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

Environmental Assessment
on
Effects of Issuing Marine Mammal Scientific Research Permit No. 16325

June 2012

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

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Location: Maine to Florida; U.S. and Canadian waters of the Gulf of Maine; and Puerto Rico in the North Atlantic Ocean

Abstract: The National Marine Fisheries Service (NMFS) proposes to issue Scientific Research Permit No. 16325, 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. The objectives of this research are to: 1) gather information Gulf of Maine humpback whale population as well as individual patterns of distribution, mating system, movement and habitat use, which are important for understanding ecology, stock structure, critical habitats and overlap with human activities. 2) gather data with which to better understand how individual habitat use and movement patterns vary with age, sex and other factors and 3) gather information on entanglement rates and other human impacts, and 4) undertake sample-based studies of molecular genetics, aging, toxicology, reproduction and health. Research on other species will focus primarily on studies of population structure, human impacts and health. The applicant requests takes of humpback whales, fin whales, blue whales, sperm whales, sei whales, North Atlantic right whales and other non-ESA-listed marine mammals.

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1.0 PURPOSE OF AND NEED FOR ACTION

Proposed Action: In response to an application from Dr. Jooke Robbins, Center for Coastal Studies (CCS), MA, NMFS proposes to issue Scientific Research Permit No. 16325 authorizing takes"[1] by level A and B harassment[2] 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*.).

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*[3] 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 of marine mammals, including those listed as 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.

Other EA/EIS That Influence Scope of this Environmental Assessment

NMFS Permits Division has prepared Environmental Assessments (EAs) with Findings of No Significant Impact (FONSI) for issuance of permits to conduct research on humpback whales (*Megaptera novaeangliae*), fin whales (*Balaenoptera physalus*), North Atlantic right whale (*Eubalaena glacialis*), sei whales (*Balaenoptera borealis*), blue whales (*Balaenoptera musculus*), and sperm whales (*Physeter macrocephalus*):

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[1] Under the MMPA, "take" is defined as to "harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect." 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."

[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)."

[3] The MMPA defines bona fide research as "scientific research on marine mammals, the results of which – (A) likely would be accepted for publication in a refereed scientific journal; (B) are likely to contribute to the basic knowledge of marine mammal biology or ecology; or (C) are likely to identify, evaluate, or resolve conservation problems."

- *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 (2007)*
- *Environmental Assessment on Issuance of Scientific Research Permit No. 633-1778 to the Center for Coastal Studies to Conduct Marine Mammal Research (2006).*
- *Environmental Assessment for the Issuance of Scientific Research Permits for Research on Humpback Whales and Other Cetaceans [File Nos. 14682, 10018-01, 13846, 14451, 14585, 14599, 14122, 14296, and 14353] (2010).*
- *Environmental Assessment for Issuance of a Scientific Research Permit for Cetacean Studies in the Pacific, Arctic and Atlantic Oceans [File No. 14245] (2011).*

These EAs were prepared to take a closer look at potential environmental impacts of permitted research on marine mammals listed as threatened or endangered, not because the Permits Division determined that significant adverse environmental impacts were expected or that a categorical exclusion was not applicable. As each EA demonstrates, and each 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. These EAs are hereby incorporated by reference.

Scope of Environmental Assessment: This EA focuses primarily on effects on humpback whales, fin whales, North Atlantic right whale, sei whales, blue whales, and sperm whales listed as endangered under the ESA.

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 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 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). 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 the target marine mammals to assist in making the decision about permit issuance under the MMPA and ESA.

There is no evidence from prior analyses[4] of the effects of permit issuance, or from monitoring reports submitted by permit holders[5], 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

[4] 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.

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

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.

A *Federal Register* notice (77 FR 12244) was published to allow other agencies and the public the opportunity to review and comment on this EA and the application. Comments were received only on the methods and objectives of the research and not on the environmental effects of the action on the human environment.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

Alternative 1 - No Action: Under the No Action alternative, no permit would be issued and the applicant would not receive an exemption from the MMPA and ESA prohibitions against take.

Alternative 2 - Proposed Permit: Under the Proposed Permit alternative, a permit would be issued to exempt the applicant from MMPA and ESA take prohibitions during conduct of research that is consistent with the purposes and policies of the MMPA and ESA and applicable permit issuance criteria.

