is unknown, but may be slowing recovery of the population. The main sources of human-caused serious injury and mortality are entanglement in fishing gear and vessel collisions. On average three animals are seriously injured or killed as a result of fishery interactions and another 1.4 whales due to vessel collisions annually. The total level of U.S. fishery-caused mortality and serious injury is unknown, but reported levels are more than 10% of the calculated PBR and, therefore, cannot be considered to be insignificant or approaching zero mortality and serious injury rate.

Sei whale: Sei whales are widely distributed in all oceans, although this species is not found as far into polar waters as other rorquals (Gambell 1985). Several stocks of sei whales have been identified, but updated estimates of the number of sei whales worldwide are not available. Commercial whaling reduced sei whale numbers in the North Pacific from 42,000 whales to approximately 7,000 to 12,000 animals by 1974 (Tillman 1977). The Nova Scotia stock is defined for management purposes in the Atlantic U.S. EEZ.

Nova Scotia stock: The southern portion of this stock's range is the Gulf of Maine and Georges Bank. Sei whales are not common in the U.S. Atlantic waters south of this location. Sei whales are generally found in deeper waters, characteristic of the continental shelf edge region (Hain et al. 1985). There are insufficient data to determine trends of the sei whale population in the North Atlantic. The best population estimate is 386 animals with an annual PBR level of 0.4 (Waring et al. 2011). For the period 2004 through 2008, the minimum annual rate of human-caused mortality and serious injury to sei whales was 1.0. This value includes incidental fishery interaction records, 0.6, and records of vessel collisions, 0.4.

Sperm Whale: Sperm whales are the largest of the toothed whales. The sperm whale occurs throughout the U.S. EEZ on the continental shelf edge, over the continental slope, and into the mid-ocean regions. In winter, sperm whales of the North Atlantic stock are concentrated east and northeast of Cape Hatteras, North Carolina. In spring, the center of distribution is east of Delaware and Virginia. Summer distribution extends east and north of Georges Bank and into the Northeast Channel region, as well as the continental shelf south of New England. The occurrence of sperm whales south of New England on the continental shelf is highest in the fall. The best estimate of abundance of the Western North Atlantic stock is 4,804 (Waring et al. 2007).

North Atlantic Right Whale: The western stock of North Atlantic right whales range from their winter calving grounds in coastal waters of the southeastern United States to their spring feeding and nursery grounds in New England waters extending northward to the Bay of Fundy and the Scotian shelf in summer. However, the location of a large segment of the population is unknown during winter, and data from a limited number of satellite-tagged whales suggests an extended range, at least for some individuals. There are at least five major habitats or congregation areas for this stock of right whales: the coastal waters of the southeastern United States, the Great South Channel, Cape Cod and Massachusetts Bays, the Bay of Fundy, and the Scotian Shelf. Critical habitat has been designated for right whales in the Atlantic Ocean in Cape Cod Bay, Great South Channel, and coastal waters off the southeastern United States.

The western North Atlantic population size was estimated to be at least 361 individuals in 2005 based on a census of individual whales identified using photo-identification techniques. Recent mortalities, including those in the first half of 2005, suggest an increase in the annual mortality rate (Kraus et al. 2005). Research using the North Atlantic Right Whale Catalogue has indicated that, annually, between 14% and 51% of right whales are involved in entanglements (Knowlton et al. 2005). Ship strikes are also a major cause of mortality and injury to right whales (Kraus 1990; Knowlton and Kraus 2001). In records from 2003 through 2007, mortality and serious injury to right whales due to ship strikes were 2.8 whales per year (U.S. waters, 2.2; Canadian waters, 0.6).

Given the small population size and low reproductive rate, human-related mortalities may be the principal factors inhibiting growth and recovery of the population. In order to reduce the threat of ship collisions with North Atlantic right whales, NMFS issued a final rule to implement speed restrictions in 2008.

Non-ESA Listed Species

The remaining non-listed species marine mammals are from populations that are considered either stable or increasing in size. See Appendix A for a complete list of species. More information about each stock may be found in the respective Stock Assessment Reports, which are available online at <http://www.nmfs.noaa.gov/pr/sars/species.htm>.

Non-Target Marine Animals

An assortment of sea birds, sea turtles, fish and invertebrates may be found in the action area during the proposed research. However, merely being present does not mean a marine organism would be affected by the proposed action. Research would be directed only at marine mammals, and thus is not expected to affect non-target marine animals. For these reasons, the effects on non-target species are not considered further.

Biodiversity and Ecosystem Function

The proposed action is directed at marine mammals and does not interfere with benthic productivity, predator-prey interactions or other biodiversity or ecosystem functions. Marine mammals would not be removed from the ecosystem or displaced from habitat, nor would the permitted takes affect their diet or foraging patterns. Further, the proposed action does not involve activities known or likely to result in the introduction or spread of non-indigenous species, such as ballast water exchange or movement of vessels among water bodies. Thus, effects on biodiversity and ecosystem function are not considered further.

Ocean and Coastal Habitats

The action area includes a variety of designated critical habitat, however the proposed action is directed at marine mammals and would not affect habitat. It does not involve alteration of substrate, movement of water or air masses, or other interactions with physical features of ocean and coastal habitat. Thus, effects on habitat are not considered further.

Unique Areas

Gray's Reef and Monitor National Marine Sanctuary are located near the action area; however research would not be conducted in either sanctuary.

Essential fish habitat (EFH) designated for various species of fish, which includes hard and soft bottom substrates is also located throughout the action area. The proposed action is directed at marine mammals and does not alter or affect unique areas, including any components of EFH; therefore effects on unique areas are not considered further.

Historic Places, Scientific, Cultural, and Historical Resources

There are no districts, sites, highways or structures listed in or eligible for listing in the National Register of Historic Places in the action area. The proposed action represents non-consumptive use of marine mammals and does not preclude their availability for other scientific, cultural, or historic uses, including subsistence harvest by Alaskan Natives. Thus, effects on such resources are not considered further.

Social and Economic Resources

The proposed action does not affect distribution of environmental burdens, access to natural or depletable resources or other social or economic concerns. It does not affect traffic and transportation patterns, risk of exposure to hazardous materials or wastes, risk of contracting disease, risk of damages from natural disasters, food safety, or other aspects of public health and safety. Thus, effects on such resources are not considered further.

