than 5:00 p.m. EST on October 10, 2017. Comments received after October 10, 2017, will be distributed to the Committee, but may not be considered at the meetings. The minutes of the meetings will be posted on the Committee Web site within 60 days of the meeting.

Dated: September 19, 2017.

Maureen Smith,

Director, Office of Supply Chain.

[FR Doc. 2017–20386 Filed 9–22–17; 8:45 am]

BILLING CODE 3510–DR–P

DEPARTMENT OF COMMERCE

National Institute of Standards and Technology

Visiting Committee on Advanced Technology

AGENCY: National Institute of Standards and Technology, Department of Commerce.

ACTION: Notice of partially closed meeting.

SUMMARY: The Visiting Committee on Advanced Technology (VCAT or Committee), National Institute of Standards and Technology (NIST), will meet Monday, October 23, 2017 from 8:30 a.m. to 3:30 p.m. Eastern Time and Tuesday, October 24, 2017 from 8:30 a.m. to 12:30 p.m. Eastern Time. The VCAT is composed of not fewer than 9 members appointed by the NIST Director, a majority of whom are eminent in such fields as business, research, new product development, engineering, labor, education, management consulting, environment, and international relations.

DATES: The VCAT will meet on Monday, October 23, 2017 from 8:30 a.m. to 3:30 p.m. Eastern Time and Tuesday, October 24, 2017 from 8:30 a.m. to 12:30 p.m. Eastern Time. The portion of the meeting that is closed to the public will take place on Tuesday, October 24, 2017 from 8:30 a.m. to 10:30 a.m.

ADDRESSES: The meeting will be held in the Portrait Room, Administration Building, at NIST, 100 Bureau Drive, Gaithersburg, Maryland, 20899. Please note admittance instructions under the **SUPPLEMENTARY INFORMATION** section of this notice.

FOR FURTHER INFORMATION CONTACT: Serena Martinez, VCAT, NIST, 100 Bureau Drive, Mail Stop 1060, Gaithersburg, Maryland 20899–1060, telephone number 301–975–2661. Mrs. Martinez's email address is *serena.martinez@nist.gov.*

SUPPLEMENTARY INFORMATION:

Authority: 15 U.S.C. 278, as amended, and the Federal Advisory Committee Act, as amended, 5 U.S.C. App.

The purpose of this meeting is for the VCAT to review and make recommendations regarding general policy for NIST, its organization, its budget, and its programs within the framework of applicable national policies as set forth by the President and the Congress. The agenda will include an update on major programs at NIST. In addition, the meeting will include presentations and discussions on priorities for the NIST Laboratory Programs over the next decade. The Committee will also be briefed on plans to improve research services and support. During a closed session on October 24, 2017 from 8:30 a.m. until 10:30 a.m., the VCAT will discuss NIST's security posture, including recent incidents and planned improvements. The agenda may change to accommodate Committee business. The final agenda will be posted on the NIST Web site at *http://www.nist.gov/director/vcat/agenda.cfm.*

Individuals and representatives of organizations who would like to offer comments and suggestions related to the Committee's affairs are invited to request a place on the agenda. On Monday, October 23, approximately one-half hour in the afternoon will be reserved for public comments and speaking times will be assigned on a first-come, first-serve basis. The amount of time per speaker will be determined by the number of requests received, but is likely to be about 3 minutes each. The exact time for public comments will be included in the final agenda that will be posted on the NIST Web site at *http://www.nist.gov/director/vcat/agenda.cfm.* Questions from the public will not be considered during this period. Speakers who wish to expand upon their oral statements, those who had wished to speak but could not be accommodated on the agenda, and those who were unable to attend in person are invited to submit written statements to VCAT, NIST, 100 Bureau Drive, MS 1060, Gaithersburg, Maryland 20899, via fax at 301–216–0529 or electronically by email to *stephanie.shaw@nist.gov.*

All visitors to the NIST site are required to pre-register to be admitted. Please submit your name, time of arrival, email address and phone number to Serena Martinez by 5:00 p.m. Eastern Time, Friday, October 13, 2017. Non-U.S. citizens must submit additional information; please contact Mrs. Martinez. Mrs. Martinez's email address is *serena.martinez@nist.gov* and her phone number is 301–975–2661. For participants attending in person, please note that federal agencies, including NIST, can only accept a state-issued driver's license or identification card for access to federal facilities if such license or identification card is issued by a state that is compliant with the REAL ID Act of 2005 (Pub. L. 109–13), or by a state that has an extension for REAL ID compliance. NIST currently accepts other forms of federal-issued identification in lieu of a state-issued driver's license. For detailed information please contact Mrs. Martinez at 301–975–2661 or visit: *http://nist.gov/public_affairs/visitor/.*

Kevin Kimball,

NIST Chief of Staff.

[FR Doc. 2017–20374 Filed 9–22–17; 8:45 am]

BILLING CODE 3510–13–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XF330

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to a Geophysical Survey in the Central Pacific Ocean

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; Issuance of an Incidental Harassment Authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an incidental harassment authorization (IHA) to the University of Hawaii (UH) to incidentally take, by Level A and Level B harassment only, marine mammals during a marine geophysical survey in the Central Pacific Ocean.

DATES: This Authorization is valid from September 14, 2017 through September 13, 2018.

FOR FURTHER INFORMATION CONTACT: Jordan Carduner, Office of Protected Resources, NMFS, (301) 427–8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *www.nmfs.noaa.gov/pr/permits/incidental/research.htm.* In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth.

NMFS has defined ''negligible impact'' in 50 CFR 216.103 as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

The MMPA states that the term ''take'' means to harass, hunt, capture, kill or attempt to harass, hunt, capture, or kill any marine mammal.

Except with respect to certain activities not pertinent here, the MMPA defines ''harassment'' 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 disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216–6A, NMFS must review our proposed action (*i.e.,* the issuance of an incidental harassment authorization) with respect to potential impacts on the human environment. Accordingly, NMFS prepared an Environmental Assessment (EA) to consider the environmental impacts associated with the issuance of the IHA to UH. We reviewed all comments submitted in response to the **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017) prior to concluding our NEPA process and deciding whether or not to issue a Finding of No Significant Impact (FONSI). NMFS concluded that issuance of an IHA to UH would not significantly affect the quality of the human environment and prepared and issued a FONSI in accordance with NEPA and NAO 216–6A. NMFS' EA and FONSI for this activity are available on our Web site at: *http://www.nmfs.noaa.gov/pr/permits/incidental.*

Summary of Request

On March 15, 2016, NMFS received a request from the UH for an IHA to take marine mammals incidental to conducting a marine geophysical survey in the central Pacific Ocean. On May 16, 2017, we deemed UH's application for authorization to be adequate and complete. UH's request is for take of a small number of 24 species of marine mammals by Level B harassment and Level A harassment. Neither UH nor NMFS expects mortality to result from this activity, and, therefore, an IHA is appropriate. The planned activity is not expected to exceed one year, hence, we do not expect subsequent MMPA incidental harassment authorizations would be issued for this particular activity.

Description of Activity

Overview

UH, in collaboration with the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), proposes to conduct a marine seismic survey north of Hawaii in the central Pacific Ocean over the course of five and a half days in September 2017. The survey would occur north of the Hawaiian Islands, in the approximate area 22.6–25.0° N and 153.5–157.4° W (See Figure 1 in IHA application). The project area is partly within the exclusive economic zone (EEZ) of the United States and partly in adjacent international waters. Water depths in the area range from 4,000 to 5,000 meters (m). The survey would involve one source vessel, the Japan-flagged R/V (research vessel) *Kairei.* The *Kairei* would deploy a 32-airgun array with a total volume of ~7800 cubic inches (in^3) as an energy source. A detailed description of UH's planned activity is provided in the **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017). Since that time, no changes have been made to the planned activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

Comments and Responses

NMFS published a notice of proposed IHA in the **Federal Register** on July 24, 2017 (82 FR 34352; July 24, 2017). During the 30-day public comment period, NMFS received a comment letter from the Marine Mammal Commission (Commission) as well as one comment from a member of the general public. NMFS has posted the comments online at: *http://www.nmfs.noaa.gov/pr/permits/incidental.* NMFS addresses any comments specific to UH's application related to the statutory and regulatory requirements or findings that NMFS must make under the MMPA in order to issue an Authorization. The following is a summary of the public comments and NMFS' responses.

Comment 1: The Commission expressed concerns regarding UH's method to estimate the extent of the Level A and B harassment zones and the numbers of marine mammal takes. The Commission stated that the model is not the best available science because it assumes spherical spreading, a constant sound speed, and no bottom interactions for surveys in deep water. In light of their concerns, the Commission recommended that NMFS require UH, in collaboration with Lamont-Doherty Earth Observatory of Columbia University (LDEO) (which performed the modeling of Level A and Level B harassment zones and estimated takes) to re-estimate the Level A and Level B harassment zones and associated takes of marine mammals using both operational (including number/type/spacing of airguns, tow depth, source level/operating pressure, operational volume) and site-specific environmental (including sound speed profiles, bathymetry, and sediment characteristics at a minimum) parameters. The Commission also expressed concern that LDEO used a high-pass filter for modeling the unweighted peak sound pressure level (SPL_{peak}) thresholds, and stated that use of the full bandwidth is appropriate given that the thresholds themselves were based on responses of the animals to the full frequency spectrum of the airgun pulses, not a filtered bandwidth.