The objectives of this research are to: 1) gather information Gulf of Maine humpback whale population as well as individual patterns of distribution, mating system, movement and habitat use, which are important for understanding ecology, stock structure, critical habitats and overlap with human activities. 2) gather data with which to better understand how individual habitat use and movement patterns vary with age, sex and other factors and 3) gather information on entanglement rates and other human impacts, and 4) undertake sample-based studies of molecular genetics, aging, toxicology, reproduction and health. Research on other species will focus primarily on studies of population structure, human impacts and health.

The following is a summary of the applicant's request to take marine mammals.

Methods: The research protocols briefly summarized here are described in detail in the application on file for this action which is hereby incorporated by reference into this EA. The experimental protocol consists of close vessel approach for photo-identification and behavioral observations; photogrammetry; collection of exhaled air, feces and sloughed skin; and skin and blubber biopsy.

Level B harassment would occur during vessel surveys, behavioral observations, photo-identification activities, photogrammetry, marine mammal breath sampling, and collection of sloughed skin or feces using a small net. All these activities would only result in Level B harassment if a large whale is within 100 yards of the vessel.

Close vessel approach[6] for photo-identification, photogrammetry, and behavioral observations

[6] An "approach" is defined as a continuous sequence of maneuvers (episode) [involving a vessel], including drifting, directed toward a cetacean or group of cetaceans closer than 100 yards for large whales, or 50 yards for smaller cetaceans.

The duration of a single approach depends on several factors, including animal behavior (especially dive duration) and weather conditions. An average humpback whale sighting lasts approximately 15 minutes, while some persist for 1.5 hours. When a sighting involves a group of associated individuals, the approach would be counted toward each individual in that group. Vessel approaches in the Gulf of Maine would be conducted primarily from CCS vessels, the R/V Shearwater and the R/V Ibis. The R/V Shearwater is a 41-foot, diesel powered, twin-screw Jarvis-Newman. The R/V Ibis is a 30-foot rigid inflatable equipped with twin 225 horsepower engines. Comparable vessels could be substituted for logistical reasons and small inflatable boats (15-20 feet) with single outboard engines could also be used in some instances.

Vessel approaches would generally be initiated from behind the target animal or group. When within 300 feet, the research vessel would fall carefully into position behind or alongside the target animal or group, matching its speed and direction of travel. Target animals ultimately would be approached to within 100 feet, particularly if biopsy sampling is required. An individual would not be selected for focal follows if its behavior is not conducive to approach, or if it exhibits evidence of disturbance when approached within 300 feet.

Individual humpback whales are primarily identified based on pigmentation patterns on the ventral side of their flukes and the shape of the trailing edge (Katona and Whitehead 1981). Secondary keys to individual identification include the dorsal fin and scars/markings on the body. Similar physical attributes are used for identifying individuals of the other requested whale species (e.g., dorsal fins, pigmentation patterns, fluke notches). Photographs would also be obtained of the caudal peduncle at the insertion point of the flukes for entanglement-related scar monitoring. Animals targeted for photo-identification and photogrammetry would be approached as described above. In most cases, photographic sampling would require approaches no closer than 100 feet.

Collection of exhaled air (blow), feces, and sloughed skin

Exhaled air (blow) sampling would involve careful vessel approaches to within 20-30 feet of the target individual. A customized collection device would then be placed into the blow stream above the nares of the whale using a long pole. This would allow sampling the blow while making no direct contact with the whale. Age classes that could be sampled include immature males and females, mature males, lactating females and pregnant females. Pregnant females cannot be identified in the field and so samples would be collected from females that have given birth in the past that are not accompanied by a calf, and are likely to be re-sighted the following year. Since humpback whales have a two-year calving interval, this would help to ensure that they can reliably confirm the pregnancy status of some pregnant individuals.

Fecal samples would be obtained opportunistically (when feces are observed in the water) or during focal follows of individual whales. In the latter case, selected individuals would be followed carefully at a distance of no less than 100 feet. Whenever feces are observed, the vessel would allow the animal to move away and then samples would be obtained from the water by scoop, net or pump, depending on the nature of the fecal cloud. As in the case of blow sampling, the goal would be to obtain adequate representation of all demographic classes.

Upon observing a surface-active whale, a sloughed skin sample may be collected. Naturally-sloughed skin samples are quite variable in size, but range from 3-mm^2 to as large as 12-cm^2 (Clapham et al. 1993c). The vessel would search the water for floating pieces of sloughed skin and any pieces that are found would be retrieved from the water using a long-handled sieve. Sloughed skin sampling would typically not require approaches within 100 feet of the whale.

Level A harassment would occur during skin and blubber biopsy. Level B harassment from vessel-based activities, as described above, would occur concurrently.