4.0 ENVIRONMENTAL CONSEQUENCES

Effects of the No Action Alternative

There are no direct or indirect effects on the environment of not issuing the permit. The takes of marine mammals, including those listed as threatened or endangered, resulting from the applicant's research would not be exempted. It is unlikely the applicant would conduct the research in the absence of a permit, because to do so would risk sanctions and enforcement actions.

Effects of the Proposed Action Alternative

Under this alternative, the permit would be issued with standard permit conditions. The permit would allow cetacean research, as described in the permit application, to occur.

Effects would occur at the time when the applicants research results in takes of marine mammals and sea turtles, including those listed as threatened or endangered.

The issue most relevant to this analysis is the potential for negative impacts on the target species. It is important to recognize that an adverse effect on a single individual or a small group of animals does not translate into an adverse effect on the population or species unless it results in reduced reproduction or survival of the individual(s) that causes an appreciable reduction in the likelihood of survival or recovery for the species. In order for the proposed action to have an adverse effect on a species, the exposure of individual animals to the research activities would first have to result in:

- direct mortality,
- serious injury that would lead to mortality, or
- disruption of essential behaviors such as feeding, mating, or nursing, to a degree that the individual's likelihood of successful reproduction or survival was substantially reduced.

Subsequently, mortality or reduction in the individual's likelihood of successful reproduction or survival would then have to result in a net reduction in the number of individuals of the species. In other words, the loss of the individual or its future offspring would not be offset by the addition, through birth or emigration, of other individuals into the population. That net loss to the species would have to be reasonably expected, directly or indirectly, to appreciably reduce the likelihood of both the survival and recovery of the listed species in the wild.

Level B harassment, as defined by the MMPA, would occur during aerial surveys, vessel approach, behavioral observation, and photo-id. The effects of closely approaching cetaceans

have been analyzed in multiple EAs and it has been repeatedly determined that aerial and close vessel approaches could lead to disturbance of marine mammals, but reactions are generally short-term and of a low impact.

Behavioral responses would be expected to vary from no response to diving, tail slapping, or changing direction. Any potential effect of vessel approach should be short-lived and minimal. These short-term behavioral responses would not likely lead to mortality, serious injury, or disruption of essential behaviors such as feeding, mating, or nursing, to a degree that the individual's likelihood of successful reproduction or survival would be substantially reduced.

An ESA Section 7 consultation was conducted on the proposed research. A Biological Opinion was prepared as a result of the consultation, and resulted in the determination that the proposed action is not likely to jeopardize the continued existence of any ESA-listed species or destroy or adversely modify designated critical habitat.

Controversy

Federal agencies are required to consider "the degree to which effects on the quality of the human environment are likely to be highly controversial" when evaluating potential impacts of a proposed action [40 CFR §1508.27]. The application and draft EA for the proposed permit were made available for public review and comment (75 FR 13730) and provided to the Marine Mammal Commission (MMC) for review and comment. No comments were received on the draft EA. Issuance of the permit is not expected to be controversial based on potential environmental impacts.

Cumulative Effects

Cumulative effects are defined as those that result from incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or nonfederal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions that take place over a period of time.

Cetaceans in the proposed study areas are regularly exposed to human activities, including entanglement in fishing gear; vessel activity including whale watching; and anthropogenic noise from vessels, military and industrial activities. A summary of the identified anthropogenic activities that may impact whales and dolphins is presented here to assess the potential for cumulatively significant impacts resulting from the proposed action. Impacts may be chronic as well as sporadic effects like behavioral changes that can stress the animal and ultimately lead to increased vulnerability to parasites and disease. The net effect of disturbance is dependent on the size and percentage of the population affected, the ecological importance of the disturbed area to the animals, the parameters that influence an animal's sensitivity to disturbance or the accommodation time in response to prolonged disturbance (Geraci and St. Aubin 1980).

Considering the nature of the proposed research activities, the minimal, temporary harassment that target animals would experience, and the mitigation measures that would be employed, the proposed research would contribute a negligible increment over and above the effects of the baseline activities currently occurring in the marine environment where the proposed research would occur.

The following activities have been identified as factors that may impact cetaceans.

Entanglement: Because cetacean distribution overlaps with fishing areas, gear entanglements can occur and cause death by drowning or serious injuries such as lacerations, which in turn can lead to severe infections. Entanglement in fishing gear and ghost gear has been a concern for multiple species in the action area. Furthermore, the number of deaths attributed to fishing gear interactions may be grossly underestimated. In many cases, veterinarians and researchers are unable to determine a cause of death from a carcass. Another possibility is that some whales become entangled, drown, and fail to resurface, so their carcasses are never recovered and examined.

Ship strikes and noise: In addition to fishing vessels, cetaceans in the study area face traffic from a variety of other vessels, including commercial shipping, whale watching, ferry operations, and recreational boats. Vessels have the potential to affect marine mammals through their physical presence and activity and the increased underwater sound levels generated by boat engines.

Vessel strikes are rare, but do occur and can result in injury or death. Many types and sizes of vessels have been involved in ship strikes, including container/cargo ships/freighters, tankers, steamships, U.S. Coast Guard (USCG) vessels, U.S. Navy vessels, cruise ships, ferries, recreational vessels, fishing vessels, whale watching vessels, and other vessels. Vessel speed (when recorded) at the time of a large whale collision has ranged from two to 51 knots (Jensen and Silber 2003).

Harassment from whale-watching is not regulated by permits, nor are the effects monitored. The growth of whale watching during the past two decades has meant that whales in some areas are experiencing increased exposure to vessel traffic and sound. This brings added risk for vessel strikes, displacement from habitat and interference with social interaction and communication (Kovacs and Innes 1990; Kruse 1991; Wells and Scott 1997; Samuels and Bejder 1998; Bejder et al. 1999; Colborn 1999; Cope et al. 1999; Mann et al. 2000; Samuels et al. 2000; Boren et al. 2001; Constantine 2001). Not only do greater numbers of boats accompany the whales for longer periods of the day, but there has also been a gradual lengthening of the viewing season in some areas. Federal regulations prohibit approaches to North Atlantic right whales within 500 yards. NMFS has developed viewing guidelines for marine mammal species in all regions.