Response: NMFS acknowledges the Commission's concerns about LDEO's current modeling approach for estimating Level A and Level B harassment zones and takes. UH's application (LGL, 2017) and the **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017) describe the applicant's approach to modeling Level A and Level B harassment zones. The model LDEO currently uses does not allow for the consideration of

environmental and site-specific parameters as requested by the Commission. NMFS continues to work with LDEO to address the issue of incorporating site-specific information to further inform the analysis and development of mitigation measures in oceanic and coastal areas for future seismic surveys. The use of models for estimating the size of ensonified areas and for developing take estimates is not a requirement of the MMPA incidental take authorization process, and NMFS does not provide specific guidance on model parameters nor prescribe a specific model for applicants at this time. We recognize that there is no model or approach that is always the most appropriate and that there may be multiple approaches that may be considered acceptable and, in this case, LDEO's current modeling approach represents the best available information to inform authorized take levels and also NMFS' determinations under the MMPA. NMFS finds that the Level A and Level B harassment zone calculations conducted by LDEO are reasonable for use in this particular IHA. Further, the results of modeling (*e.g.,* take estimates) is just one component of the analysis during the MMPA authorization process as NMFS also takes into consideration other factors associated with the activity (*e.g.,* geographic location, duration of activities, context, sound source intensity, etc.).

With regard to the Commission's concern regarding LDEO's use of a high-pass filter for modeling the unweighted SPL_{peak} thresholds, NMFS has reviewed the best available information and we agree that the Commission's concern is valid. Since the thresholds were based on responses of the animals to the full frequency spectrum of the airgun pulses, not a filtered bandwidth, we agree that use of the full bandwidth is appropriate. Therefore, we have revised the modeled distances to the Level A harassment threshold (SPL_{peak}) that we rely on for estimating Level A takes, from those described in the **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017) to those shown in Table 6 in this document, which have no band pass filtering applied.

Comment 2: The Commission expressed concern that the method used to estimate the numbers of takes, which summed fractions of takes for each species across project days, does not account for and negates the intent of NMFS' 24-hour reset policy.

NMFS Response: We appreciate the Commission's ongoing concern in this matter. Calculating predicted takes is not an exact science and there are arguments for taking different mathematical approaches in different situations, and for making qualitative adjustments in other situations. We believe, however, that the methodology used for take calculation in this IHA remains appropriate and is not at odds with the 24-hour reset policy the Commission references.

Comment 3: The Commission questioned why NMFS did not propose to prohibit the use of power downs and recommended that NMFS use a consistent approach for requiring all geophysical survey operators to abide by the same general mitigation measures, including prohibiting UH from using power downs during its survey.

NMFS Response: NMFS agrees with the Commission that consistency in mitigation measures across ITAs for similar activities is a worthwhile goal, to the extent practicable. NMFS also agrees with the Commission that limiting the use of power downs can be beneficial in reducing the overall sound input in the marine environment from geophysical surveys; as such, NMFS is requiring that power downs in this IHA occur for no more than a maximum of 30 minutes at any time. The requirement for a 30 minute maximum for power downs represents a change to the mitigation measures from those proposed in the **Federal Register** notice of the proposed IHA (82 FR 34352, July 24, 2017) and is reflected in the mitigation measures in the issued IHA. NMFS is still in the process of determining best practice, via solicitation of public comment, for the use of power downs as a mitigation measure in ITAs for geophysical surveys. We will take into consideration the Commission's recommendation that power downs be eliminated as a mitigation measure as we work toward a determination on best practices for the use of power downs in IHAs for marine geophysical surveys. We will also review the comments received in response to the **Federal Register** notice for proposed IHAs for marine geophysical surveys in the Atlantic Ocean (82 FR 26244, June 6, 2017) to help inform that determination; we are still reviewing those comments at this time. Ultimately our determination will be based on the best available science and will be communicated clearly to ITA applicants.

Comment 4: The Commission expressed concern that reporting of the manner of taking and the numbers of animals incidentally taken should account for all animals in the various survey areas, including those animals directly on the trackline that are not detected and how well animals are detected based on the distance from the observer (accounted for by g(0) and f(0) values). The Commission has recommended a method for estimating the number of cetaceans in the vicinity of geophysical surveys based on the number of groups detected and recommended that NMFS require UH to use this method for estimating g(0) and f(0) values to better estimate the numbers of marine mammals taken by Level A and Level B harassment.

NMFS response: NMFS agrees that reporting of the manner of taking and the numbers of animals incidentally taken should account for all animals taken, including those animals directly on the trackline that are not detected and how well animals are detected based on the distance from the observer, to the extent practicable. NMFS has provided the Commission's recommended method for estimating g(0) and f(0) values to previous applicants for similar activities (*i.e.,* research-based geophysical surveys). We have received feedback in response that those applicants are concerned with some aspects of the Commission's method, including that the probability values recommended by the Commission's recommended method involve assumptions that are not met by the surveys conducted aboard research geophysical vessels and that, as such, derived *f*(0) values for research geophysical surveys would not be suitable for refining the number of cetaceans potentially taken incidentally during these surveys. NMFS requires in this IHA that takes reported in UH's monitoring report include an estimate that accounts for all animals incidentally taken, including those on the trackline but not detected, but at this time we do not prescribe a particular method for accomplishing this task.

Description of Marine Mammals in the Area of Specified Activities

Section 4 of the application summarizes available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SAR; *www.nmfs.noaa.gov/pr/sars/*), and more general information about these species (*e.g.,* physical and behavioral descriptions) may be found on NMFS' Web site (*www.nmfs.noaa.gov/pr/species/mammals/*).

Table 1 lists all species with expected potential for occurrence in the central Pacific Ocean and summarizes information related to the population or

stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2016). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Pacific SARs (*e.g.,* Carretta *et al.,* 2017). All values presented in Table 1 are the most recent available at the time of publication and are available in the 2016 SARs (Carretta *et al.,* 2017), available online at: *www.nmfs.noaa.gov/pr/sars,* except where noted otherwise.

TABLE 1—MARINE MAMMALS THAT COULD OCCUR IN THE PROJECT AREA

Species	Stock	ESA/MMPA status; strategic (Y/N) [1]	Stock abundance [2] (CV, Nmin, most recent abundance survey) [3]	PBR [4]	Relative occurrence in project area
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)					
Family: Balaenopteridae					
Humpback whale (*Megaptera novaeangliae*) [5].	Central North Pacific	-/-; N	10,103 (0.300; 7,890; 2006).	83	Seasonal; throughout known breeding grounds during winter and spring (most common November through April).
Blue Whale (*Balaenoptera musculus).*	Central North Pacific	E/D; Y	81 (1.14; 38; 2010)	0.1	Seasonal; infrequent winter migrant; few sightings, mainly fall and winter; considered rare.
Fin whale (*Balaenoptera physalus*.	Hawaii	E/D; Y	58 (1.12; 27; 2010)	0.1	Seasonal, mainly fall and winter; considered rare.
Sei whale (*Balaenoptera borealis).*	Hawaii	E/D; Y	178 (0.90; 93; 2010)	0.2	Rare; limited sightings of seasonal migrants that feed at higher latitudes.
Bryde's whale (*Balaenoptera brydei/edeni).*	Hawaii	-/-; N	798 (0.28; 633; 2010)	6.3	Uncommon; distributed throughout the Hawaiian Exclusive Economic Zone.
Minke whale (*Balaenoptera acutorostrata).*	Hawaii	-/-; N	n/a (n/a; n/a; 2010)	Undet.	Seasonal, mainly fall and winter; considered rare.
Order Cetartiodactyla—Cetacea—Superfamily Odontoceti (toothed whales, dolphins, and porpoises)					
Family: Physeteridae					
Sperm whale (*Physeter macrocephalus*).	Hawaii	E/D; Y	3,354 (0.34; 2,539; 2010)	10.2	Widely distributed year round.
Order Cetartiodactyla—Cetacea—Superfamily Odontoceti (toothed whales, dolphins, and porpoises)					
Family: Kogiidae					
Pygmy sperm whale [6] (*Kogia breviceps*).	Hawaii	-/-; N	7,139 (2.91; n/a; 2006)	Undet.	Widely distributed year round.
Dwarf sperm whale [6] (*Kogia sima*).	Hawaii	-/-; N	17,519 (7.14; n/a; 2006)	Undet.	Widely distributed year round.
Order Cetartiodactyla—Cetacea—Superfamily Odontoceti (toothed whales, dolphins, and porpoises)					
Family delphinidae					
Killer whale (*Orcinus orca*)	Hawaii	-/-; N	101 (1.00; 50; 2010)	1	Uncommon; infrequent sightings.
False killer whale (*Pseudorca crassidens*).	Hawaii Pelagic	-/-; N	1,540 (0.66; 928; 2010)	9.3	Regular.
Pygmy killer whale (*Feresa attenuata*).	Hawaii	-/-; N	3,433 (0.52; 2,274; 2010)	23	Year-round resident.