Skin and blubber biopsy
Tissue samples of free-ranging animals of all species would be obtained by biopsy sampling or the retrieval of naturally-sloughed skin, as described below. Biopsy samples would be collected from humpback whale, fin whale and sei whale mothers and calves. Samples from minke (*Balaenoptera acutorostrata*) and killer whales (*Orcinus orca*) would be done opportunistically. Humpback whale calves would be no less than 3 months old when sampled; fin and sei whale calves would be of unknown age, but likely close to weaning by the time of encounter.

The position of the vessel during a biopsy attempt is directly abeam and less than 100 feet from the whale. The darter would collect the biopsy sample using a crossbow (150-lbs. draw) and specially designed CETA-DART bolts and tips (Palsbøll et al. 1991). The bolt is a standard carbon fiber shaft, equipped with a pressed foam stop collar/float. CETA-DART cylindrical sampling tips are constructed from stainless steel. Biopsy tips collect a core sample of skin and shallow blubber tissue. Samples would be collected from the upper flank of the animal, generally below or posterior to the dorsal fin sample collection. In most instances, this is performed when the animal arches to initiate its terminal dive. Once the dart is fired, the animal would be allowed to move out of the area before the vessel moves in to retrieve the floating bolt. Biopsy sampling would be terminated when a sample was obtained, or after three attempts in which a dart lands in the water and the whale reacts.

Between samples, tips would be thoroughly cleaned to reduce cross contamination between samples and infection risk to target animals. Cleaning would begin with a soap solution scrub, freshwater rinse and an overnight soak in concentrated (>10%) hydrogen peroxide bleach. This procedure is expected to remove organic materials with minimal damage to stainless steel equipment. It would be followed by a short soak in sodium hydroxide bleach, a thorough freshwater rinse, a final rinse with 70% ethanol solution and air dry. The latter sequence is intended to kill any potential viral or bacterial agents on the equipment before reuse on another animal.

Upon observing a surface-active whale, a sloughed skin sample may be obtained in lieu of a biopsy.

<u>Duration:</u> The researchers intend to conduct the surveys year round. Sampling in the northeast (within and adjacent to the US/Canadian Gulf of Maine) would be performed year-round, but primarily from March through December. Sampling off the US mid-Atlantic states, the southeast US states, and Puerto Rico is expected to occur primarily from November through May. The permit would be valid for five years from date of issuance.

Target species or stocks: The applicant's research is directed at humpback whales, fin whales, sei whales, blue whales, killer whales, minke whales, and sperm whales. The proposed annual take for each species is summarized in Attachment 1. The requested actions involve Level A and B harassment that may indirectly affect seven cetacean species (including North Atlantic right whales) and two pinniped species. The permit would exempt takes of all these marine mammals that could be potentially disturbed.

3.0 AFFECTED ENVIRONMENT

Location

As identified in Ch. 2, research would occur in U.S. and Canadian waters of the Gulf of Maine, waters off the U.S. northeast and mid-Atlantic states, and Puerto Rico in the North Atlantic Ocean.

Status of ESA Species

Further details on the species and the status by stock can be found in the Atlantic and Gulf of Mexico U.S. Stock Assessment Reports (Waring et. al. 2011).

Humpback whales: Humpback whales are listed as depleted under the MMPA and endangered under the ESA, throughout their range. The best available estimate for the Gulf of Maine (formerly Western North Atlantic) stock is 847 animals. This population is estimated to be growing at about six percent annually (Barlow and Clapham 1997). Winter breeding areas are known to occur in the West Indies. Most breeding sites are found in the waters of the Dominican Republic but can extend throughout the Antillean arc, from Puerto Rico to the coast of Venezuela.

Sei whales: Sei whales are listed as depleted under the MMPA and endangered under the ESA, throughout their range. The best estimate of abundance for the Nova Scotia stock sei whales is 386. Current and maximum net productivity rates are unknown for this stock. However, it is estimated that this stock may not grow at rates much greater than 4% given the constraints of their reproductive life history (Barlow et al. 1995). Sei whale abundance is greatest in U.S. waters mostly in the northern portions of the U.S. Atlantic Exclusive Economic Zone (EEZ)—the Gulf of Maine and Georges Bank during spring and summer.