There is evidence that anthropogenic noise has substantially increased the ambient level of sound in the ocean over the last 50 years (Andrew et.al. 2002, McDonald et.al. 2006). Much of this increase is due to increased shipping activity, industrial activity and military operations. Some individuals or populations are regularly exposed to natural and anthropogenic sounds and may tolerate, or have become habituated to, certain levels of exposure to noise (Richardson 1995). The net effect of disturbance is dependent on the size and percentage of the population affected, the ecological importance of the disturbed area to the animals, and their behavioral plasticity (Geraci and St. Aubin 1980).

In some areas where industrial and commercial activity takes place, noise originates from the construction, operation, and vessel and aircraft support. Many researchers have described

behavioral responses of marine mammals to sounds produced by helicopters and fixed-wing aircraft, boats and ships, as well as dredging, construction, and geological explorations (Richardson 1995; Nowacek et.al. 2007). Most observations have been limited to short-term behavioral responses, which included cessation of feeding, resting, or social interactions. Several studies have demonstrated short-term effects of disturbance on humpback whale behavior (Hall 1982; Baker et al. 1983; Krieger and Wing 1984; Bauer and Herman 1986, Miller et.al. 2000), but the long-term effects, if any, are unclear or not detectable. Actions such as repair of bridges and ports, as well as explosive removal of structures have been analyzed previously and been found to have a negligible impact on the marine mammal stocks.

Contaminants: Human actions, such as emitting discharge from wastewater facilities, dredging, ocean dumping and disposal, aquaculture, and coastal development are known to have deleterious impacts on marine mammals and their prey's habitat, ultimately affecting the animals themselves as they are bioaccumulated. Point source pollutants from coastal runoff, at sea disposal of dredged material and sewage effluents, oil spills, as well as substantial commercial and recreational vessel traffic and impacts of fishing operations continue to negatively affect marine mammals in the proposed action areas.

Climate Change: The extent to which climate and/or ecosystem changes impact the target cetacean species is largely unknown. However, NMFS recognizes that such impacts may occur based on the biology, diet, and foraging behavior of dolphins and whales. Inter-annual, decadal, and longer time-scale variability in climate can alter the distribution and biomass of prey available to large whales. The effects of climate-induced shifts in productivity, biomass, and species composition of zooplankton on the foraging success of planktivorous whales have received little attention. Such shifts in community structure and productivity may alter the distribution and occurrence of foraging whales in coastal habitats and affect their reproductive potential as well. Similar shifts in prey resources could likewise impact large whales if climate change alters the density, distribution, or range of prey.

Other Permits and Authorizations: Some species and locations within the proposed study area are the focus of a high level of research effort. This is due, in part, to intense interest in developing appropriate management and conservation measures to recover these species. Given the number of permits, associated takes, and research vessels present in the environment, repeated disturbance of individual animals is likely to occur in some instances, particularly in coastal areas (due to the proximity to shore). It is difficult to assess the effects of such disturbance. However, NMFS has taken steps to limit repeated harassment and avoid unnecessary duplication of effort through permit conditions requiring coordination among permit holders. NMFS expects that the temporary harassment of individuals would dissipate within minutes, and therefore animals would recover before being targeted for research by another Permit Holder. NMFS would continue to monitor the effectiveness of these conditions in avoiding unnecessary repeated disturbances.

Fifteen permits authorize the harassment of one or more of the cetacean species targeted or incidentally taken in the proposed action area (Appendix C). Nearly all the permits authorize takes in a smaller study area or region, reducing the chance of repeated harassment of individual whales by researchers. Most of this research does not overlap in area or timing. However, some

spatial overlap exists. The majority of the takes authorized by these permits are for Level B harassment that would result in no more than disturbance to the target species.

Several of the active permits would expire before or soon after Permit No. 16473 would be issued. NMFS expects that some researchers would request new permits, or renewals, to continue their work once their current permit expires. NMFS cannot predict with certainty the level of take of each species that may be requested in the future but, conservatively, expects the amount of future research to be similar to or slightly greater than current levels as interest in marine conservation, biology, and management of these species grows.

In addition to the scientific research permits, ten Letters of Confirmation (LOC) under the General Authorization have been issued for non-listed species that are part of the proposed action (Appendix C); these LOCs confirm that the research would result in no more than Level B harassment of non-ESA marine mammals.

None of the active research permits or LOCs authorizes activities likely to result in the serious injury or mortality of any animal. Further, no such incidences have been reported by permitted cetacean researchers. In addition, all permits issued by NMFS for research on protected species, including the proposed permit, contain conditions requiring the Permit Holders to coordinate their activities with the NMFS regional offices and other Permit Holders conducting research on the same species in the same areas.

In general, harassment of marine mammals during permitted research has not been shown to result in long-term or permanent adverse effects on individual animals, regardless of the number of times the harassment occurs. The frequency and duration of the disturbance under the proposed permit would allow adequate time for animals to recover from adverse effects such that additive or cumulative effects of the action on its own are not expected.

NMFS also issues Letters of Authorization (LOAs) associated with rulemakings and Incidental Harassment Authorizations (IHAs) under the MMPA for the incidental take of marine mammals. NMFS has issued one IHA and four LOAs for the take of multiple target species in the action area (Appendix C).

No measurable effects on population demographics are anticipated because any sub-lethal (disturbance) effects are expected to be short-term, and the proposed action is not expected to result in mortality of any animals. There exists the possibility that adverse effects on a species could accrue from the cumulative effects of a large number of permitted takes by harassment relative to the size of a population. However, there is no evidence that current or past levels of permitted takes have resulted in such species level effects.

It is also important to note that many of the target whales are migratory and may transit in and out of U.S. waters and the high seas. NMFS does not have jurisdiction over the activities of individuals conducting field studies in other nations' waters, and cumulative effects from all scientific research on these species across the Proposed Action area cannot be fully assessed. However, where possible, NMFS attempts to collaborate with foreign governments to address management and conservation of these trans-boundary ESA-listed species.