TABLE 1—MARINE MAMMALS THAT COULD OCCUR IN THE PROJECT AREA—Continued

Species	Stock	ESA/MMPA status; strategic (Y/N) [1]	Stock abundance [2] (CV, Nmin, most recent abundance survey) [3]	PBR [4]	Relative occurrence in project area
Short-finned pilot whale (*Globicephala macrorhynchus*).	Hawaii	-/-; N	12,422 (0.43; 8,872; 2010)	70	Commonly observed around Main Hawaiian Islands and Northwestern Hawaiian Islands.
Melon headed whale (*Peponocephala electra).*	Hawaiian Islands	-/-; N	5,794 (0.20; 4,904; 2010) ..	4	Regular.
Bottlenose dolphin (*Tursiops truncatus*).	Hawaii pelagic	-/-; N	5,950 (0.59; 3,755; 2010) ..	38	Common in deep offshore waters.
Pantropical spotted dolphin (*Stenella attenuata*).	Hawaii pelagic	-/-; N	15,917 (0.40; 11,508; 2010).	115	Common; primary occurrence between 100 and 4,000 m depth.
Striped dolphin (*Stenella coeruleoala*).	Hawaii	-/-; N	20,650 (0.36; 15,391; 2010).	154	Occurs regularly year round but infrequent sighting during survey.
Spinner dolphin [6] (*Stenella longirostris*).	Hawaii pelagic	-/-; N	3,351 (0.74; n/a; 2006)	Undet.	Common year-round in offshore waters.
Rough-toothed dolphin (*Steno bredanensis*).	Hawaii	-/-; N	6,288 (0.39; 4,581; 2010) ..	46	Common throughout the Main Hawaiian Islands and Hawaiian Islands EEZ.
Fraser's dolphin (*Lagenodelphis hosei*).	Hawaii	-/-; N	16,992 (0.66; 10,241; 2010).	102	Tropical species only recently documented within Hawaiian Islands EEZ (2002 survey).
Risso's dolphin (*Grampus griseus*).	Hawaii	-/-; N	7,256 (0.41; 5,207; 2010) ..	42	Previously considered rare but multiple sightings in Hawaiian Islands EEZ during various surveys conducted from 2002–2012.
Order Cetartiodactyla—Cetacea—Superfamily Odontoceti (toothed whales, dolphins, and porpoises)					
Family: Ziphiidae					
Cuvier's beaked whale (*Ziphius cavirostris*).	Hawaii	-/-; N	1,941 (n/a; 1,142; 2010)	11.4	Year-round occurrence but difficult to detect due to diving behavior.
Blainville's beaked whale (*Mesoplodon densirostris*).	Hawaii	-/-; N	2,338 (1.13; 1,088; 2010) ..	11	Year-round occurrence but difficult to detect due to diving behavior.
Longman's beaked whale (*Indopacetus pacificus*).	Hawaii	-/-; N	4,571 (0.65; 2,773; 2010) ..	28	Considered rare; however, multiple sightings during 2010 survey.

[1] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR (see footnote 3) or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[2] Abundance estimates from Carretta *et al.* (2017) unless otherwise noted.

[3] CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable. For certain stocks, abundance estimates are actual counts of animals and there is no associated CV. The most recent abundance survey that is reflected in the abundance estimate is presented; there may be more recent surveys that have not yet been incorporated into the estimate.

[4] Potential biological removal (PBR), defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population size (OSP).

[5] Values for humpback whale are from the 2015 Alaska SAR (Muto *et al.,* 2015).

[6] Values for spinner dolphin, dwarf and pygmy sperm whale are from Barlow *et al.* (2006).

All species that could potentially occur in the survey area are included in Table 1. We have reviewed UH's species descriptions, including life history information, distribution, regional distribution, diving behavior, and acoustics and hearing, for accuracy and completeness. We refer the reader to Section 4 of UH's IHA application, rather than reprinting the information here. A detailed description of the species likely to be affected by UH's survey, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017). Since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to NMFS' Web site (*www.nmfs.noaa.gov/pr/*

species/mammals/) for generalized species accounts

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

The effects of underwater noise from marine geophysical survey activities have the potential to result in behavioral harassment and, in a limited number of instances, auditory injury (PTS) of marine mammals in the vicinity of the action area. The **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017) included a discussion of the effects of anthropogenic noise on marine mammals and their habitat, therefore that information is not repeated here; please refer to the **Federal Register** notice (82 FR 34352; July 24, 2017) for that information. No instances of serious injury or mortality are expected as a result of UH's survey activities.

Estimated Take

This section provides an estimate of the number of incidental takes authorized through the IHA, which informs both NMFS' consideration of whether the number of takes is ''small'' and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines ''harassment'' 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 disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would primarily be by Level B harassment, as use of the seismic airguns have the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for mysticetes and high frequency cetaceans (*i.e.,* kogiidae spp.), due to larger predicted auditory injury zones for those functional hearing groups. Auditory injury is unlikely to occur for mid-frequency species given very small modeled zones of injury for those species. The mitigation and monitoring measures are expected to minimize the severity of such taking to the extent practicable.

As described previously, no mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

Described in the most basic way, we estimate take by considering: (1) Acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and (4) and the number of days of activities. Below, we describe these components in more detail and present the exposure estimate and associated numbers of take authorized.

Acoustic Thresholds

Using the best available science, NMFS has developed acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur permanent threshold shift (PTS) of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.,* frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.,* 2007, Ellison *et al.,* 2011). Based on the best available science and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider to fall under Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 decibels (dB) re 1 micropascal (μPa) root mean square (rms) for continuous (*e.g.* vibratory pile-driving, drilling) and above 160 dB re 1 μPa (rms) for non-explosive impulsive (*e.g.,* seismic airguns) or intermittent (*e.g.,* scientific sonar) sources. UH's activity includes the use of impulsive seismic sources. Therefore, the 160 dB re 1 μPa (rms) criteria is applicable for analysis of level B harassment.

Level A harassment for non-explosive sources—NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NMFS, 2016) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) (Table 2) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). The Technical Guidance identifies the received levels, or thresholds, above which individual marine mammals are predicted to experience changes in their hearing sensitivity for all underwater anthropogenic sound sources, reflects the best available science, and better predicts the potential for auditory injury than does NMFS' historical criteria.

TABLE 2—MARINE FUNCTIONAL MAMMAL HEARING GROUPS AND THEIR GENERALIZED HEARING RANGES

Hearing group	Generalized hearing range *
Low frequency (LF) cetaceans (baleen whales)	7Hz to 35 kHz.
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
High-frequency (HF) cetaceans (true porpoises, Kogia, river dolphins, cephalorhynchid, Lagenorhynchus cruciger and L. australis).	275 Hz to 160 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.,* 2007) and PW pinniped (approximation).

These thresholds were developed by compiling and synthesizing the best available science and soliciting input multiple times from both the public and peer reviewers to inform the final product, and are provided in Table 3 below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2016 Technical Guidance, which may be accessed at: *http://www.nmfs.noaa.gov/pr/acoustics/guidelines.htm.* As described above, UH's activity includes the use of intermittent and impulsive seismic sources.

TABLE 3—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT IN MARINE MAMMALS

Hearing Group	PTS onset thresholds	
	Impulsive *	Non-impulsive
Low-Frequency (LF) Cetaceans	$L_{pk,flat}$: 219 dB, $L_{E,LF,24h}$: 183 dB ..	$L_{E,LF,24h}$: 199 dB.
Mid-Frequency (MF) Cetaceans	$L_{pk,flat}$: 230 dB, $L_{E,MF,24h}$: 185 dB	$L_{E,MF,24h}$: 198 dB.
High-Frequency (HF) Cetaceans	$L_{pk,flat}$: 202 dB, $L_{E,HF,24h}$: 155 dB ..	$L_{E,HF,24h}$: 173 dB.

Note: * Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (Lpk) has a reference value of 1 μPa, and cumulative sound exposure level (LE) has a reference value of 1μPa2s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.,* varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into estimating the area ensonified above the acoustic thresholds.

The survey would entail use of a 32-airgun array with a total discharge of 7,800 in^3 at a tow depth of 10 m. The distance to the predicted isopleth corresponding to the threshold for Level B harassment (160 dB re 1 μPa) was calculated based on results of modeling performed by LDEO. Received sound levels were predicted by LDEO's model (Diebold *et al.* 2010) as a function of distance from the full 32-airgun array as well as for a single 100 in^3 airgun, which would be used during power-downs. The LDEO modeling approach uses ray tracing for the direct wave traveling from the array to the receiver and its associated source ghost (reflection at the air-water interface in the vicinity of the array), in a constant-velocity half-space (infinite homogeneous ocean layer unbounded by a seafloor). LDEO's modeling methodology is described in greater detail in the IHA application (LGL 2017) and we refer to the reader to that document rather than repeating it here. The estimated distances to the Level B harassment isopleth for the *Kairei's* full airgun array and for the single 100-in^3 airgun are shown in Table 4. The total area estimated to be ensonified to the Level B harassment threshold for the entire survey is 24,408 square kilometers (km^2).

TABLE 4—PREDICTED RADIAL DISTANCES FROM R/V KAIREI SEISMIC SOURCE TO ISOPLETH CORRESPONDING TO LEVEL B HARASSMENT THRESHOLD

Source and volume	Predicted distance to threshold (160 dB re 1 μPa)
1 airgun, 100 in^3	722 m.
4 strings, 32 airguns, 7800 in^3.	9,289 m.

Predicted distances to Level A harassment isopleths, which vary based on marine mammal hearing groups (Table 2), were calculated based on modeling performed by LDEO using the Nucleus software program and the NMFS User Spreadsheet, described below. The updated acoustic thresholds for impulsive sounds (such as airguns) contained in the Technical Guidance (NMFS 2016) were presented as dual metric acoustic thresholds using both cumulative sound exposure level (SEL_{cum}) and peak sound pressure metrics. As dual metrics, NMFS considers onset of PTS (Level A harassment) to have occurred when either one of the two metrics is exceeded (*i.e.,* metric resulting in the largest isopleth). The SEL_{cum} metric considers both level and duration of exposure, as well as auditory weighting functions by marine mammal hearing group. In recognition of the fact that the requirement to calculate Level A harassment ensonified areas could be more technically challenging to predict due to the duration component and the use of weighting functions in the new SEL_{cum} thresholds, NMFS developed an optional User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to facilitate the estimation of take numbers.