Fin whales: Fin whales are listed as depleted under the MMPA and endangered under the ESA, throughout their range. The best available estimate for the Western North Atlantic stock is 3,985. There are insufficient data to determine status and population trends for this stock. New England waters represent a major feeding ground for fin whales (Waring et al. 2011). It is likely that fin whales occurring in the U.S. Atlantic EEZ undergo migrations into Canadian waters, open-ocean areas, and perhaps even subtropical or tropical regions. However, the popular notion that entire fin whale populations make distinct annual migrations like some other mysticetes has little support in the data; in the North Pacific, year-round monitoring of fin whale calls found no evidence for large-scale migratory movements (Watkins et al. 2000). A recent NMFS 5-year

Status Review of fin whales points out that there is a lack of ocean-wide status and trend information of fin whales (NMFS 2011).

Blue whales: Blue whales are listed as depleted under the MMPA and endangered under the ESA, throughout their range. There are insufficient data to determine the status and trends of the blue whale population in the western North Atlantic stock (Waring et al. 2011). The Recovery Plan for the blue whale (NMFS 1998) summarizes what is known about blue whale abundance in the western North Atlantic and concludes that the population probably numbers in the low hundreds. More than 440 individuals were photo-identified in the Gulf of St. Lawrence between 1979-2009 (R. Sears, pers. comm., as quoted by Waring et al. 2011).

Sperm whales: Sperm whales are listed as depleted under the MMPA and endangered under the ESA, throughout their range. 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. 2011).

North Atlantic right whales: North Atlantic right whales are listed as depleted under the MMPA and endangered under the ESA, throughout their range. 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. 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.

Status of Other Marine Mammals

Minke whales and killer whales would also be targeted but none in the action area are listed as threatened or endangered under the ESA or considered strategic or depleted under the MMPA.

The permit would also authorize incidental harassment of Atlantic white-sided dolphins (*Lagenorhynchus acutus*), bottlenose dolphins (*Tursiops truncatus*), common short-beaked dolphins (*Delphinus delphis*), Risso's dolphins (*Grampus griseus*), long-finned pilot whales (*Globicephala melas*), short-finned pilot whales (*Globicephala macrorhynchus*), Atlantic spotted dolphins (*Stenella frontalis*), spinner dolphins (*Stenella longirostris*), rough-toothed dolphins (*Steno bredanensis*), pantropical spotted dolphins (*Stenella attenuata*), striped dolphins (*Stenella coeruleoalba*), harbor porpoises (*Phocoena phocoena*), gray seals (*Halichoerus grypus*), and harbor seals (*Phoca vitulina*) that may be found in the action area. None of these marine

mammals are listed as threatened or endangered under the ESA. However, the Western North Atlantic coastal stock of bottlenose dolphin is considered depleted under the MMPA.

Non-Target Marine Animals
In addition to the marine mammal stocks and species that are the subject of the permit, an assortment of sea birds, sea turtles, fish and invertebrates may be found in the action area. The permit would only authorize takes of marine mammals (Appendix 1). Non-target animals would not be approached and therefore not subject to harassment. They would not be affected by the action and 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 research affect their diet or foraging patterns. Further, the proposed action does not involve activities known to or likely to result in the introduction or spread of nonindigenous species, such as ballast water exchange or movement of vessels among water bodies. Thus, effects on biodiversity and ecosystem function will not be considered further.

Ocean and Coastal Habitats
The ESA provides for designation of "critical habitat" for listed species and includes physical or biological features essential to the conservation of the species. Critical habitats may require special management considerations or protection. Critical habitat designations affect only federal agency actions or federally funded or permitted activities. Essential fish habitat (EFH) designated for various species of fish as well as critical habitat for green (*Chelonia mydas*) and hawksbill (*Eretmochelys imbricata*) sea turtles, for North Atlantic right whales, and the coral species *Acropora cervicornis* and *Acropora palmata* overlap with the proposed action area. However, the proposed action is directed at marine mammals and does not affect habitat. It does not involve alteration of substrate (no anchoring would occur), movement of water or air masses, or other interactions with physical features of ocean and coastal habitat. Thus effects on the ocean and coastal habitat will not be considered further.

Unique Areas
All holders of NMFS's scientific research permits conducting work within a National Marine Sanctuary are required to obtain appropriate authorizations from and coordinate the timing and location of their research with NOAA's National Marine Sanctuaries Program (NMSP) to ensure that the research would not adversely impact marine mammals, birds or other animals within the sanctuaries. In addition, permit actions including the proposed action are sent to the NMSP for review if research is to occur in sanctuary waters. Additionally, Permit Holders also have the responsibility to obtain any other permits, or comply with any other Federal, State, local laws or regulations.