Summary of Cumulative Effects

There may already be significant adverse impacts on marine mammals from the existing levels of human activities. However, the relative incremental effect of the proposed action would not be significant. The proposed takes of specified numbers of marine mammals by harassment during the life of the permit are not likely to contribute to collectively significant adverse impacts on marine mammal stocks or species, including those listed as threatened or endangered. The effects of the takes would be transitory and recoverable, associated with only minor and short-term changes in the behavior of a limited number of individual marine mammals.

Although the effects of repeated or chronic disturbance from scientific research activities should not be dismissed, the potential long-term benefits and value of information gained on these species also must be considered. The proposed research would provide valuable information on a new type of tag attachment and on these species' biology and ecology that in turn may be used to improve their management and reduce the effects of human activities on these populations.

5.0 MITIGATION MEASURES

There are no additional mitigation measures beyond those that are part of the applicant's protocols or conditions that would be required by permit, as discussed in the description of the proposed action (see Chapter 2). The applicant's protocols are incorporated into the permit by reference.

In summary, the permit conditions limit the level of take as described in the take table and require notification, coordination, monitoring, and reporting. Researchers would be required to retreat from animals if behaviors indicate the approach may be interfering with reproduction, pair bonding, feeding, or other vital functions. Although injury and mortality are not expected, if they occur due to the authorized actions, the permit contains measures requiring researchers to cease activities until protocols have been reviewed and revised with NMFS.

Review of monitoring reports of previous permits for the same or similar research protocols indicate that these types of mitigation measures are effective at minimizing stress, pain, injury, and mortality associated with takes.

6.0 LIST OF PREPARERS AND AGENCIES CONSULTED

Agencies Consulted

No agencies were consulted during the preparation of this EA.

Prepared By

This document was prepared by the Permits and Conservation Division of NMFS' Office of Protected Resources in Silver Spring, Maryland.

7.0 LITERATURE CITED

- Andrew, R. K., B. M. Howe, J. A. Mercer, and M. A. Dzieciuch. 2002. Ocean ambient sound: comparing the 1960's with the 1990's for a receiver off the California coast. *Acoustic Research Letters* Online 3:65-70.
- Baker, C.S., L.M. Herman, B.G. Bays and G.B. Bauer. 1983. The impact of vessel traffic on the behavior of humpback whales in southeast Alaska: 1982 season. Report submitted to the National Marine Mammal Laboratory, Seattle, WA. 78 pp.
- Balcomb, K.C., and G. Nichols. 1978. Western north Atlantic humpback whales. *Rep. Int. Whal. Comm.* 28:159-164.
- Barlow, J. and P.J. Clapham 1997. A new birth-interval approach to estimating demographic parameters of humpback whales. *Ecology* 78: 535-546.
- Bauer, G.B. and L.M. Herman. 1986. Effects of vessel traffic on the behavior of humpback whales in Hawaii. Report Submitted to NMFS Southwest Region, Western Pacific Program Office, Honolulu, HI. 151 pp.
- Bejder, L., S.M. Dawson, and J.A. Harraway. 1999. Responses by Hector's dolphins to boats and swimmers in Porpoise bay, New Zealand. *Mar. Mamm. Sci.*, 15(32):738-750.
- Boren, L.J., N.J. Gemmell, and K. Barton. 2001. Controlled approaches as an indicator of tourist disturbance on New Zealand Fur Seals (*Arctocephalus forsteri*). Page 23 in Abstracts of the Southern Hemisphere Marine Mammal Conference 2001, Victoria, Australia, May 29-June 1, 2001.
- Chittleborough, R.G. 1965. Dynamics of two populations of humpback whale, *Megaptera novaeangliae* (Borowski). *Aust. J. Mar. Freshwater Res.* 16:33-128.
- Christensen, I., T. Haug and N. Øien 1992. Seasonal distribution, exploitation and present abundance of stocks of large baleen whales (Mysticeti) and sperm whales (*Physeter macrocephalus*) in Norwegian and adjacent waters. *ICES J. Mar. Sci.* 49: 341-355.
- Clapham, P.J. and C.A. Mayo 1987. Reproduction and recruitment of individually identified humpback whales, *Megaptera novaeangliae*, observed in Massachusetts Bay, 1979-1985. *Can. J. Zool.* 65: 2853-2863.
- Clapham, P.J., L.S. Baraff, C.A. Carlson, M.A. Christian, D.K. Mattila, C.A. Mayo, M.A. Murphy and S. Pittman 1993. Seasonal occurrence and annual return of humpback whales, *Megaptera novaeangliae*, in the southern Gulf of Maine. *Can. J. Zool.* 71: 440-443.
- Colborn, K. 1999. Interactions between humans and bottlenose dolphins, *Tursiops truncatus*, near Panama City, Florida. Master's Thesis, Duke University, Durham, NC. 45pp.
- Constantine, R. 2001. Increased avoidance of swimmers by wild bottlenose dolphins (*Tursiops truncatus*) due to long-term exposure to swim-with-dolphin tourism. *Mar. Mamm. Sci.*, 17(4):689-702.
- Cope, M., D. St. Aubain, and J. Thomas. 1999. The effect of boat activity on the behavior of bottlenose dolphins (*Tursiops truncatus*) in the nearshore waters of Hilton Head, South Carolina. Page 37 in Abstracts of the 13th Biennial Conference on the Biology of Marine Mammals, Wailea, Hawaii, November 38-December 3, 1999.
- Donovan, G. P. 1991. A review of IWC stock boundaries. *Rept. Int. Whal. Commn.*, Special Issue 13:39-68.