The values for SEL_{cum} and peak SPL for the *Kairei* airgun array were derived from calculating the modified farfield signature (Table 5). The farfield signature is often used as a theoretical representation of the source level. To compute the farfield signature, the source level is estimated at a large distance below the array (*e.g.,* 9 km), and this level is back projected mathematically to a notional distance of 1 m from the array's geometrical center. However, when the source is an array of multiple airguns separated in space, the source level from the theoretical farfield signature is not necessarily the best measurement of the source level that is physically achieved at the source (Tolstoy *et al.* 2009). Near the source (at short ranges, distances <1 km), the pulses of sound pressure from each individual airgun in the source array do not stack constructively, as they do for the theoretical farfield signature. The pulses from the different airguns spread out in time such that the source levels observed or modeled are the result of the summation of pulses from a few airguns, not the full array (Tolstoy *et al.* 2009). At larger distances, away from the source array center, sound pressure of all the airguns in the array stack coherently, but not within one time

sample, resulting in smaller source levels (a few dB) than the source level derived from the farfield signature. Because the farfield signature does not take into account the large array effect near the source and is calculated as a point source, the modified farfield signature is a more appropriate measure of the sound source level for distributed sound sources, such as airgun arrays. UH used the acoustic modeling developed by LDEO (same as used for Level B takes) with a small grid step of 1 m in both the inline and depth directions (for example, see Figure 5 in the IHA application). The propagation modeling takes into account all airgun interactions at short distances from the source, including interactions between subarrays which are modeled using the NUCLEUS software to estimate the notional signature and MATLAB software to calculate the pressure signal at each mesh point of a grid.

TABLE 5—MODELED SOURCE LEVELS FOR R/V KAIREI 7,800 IN^3 AIRGUN ARRAY AND 100 IN^3 AIRGUN BASED ON MODIFIED FARFIELD SIGNATURE

Functional hearing group	7,800 in^3 airgun array (peak SPL_{flat})	7,800 in^3 airgun array (SEL_{cum})	100 in^3 airgun (peak SPL_{flat})	100 in^3 airgun (SEL_{cum})
Low frequency cetaceans ($L_{pk,flat}$: 219 dB; $L_{E,LF,24h}$: 183 dB)	256.36 dB	235.01 dB	229.46 dB	208.41 dB.
Mid frequency cetaceans ($L_{pk,flat}$: 230 dB; $L_{E,MF,24h}$: 185 dB)	245.59 dB	235.12 dB	229.47 dB	208.44 dB.
High frequency cetaceans ($L_{pk,flat}$: 202 dB; $L_{E,HF,24h}$: 155 dB)	256.26 dB	235.16 dB	229.59 dB	209.01 dB.

In order to more realistically incorporate the Technical Guidance's weighting functions over the seismic array's full acoustic band, unweighted spectrum data for the Kairei's airgun array (modeled in 1 hertz (Hz) bands) was used to make adjustments (dB) to the unweighted spectrum levels, by frequency, according to the weighting functions for each relevant marine mammal hearing group. These adjusted/weighted spectrum levels were then converted to pressures (micropascals) in order to integrate them over the entire broadband spectrum, resulting in broadband weighted source levels by hearing group that could be directly incorporated within the User Spreadsheet (*i.e.,* to override the Spreadsheet's more simple weighting factor adjustment). Using the User Spreadsheet's ''safe distance'' methodology for mobile sources (described by Sivle *et al.,* 2014) with the hearing group-specific weighted source levels, and inputs assuming spherical spreading propagation, a source velocity of 2.315 meters/second, and shot interval of 21.59 seconds (LGL 2017), potential radial distances to auditory injury zones were then calculated for SEL_{cum} thresholds.

To estimate Peak SPL thresholds, LDEO performed modeling for a single shot and then a high pass filter was applied for each hearing group. A high pass filter is a type of band band-pass filter, which pass frequencies within a defined range without reducing amplitude and attenuate frequencies outside that defined range (Yost 2007). In their IHA application (LGL 2017) UH presented modeled distances to level A isopleths (Peak SPL) both with and without the high pass filter applied. In the **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017) NMFS presented distances to the Level A harassment thresholds for Peak SPL based on LDEO's modeling, including the application of the high pass filter. At the time that **Federal Register** notice was published, we agreed that application of the high pass filter was appropriate, and we accepted LDEO's modeling methodology and its application for take estimation. However, in response to feedback we received in the form of public comments submitted in response to that **Federal Register** notice (see Comments and Responses section) we have subsequently determined that the application of the high pass filter is, in fact, not appropriate (see Comments and Responses section for further discussion of this issue). As such, the estimated distances to Level A harassment isopleths (for Peak SPL) shown in Table 6 have revised from those shown in the **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017) to reflect no band pass filtering.

Inputs to the User Spreadsheet are shown in Table 5; outputs from the User Spreadsheet in the form of estimated distances to Level A harassment isopleths are shown in Table 6. The User Spreadsheet used by UH is shown in Table 3 of the IHA application.

TABLE 6—MODELED RADIAL DISTANCES FROM R/V KAIREI 7800 IN^3 AIRGUN ARRAY AND 100 IN^3 AIRGUN TO ISOPLETHS CORRESPONDING TO LEVEL A HARASSMENT THRESHOLDS

Functional hearing group	7,800 in^3 airgun array (peak SPL_{flat})	7,800 in^3 airgun array (SEL_{cum})	100 in^3 airgun (peak SPL_{flat})	100 in^3 airgun (SEL_{cum})
Low frequency cetaceans ($L_{pk,flat}$: 219 dB; $L_{E,LF,24h}$: 183 dB)	73.8 m	752.8 m	3.3 m	4.48 m
Mid frequency cetaceans ($L_{pk,flat}$: 230 dB; $L_{E,MF,24h}$: 185 dB)	6.0	0.0 m	0.9	n/a
High frequency cetaceans ($L_{pk,flat}$: 202 dB; $L_{E,HF,24h}$: 155 dB)	516.5 m	1.7 m	24 m	n/a

Note that because of some of the assumptions included in the methods used, isopleths produced may be overestimates to some degree, which will ultimately result in some degree of overestimate of Level A take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools and will qualitatively address the output where appropriate. For mobile sources, such as UH's survey, the User Spreadsheet predicts the closest distance at which a stationary animal would not incur PTS if the sound source traveled by the animal in a straight line at a constant speed.

Marine Mammal Occurrence

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

The best available scientific information was considered in conducting marine mammal exposure estimates (the basis for estimating take). For most cetacean species, densities calculated by Bradford *et al. (*2017) from summer–fall vessel-based surveys that are part of the Hawaiian Island Cetacean Ecosystem Assessment Survey (HICEAS) were used. The surveys were conducted by NMFS' Southwest Fisheries Science Center (SWFSC) and Pacific Islands Fisheries Science Center (PIFSC) in 2010 using two NOAA research vessels, one during August 13—December 1 and the other during September 2—October 29. The densities were estimated using a multiple-covariate line-transect approach (Buckland *et al.* 2001; Marques and Buckland 2004). Density estimates for pygmy and dwarf sperm whales and spinner dolphins, which were not calculated from the 2010 surveys, were derived from the ''Outer EEZ stratum'' of the vessel-based HICEAS survey conducted in summer–fall 2002 by SWFSC (Barlow 2006) using line-transect methodology (Buckland *et al.* 2001). The density estimate for the false killer whale was based on the pelagic stock density calculated by Bradford *et al.* (2015) using line-transect methodology (Buckland *et al.* 2001).

All densities were corrected for trackline detection probability bias ($f(0)$) and availability ($g(0)$) bias by the authors. Bradford *et al.* (2017) used $g(0)$ values estimated by Barlow (2015), whose analysis indicated that $g(0)$ had previously been overestimated, particularly for high sea states. Barlow (2006) used earlier estimates of $g(0)$, so densities used here for pygmy and dwarf sperm whales and spinner dolphins likely are underestimates. The density for the ''Sei or Bryde's whale'' category identified by Bradford *et al.* (2017) was allocated between sei and Bryde's whales according to their proportionate densities. Density estimates for humpback and minke whales were not available.

There is some uncertainty related to the estimated density data and the assumptions used in their calculations, as with all density data estimates. However, the approach used is based on the best available data.

Take Calculation and Estimation

Here we describe how the information provided above is brought together to produce a quantitative take estimate. In order to estimate the number of marine mammals predicted to be exposed to sound levels that would result in Level B harassment or Level A harassment, radial distances to predicted isopleths corresponding to the Level A harassment and Level B harassment thresholds are calculated, as described above. We then use those distances to calculate the area(s) around the airgun array predicted to be ensonified to sound levels that exceed the Level A and Level B harassment thresholds. The total ensonified area for the survey is then calculated, based on the areas predicted to be ensonified around the array and the trackline distance. The marine mammals predicted to occur within these respective areas, based on estimated densities, are expected to be incidentally taken by UH's survey.

To summarize, the estimated density of each marine mammal species within an area (animals/km^2) is multiplied by the daily ensonified areas (km^2) that correspond to the Level A and Level B harassment thresholds for the species. The product (rounded) is the number of instances of take for each species within one day. The number of instances of take for each species within one day is then multiplied by the number of survey days (plus 25 percent contingency, as described below). The result is an estimate of the number of instances that marine mammals are predicted to be exposed to airgun sounds above the Level B harassment threshold and the Level A harassment threshold over the duration of the survey. Estimated takes for all marine mammal species are shown in Table 7.

The planned survey would occur both within the U.S. EEZ and outside the U.S. EEZ. We authorize incidental take that is expected to occur as a result of the survey both within and outside the U.S. EEZ.