The action area contains:

- Studds-Stellwagen Bank National Marine Sanctuary,
- Gray's Reef National Marine Sanctuary,
- Mona Passage Reserve, and

- Desecheo Island Reserve.

The proposed action is directed at marine mammals and involves routine vessel transit through the water. Thus, effects on such unique areas will not be considered further. There are no other historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas within the action area, which is limited to coastal and open waters.

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 is an undertaking that does not have the potential to cause effects on historic properties. 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 will not be 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. Research would be conducted by or under the close supervision of experienced personnel, as required by the permit. The equipment and vessels used are local and any equipment that comes in contact with animals would be thoroughly decontaminated between uses. Research vessels do not carry ballast water and any scientific samples are shared only between scientific laboratories. Therefore, no negative impacts on human health or safety are anticipated during research. Thus, effects on such resources will not be 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.

If the research is not conducted, the opportunity would be lost to collect information that would contribute to a better understanding of marine mammal populations. This information is necessary for NMFS to conduct mandated stock assessments and status reviews and implement management activities. The proposed research would directly address research needs identified in NMFS recovery plans for humpback, blue, fin, North Atlantic right, sei, and sperm whales, as well as the 2011 five-year Status Review of fin whales, and would provide important information that would help conserve, manage, and recover this species as required by the ESA and the MMPA. Without relevant, up-to-date information on species biology, ecology, and behavior, management decisions may be too conservative or not sufficiently conservative to ensure a stock or species is to recover.

Effects of the Proposed Permit Alternative
Effects would occur at the time when the applicant's research results in takes of marine mammals, including those listed as threatened or endangered.

The activities requested in the permit application would allow research conducted since the mid-1970s under Permit No. 633-1778, and under various prior scientific research permits, to continue for five additional years. The number of animals proposed to be taken annually would be slightly higher than is currently authorized for some species, but would not be substantially different from the level of effort currently authorized under Permit No. 633-1778. The overall effects of issuing the permit would be similar to the effects of issuing Permit No. 633-1778, which has been amended one time since issuance. The EA for Permit No. 633-1778 resulted in a FONSI. Research activities may result in short-term behavioral responses by individuals, but would not be expected to result in stock- or species-level effects.

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 vessel surveys, behavioral observations, the collection of sloughed skin, feces, and exhaled air, photo-identification, and photogrammetry activities. These activities were analyzed in past EAs for large whale research conducted by other researchers working in the same waters, and it was determined that they could lead to short-term disturbance of marine mammals, but that there would be no significant impact from issuance of the permits and amendments (NMFS 2008, 2010, and 2011). These research activities are all considered Level B harassment and are not new types of activities; therefore, NMFS feels that the effects of close approach to marine mammals would be minimal and short-term. The differences in close approach activities requested in the proposed action from what was previously authorized are limited to small increases in the number of animals that

would be taken, and would not be expected to have any additional effects that were not analyzed in previous EA's.

Level B harassment from large and small vessel surveys and photo-identification, as described above, would occur concurrently with Level A harassment activities.

Level A harassment, as defined by the MMPA, would occur during biopsy activities, when physical contact is made that has the potential to injure animals. Actual injury would be minimized by conditions of the permit limiting how sampling may occur, such as avoiding sensitive areas of the body.

Skin and blubber biopsy
In their 2008-2009 and 2009-2010 annual reports for Permit No. 633-1778, the applicant states that animal responses to biopsy sampling were consistent with those reported by Clapham and Mattila (1993) and included: 1) no observed reaction, 2) a low reaction (a hesitation, flinch or sink), or 3) a moderate reaction (single tail flick). No strong reactions (defined as multiple tail flicks and/or active behavior in response to the procedure) were observed.

Biopsy sampling has been used extensively worldwide and is a common and widely accepted method for obtaining tissue samples, especially because the unequivocal value of molecular genetic tools and analyses has been recognized. The potential for serious injury and/or long-term effects on individuals from remote biopsy sampling is considered minimal. The biopsy darts would not contain any hazardous materials, and the penetration depth of the dart relative to the blubber depth, and the mitigation measures employed to prevent deeper penetration, make it highly unlikely that serious injury would occur to target individuals.

As with any instance where the dermis is penetrated, there is the possibility of infection associated with biopsy sampling. However, no evidence of infection has been seen at the point of penetration or elsewhere among the many whales re-sighted in days following the taking of a biopsy sample. There have been no documented cases of infection or injury to large whales resulting from biopsies, including well-monitored populations with repeatedly observed identified individuals.