- Gambell, R. 1985. Sei whale, *Balaenoptera borealis* Lesson, 1828. In Handbook of Marine Mammals. Volume 3: the Sirenians and Baleen Whales. Sam H. Ridway and Sir Richard Harrison, eds. p.155-170.
- Geraci, J.R. and D.J. St. Aubin. 1980. Offshore petroleum resource development and marine mammals: A review and research recommendations. *Mar. Fish. Rev.* 42:11: 1-12.
- Hall, J.D. 1982. Prince Wouldiam Sound, Alaska: Humpback whale population and vessel traffic study. Final Report, Contract No. 81-ABG-00265. NMFS, Juneau Management Office, Juneau, Alaska. 14 pp.
- Hain, J. H. W., M. A. M. Hyman, R. D. Kenney, and H. E. Winn. 1985. The role of cetaceans in the shelf-edge region of the northeastern United States. *Mar. Fish. Rev.* 47(1): 13-17.
- Herman, L.M., P.H. Forestell, and RC. Antinaja. 1980. The 1976/1977 migration of humpback whales into Hawaiian waters: composite description. Marine Mammal Commission Report No. MMC 77-19. Washington, D.C.
- Jensen, A.S. and G.K. Silber. 2003. Large Whale Ship Strike Database. U.S. Department of Commerce, NOAA Technical Memorandum. NMFS-OPR-25, 37 pp.
- Katona, S.K. and J.A. Beard 1990. Population size, migrations, and feeding aggregations of the humpback whale (*Megaptera novaeangliae*) in the western North Atlantic ocean. *Rep. Int. Whal. Comm. (Special Issue)* 12: (295-306).
- Knowlton, A.R. and S.D. Kraus 2001. Mortality and serious injury of North Atlantic right whales (*Eubalaena glacialis*) in the North Atlantic Ocean. *J. Cetacean Res. Manage. (Special Issue)* 2: 193-208.
- Knowlton, A.R., M.K. Marx, H.M. Pettis, P.K. Hamilton and S.D. Kraus 2005. Analysis of scarring on North Atlantic right whales (*Eubalaena glacialis*): monitoring rates of entanglement interaction 1980-2002. National Marine Fisheries Service. Contract #43EANF030107. Final Report
- Kovacs, K.M. and S. Innes. 1990. The impact of tourism on harp seals (*Phoca groenlandica*) in the gulf of St. Lawrence, Canada. *Applied Animal Behaviour Science*, 26:15-26.
- Kraus, S.D. 1990. Rates and potential causes of mortality in North Atlantic right whales (*Eubalaena glacialis*). *Mar. Mamm. Sci.* 6: 278-291.
- Kraus, S.D., M.W. Brown, H. Caswell, C.W. Clark, M. Fujiwara, P.K. Hamilton, R.D. Kenney, A.R. Knowlton, S. Landry, C.A. Mayo, W.A. McLellan, M.J. Moore, D.P. Nowacek, D.A. Pabst, A.J. Read and R.M. Rolland. 2005. North Atlantic right whales in crisis. *Science* 309(5734): 561-562.
- Krieger, K. and B.L. Wing. 1984. Hydroacoustic surveys and identifications of humpback whale forage in Glacier Bay, Stephens Passage, and Frederick Sound, southeastern Alaska, Summer 1983. NOAA Tech. Memo. NMFS/NWC-66. 60 pp.
- Kruse, S. 1991. The interactions between killer whales and boats in Johnstone Strait, B.C. In *Dolphin societies: discoveries and nuzzles*: 149-159. Pryor. K. & Norris. K. S. Berkeley: University of California Press.
- Mann, J., R.C. Connor, L.M. Barre, and M.R. Heithaus. 2000. Female reproductive success in wild bottlenose dolphins (*Tursiops sp.*): Life history, habitat, provisioning, and group size effects. *Behavioral Ecology*, 11:210-219.
- McDonald, M.A., J. A. Hildebrand and S. M. Wiggins. 2006. Increases in deep ocean ambient noise in the Northeast Pacific west of San Nicolas Island, California, *J. Acoust. Soc. Am.* 120, 711-718.

- Miller, P. J.O., N. Biassoni, A. Samuels, and P.L. Tyack. 2000. Whale songs lengthen in response to sonar. *Nature* 405(6789):903-904.
- Nowacek, D.P., L.H. Thorne, D.W. Johnston, and P.L. Tyack. 2007. Responses of cetaceans to anthropogenic noise. *Mammal Review* 37(2):81-115.
- Palsbøll, P.J., J. Allen, M. Berube, P. Clapham, T. Feddersen, P. Hammond, R. Hudson, H. Jorgensen, S. Katona, A.H. Larsen, F. Larsen, J. Lien, D. Mattila, J. Sigurjonsson, R. Sears, T. Smith, R. Spomer, P. Stevick and N. Oien 1997. Genetic tagging of humpback whales. *Nature* 388: 767-769.
- Perry, S.L., D.P. DeMaster, and G.K. Silber. 1999. The great whales: History and status of six species listed as endangered under the U.S. Endangered Species Act of 1973. *Mar. Fish. Rev.* 6:1-74.
- Richardson, W.J. 1995. Documented disturbance reactions. *In* *Marine Mammals and Noise*. W.J. Richardson, C.R. Greene, Jr., C.I. Malme, and D.H. Thomson, editors. Academic Press, San Diego, California.
- Samuels, A. and L. Bejder. 1998. Habitual interactions between humans and wild bottlenose dolphins (*Tursiops truncatus*) near Panama City Beach, Florida. Report to the Marine Mammal Commission, Silver Spring, MD. 13 pp.
- Samuels, A., L. Bejder, and S. Heinrich. 2000. A Review of the Literature Pertaining to Swimming with Wild Dolphins. Report to the Marine Mammal Commission. 57 pp.
- Stevick, P., N. Øien and D.K. Mattila 1998. Migration of a humpback whale between Norway and the West Indies. *Mar. Mamm. Sci.* 14: 162-166.
- Swingle, W.M., S.G. Barco, T.D. Pitchford, W.A. McLellan, and D.A. Pabst. 1993. Appearance of juvenile humpback whales feeding in the nearshore waters of Virginia. *Mar. Mamm. Sci.* 9:309-315.
- Tillman, M.F. 1977. Estimates of population size for the North Pacific sei whale. *Rep. Int. Whal. Comm. Spec. Iss.* 1:98-106.
- Waring G. T., E. Josephson, C. P. Fairfield-Walsh, and K. Maze-Foley, editors. 2007. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments -- 2007. NOAA Tech Memo NMFS NE 205; 415 p.
- Waring GT, Josephson E, Maze-Foley K, and Rosel PE, editors. 2009. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments -- 2009. NOAA Tech Memo NMFS NE 213; 528 p.
- Waring GT, Josephson E, Maze-Foley K, Rosel, PE, editors. 2011. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments -- 2011. NOAA Tech Memo NMFS NE 219; 598 p.
- Wells, R.S. and M.D. Scott. 1997. Seasonal incidence of boat strikes on bottlenose dolphins near Sarasota, Florida. *Mar. Mamm. Sci.*, 13(3):475-480.
- Whitehead, H. 1982. Populations of humpback whales in the northwest Atlantic. *Rep. Int. Whale Comm.* 32:345-353.
- Whitehead, H. 1987. Updated status of the humpback whale, *Megaptera novaeangliae* in Canada. *Canadian Field-Naturalist* 101(2): 284-294.