TABLE 7—NUMBERS OF INCIDENTAL TAKE OF MARINE MAMMALS AUTHORIZED

Species	Estimated density (#/1,000 km2)	Estimated and authorized Level A takes	Estimated Level B takes	Authorized Level B takes	Total authorized Level A and Level B takes	Total authorized Level A and Level B takes as a percentage of population
Humpback whale [1]	0	0	0	2	2	<0.1
Minke whale [1]	0	0	0	1	1	n/a
Bryde's whale	0.97	2	25	25	27	3.4
Sei whale	0.22	0	6	6	6	3.4
Fin whale	0.06	0	2	2	2	3.4
Blue whale [1]	0.05	0	1	3	3	3.7
Sperm whale	1.86	0	51	51	51	1.5
Cuvier's beaked whale	0.30	0	8	8	8	<0.1
Longman's beaked whale	3.11	0	85	85	85	1.9
Blainville's beaked whale	1.89	0	76	76	76	3.3
Rough-toothed dolphin	29.6	0	812	812	812	12.9
Bottlenose dolphin	8.99	0	246	246	246	4.1
Pantropical spotted dolphin	23.3	0	639	639	639	4.0
Spinner dolphin [1]	0.83	0	23	32	32	0.9
Striped dolphin	25.0	0	685	685	685	3.3
Fraser's dolphin	21.0	0	577	577	577	3.4
Risso's dolphin	4.74	0	130	130	130	1.8
Melon-headed whale	3.54	0	97	97	97	1.7
Pygmy killer whale	4.35	0	119	119	119	3.5
False killer whale	0.60	0	16	16	16	1.0
Killer whale [1]	0.06	0	2	5	5	4.9
Short-finned pilot whale	7.97	0	218	218	218	1.8
Pygmy sperm whale	3.19	7	87	87	94	7.4

TABLE 7—NUMBERS OF INCIDENTAL TAKE OF MARINE MAMMALS AUTHORIZED—Continued

Species	Estimated density (#/1,000 km2)	Estimated and authorized Level A takes	Estimated Level B takes	Authorized Level B takes	Total authorized Level A and Level B takes	Total authorized Level A and Level B takes as a percentage of population
Dwarf sperm whale	7.82	18	214	214	232	7.8

[1] The number of authorized takes (Level B harassment only) for these species has been increased from the calculated take to mean group size. Sources for mean group sizes are as follows: blue whale (Bradford *et al.* 2017); minke whale (Jackson *et al.* 2008); humpback whale (Mobley *et al.* 2001); spinner dolphin (Barlow 2006); killer whale (Bradford *et al.* 2017).

Species with Take Estimates Less than Mean Group Size: Using the approach described above to estimate take, the take estimates for the blue whale, killer whale, and spinner dolphin (Table 7) were less than the average group sizes estimated for these species. However, information on the social structures and life histories of these species indicates it is common for them to be encountered in groups. As the results of take calculations support the likelihood that UH's survey would be expected to encounter and to incidentally take these species, and we believe it is likely that these species may be encountered in groups, it is reasonable to conservatively assume that one group of each of these species will be taken during the survey. We therefore propose to authorize the take of the average (mean) group size for the blue whale, killer whale, and spinner dolphin to account for the possibility that UH's survey encounters a group of any of these species (Table 7).

Species with No Available Density Data: No density data were available for humpback and minke whales. Both species would typically be found further north than the survey area during the time of year that the survey is planned to occur, based on sightings data around the Hawaiian Islands (Carretta *et al.* 2017). However, based on input from subject matter experts, we believe it is reasonable to assume that both species may be encountered by UH during the survey. Humpback whales have typically not been observed in the project area in the fall (Carretta *et al.* 2017). However, there are increasing anecdotal reports of confirmed sightings of humpback whales from early September through October in areas near the planned project area (pers. comm. E. Lyman, NOAA Office of National Marine Sanctuaries, to J. Carduner, NMFS, June 20, 2017). Like humpback whales, sightings data does not indicate that minke whales would typically be expected to be present in the project area in the fall (Carretta *et al.* 2017). However, detections of minke whales are common in passive acoustic recordings from various locations around the main Hawaiian Islands, including during the fall (pers. comm. E. Oleson, NOAA PIFSC, to J. Carduner, NMFS, June 20, 2017). Additionally, as minke whales in the North Pacific do not have a visible blow, they can be easily missed by visual observers, suggesting a lack of sightings is likely related to misidentification or low detection capability in poor sighting conditions (Rankin *et al.* 2007). Though no density data are available, we believe it is reasonable to conservatively assume that UH's survey may encounter and incidentally take minke and humpback whales. We therefore propose to authorize the take of the average (mean) group size (weighted by effort and rounded up) for the humpback and minke whale (Table 7).

It should be noted that the take numbers shown in Table 7 are believed to be conservative for several reasons. First, in the calculations of estimated take, 25 percent has been added in the form of operational survey days (equivalent to adding 25 percent to the line km to be surveyed) to account for the possibility of additional seismic operations associated with airgun testing, and repeat coverage of any areas where initial data quality is sub-standard. Additionally, marine mammals would be expected to move away from a sound source that represents an aversive stimulus. However, the extent to which marine mammals would move away from the sound source is difficult to quantify and is therefore not accounted for in take estimates shown in Table 7.

Level A take estimates (Table 7) have been revised from the take estimates provided in the **Federal Register** notice for the proposed IHA (82 FR 34352; July 24, 2017) based on our decision to rely on modeled distances to Level A harassment isopleths for Peak SPL (Table 6) without band pass filtering applied, as described above. The only species for which Level A take numbers were affected by this revision were the pygmy sperm whale and dwarf sperm whale (Level A takes changed from 0 to 7 and from 0 to 18, respectively).

Mitigation

In order to issue an IHA under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned) the likelihood of effective implementation (probability implemented as planned); and

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case

of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

UH has reviewed mitigation measures employed during seismic research surveys authorized by NMFS under previous incidental harassment authorizations, as well as recommended best practices in Richardson *et al.* (1995), Pierson *et al.* (1998), Weir and Dolman (2007), Nowacek *et al.* (2013), Wright (2014), and Wright and Cosentino (2015), and has incorporated a suite of mitigation measures into their project description based on the above sources.

To reduce the potential for disturbance from acoustic stimuli associated with the activities, UH will implement the following mitigation measures for marine mammals:

(1) Vessel-based visual mitigation monitoring;

(2) Vessel-based passive acoustic monitoring;

(3) Establishment of an exclusion zone;

(4) Power down procedures;

(5) Shutdown procedures;

(6) Ramp-up procedures; and

(7) Ship strike avoidance measures.

Vessel-Based Visual Mitigation Monitoring

Protected Species Observer (PSO) observations will take place during all daytime airgun operations and nighttime start ups (if applicable) of the airguns. Airgun operations will be suspended when marine mammals are observed within, or about to enter, designated Exclusion Zones (as described below). PSOs will also watch for marine mammals near the vessel for at least 30 minutes prior to the planned start of airgun operations. PSOs will monitor the entire extent of the modeled Level B harassment zone (Table 4) (or, as far as they are able to see, if they cannot see to the extent of the estimated Level B harassment zone). Observations will also be made during daytime periods when the *Kairei* is underway without seismic operations, such as during transits, to allow for comparison of sighting rates and behavior with and without airgun operations and between acquisition periods.

During seismic operations, a minimum of four visual PSOs will be based aboard the *Kairei.* PSOs will be appointed by JAMSTEC with NMFS approval. During the majority of seismic operations, two PSOs will monitor for marine mammals around the seismic vessel. Use of two simultaneous observers will increase the effectiveness of detecting marine mammals around the source vessel. However, during meal times, only one PSO may be on duty. PSO(s) would be on duty in shifts of duration no longer than 4 hours. Other crew will also be instructed to assist in detecting marine mammals and in implementing mitigation requirements (if practical). Before the start of the seismic survey, the crew will be given additional instruction in detecting marine mammals and implementing mitigation requirements. The *Kairei* is a suitable platform for marine mammal observations. When stationed on the observation platform, PSOs will have a good view around the entire vessel. During daytime, the PSO(s) will scan the area around the vessel systematically with reticle binoculars (*e.g.,* 7×50 Fujinon), Big-eye binoculars (25×150), and with the naked eye.

The PSOs must have no tasks other than to conduct observational effort, record observational data, and communicate with and instruct relevant vessel crew with regard to the presence of marine mammals and mitigation requirements. PSO resumes will be provided to NMFS for approval. At least two PSOs must have a minimum of 90 days at-sea experience working as PSOs during a high energy seismic survey, with no more than eighteen months elapsed since the conclusion of the at-sea experience. One ''experienced'' visual PSO will be designated as the lead for the entire protected species observation team. The lead will coordinate duty schedules and roles for the PSO team and serve as primary point of contact for the vessel operator. The lead PSO will devise the duty schedule such that ''experienced'' PSOs are on duty with those PSOs with appropriate training but who have not yet gained relevant experience, to the maximum extent practicable.

The PSOs must have successfully completed relevant training, including completion of all required coursework and passing a written and/or oral examination developed for the training program, and must have successfully attained a bachelor's degree from an accredited college or university with a major in one of the natural sciences and a minimum of 30 semester hours or equivalent in the biological sciences and at least one undergraduate course in math or statistics. The educational requirements may be waived if the PSO has acquired the relevant skills through alternate training, including (1) secondary education and/or experience comparable to PSO duties; (2) previous work experience conducting academic, commercial, or government-sponsored marine mammal surveys; or (3) previous work experience as a PSO; the PSO should demonstrate good standing and consistently good performance of PSO duties.

In summary, a typical daytime cruise will have scheduled two observers (visual) on duty from the observation platform, and an acoustic observer on the passive acoustic monitoring system.

Vessel-Based Passive Acoustic Mitigation Monitoring

Passive acoustic monitoring (PAM) will take place to complement the visual monitoring program. Visual monitoring typically is not effective during periods of poor visibility or at night, and even with good visibility, is unable to detect marine mammals when they are below the surface or beyond visual range. Acoustic monitoring can be used in addition to visual observations to improve detection, identification, and localization of cetaceans. The acoustic monitoring will serve to alert visual observers (if on duty) when vocalizing cetaceans are detected. It is only useful when marine mammals vocalize, but it can be effective either by day or by night and does not depend on good visibility. It will be monitored in real time so that visual observers can be alerted when marine mammals are detected acoustically.

The PAM system consists of hardware (*i.e.,* hydrophones) and software. The ''wet end'' of the system consists of a towed hydrophone array that is connected to the vessel by a tow cable. A deck cable will connect the tow cable to the electronics unit on board where the acoustic station, signal conditioning, and processing system would be located. The acoustic signals received by the hydrophones are amplified, digitized, and then processed by the software.