The effects of biopsy sampling of large whales requested in the proposed action were analyzed in previous EAs prepared (NMFS 2004, 2005, 2010). All of these analyses found that there would be no significant impact from issuance of the permits and amendments.

In addition to the effects of the close approach of a vessel to whales associated with collecting biopsy samples, the analyses determined:

- The responses of whales are generally minimal to non-existent when approaches are slow and careful, and even when subjected to invasive biopsy and tagging procedures, a careful approach generally elicits at most a minimal and short-lived response from the whales.
- Biopsy sampling would not be expected to have long-term, adverse effects on the target species; therefore disturbances from the activities were considered not likely to have a significant cumulative effect on any research animals.

In general, biopsy samples can successfully be taken from about 90 percent of whales that are approached (Gauthier and Sears, 1999). There is no evidence that responses of individual whales to biopsy sampling would exceed short-term stress and discomfort and no long-term effects would be anticipated. This activity would not be expected to have any additional effects that were not analyzed in the previous EAs. The short-term behavioral responses that might result from research activities 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. In addition, conditions and mitigation measures would be placed in the permit to further limit the potential for negative effects from these activities.

In accordance with Section 7 of the ESA, a Biological Opinion was prepared and after reviewing the current status of listed resources, the environmental baseline for the action area, the anticipated effects of the proposed activities, and the cumulative effects, it is the NMFS' opinion that the activities authorized by the proposed issuance of scientific research permit 16325, as proposed, is not likely to jeopardize the continued existence of listed species, and we do not anticipate the destruction or adverse modification of the designated critical habitat within the action area.

Cumulative Impacts

Cumulative impacts 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. A list of active Scientific Research Permits and Letters of Confirmation authorizing research on humpback, North Atlantic right, sei, fin, blue, and sperm whales in the action area is provided in Attachment 2 for reference. As a permit requirement, researchers must notify the relevant NMFS Regional Office in advance of their research plan and each Region is responsible for coordination of researchers in the area.

Cumulative impacts can result from individually minor but collectively significant actions that take place over a period of time. There may already be substantial 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.

NMFS believes that the proposed action as discussed above is similar to that of actions previously analyzed in the four NMFS EA's discussed in the *Other EA/EIS That Influence Scope of this Environmental Assessment* section which have been incorporated by reference. These prior analyses determined that the research directed at large whales and other species would not have a significant cumulative effect on either the human or marine environment. The proposed action would be directed at humpback, fin, blue, sperm, sei, North Atlantic right, minke, and killer whales and would similarly not be likely to have a significant cumulative effect on the target and non-target species. Based on these determinations, it is highly unlikely that activities carried out by the researcher under the proposed permit would have significant cumulative impacts.

5.0 MITIGATION MEASURES

In addition to the mitigation measures identified by the applicant and described in this EA, the permit, if issued, would contain conditions requiring the applicant to retreat from animals if behaviors indicate the approach may be interfering with reproduction, pair bonding, feeding, or other vital functions

In summary, the permit conditions limit the level of take to level A and level B harassment and require notification, coordination, monitoring, and reporting.

6.0 LIST OF PREPARERS AND AGENCIES CONSULTED

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

The National Marine Sanctuary Program was consulted for activities that would be conducted in the Studds-Stellwagen Bank National Marine Sanctuary and Gray's Reef National Marine Sanctuary.

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APPENDIX 1: TABLES SPECIFYING THE KINDS OF PROTECTED SPECIES, LOCATIONS, AND MANNER OF TAKING

TABLE 1. Proposed Annual Takes Of Cetacean Species During Vessel Surveys from Maine to Rhode Island, primarily in and around Gulf of Maine and Adjacent Canadian waters. Both Male And Females Could Be Harassed.

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
1	Dolphin, Atlantic white-sided	Western North Atlantic Stock	All	Male and Female	500	1	Harass	Survey, vessel	Incidental harassment	
2	Dolphin, bottlenose	Western North Atlantic Coastal Stocks	All	Male and Female	50	1	Harass	Survey, vessel	Incidental harassment	
3	Dolphin, common, short-beaked	Western North Atlantic Stock	All	Male and Female	50	1	Harass	Survey, vessel	Incidental harassment	
4	Dolphin, Risso's	Western North Atlantic Stock	All	Male and Female	50	1	Harass	Survey, vessel	Incidental harassment	
5	Porpoise, harbor	Gulf of Maine/Bay of Fundy Stock	All	Male and Female	20	1	Harass	Survey, vessel	Incidental harassment	
6	Seal, gray	Western North Atlantic Stock	All	Male and Female	20	1	Harass	Survey, vessel	Incidental harassment	
7	Seal, harbor	Western North Atlantic Stock	All	Male and Female	20	1	Harass	Survey, vessel	Incidental harassment	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
8	Whale, blue	Western North Atlantic Stock (NMFS Endangered)	All	Male and Female	50	3	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	
9	Whale, blue	Western North Atlantic Stock (NMFS Endangered)	Adult/ Juvenile	Male and Female	30	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
10	Whale, fin	Range-wide (NMFS Endangered)	All	Male and Female	200	10	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	
11	Whale, fin	Range-wide (NMFS Endangered)	Adult/ Juvenile	Male and Female	50	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
12	Whale, fin	Western North Atlantic Stock (NMFS Endangered)	Calf	Male and Female	10	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	
13	Whale, humpback	Range-wide (NMFS Endangered)	Adult/ Juvenile	Male and Female	80	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy; Underwater photo/videography	Biopsy sampling new whales for genetics and other analyses

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
14	Whale, humpback	Western North Atlantic Stock (NMFS Endangered)	All	Male and Female	1850	20	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	
15	Whale, humpback	Western North Atlantic Stock (NMFS Endangered)	Calf	Male and Female	50	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	Biopsy sampling calves for genetics and other analyses

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
16	Whale, humpback	Western North Atlantic Stock (NMFS Endangered)	Adult/ Juvenile	Male and Female	80	9	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	Biopsy sampling whales of known demographic up to three samples per individual per year (3 attempts per sample = 9 takes per animal)
17	Whale, killer	Western North Atlantic Stock	All	Male and Female	50	3	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
18	Whale, killer	Western North Atlantic Stock	Adult/ Juvenile	Male and Female	30	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, anal swab; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	
19	Whale, minke	Range-wide	All	Male and Female	50	3	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
20	Whale, minke	Range-wide	Adult/ Juvenile	Male and Female	30	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	
21	Whale, pilot, long-finned	Western North Atlantic Stock	All	Male and Female	50	1	Harass	Survey, vessel	Incidental harassment	
22	Whale, right, North Atlantic	Western Atlantic Stock (NMFS Endangered)	All	Male and Female	15	1	Harass	Survey, vessel	Incidental harassment	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
23	Whale, sei	Nova Scotia Stock (NMFS Endangered)	Calf	Male and Female	10	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	
24	Whale, sei	Nova Scotia Stock (NMFS Endangered)	All	Male and Female	50	3	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
25	Whale, sei	Nova Scotia Stock (NMFS Endangered)	Adult/ Juvenile	Male and Female	30	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	
26	Whale, sperm	North Atlantic Stock (NMFS Endangered)	All	Male and Female	50	3	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
27	Whale, sperm	North Atlantic Stock (NMFS Endangered)	Adult/ Juvenile	Male and Female	30	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	

TABLE 2. Proposed Annual Takes Of Cetacean Species During Vessel Surveys from New York to North Carolina. Both Male And Females Could Be Harassed.

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
1	Whale, humpback	Western North Atlantic Stock (NMFS Endangered)	Adult/ Juvenile	Male and Female	50	3	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	
2	Whale, humpback	Western North Atlantic Stock (NMFS Endangered)	Adult/ Juvenile	Male and Female	50	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
3	Whale, fin	Western North Atlantic Stock (NMFS Endangered)	Adult/ Juvenile	Male and Female	50	3	Harass	Survey, vessel	Count/survey; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	
4	Whale, fin	Western North Atlantic Stock (NMFS Endangered)	Adult/ Juvenile	Male and Female	30	3	Harass/ Sampling	Survey, vessel	Count/survey; Import/export/receive , parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	
5	Whale, sei	Range-wide (NMFS Endangered)	Adult/ Juvenile	Male and Female	50	3	Harass	Survey, vessel	Count/survey; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
6	Whale, sei	Range-wide (NMFS Endangered)	Adult/ Juvenile	Male and Female	30	3	Harass/ Sampling	Survey, vessel	Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	
7	Dolphin, bottlenose	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
8	Dolphin, pantropical spotted	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
9	Dolphin, striped	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
10	Dolphin, common, short-beaked	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
11	Dolphin, Risso's	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
12	Whale, pilot, short-finned	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
13	Whale, pilot, long-finned	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	

TABLE 3. Proposed Annual Takes Of Cetacean Species During Vessel Surveys in South Carolina, Georgia, and Florida. Both Male And Females Could Be Harassed.

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
1	Whale, humpback	Range-wide (NMFS Endangered)	Adult/ Juvenile	Male and Female	50	3	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	
2	Whale, humpback	Range-wide (NMFS Endangered)	Adult/ Juvenile	Male and Female	30	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy	
3	Dolphin, bottlenose	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
4	Dolphin, Atlantic spotted	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	

TABLE 4. Proposed Annual Takes Of Cetacean Species During Vessel Surveys in Puerto Rico. Both Male And Females Could Be Harassed.

LINE	SPECIES	LISTING UNIT/STOCK	LIFE STAGE	SEX	EXPECTED TAKE	TAKES PER ANIMAL	TAKE ACTION	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
1	Whale, humpback	Range-wide (NMFS Endangered)	All	Male and Female	150	5	Harass	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air	
2	Whale, humpback	Range-wide (NMFS Endangered)	Adult/ Juvenile	Male and Female	50	3	Harass/ Sampling	Survey, vessel	Collect, sloughed skin; Count/survey; Import/export/receive, parts; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, skin and blubber biopsy	
3	Dolphin, bottlenose	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
4	Dolphin, spinner	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	
5	Dolphin, Atlantic spotted	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	

6	Dolphin, rough-toothed	Range-wide	All	Male and Female	100	1	Harass	Survey, vessel	Incidental harassment	

APPENDIX 2: Active Scientific Research Permits And Letters Of Confirmation Authorizing Research As Well As Letters Of Authorization And Incidental Harassment Authorizations Of The Targeted Species In The Action Area.

Permit No.	Permit Holder	Expiration date	Ocean Basin or Area	Harassment
605-1904	The Whale Center of New England	2/15/2013	Cape Cod and VA to FL	Level A & B
**633-1778*	*Center For Coastal Studies*	*6/30/2012*	*North Atlantic Ocean and Canadian Gulf of Maine*	*Level A & B*
775-1875	NEFSC	1/15/2013	ME to FL	Level A & B
948-1692	Pabst	5/31/2012	DE to FL	Level B
*1058-1733	Baumgartner	5/31/2012	Pacific and Atlantic Ocean	Level A & B
1128-1922	Mercado	1/15/2014	Puerto Rico	Level B
10014	NJDEP	12/31/2012	NJ	Level B
10082	Neptune LNG LLC	7/13/2016	MA	MMPA Rulemaking
13331	U.S. Navy	06/04/2014	VA	MMPA Rulemaking
13386	Taras Oceanographic Foundation	5/01/2013	FL	Level B
13543	SCDNR	4/30/2014	NC to FL	Level A & B
13562	U.S. Navy	06/04/2014	NC	MMPA Rulemaking
13927	Hain	10/31/2016	GA to FL	Level B
14233	Kraus	3/30/2015	Atlantic Ocean	Level A & B
14241	Tyack	7/31/2014	NC	Level A & B

Permit No.	Permit Holder	Expiration date	Ocean Basin or Area	Harassment
14245	NMML	5/01/2016	Gulf of Maine, mid-Atlantic and southeastern US	Level A & B
14451	Mobley	7/31/2015	Pacific and Atlantic Ocean	Level B
14586	Wyneken	11/30/2015	FL	Level B
14603	Center for Coastal Studies	9/30/2015	MA,ME,NH	Level B
14791	Nowacek	7/30/2015	Northwest Atlantic Ocean	Level A & B
15415	Kraus	3/31/2014	ME to NY	Level B
15488	Georgia DNR	6/30/2016	SC to FL	Level A & B
15575	Robert DiGiovanni	5/17/2017	ME to NC	Level B
15682	MacKay	12/31/2016	PR	Level B
15683	Mann	10/31/2015	AL, FL	Level B
16109	GeoMarine, Inc.	5/15/2017	NJ to NC	Level B
16185	Read	4/01/2016	Atlantic Ocean	Level B
16232	GeoMarine, Inc.	3/31/2016	NJ to NC	Level B
16449	Northeast Gateway Energy Bridge, LLC	10/05/2012	MA	IHA***
16557	Neptune LNG LLC	7/10/2016	MA	LOA**
16987	U.S. Navy	1/21/2013	Atlantic Ocean	LOA**

* indicates that there is an extension on the permit
**MMPA Small Take Letter of Authorization
***MMPA Incidental Harassment Authorization
Italicized row indicates the permit that would be replaced by the permit issued in this action