APPENDIX A: Target Species.

SPECIES	LISTING UNIT/STOCK	AUTHORIZED TAKE ⁵	TAKES PER ANIMAL ⁶	OBSERVE/COLLECT METHOD	PROCEDURES
Whale, right, North Atlantic	Western Atlantic Stock	200	3	Survey, aerial/vessel	Count/survey; Photo-id
Whale, humpback	Western North Atlantic Stock	200	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, fin	Western North Atlantic Stock	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, sei	Nova Scotia Stock	40	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, minke	Canadian East Coastal Stock	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, sperm	North Atlantic Stock	150	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, unidentified Kogia (dwarf/pygmy sperm)	NA	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, unidentified beaked	NA	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, killer	Western North Atlantic Stock	50	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, unidentified pilot	NA	5000	12	Survey, aerial/vessel	Count/survey; Observations, behavioral; Photo-id
Whale, false killer	Range-wide	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Whale, pygmy killer	Western North Atlantic Stock	100	12	Survey, aerial/vessel	Count/survey; Photo-id

⁵ Takes = the **maximum** number of animals, not necessarily individuals, that may be targeted for research annually

⁶ This column indicates the number of surveys an individual may be repeatedly taken on, annually. It is not meant to be multiplied by the “Authorized Take” column.

SPECIES	LISTING UNIT/STOCK	AUTHORIZED TAKE⁵	TAKES PER ANIMAL⁶	OBSERVE/COLLECT METHOD	PROCEDURES
Whale, melon-headed	Western North Atlantic	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Dolphin, Risso's	Western North Atlantic Stock	2500	12	Survey, aerial/vessel	Count/survey; Observations, behavioral; Photo-id
Dolphin, Fraser's	Western North Atlantic Stock	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Dolphin, rough-toothed	Range-wide	1000	12	Survey, aerial/vessel	Count/survey; Photo-id
Dolphin, bottlenose	Western North Atlantic Coastal Stocks	2000	12	Survey, aerial/vessel	Count/survey; Observations, behavioral; Photo-id
Dolphin, bottlenose	Western North Atlantic Offshore Stock	6000	12	Survey, aerial/vessel	Count/survey; Observations, behavioral; Photo-id
Dolphin, Atlantic spotted	Western North Atlantic Stock	5000	12	Survey, aerial/vessel	Count/survey; Observations, behavioral; Photo-id
Dolphin, pantropical spotted	Western North Atlantic Stock	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Dolphin, striped	Western North Atlantic Stock	500	12	Survey, aerial/vessel	Count/survey; Photo-id
Dolphin, clymene	Western North Atlantic Stock	250	12	Survey, aerial/vessel	Count/survey; Photo-id
Dolphin, spinner	Western North Atlantic Stock	100	12	Survey, aerial/vessel	Count/survey; Photo-id
Dolphin, common, short-beaked	Western North Atlantic Stock	1000	12	Survey, aerial/vessel	Count/survey; Photo-id
Porpoise, harbor	Gulf of Maine/Bay of Fundy Stock	100	12	Survey, aerial/vessel	Count/survey; Photo-id

APPENDIX B: Recent Environmental Assessments for Marine Mammal Research Permits.

NMFS Permits Division has prepared EAs with Findings of No Significant Impact (FONSI) for issuance of permits to conduct research on the listed and proposed for listing species, as well as for issuance of permits to conduct aerial and vessel surveys on numerous species of marine mammals. Those EAs were prepared to take a closer look at potential environmental impacts of permitted research on marine mammals listed as threatened or endangered, and not because the Permits Division determined that significant adverse environmental impacts were expected or that a categorical exclusion was not applicable. As each EA and associated FONSI has documented, research on marine mammals generally does not have a potential for significant adverse impacts on marine mammal populations or any other component of the environment.

The NEPA documents that contain analyses relevant to the proposed action include:

- *Environmental Assessment for the Issuance of a Scientific Research Permit for Aerial and Vessel Surveys of North Atlantic Right Whales off the Southeastern United States (File No. 13927) (NMFS 2011)*

The permit authorizes aerial and vessel surveys focused on North Atlantic right whales. Research activities consist of photo-identification, surveys, and passive acoustics and occur off the southeastern U.S. coast from December through April, annually. Three other cetacean species may be incidentally harassed as a result of the research. The objectives of the research are to: 1) monitor the distribution of right whales in the portion of the southeast critical habitat south of St. Augustine, Florida; 2) improve knowledge of right whale habitat utilization; 3) monitor reproductive success; 4) contribute to the right whale photo-identification catalog; 5) explore linkages between right whale vocalizations and behavior; and 6) evaluate the efficacy of a passive acoustic monitoring system. The EA described and analyzed the effects of aerial surveys and close approach by vessel. A FONSI was signed in October 2011.

- *Environmental Assessment for Issuance of a Scientific Research Permit [File No. 15488] for Research on North Atlantic Right Whales in the Southeast United States (NMFS 2011)*

The purpose of the research is to monitor North Atlantic right whale population status, demographics, habitat and anthropogenic impacts off the coast of Georgia, Florida, and South Carolina. This EA described and analyzed the effects of aerial surveys and close approach by vessel to collect right whale photo-identification data, skin/blubber biopsies, and behavioral data. Bottlenose and Atlantic spotted dolphins would be harassed incidental to research. A FONSI was signed June 23, 2011.