At least one acoustic PSO (in addition to the four visual PSOs) will be on board. The towed hydrophones would be monitored 24 hours per day (either by the acoustic PSO or by a visual PSO trained in the PAM system if the acoustic PSO is on break) while at the seismic survey area during airgun operations, and during most periods when the *Kairei* is underway while the airguns are not operating. However, PAM may not be possible if damage occurs to the array or back-up systems during operations. One PSO will monitor the acoustic detection system at any one time, in shifts no longer than six hours, by listening to the signals via headphones and/or speakers and watching the real-time spectrographic display for frequency ranges produced by cetaceans.

When a vocalization is detected, while visual observations are in progress, the acoustic PSO will contact the visual PSOs immediately, to alert them to the presence of marine mammals (if they have not already been detected visually), in order to facilitate a power down or shut down, if required. The information regarding the marine mammal acoustic detection will be entered into a database.

Exclusion Zone and Buffer Zone

An exclusion zone (EZ) is a defined area within which occurrence of a marine mammal triggers mitigation action intended to reduce the potential for certain outcomes, *e.g.,* auditory injury, disruption of critical behaviors. The PSOs will establish a minimum EZ with a 500 m radius for the full array. The 500 m EZ will be based on radial distance from any element of the airgun array (rather than being based on the center of the array or around the vessel itself). With certain exceptions (described below), if a marine mammal appears within, enters, or appears on a course to enter this zone, the acoustic source will be powered down (see Power Down Procedures below). In addition to the 500 m EZ for the full array, a 100 m exclusion zone will be established for the single 100 in^3 airgun. With certain exceptions (described below), if a marine mammal appears within, enters, or appears on a course to enter this zone the acoustic source will be shut down entirely (see Shutdown Procedures below). Additionally, power down of the full array will last no more than 30 minutes maximum at any given time; thus the array will be shut down entirely if, after 30 minutes of power down, a marine mammal remains inside the 500 m EZ.

Potential radial distances to auditory injury zones were calculated on the basis of maximum peak pressure using values provided by the applicant (Table 6). The 500 m radial distance of the standard EZ is intended to be precautionary in the sense that it would be expected to contain sound exceeding peak pressure injury criteria for all cetacean hearing groups, while also providing a consistent, reasonably observable zone within which PSOs would typically be able to conduct effective observational effort. Although significantly greater distances may be observed from an elevated platform under good conditions, we believe that 500 m is likely regularly attainable for PSOs using the naked eye during typical conditions.

An appropriate EZ based on cumulative sound exposure level (SEL_{cum}) criteria would be dependent on the animal's applied hearing range and how that overlaps with the frequencies produced by the sound source of interest (*i.e.,* via marine mammal auditory weighting functions) (NMFS, 2016), and may be larger in some cases than the zones calculated on the basis of the peak pressure thresholds (and larger than 500 m) depending on the species in question and the characteristics of the specific airgun array. In particular, the EZ radii would be larger for low-frequency cetaceans, because their most susceptible hearing range overlaps the low frequencies produced by airguns, but the zones would remain very small for mid-frequency cetaceans (*i.e.,* including the ''small delphinoids'' described below), whose range of best hearing largely does not overlap with frequencies produced by airguns.

Consideration of exclusion zone distances is inherently an essentially instantaneous proposition—a rule or set of rules that requires mitigation action upon detection of an animal. This indicates that consideration of peak pressure thresholds is most relevant, as compared with cumulative sound exposure level thresholds, as the latter requires that an animal accumulate some level of sound energy exposure over some period of time (*e.g.,* 24 hours). A PSO aboard a mobile source will typically have no ability to monitor an animal's position relative to the acoustic source over relevant time periods for purposes of understanding whether auditory injury is likely to occur on the basis of cumulative sound exposure and, therefore, whether action should be taken to avoid such potential. Therefore, definition of an exclusion zone based on SEL_{cum} thresholds is of questionable relevance given relative motion of the source and receiver (*i.e.,* the animal). Cumulative SEL thresholds are likely more relevant for purposes of modeling the potential for auditory injury than they are for informing real-time mitigation. We recognize the importance of the accumulation of sound energy to an understanding of the potential for auditory injury and that it is likely that, at least for low-frequency cetaceans, some potential auditory injury is likely impossible to mitigate and should be considered for authorization.

In summary, our intent in prescribing a standard exclusion zone distance is to (1) encompass zones for most species within which auditory injury could occur on the basis of instantaneous exposure; (2) provide additional protection from the potential for more severe behavioral reactions (*e.g.,* panic, antipredator response) for marine mammals at relatively close range to the acoustic source; (3) provide consistency for PSOs, who need to monitor and implement the exclusion zone; and (4) to define a distance within which detection probabilities are reasonably high for most species under typical conditions.

Our use of 500 m as the EZ is a reasonable combination of factors. This zone is expected to contain all potential auditory injury for all cetaceans (high-frequency, mid-frequency and low-frequency functional hearing groups) as assessed against peak pressure thresholds (NMFS, 2016) (Table 6), and to contain all potential auditory injury for high-frequency and mid-frequency cetaceans as assessed against SEL_{cum} thresholds (NMFS, 2016) (Table 6), It has also proven to be practicable through past implementation in seismic surveys conducted for the oil and gas industry in the Gulf of Mexico (as regulated by BOEM pursuant to the Outer Continental Shelf Lands Act (OCSLA) (43 U.S.C. 1331–1356)). In summary, a practicable criterion such as this has the advantage of simplicity while still providing in most cases a zone larger than relevant auditory injury zones, given realistic movement of source and receiver.

The PSOs will also establish and monitor a 1,000 m buffer zone. During use of the acoustic source, occurrence of marine mammals within the buffer zone (but outside the exclusion zone) will be communicated to the vessel operator to prepare for potential power down or shutdown of the acoustic source. The buffer zone is discussed further under Ramp Up Procedures below. PSOs will monitor the entire extent of the modeled Level B harassment zone (Table 4) (or, as far as they are able to see, if they cannot see to the extent of the estimated Level B harassment zone).

Power Down Procedures

A power down involves decreasing the number of airguns in use such that the radius of the mitigation zone is decreased to the extent that marine mammals are no longer in, or about to enter, the 500 m EZ. During a power down, one 100-in^3 airgun would be operated. The continued operation of one 100-in^3 airgun is intended to alert marine mammals to the presence of the seismic vessel in the area, and to allow them to leave the area of the seismic vessel if they choose. In contrast, a shutdown occurs when all airgun activity is suspended (shutdown procedures are discussed below). If a marine mammal is detected outside the 500 m EZ but appears likely to enter the 500 m EZ, the airguns will be powered

down before the animal is within the 500 m EZ. Likewise, if a mammal is already within the 500 m EZ when first detected, the airguns will be powered down immediately. During a power down of the airgun array, the 100-in^3 airgun will be operated.

Following a power down, airgun activity will not resume until the marine mammal has cleared the 500 m EZ. The animal will be considered to have cleared the 500 m EZ if the following conditions have been met:

- It is visually observed to have departed the 500 m EZ, or
- it has not been seen within the 500 m EZ for 15 min in the case of small odontocetes, or
- it has not been seen within the 500 m EZ for 30 min in the case of mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm, and beaked whales.

This power down requirement will be in place for all marine mammals, with the exception of small delphinoids under certain circumstances. As defined here, the small delphinoid group is intended to encompass those members of the Family Delphinidae most likely to voluntarily approach the source vessel for purposes of interacting with the vessel and/or airgun array (*e.g.,* bow riding). This exception to the power down requirement will apply solely to specific genera of small dolphins—*Steno, Tursiops, Stenella* and *Lagenodelphis*—and will only apply if the animals were traveling, including approaching the vessel. If, for example, an animal or group of animals is stationary for some reason (*e.g.,* feeding) and the source vessel approaches the animals, the power down requirement applies. An animal with sufficient incentive to remain in an area rather than avoid an otherwise aversive stimulus could either incur auditory injury or disruption of important behavior. If there is uncertainty regarding identification (*i.e.,* whether the observed animal(s) belongs to the group described above) or whether the animals are traveling, the power down will be implemented.

We include this small delphinoid exception because power-down/shutdown requirements for small delphinoids under all circumstances represent practicability concerns without likely commensurate benefits for the animals in question. Small delphinoids are generally the most commonly observed marine mammals in the specific geographic region and would typically be the only marine mammals likely to intentionally approach the vessel. As described below, auditory injury is extremely unlikely to occur for mid-frequency cetaceans (*e.g.,* delphinids), as this group is relatively insensitive to sound produced at the predominant frequencies in an airgun pulse while also having a relatively high threshold for the onset of auditory injury (*i.e.,* permanent threshold shift). Please see Potential Effects of the Specified Activity on Marine Mammals above for further discussion of sound metrics and thresholds and marine mammal hearing.

A large body of anecdotal evidence indicates that small delphinoids commonly approach vessels and/or towed arrays during active sound production for purposes of bow riding, with no apparent effect observed in those delphinoids (*e.g.,* Barkaszi *et al.,* 2012). The potential for increased shutdowns resulting from such a measure would require the *Kairei* to revisit the missed track line to reacquire data, resulting in an overall increase in the total sound energy input to the marine environment and an increase in the total duration over which the survey is active in a given area. Although other mid-frequency hearing specialists (*e.g.,* large delphinoids) are no more likely to incur auditory injury than are small delphinoids, they are much less likely to approach vessels. Therefore, retaining a power-down/shutdown requirement for large delphinoids would not have similar impacts in terms of either practicability for the applicant or corollary increase in sound energy output and time on the water. We do anticipate some benefit for a power-down/shutdown requirement for large delphinoids in that it simplifies somewhat the total range of decision-making for PSOs and may preclude any potential for physiological effects other than to the auditory system as well as some more severe behavioral reactions for any such animals in close proximity to the source vessel.