- *Environmental Assessment for Issuance of a Scientific Research Permit for Cetacean Studies in the Pacific, Arctic and Atlantic Oceans (April 2011) (File No. 15215)*

For issuance of a new permit to the NMFS National Marine Mammal Laboratory (NMML), an EA was prepared. The proposed research covers 33 species of cetaceans and the incidental harassment of nine species of pinnipeds. The study area encompasses the Pacific, Arctic and Atlantic Oceans. The purpose of the research is to continue studies that evaluate trends, abundance, distribution, movement patterns, habitat use, health and stock structure of cetaceans in U.S. and international waters over long periods of time. The EA described and analyzed the effects of a variety of research techniques, including: vessel and aerial surveys, photo-identification, feeding studies, biological sampling, tagging, live capture and release, and a suite of procedures associated with captures. A small number of unintentional mortalities would be authorized for capture activities and these were also analyzed in the EA. A FONSI was signed on April 22, 2011. The FONSI determined that the proposed research is not expected to result in any cumulative adverse effects to the target species or non-target species found in the study area. For targeted species, the research would not be expected to have more than short-term effects to individuals and the loss of a limited number of animals during captures. These impacts are expected to be negligible to marine mammal stocks and species. No cumulative adverse effects that could have a substantial effect on any species, target or non-target, would be expected.

- *Environmental Assessment On the Issuance of Two Scientific Research Permits for Aerial and Vessel Surveys of North Atlantic Right Whales* (NMFS 2010)

The purpose of the research is to monitor the health and status and to monitor demographics, life history traits, habitat use, and behavior of the North Atlantic right whale population from Florida to Maine. This EA described and analyzed the effects of observation, photo-identification, videography, passive acoustic recording, biopsy sampling, and tagging of North Atlantic right whales during vessel surveys and aerial surveys. A FONSI was signed September 1, 2010.

- *Environmental Assessment for The Issuance of Scientific Research Permits for Research on Humpback Whales and Other Cetaceans* (NMFS 2010)

The objective of the eight permits is to collect information on the biology, foraging ecology, behavior, and communication of a variety of marine mammal species in the Pacific Ocean, with a focus on humpback whales. This EA described and analyzed the effects of aerial surveys, vessel surveys for behavioral observations, photo-identification, underwater photography and videography, collection of sloughed skin and feces, sampling whale blows, passive acoustic recordings, export and re-import of parts, tags attached by suction cup or by implanting darts, barbs, or a portion of the tag into the skin and blubber, biopsy sample collection, and acoustic playbacks. A FONSI was signed July 14, 2010 based on the best available information suggesting that the proposed permit actions elicit only moderate to minimal reactions, that most animals show no observable change in behavior in response to biopsy sampling or tagging and no long term impact or reduction in fecundity are expected.

- *Environmental Assessment On the Issuance of a Scientific Research Permit to the National Marine Fisheries Service Northeast Fisheries Science Center [Responsible Party: Dr. Nancy Thompson] to Conduct Research on Marine Mammals in the North Atlantic Ocean (NMFS 2008)*

The EA analyzed the effects of permit issuance to conduct research on seven species of baleen whales and twenty five species/stocks of odontocetes, including endangered species. Biopsy samples would be taken and used for genetic analysis to elucidate stock identity and to assist with the estimation of mark-recapture based survival for some species. Aerial and vessel transect surveys would be used to prepare new abundance estimates. In order to gain information about the animals below the water that are unavailable for surveying, suction-cup tags would be attached to medium and large cetaceans in order to develop correction factors for abundance estimates of certain species. In addition, the NEFSC's aerial and vessel surveys for right whales would be conducted to gather information to support the Right Whale Sighting Advisory System (a system that warns mariners of the presence of right whales in an effort to prevent ship strikes). A FONSI was signed in 2008.

APPENDIX C: Active Permits and Authorizations in the Action Area.

Table 1. Active Scientific Research Permits

File No.	Permit Holder	Expiration date	Ocean Basin or Area	Harassment
633-1778	Center For Coastal Studies	6/30/2012	North Atlantic Ocean and Canadian Gulf of Maine	Level A & B
948-1692 ⁷	Pabst	5/31/2012	Atlantic	Level B
1058-1733	Woods Hole Oceanic Institute	5/31/2012	Northwest Atlantic Ocean	Level A & B
10014	NJDEP	12/31/2012	NJ	Level B
775-1875	NMFS NEFSC	1/15/2013	Atlantic	Level A & B
15415	Kraus	3/31/2014	NY to ME	Level B
14241	Tyack	7/31/2014	NC	Level A & B
14451	Mobley	7/31/2015	Pacific and Atlantic Ocean	Level B
14791	Nowacek	7/30/2015	Northwest Atlantic Ocean	Level A & B
14233	Kraus	9/30/2015	Atlantic	Level A & B
14603	Center for Coastal Studies	9/30/2015	Cape Cod Bay	Level A & B
14245	NMML	5/01/2016	Gulf of Maine, mid-Atlantic and southeastern US	Level A & B
15488	GA DNR	6/30/2016	SC, GA, FL	Level A & B
15575	DiGiovanni	5/15/2017	NC to MA	Level B
16109	GeoMarine, Inc.	5/15/2017	NJ to NC	Level B

⁷ The proposed permit would replace Permit No. 948-1692.

Table 2. Active Letters of Confirmation

File No.	Permit Holder	Expiration date	Ocean Basin or Area	Harassment
13416	Weiss	3/31/2013	NC	Level B
14157	Harbor Branch Oceanographic Institute	3/1/2014	FL	Level B
14219	Cox	3/1/2014	GA	Level B
14348	NOS Charleston	6/30/2014	SC and GA	Level B
16103	Montie	12/31/2015	SC	Level B
16104	Young	12/31/2015	NC and SC	Level B
16185	Read	4/1/2016	Atlantic	Level B
16232	Geo-Marine, Inc.	3/31/2016	Atlantic	Level B
16522	Noke	9/30/2016	FL	Level B
809-1902	Virginia Aquarium	11/30/2012	VA	Level B

Table 2. Active IHAs and LOAs

File No.	Permit Holder	Expiration date	Ocean Basin or Area	Authorization Type
16679	U.S. Marine Corps	12/31/2012	NC	IHA
16588	U.S. Navy – VACAPES	6/4/2012	Atlantic	LOA
16589	U.S. Navy - JAX	6/4/2012	Atlantic	LOA
16590	U.S. Navy – Cherry Point	6/4/2012	Atlantic	LOA
16987	U.S. Navy - AFAST	1/21/2013	Atlantic	LOA



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

**Finding of No Significant Impact
Issuance of Scientific Research Permit No. 16473**

MAY 30 2012

Background

In May 2011, the National Marine Fisheries Service (NMFS) received an application for a permit (File No. 16473) from Ann Pabst, Ph.D., to conduct research on marine mammals from Delaware Bay to Cape Canaveral, Florida out to 120 nm offshore. In accordance with the National Environmental Policy Act, NMFS has prepared an Environmental Assessment (EA) analyzing the impacts on the human environment associated with permit issuance (EA for Issuance of Scientific Research Permit No. 16473 for Cetacean Research in the Atlantic Ocean). In addition, a Biological Opinion was issued under the Endangered Species Act summarizing the results of an intra-agency consultation. The analyses in the EA, as informed by the Biological Opinion, support the below findings and determination.