At any distance, power down of the acoustic source will also be required upon observation of a large whale (*i.e.,* sperm whale or any baleen whale) with a calf, or upon observation of an aggregation of large whales of any species (*i.e.,* sperm whale or any baleen whale) that does not appear to be traveling (*e.g.,* feeding, socializing, etc.). These are the only two potential situations that would require power down of the array for marine mammals observed beyond the 500 m EZ.

A power down could occur for no more than 30 minutes maximum at any given time. If, after 30 minutes of the array being powered down, marine mammals had not cleared the 500 m EZ (as described above), a shutdown of the array will be implemented (see Shut Down Procedures, below). Power down is only allowed in response to the presence of marine mammals within the designated EZ. Thus, the single 100 in^3 airgun, which will be operated during power downs, may not be operated continuously throughout the night or during transits from one line to another.

Shut Down Procedures

The single 100-in^3 operating airgun will be shut down if a marine mammal is seen within or approaching the 100 m EZ for the single 100-in^3 airgun. Shutdown will be implemented if (1) an animal enters the 100 m EZ of the single 100-in^3 airgun after a power down has been initiated, or (2) an animal is initially seen within the 100 m EZ of the single 100-in^3 airgun when more than one airgun (typically the full array) is operating. Airgun activity will not resume until the marine mammal has cleared the 500 m EZ. Criteria for judging that the animal has cleared the EZ will be as described above. A shutdown of the array will be implemented if, after 30 minutes of the array being powered down, marine mammals have not cleared the 500 m EZ (as described above).

The shutdown requirement, like the power down requirement, will be waived for dolphins of the following genera: *Steno, Tursiops, Stenella* and *Lagenodelphis.* The shutdown waiver only applies if the animals are traveling, including approaching the vessel. If animals are stationary and the source vessel approaches the animals, the shutdown requirement would apply. If there is uncertainty regarding identification (*i.e.,* whether the observed animal(s) belongs to the group described above) or whether the animals are traveling, the shutdown would be implemented. A shutdown will be implemented if a North Pacific right whale is sighted, regardless of the distance from the *Kairei.* Ramp-up procedures would not be initiated until the right whale has not been seen at any distance for 30 minutes.

Ramp-Up Procedures

Ramp-up of an acoustic source is intended to provide a gradual increase in sound levels following a power down or shutdown, enabling animals to move away from the source if the signal is sufficiently aversive prior to its reaching full intensity. The ramp-up procedure involves a step-wise increase in the number of airguns firing and total array volume until all operational airguns are activated and the full volume is achieved. Ramp-up will be required after the array is powered down or

shutdown due to mitigation. If the airgun array has been shut down for reasons other than mitigation (*e.g.,* mechanical difficulty) for a period of less than 30 minutes, it may be activated again without ramp-up if PSOs have maintained constant visual and acoustic observation and no visual detections of any marine mammal have occurred within the buffer zone and no acoustic detections have occurred.

Ramp-up will begin by activating a single airgun of the smallest volume in the array and would continue in stages by doubling the number of active elements at the commencement of each stage, with each stage of approximately the same duration.

If airguns have been powered down or shut down due to PSO detection of a marine mammal within or approaching the 500 m EZ, ramp-up will not be initiated until all marine mammals have cleared the EZ, during the day or night. Visual and acoustic PSOs are required to monitor during ramp-up. If a marine mammal were detected by visual PSOs within or approaching the 500 m EZ during ramp-up, a power down (or shut down if appropriate) would be implemented as though the full array were operational. Criteria for clearing the EZ would be as described above.

Thirty minutes of pre-clearance observation are required prior to ramp-up for any power down or shutdown of longer than 30 minutes (*i.e.,* if the array were shut down during transit from one line to another). This 30 minute pre-clearance period may occur during any vessel activity (*i.e.,* transit). If a marine mammal is observed within or approaching the 500 m EZ during this pre-clearance period, ramp-up will not be initiated until all marine mammals have cleared the EZ. Criteria for clearing the EZ will be as described above.

Ramp-up will be planned to occur during periods of good visibility when possible. However, ramp-up will be allowed at night and during poor visibility if the 500 m EZ and 1,000 m buffer zone have been monitored by visual PSOs for 30 minutes prior to ramp-up and if acoustic monitoring has occurred for 30 minutes prior to ramp-up with no acoustic detections during that period.

The operator will be required to notify a designated PSO of the planned start of ramp-up as agreed-upon with the lead PSO. A designated PSO must be notified again immediately prior to initiating ramp-up procedures and the operator must receive confirmation from the PSO to proceed. The operator must provide information to PSOs documenting that appropriate procedures were followed. Following deactivation of the array for reasons other than mitigation, the operator will be required to communicate the near-term operational plan to the lead PSO with justification for any planned nighttime ramp-up.

Based on our evaluation of the applicant's proposed measures, NMFS has determined that the mitigation measures provide the means effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an IHA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth, requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.,* presence, abundance, distribution, density).
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) Action or environment (*e.g.,* source characterization, propagation, ambient noise); (2) affected species (*e.g.,* life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.,* age, calving or feeding areas).
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors.
- How anticipated responses to stressors impact either: (1) Long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks.
- Effects on marine mammal habitat (*e.g.,* marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat).
- Mitigation and monitoring effectiveness.

UH submitted a marine mammal monitoring and reporting plan in section XIII of their IHA application. Monitoring that is designed specifically to facilitate mitigation measures, such as monitoring of the EZ to inform potential power downs or shutdowns of the airgun array, are described above and are not repeated here.

UH's monitoring and reporting plan includes the following measures:

Vessel-Based Visual Monitoring

As described above, PSO observations will take place during daytime airgun operations and nighttime start ups (if applicable) of the airguns. During seismic operations, at least four visual PSOs would be based aboard the *Kairei.* PSOs will be appointed by JAMSTEC with NMFS approval. During the majority of seismic operations, two PSOs will monitor for marine mammals around the seismic vessel. Use of two simultaneous observers would increase the effectiveness of detecting animals around the source vessel. However, during meal times, only one PSO may be on duty. PSOs will be on duty in shifts of duration no longer than 4 hours. Other crew will also be instructed to assist in detecting marine mammals and in implementing mitigation requirements (if practical). During daytime, PSOs will scan the area around the vessel systematically with reticle binoculars (*e.g.,* 7×50 Fujinon), Big-eye binoculars (25×150), and with the naked eye.

PSOs will record data to estimate the numbers of marine mammals exposed to various received sound levels and to document apparent disturbance reactions or lack thereof. Data will be used to estimate numbers of animals potentially 'taken' by harassment (as defined in the MMPA). They will also provide information needed to order a power down or shutdown of airguns when a marine mammal is within or near the EZ.

When a sighting is made, the following information about the sighting will be recorded:

1. Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from seismic vessel, sighting cue, apparent reaction to the airguns or vessel (*e.g.,* none, avoidance,

approach, paralleling, etc.), and behavioral pace.

2. Time, location, heading, speed, activity of the vessel, sea state, visibility, and sun glare.

All observations and power downs or shutdowns will be recorded in a standardized format. Data will be entered into an electronic database. The accuracy of the data entry will be verified by computerized data validity checks as the data are entered and by subsequent manual checking of the database. These procedures will allow initial summaries of data to be prepared during and shortly after the field program and will facilitate transfer of the data to statistical, graphical, and other programs for further processing and archiving. The time, location, heading, speed, activity of the vessel, sea state, visibility, and sun glare will also be recorded at the start and end of each observation watch, and during a watch whenever there is a change in one or more of the variables.

Results from the vessel-based observations will provide:

1. The basis for real-time mitigation (airgun power down or shut down).

2. Information needed to estimate the number of marine mammals potentially taken by harassment, which must be reported to NMFS.

3. Data on the occurrence, distribution, and activities of marine mammals and turtles in the area where the seismic study is conducted.

4. Information to compare the distance and distribution of marine mammals and turtles relative to the source vessel at times with and without seismic activity.

5. Data on the behavior and movement patterns of marine mammals and turtles seen at times with and without seismic activity.

Vessel-Based Passive Acoustic Monitoring

PAM will take place to complement the visual monitoring program as described above. Please see the Mitigation section above for a description of the PAM system and the acoustic PSO's duties. The acoustic PSO will record data collected via the PAM system, including the following: An acoustic encounter identification number, whether it was linked with a visual sighting, date, time when first and last heard and whenever any additional information was recorded, position and water depth when first detected, bearing if determinable, species or species group (*e.g.,* unidentified dolphin, sperm whale), types and nature of sounds heard (*e.g.,* clicks, continuous, sporadic, whistles, creaks, burst pulses, strength of signal, etc.), and any other notable information. Acoustic detections will also be recorded for further analysis.

Reporting

A report will be submitted to NMFS within 90 days after the end of the cruise. The report will describe the operations that were conducted and sightings of marine mammals near the operations. The report will provide full documentation of methods, results, and interpretation pertaining to all monitoring. The 90-day report will summarize the dates and locations of seismic operations, and all marine mammal sightings (dates, times, locations, activities, associated seismic survey activities). The report will also include estimates of the number and nature of exposures that occurred above the harassment threshold based on PSO observations.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.,* intensity, duration), the context of any responses (*e.g.,* critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.,* as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, our analysis applies to all the species listed in Table 1, given that NMFS expects the anticipated effects of the planned seismic survey to be similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, NMFS has identified species-specific factors to inform the analysis.

NMFS does not anticipate that serious injury or mortality would occur as a result of UH's survey, even in the absence of mitigation. Thus the authorization does not authorize any mortality. Non-auditory physical effects, stranding, and vessel strike are not expected to occur.