Analysis

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ’s context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in Fishery Management Plans?

Response: Although Essential Fish Habitat (EFH) may be present in the action area, the Proposed Action would only affect cetaceans authorized to be taken during research conducted under the permit. Therefore, no EFH consultation was required.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: The effects of the Proposed Action on target species, including ESA-listed species and their habitat, EFH, and other marine mammals were all considered. The Proposed Action would authorize take of target cetaceans during photo-identification and observation, which is expected to result in short-term minimal disturbance to individual whales. This work is not expected to affect an animal’s susceptibility to predation, alter dietary preferences or foraging behavior, or change distribution or



abundance of predators or prey. Therefore, the Proposed Action is not expected to have a substantial impact on biodiversity or ecosystem function.

3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

Response: The Proposed Action is issuance of a permit to exempt take of cetaceans by harassment during behavioral observation and photo-identification. It would not involve hazardous methods, toxic agents or pathogens, or other materials that would have a substantial adverse impact on public health and safety.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

Response: The Proposed Action would affect the target cetacean species, including ESA-listed species, during vessel and aerial surveys. The 2012 biological opinion prepared for the Proposed Action concluded that the effects of the Proposed Action on individual animals would be short-term in nature, and would not be likely to jeopardize the continued existence of endangered species or to cause the destruction or adverse modification of designated critical habitat. Non-target species would not be affected by issuance of the permit. The permit would contain mitigation measures to minimize the effects of the harassment and to avoid unnecessary stress to protected species by requiring use of specific protocols.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

Response: There are no significant social or economic impacts interrelated with potential natural or physical impacts of the action. The take exemptions of marine mammals authorized by the permit will result in insignificant effects on the natural and physical environment, and there are no significant social or economic impacts interrelated with these effects. The action does not involve and is not associated with factors typically related to effects on the social and economic environment such as inequitable distributions of environmental burdens, or differential access to natural or depletable resources in the action area.

6) Are the effects on the quality of the human environment likely to be highly controversial?

Response: The application and draft EA for the proposed permit were made available for public review and comment (75 FR 13730) and provided to the Marine Mammal Commission (MMC) for review and comment. No comments were received on the draft EA. Issuance of the permit is not expected to be controversial based on potential environmental impacts.

7) Can the proposed action reasonably be expected to result in substantial impacts to

unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?

Response: Issuance of the permit is not expected to result in substantial impacts to any such area. The majority of these are not part of the action area. Research activities would not occur in National Marine Sanctuaries. The taking of marine mammals by harassment will not impact any unique or ecologically critical areas. Issuance of the permit does not involve contact with or activities that may indirectly impact such areas.

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Response: The proposed research does not involve unique or unknown risks to the human environment. Similar activities have been the subject of previous permits for cetacean research; some activities have occurred for decades. There have been no reported serious injuries or mortalities of cetacean species or risks to any other portion of the human environment as a result of these research activities. Therefore, the risks to the human environment are not unique or unknown.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Response: The Proposed Action is not related to other actions with individually insignificant, but cumulatively significant impacts. While these species are impacted by other human activities, including other scientific research, these activities are not occurring simultaneously on the same individuals of a population/stock. The short-term stresses (separately and cumulatively when added to other stresses cetaceans face in the environment) resulting from the research activities would be expected to be minimal. Behavioral reactions suggest that harassment is brief, lasting minutes, before animals resume normal behaviors. Hence, NMFS expects any effects of research to dissipate before animals could be harassed by other human activities. Significant cumulative impacts are not expected because no serious injury or mortality is expected (resulting in no direct loss of animals from the population), nor is an appreciable reduction in the fecundity of target individuals. Furthermore, the permit would contain conditions to mitigate and minimize any impacts to the animals from research activities, including the coordination of research activities with other researchers in the area.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Response: The Proposed Action would not take place in any district, site, highway, structure, or object listed in or eligible for listing in the National Register of Historic Places, thus none would be impacted. The Proposed Action would not occur in other

areas of significant scientific, cultural or historical resources and thus would not cause their loss or destruction. None of these resources are expected to be directly or indirectly impacted.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

Response: Issuance of the permit does not involve removing or introducing any species and would not likely result in the introduction or spread of a non-indigenous species.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

Response: The decision to issue the permit would not be precedent setting and would not affect any future decisions. Issuance of a permit to a specific individual or organization for a given research activity does not in any way guarantee or imply that NMFS will exempt take for other individuals or organizations to conduct the same research activity. Any future request received would be evaluated on its own merits relative to the criteria established in the MMPA, ESA, and NMFS' implementing regulations.

13) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

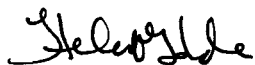
Response: The action would not result in any violation of Federal, State, or local laws for environmental protection. The permit would contain language stating that the Holder is required to obtain any federal, state and local permits necessary to carry out the action.

14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

Response: The action is not expected to result in any cumulative adverse effects to the target or non-target species. For targeted species, the Proposed Action would not be expected to have more than short-term effects to individuals and negligible effects to populations. The effects on non-target species were also considered and no substantial effects are expected as research would not be directed at these species. Therefore, no cumulative adverse effects that could have a substantial effect on any species, target or non-target, would be expected.

DETERMINATION

In view of the information presented in this document, and the analyses contained in the EA and Biological Opinion prepared for issuance of Permit No. 16473, it is hereby determined that permit issuance will not significantly impact the quality of the human environment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.



Helen M. Golde
Acting Director, Office of Protected Resources

MAY 30 2012

Date