We authorize a limited number of instances of Level A harassment of three marine mammal species (Table 7). However, we believe that any PTS incurred in marine mammals as a result of the activity would be in the form of only a small degree of PTS and not total deafness that would not be likely to affect the fitness of any individuals, because of the constant movement of both the *Kairei* and of the marine mammals in the project area, as well as the fact that the vessel is not expected to remain in any one area in which individual marine mammals would be expected to concentrate for an extended period of time (*i.e.,* since the duration of exposure to loud sounds will be relatively short). Also, as described above, we expect that marine mammals would be likely to move away from a sound source that represents an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice of the *Kairei's* approach due to the vessel's relatively low speed when conducting the survey. We expect that the majority of takes would be in the form of short-term Level B behavioral harassment in the form of temporary avoidance of the area or decreased foraging (if such activity were occurring), reactions that are considered to be of low severity and with no lasting biological consequences (*e.g.,* Southall *et al.,* 2007).

Potential impacts to marine mammal habitat were discussed in the **Federal Register** noticed for the proposed IHA (82 FR 34352; July 24, 2017) (see *Potential Effects of the Specified Activity on Marine Mammals and their Habitat*). Marine mammal habitat may be impacted by elevated sound levels, but these impacts would be temporary. Feeding behavior is not likely to be significantly impacted, as marine mammals appear to be less likely to exhibit behavioral reactions or

avoidance responses while engaged in feeding activities (Richardson *et al.,* 1995). Prey species are mobile and are broadly distributed throughout the project area; therefore, marine mammals that may be temporarily displaced during survey activities are expected to be able to resume foraging once they have moved away from areas with disturbing levels of underwater noise. Because of the temporary nature of the disturbance, the availability of similar habitat and resources in the surrounding area, and the lack of important or unique marine mammal habitat, the impacts to marine mammals and the food sources that they utilize are not expected to cause significant or long-term consequences for individual marine mammals or their populations. In addition, there are no mating or calving areas known to be biologically important to marine mammals within the project area.

The activity is expected to impact a very small percentage of all marine mammal stocks that would be affected by UH's survey (less than two percent for all marine mammal stocks). Additionally, the acoustic ''footprint'' of the survey would be very small relative to the ranges of all marine mammals that would potentially be affected. Sound levels would increase in the marine environment in a relatively small area surrounding the vessel compared to the range of the marine mammals within the survey area. The seismic array would be active 24 hours per day throughout the duration of the survey. However, the very brief overall duration of the survey (5.5 days) would further limit potential impacts that may occur as a result of the activity.

The mitigation measures are expected to reduce the number and/or severity of takes by allowing for detection of marine mammals in the vicinity of the vessel by visual and acoustic observers, and by minimizing the severity of any potential exposures via power downs and/or shutdowns of the airgun array. Based on previous monitoring reports for substantially similar activities that have been previously authorized by NMFS, we expect that the mitigation will be effective in preventing at least some extent of potential PTS in marine mammals that may otherwise occur in the absence of mitigation.

Of the marine mammal species under our jurisdiction that are likely to occur in the project area, the following species are listed as endangered under the ESA: blue, fin, sei, and sperm whales. There are currently insufficient data to determine population trends for blue, fin, sei, and sperm whales (Carretta *et al.,* 2016); however, we are authorizing very small numbers of takes for these species (Table 7), relative to their population sizes, therefore we do not expect population-level impacts to any of these species. The other marine mammal species that may be taken by harassment during UH's seismic survey are not listed as threatened or endangered under the ESA. There is no designated critical habitat for any ESA-listed marine mammals within the project area; and of the non-listed marine mammals for which we propose to authorize take, none are considered ''depleted'' or ''strategic'' by NMFS under the MMPA.

NMFS concludes that exposures to marine mammal species and stocks due to UH's seismic survey would result in only short-term (temporary and short in duration) effects to individuals exposed. Animals may temporarily avoid the immediate area, but are not expected to permanently abandon the area. Major shifts in habitat use, distribution, or foraging success are not expected. NMFS does not anticipate the take estimates to impact annual rates of recruitment or survival.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from this activity are not expected to adversely affect the marine mammal species or stocks through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized;
- The anticipated impacts of the activity on marine mammals would primarily be temporary behavioral changes due to avoidance of the area around the survey vessel. The relatively short duration of the survey (5.5 days) would further limit the potential impacts of any temporary behavioral changes that would occur;
- PTS is only anticipated to occur for one species and the number of instances of PTS that may occur are expected to be very small in number (Table 7). Instances of PTS that are incurred in marine mammals would be of a low level, due to constant movement of the vessel and of the marine mammals in the area, and the nature of the survey design (not concentrated in areas of high marine mammal concentration);
- The availability of alternate areas of similar habitat value for marine mammals to temporarily vacate the survey area during the survey to avoid exposure to sounds from the activity;
- The project area does not contain areas of significance for mating or calving;
- The potential adverse effects on fish or invertebrate species that serve as prey species for marine mammals from the survey would be temporary and spatially limited;
- The mitigation measures, including visual and acoustic monitoring, power-downs, and shutdowns, are expected to minimize potential impacts to marine mammals.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the total marine mammal take from the planned activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under Section 101(a)(5)(D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers; so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities. Table 7 provides numbers of take by Level A harassment and Level B harassment authorized. These are the numbers we use for purposes of the small numbers analysis.

The numbers of marine mammals that we authorize to be taken, for all species and stocks, would be considered small relative to the relevant stocks or populations (approximately 13 percent for rough-toothed dolphin, and less than 8 percent for all other species and stocks). For the blue whale, killer whale, humpback whale, minke whale and spinner dolphin we propose to authorize take resulting from a single exposure of one group of each species or stock, as appropriate (using best available information on mean group size for these species or stocks). We believe that a single incident of take of one group of any of these species represents take of small numbers for that species

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be

taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally, in this case with the ESA Interagency Cooperation Division, whenever we propose to authorize take for endangered or threatened species.

We (the NMFS OPR Permits and Conservation Division) are authorizing the incidental take of four species of marine mammals which are listed under the ESA: The sei, fin, blue and sperm whale. Under Section 7 of the ESA, we initiated consultation with the NMFS OPR Interagency Cooperation Division for the issuance of this IHA. In September, 2017, the NMFS OPR Interagency Cooperation Division issued a Biological Opinion with an incidental take statement, which concluded that the issuance of the IHA was not likely to jeopardize the continued existence of sei, fin, blue and sperm whales. The Biological Opinion also concluded that the issuance of the IHA would not destroy or adversely modify designated critical habitat for these species.

Authorization

NMFS has issued an IHA to the University of Hawaii for the potential harassment of small numbers of 24 marine mammal species incidental to a marine geophysical survey in the central Pacific Ocean, provided the previously mentioned mitigation, monitoring and reporting requirements are incorporated.

Dated: September 19, 2017.

Donna S. Wieting,

Director, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2017–20362 Filed 9–22–17; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Proposed Information Collection; Comment Request; Alaska Pacific Halibut Fisheries: Charter Permits

AGENCY: National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice.

SUMMARY: The Department of Commerce, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995.

DATES: Written comments must be submitted on or before November 24, 2017.

ADDRESSES: Direct all written comments to Jennifer Jessup, Departmental Paperwork Clearance Officer, Department of Commerce, Room 6616, 14th and Constitution Avenue NW., Washington, DC 20230 (or via the Internet at *pracomments@doc.gov*).

An electronic copy of the most recent supporting statement for this information collection is available from *http://www.cio.noaa.gov/itmanagement/pdfs/0592ext14.pdf.*

FOR FURTHER INFORMATION CONTACT: Requests for additional information or copies of the information collection instrument and instructions should be directed to Kurt Iverson (907) 586–7228 or *kurt.iverson@noaa.gov.*

SUPPLEMENTARY INFORMATION:

I. Abstract

This request is for an extension of a currently approved information collection.

The Alaska Pacific Halibut Charter Program established Federal Charter Halibut Permits (CHPs) for operators in the charter halibut fishery in IPHC regulatory Areas 2C (Southeast Alaska) and 3A (Central Gulf of Alaska). Since February 1, 2011, all vessel operators in Areas 2C and 3A with charter anglers onboard catching and retaining Pacific halibut must have a valid CHP onboard during every charter vessel fishing trip. CHPs must be endorsed with the appropriate regulatory area and number of anglers.

The National Marine Fisheries Service (NMFS) implemented this program based on recommendations by the North Pacific Fishery Management Council to meet allocation objectives in the charter halibut fishery. This program provides stability in the fishery by limiting the number of charter vessels that may participate in Areas 2C and 3A and decreasing the overall number of available CHPs over time. The program goals are to increase the value of the resource, limit boats to qualified active participants in the guided sport halibut sector, and enhance economic stability in rural coastal communities.

II. Method of Collection

Methods of submittal include mail and facsimile transmission of paper forms. Fillable pdfs are available on the NMFS Alaska Region Web page and may be downloaded, completed, and printed out prior to submission.

III. Data

OMB Control Number: 0648–0592.

Form Number: None.

Type of Review: Regular submission (extension of a currently approved collection).

Affected Public: Business or other for-profit organizations.

Estimated Number of Respondents: 68.

Estimated Time per Response: 2 hours for Application for Transfer of Charter Halibut Permit; 0.5 hours for Application for Military Charter Permit; 2 hours for Application for Transfer between IFQ and Guided Angler Fish (GAF); and 4 hours for Appeals if an Application for Transfer between IFQ and GAF is denied by NMFS.

Estimated Total Annual Burden Hours and Equivalent Labor Costs to the Public: 98 hours and $3,626 per year ($37 per hour for preparing and submitting applications and $125/hr for preparing an appeal).

Estimated Total Annual Cost to Public: $196 in recordkeeping/reporting costs for photocopying, obtaining a notarized signature, faxing, or mailing applications.

IV. Request for Comments

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden (including hours and cost) of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology.