



This document is scheduled to be published in the Federal Register on 10/03/2016 and available online at <https://federalregister.gov/d/2016-23725>, and on [FDsys.gov](http://FDsys.gov)

**BILLING CODE: 3510-22-P**

**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**RIN 0648-XE675**

**Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the U.S. Air Force 86 Fighter Weapons Squadron Conducting Long Range Strike Weapon Systems Evaluation Program at the Pacific Missile Range Facility at Kauai, Hawaii**

**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), notification is hereby given that we have issued an incidental harassment authorization (IHA) to the U.S. Air Force 86 Fighter Weapons Squadron (86 FWS) to incidentally harass marine mammals during Long Range Strike Weapons System Evaluation Program (LRS WSEP) activities in the Barking Sands Underwater Range Extension (BSURE) area of the Pacific Missile Range Facility (PMRF) at Kauai, Hawaii.

**DATES:** This authorization is effective from October 1, 2016, through November 30, 2016.

**FOR FURTHER INFORMATION CONTACT:** Laura McCue, Office of Protected Resources, NMFS, (301) 427-8401.

**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 to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals of a species or population stock, 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 for marine mammals 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 taking 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 NDAA of 2004 (Public Law 108–136) removed the “small numbers” and “specified geographical region” limitations indicated earlier and amended the definition of harassment as it applies to a “military readiness activity” to read as follows (Section 3(18)(B) of the MMPA): (i) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild (Level A Harassment); or (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the

wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered (Level B Harassment).

### **Summary of Request**

On May 12, 2016, NMFS received an application from 86 FWS for the taking of marine mammals, by harassment, incidental to the LRS WSEP within the PMRF in Kauai, Hawaii from September 1, 2016 through August 31, 2017. 86 FWS submitted a revised version of the renewal request on June 9, 2016 and June 20, 2016, which we considered adequate and complete. After completion of the application, the planned LRS WSEP training activities were pushed back to October 2016.

86 FWS proposes actions that include LRS WSEP test missions of the Joint Air-To-Surface Stand-off Missile (JASSM) and the Small Diameter Bomb-I/II (SDB-I/II) including detonations at the water surface. These activities qualify as military readiness activities under the MMPA.

The following aspects of the planned LRS WSEP training activities have the potential to take marine mammals: munition strikes and detonation effects (overpressure and acoustic components). Take, by Level B harassment of individuals of dwarf sperm whale, pygmy sperm whale, Fraser's dolphin, and minke whale could potentially result from the specified activity. Additionally, 86 FWS has requested authorization for Level A Harassment of one individual dwarf sperm whale. 86 FWS's LRS WSEP training activities may potentially impact marine mammals at or near the water surface. In the absence of mitigation, marine mammals could potentially be injured or killed by exploding and non-exploding projectiles, falling debris, or ingestion of military expended

materials. However, based on analyses provided in 86 FWS's 2016 application, 2016 Environmental Assessment (EA), and for reasons discussed later in this document, we do not anticipate that 86 FWS's LRS WSEP activities would result in any serious injury or mortality to marine mammals.

## **Description of the Specified Activity**

### *Overview*

86 FWS plans to conduct an air-to-surface mission in the BSURE area of the PMRF. The LRS WSEP test objective is to conduct operational evaluations of long range strike weapons and other munitions as part of LRS WSEP operations to properly train units to execute requirements within Designed Operational Capability Statements, which describe units' real-world operational expectations in a time of war. Due to threats to national security, increased missions involving air-to-surface activities have been directed by the Department of Defense (DoD). Accordingly, the U.S. Air Force needs to conduct operational evaluations of all phases of long range strike weapons within the U.S. Navy's Hawaii Range Complex (HRC). The actions will fulfill the Air Force's requirement to evaluate full-scale maneuvers for such weapons, including scoring capabilities under operationally realistic scenarios. LRS WSEP objectives are to evaluate air-to-surface and maritime weapon employment data, evaluate tactics, techniques, and procedures in an operationally realistic environment, and to determine the impact of tactics, techniques, and procedures on combat Air Force training. The munitions associated with the planned activities are not part of a typical unit's training allocations, and prior to attending a WSEP evaluation, most pilots and weapon systems officers have only dropped weapons in simulators or used the aircraft's simulation mode. Without WSEP operations, pilots

would be using these weapons for the first time in combat. On average, half of the participants in each unit drop an actual weapon for the first time during a WSEP evaluation. Consequently, WSEP is a military readiness activity and is the last opportunity for squadrons to receive operational training and evaluations before they deploy.

#### *Dates and Duration*

86 FWS plans to schedule the LRS WSEP training missions over one day in October 2016. The planned missions would occur on a weekday during daytime hours only, with all missions occurring in one day. This IHA is valid from October 1, 2016 through November 30, 2016.

#### *Specified Geographic Region*

The specific planned impact area is approximately 44 nautical miles (nm) (81 kilometers (km)) offshore of Kauai, Hawaii, in a water depth of about 15,240 feet (ft) (4,645 meters (m)) (see Figure 2-2 of 86 FWS's application). All activities will take place within the PMRF, which is located in Hawaii off the western shores of the island of Kauai and includes broad ocean areas to the north, south, and west (see Figure 2-1 of 86 FWS's application). Within the PMRF, activities would occur in the BSURE area, which lies in Warning Area 188 (W-188).

NMFS provided detailed descriptions of the activity area in a previous notice for the proposed authorization (81 FR 44277) (July 7, 2016). The information has not changed between the notice of proposed authorization and this final notice announcing the issuance of the authorization.

#### *Detailed Description of Activities*

The LRS WSEP training missions, classified as military readiness activities, refer to the deployment of live (containing explosive charges) missiles from aircraft toward the water surface. The actions include air-to-surface test missions of the JASSM and the SDB-I/II including detonations at the water surface.

Aircraft used for munition releases would include bombers and fighter aircraft. Additional airborne assets, such as the P-3 Orion or the P-8 Poseidon, would be used to relay telemetry (TM) and flight termination system (FTS) streams between the weapon and ground stations. Other support aircraft would be associated with range clearance activities before and during the mission and with air-to-air refueling operations. All weapon delivery aircraft would originate from an out base and fly into military-controlled airspace prior to employment. Due to long transit times between the out base and mission location, air-to-air refueling may be conducted in either W-188 or W-189. Bombers, such as the B-1, would deliver the weapons, conduct air-to-air refueling, and return to their originating base as part of one sortie. However, when fighter aircraft are used, the distance and corresponding transit time to the various potential originating bases would make return flights after each mission day impractical. In these cases, the aircraft would temporarily (less than one week) park overnight at Hickam Air Force Base (HAFB) and would return to their home base at the conclusion of each mission set. The LRS WSEP missions scheduled for 2016 are planned to occur in one day. Approximately 10 Air Force personnel would be on temporary duty to support the mission.

Aircraft flight maneuver operations and weapon release would be conducted in W-188A boundaries of PMRF. Chase aircraft may be used to evaluate weapon release and to track weapons. Flight operations and weapons delivery would be in accordance

with published Air Force directives and weapon operational release parameters, as well as all applicable Navy safety regulations and criteria established specifically for PMRF. Aircraft supporting LSR WSEP missions would primarily operate at high altitudes—only flying below 3,000 feet (914.1 m) for a limited time as needed for escorting non-military vessels outside the hazard area or for monitoring the area for protected marine species (*e.g.*, marine mammals, sea turtles). Protected marine species aerial surveys would be temporary and would focus on an area surrounding the weapon impact point on the water. Post-mission surveys would focus on the area down current of the weapon impact location. Range clearance procedures for each mission would cover a much larger area for human safety. Weapon release parameters would be conducted as approved by PMRF Range Safety. Daily mission briefs would specify planned release conditions for each mission. Aircraft and weapons would be tracked for time, space, and position information. The 86 FWS test director would coordinate with the PMRF Range Safety Officer, Operations Conductor, Range Facility Control Officer, and other applicable mission control personnel for aircraft control, range clearance, and mission safety.

NMFS provided detailed descriptions of the components of the planned mission activities in a previous notice for the proposed authorization (81 FR 44277) (July 7, 2016). The information has not changed between the notice of proposed authorization and this final notice announcing the issuance of the authorization.

Initial phases of the LRS WSEP operational evaluations are planned for October 2016 and would consist of releasing only one live JASSM/JASSM-ER and up to eight SDB-Is in military controlled airspace (Table 1).

Table 1. Summary of Proposed Testing at PMRF in 2016.

Munition	Fusing Option	Net Explosive	Detonation	Annual Total
----------	---------------	---------------	------------	--------------

		Weight (lb)	Scenario	Number of Munitions
JASSM/JASSM-ER	Live/Instantaneous	300	Surface	1
SDB-I	Live/Instantaneous	37	Surface	8

ER = Extended Range; JASSM = Joint Air-to-Surface Stand-off Missile; lb = pounds; SDB = Small Diameter Bomb

A typical mission day would consist of pre-mission checks, safety review, crew briefings, weather checks, clearing airspace, range clearance, mitigations/monitoring efforts, and other military protocols prior to launch of weapons. Potential delays could be the result of multiple factors including, but not limited to; adverse weather conditions leading to unsafe take-off, landing, and aircraft operations, inability to clear the range of non-mission vessels or aircraft, mechanical issues with mission aircraft or munitions, or presence of protected species in the impact area. If the mission is cancelled due to any of these, one back-up day has also been scheduled as a contingency. These standard operating procedures are usually done in the morning, and live range time may begin in late morning once all checks are complete and approval is granted from range control. The range would be closed to the public for a maximum of four hours per mission day.

### **Comments and Responses**

A notice of NMFS' proposal to issue an Authorization to 86 FWS published in the **Federal Register** on July 7, 2016 (81 FR 44277). During the 30-day public comment period, NMFS received comments from the Marine Mammal Commission (Commission) and one relevant comment from a private citizen. Following is the comment from the Commission and NMFS' response and the comment received from a private citizen and NMFS' response.

*Comment 1:* The Commission recommends that NMFS and the Air Force assess practicable ways to supplement the Air Force's mitigation and monitoring measures with



PAM (passive acoustic monitoring), including obtaining access to the Navy's hydrophone array data at PMRF.

*Response:* NMFS agrees that the use of PAM would be beneficial for monitoring and mitigation for mission activities. For this one-day mission, NMFS considered the use of PAM for mitigation and monitoring but, due to timing and logistical constraints, the use of PAM will not be required. For any future actions by the applicant in this area, the use of PAM for mitigation or monitoring purposes will be considered.

*Comment 2:* One private citizen requested notice of this military training exercise to be posted in the Kauai newspaper to help generate adequate public awareness and facilitate a healthy amount of discussion on this IHA prior to commencing activities.

*Response:* NMFS made the information available to the public during our 30-day public comment period by publishing the proposed IHA in the **Federal Register** on July 7, 2016 (81 FR 44277) and by posting all of the documents to our website. In addition, the USAF posted their draft EA in *The Garden Island* and *Honolulu Star Advertiser* newspapers, as well as other places, describing the action and the potential impacts of the action on the environment. A 30-day public comment period was available for public input.

### **Description of Marine Mammals in the Area of the Specified Activity**

There are 25 marine mammal species with potential or confirmed occurrence in the activity area; however, not all of these species occur in this region during the project timeframe. Table 2 lists and summarizes key information regarding stock status and abundance of these species. Please see NMFS' 2015 Stock Assessment Reports (SAR), available at [www.nmfs.noaa.gov/pr/sars](http://www.nmfs.noaa.gov/pr/sars) for more detailed accounts of these stocks' status and abundance.

Table 2. Marine Mammals that could occur in the BSURE Area.

Species	Stock	ESA/MMPA Status; Strategic (Y/N) <sup>1</sup>	Stock abundance (CV, Nmin, most recent abundance survey) <sup>2</sup>	PBR <sup>3</sup>	Occurrence in BSURE Area
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)					
Family: Balaenopteridae					
Humpback whale ( <i>Megaptera novaeangliae</i> ) <sup>4</sup>	Central North Pacific	E/D; Y	10,103 (0.300; 7,890; 2006)	83	Seasonal; throughout known breeding grounds during winter and spring (most common November through April)
Blue Whale ( <i>Balaenoptera musculus</i> )	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 ( <i>Balaenoptera physalus</i> )	Hawaii	E/D; Y	58 (1.12; 27; 2010)	0.1	Seasonal, mainly fall and winter; considered rare
Sei whale ( <i>Balaenoptera borealis</i> )	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 ( <i>Balaenoptera brydei/edeni</i> )	Hawaii	-; N	798 (0.28; 633; 2010)	6.3	Uncommon; distributed throughout the Hawaiian EEZ
Minke whale ( <i>Balaenoptera acutorostrata</i> )	Hawaii	-; N	n/a (n/a; n/a; 2010)	Undet.	Regular but seasonal (October-April)
Order Cetartiodactyla – Cetacea – Superfamily Odontoceti (toothed whales, dolphins, and porpoises)					
Family: Physeteridae					
Sperm whale ( <i>Physeter macrocephalus</i> )	Hawaii	E/D; Y	3,354 (0.34; 2,539; 2010)	10.2	Widely distributed year round; more likely in waters > 1,000 m depth, most often > 2,000 m
Order Cetartiodactyla – Cetacea – Superfamily Odontoceti (toothed whales, dolphins, and porpoises)					
Family: Kogiidae					
Pygmy sperm whale ( <i>Kogia breviceps</i> )	Hawaii	-; N	n/a (n/a; n/a; 2010)	Undet.	Widely distributed year round; more likely in waters > 1,000 m depth
Dwarf sperm whale ( <i>Kogia sima</i> )	Hawaii	-; N	n/a (n/a; n/a; 2010)	Undet.	Widely distributed year round; more likely in waters > 500 m depth
Order Cetartiodactyla – Cetacea – Superfamily Odontoceti (toothed whales, dolphins, and porpoises)					
Family delphinidae					

Killer whale ( <i>Orcinus orca</i> )	Hawaii	-; N	101 (1.00; 50; 2010)	1	Uncommon; infrequent sightings
False killer whale ( <i>Pseudorca crassidens</i> )	Hawaii Pelagic	-; N	1,540 (0.66; 928; 2010)	9.3	Regular
	NWHI Stock	-; N	617 (1.11; 290; 2010)	2.3	Regular
Pygmy killer whale ( <i>Feresa attenuata</i> )	Hawaii	-; N	3,433 (0.52; 2,274; 2010)	23	Year-round resident
Short-finned pilot whale ( <i>Globicephala macrorhynchus</i> )	Hawaii	-; N	12,422 (0.43; 8,872; 2010)	70	Commonly observed around Main Hawaiian Islands and Northwestern Hawaiian Islands
Melon headed whale ( <i>Peponocephala electra</i> )	Hawaii Islands stock	-; N	5,794 (0.20; 4,904; 2010)	4	Regular
Bottlenose dolphin ( <i>Tursiops truncatus</i> )	Hawaii pelagic	-; N	5,950 (0.59; 3,755; 2010)	38	Common in deep offshore waters
Pantropical spotted dolphin ( <i>Stenella attenuata</i> )	Hawaii pelagic	-; N	15,917 (0.40; 11,508; 2010)	115	Common; primary occurrence between 100 and 4,000 m depth
Striped dolphin ( <i>Stenella coeruleoala</i> )	Hawaii	-; N	20,650 (0.36; 15,391; 2010)	154	Occurs regularly year round but infrequent sighting during survey
Spinner dolphin ( <i>Stenella longirostris</i> )	Hawaii pelagic	-; N	n/a (n/a; n/a; 2010)	Undet.	Common year- round in offshore waters
Rough-toothed dolphins ( <i>Steno bredanensis</i> )	Hawaii stock	-; N	6,288 (0.39; 4,581; 2010)	46	Common throughout the Main Hawaiian Islands and Hawaiian Islands EEZ
Fraser's dolphin ( <i>Lagenodelphis hosei</i> )	Hawaii	-; N	16,992 (0.66; 10,241; 2010)	102	Tropical species only recently documented within Hawaiian Islands EEZ (2002 survey)
Risso's dolphin ( <i>Grampus griseus</i> )	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 ( <i>Ziphius cavirostris</i> )	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 ( <i>Mesoplodon densirostris</i> )	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 ( <i>Indopacetus pacificus</i> )	Hawaii	-; N	4,571 (0.65; 2,773; 2010)	28	Considered rare; however, multiple sightings during 2010 survey
Order – Carnivora — Superfamily Pinnipedia (seals, sea lions)					
Family: Phocidae					
Hawaiian monk seal ( <i>Neomonachus schauinslandi</i> )	Hawaii	E/D; Y	1,112 (n/a; 1,088; 2013)	Undet.	Predominantly occur at Northwestern Hawaiian Islands; approximately 138 individuals in Main Hawaiian Islands

<sup>1</sup>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.

<sup>2</sup>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. All values presented here are from the 2015 Pacific SARs, except humpback whales- see comment 4.

<sup>3</sup>Potential biological removal, 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).

<sup>4</sup>Values for humpback whales are from the 2015 Alaska SAR.

Of these 25 species, five are listed as endangered under the ESA and as depleted throughout its range under the MMPA. These are: blue whale, fin whale, sei whale, sperm whale, and the Hawaiian monk seal. Humpback whales were listed as endangered under the ESA in 1973. NMFS evaluated the status of this population, and on September 8, 2016, NMFS divided the globally listed humpback whale into 14 distinct population segment (DPS), removed the current species-level listing, and in its place listed four DPSs as endangered and one DPS as threatened (81 FR 62259). The remaining nine DPSs were not listed because it was determined that they are not threatened or endangered under the ESA. The Hawaiian DPS of humpback whales, which would be present in the action area, were not listed under the ESA in NMFS final rule.

Of the 25 species that may occur in Hawaiian waters, only certain stocks occur in the impact area, while others are island-associated or do not occur at the depths of the impact area (*e.g.* false killer whale insular stock, island-associated stocks of bottlenose, spinner, and spotted dolphins). Only five species are considered likely to be in the impact area during the one day of project activities. This number has increased from the proposed IHA based on changes to the project dates. Dates have moved back to October (from September), and the use of fall densities are now used. The species now modeled to have take exposures include dwarf sperm whale, pygmy sperm whale, Fraser's dolphin, minke whale, and humpback whale. Other species are seasonal and only occur in these waters later in the winter (blue whale, fin whale, sei whale, killer whale); some are rare in the area or unlikely to be impacted due to small density estimates (Longman's beaked whale, Bryde's whale, false killer whale, pygmy killer whale, short-finned pilot whale, melon-headed whale, bottlenose dolphin, pantropical spotted dolphin, striped dolphin, spinner dolphin, rough-toothed dolphin, Risso's dolphin, Cuvier's beaked whale, Blainville's beaked whale, and Hawaiian monk seal). Because these 19 species are unlikely to occur within the BSURE area based on modeling predictions, 86 FWS has not requested, and NMFS will not issue take authorizations for them. Thus, NMFS does not consider these species further in this notice.

We have reviewed 86 FWS'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 Sections Three and Four of 86 FWS's application rather than reprinting the information here. Please also refer to NMFS' website ([www.nmfs.noaa.gov/pr/species/mammals](http://www.nmfs.noaa.gov/pr/species/mammals)) for generalized species

accounts. We provided additional information for two of the marine mammals (dwarf and pygmy sperm whales) with potential for occurrence in the area of the specified activity in our **Federal Register** notice of proposed authorization (81 FR 44277) (July 7, 2016). Since that publication, the dates for the LRS WSEP activities changed to later in the year; therefore, different densities were used to calculate take. Because of this, two additional species were included in take exposures. Species descriptions for these three species are provided below.

*Fraser's dolphin*

Fraser's dolphin are distributed worldwide in tropical waters (Caretta *et al.*, 2011). Very little is known about this species, which was first documented within Hawaiian waters in 2002. There is a single stock in Hawaii with a current population estimate of 16,992 animals and PBR at 102 animals (Caretta *et al.*, 2016). Current population trends are not available for this species. This species is not listed under the Endangered Species Act (ESA), and is not considered strategic or designated as depleted under the Marine Mammal Protection Act (MMPA) (Caretta *et al.*, 2016). The biggest threat to the species is fishery-related injuries (Caretta *et al.*, 2011).

*Minke whale*

Minke whales are found worldwide in deep waters. There are three stocks in the Pacific: the Hawaiian stock, the California/Oregon/Washington stock, and the Alaskan stock. Only the Hawaiian stock is affected by the project activities. Minke whales occur seasonally in Hawaiian waters (October- April). Current abundance estimates, PBR, and population trends for this stock are unknown. This stock is not listed under the ESA, nor are they considered strategic, or designated as depleted under the MMPA.

One of the suggested habitat concerns for this stock is the increasing levels of anthropogenic noise in the world's oceans (Caretta *et al.*, 2014).

### *Humpback whale*

Humpback whales are found worldwide in all ocean basins. In winter, most humpback whales occur in the subtropical and tropical waters of the Northern and Southern Hemispheres. These wintering grounds are used for mating, giving birth, and nursing new calves. Humpback whales migrate nearly 3,000 mi (4,830 km) from their summer foraging grounds to these wintering grounds in Hawaii away. The average date of the first sighting of humpback whales in Hawaii is approximately the first week in October, with whales seen earlier and earlier in the past five years (E. Lyman, personal communication, August 2016).

Humpback whales were listed as endangered under the Endangered Species Conservation Act (ESCA) in June 1970. In 1973, the ESA replaced the ESCA, and continued to list humpbacks as endangered. Because the recent rule by NMFS did not consider the Hawaii DPS of humpbacks to be threatened or endangered under the ESA, this DPS is not listed under the ESA. The current abundance estimate for this DPS is 11,398 individuals and its population trend estimate is 5.5 – 6 percent (81 FR 62259).

### **Potential Effects of the Specified Activity on Marine Mammals and Their Habitat**

This section of the notice of the proposed Authorization (81 FR 44277) (July 7, 2016) included a summary and discussion of the ways that components (*e.g.*, munition strikes and detonation effects) of the specified activity, including mitigation, may impact marine mammals and their habitat. The *Estimated Take by Incidental Harassment* section later in this document will include a quantitative analysis of the number of individuals

that we expect 86 FWS to take during this activity. The *Negligible Impact Analysis* section will include the analysis of how this specific activity would impact marine mammals, and will consider the content of this section, the *Estimated Take by Incidental Harassment* section and the *Mitigation* section to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and from that on the affected marine mammal populations or stocks.

In summary, the LRS WSEP training exercises proposed for taking of marine mammals under an Authorization have the potential to take marine mammals by exposing them to overpressure and acoustic components generated by live ordnance detonation at or near the surface of the water. Exposure to energy or pressure resulting from these detonations could result in Level A harassment (physical injury and permanent threshold shift, or PTS) and Level B harassment (temporary threshold shift, or TTS and behavioral disturbances). Based on modeled predictions, LRS WSEP activities are not expected to result in serious injury or mortality.

NMFS provided detailed information on these potential effects in the notice of the proposed Authorization (81 FR 44277) (July 7, 2016). The information presented in that notice has not changed.

#### *Anticipated Effects on Habitat*

Detonations of live ordnance would result in temporary changes to the water environment. An explosion on the surface of the water from these weapons could send a shock wave and blast noise through the water, release gaseous by-products, create an oscillating bubble, and cause a plume of water to shoot up from the water surface. However, these effects would be temporary and not expected to last more than a few



seconds. Similarly, 86 FWS does not expect any long-term impacts with regard to hazardous constituents to occur. 86 FWS considered the introduction of fuel, debris, ordnance, and chemical materials into the water column within its EA and determined the potential effects of each to be insignificant. NMFS provided a summary of the analyses in the notice for the proposed Authorization (81 FR 44277) (July 7, 2016). The information presented in that notice has not changed.

### **Mitigation**

In order to issue an incidental take authorization 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 adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and the availability of such species or stock for taking for certain subsistence uses (where relevant).

The NDAA of 2004 amended the MMPA as it relates to military-readiness activities and the incidental take authorization process such that “least practicable adverse impact” shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

NMFS and 86 FWS have worked to identify potential practicable and effective mitigation measures, which include a careful balancing of the likely benefit of any particular measure to the marine mammals with the likely effect of that measure on personnel safety, practicality of implementation, and impact on the “military-readiness activity.” We refer the reader to Section 11 of 86 FWS’s application for more detailed information on the planned mitigation measures which are also described below.

*Visual Aerial Surveys:* For the LRS WSEP activities, mitigation procedures consist of visual aerial surveys of the impact area for the presence of protected marine species (including marine mammals). During aerial observation, Navy test range personnel may survey the area from an S-61N helicopter or C-62 aircraft that is based at the PMRF land facility (typically when missions are located relatively close to shore). Alternatively, when missions are located farther offshore, surveys may be conducted from mission aircraft (typically jet aircraft such as F-15E, F-16, or F-22) or a U.S. Coast Guard C-130 aircraft.

Protected species surveys will begin within one hour of weapon release and as close to the impact time as feasible, given human safety requirements. Survey personnel must depart the human hazard zone before weapon release, in accordance with Navy safety standards. Personnel conduct aerial surveys within an area defined by an approximately 2-nm (3,704 m) radius around the impact point, with surveys typically flown in a star pattern. This survey distance is consistent with requirements already in place for similar actions at PMRF. Observers would consist of aircrew operating the C-26, S-61N, and C-130 aircraft from PMRF and the Coast Guard. These aircrew are trained and have had prior experience conducting aerial marine mammal surveys and have provided similar support for other missions at PMRF. Aerial surveys are typically conducted at an altitude of about 200 feet (61 m), but altitude may vary somewhat depending on sea state and atmospheric conditions. The C-26 and other aircraft would generally be operated at a slightly higher altitude than the S-61N helicopter. If adverse weather conditions preclude the ability for aircraft to safely operate, missions would either be delayed until the weather clears or cancelled for the day. For 2016 LRS WSEP

missions, one day has been designated as a weather back-up day. The observers will be provided with the GPS location of the impact area. Once the aircraft reaches the impact area, pre-mission surveys typically last for 30 minutes, depending on the survey pattern. The fixed-wing aircraft are faster than the helicopter; and, therefore, protected species may be more difficult to spot. However, to compensate for the difference in speed, the aircraft may fly the survey pattern multiple times.

If a protected species is observed in the impact area, weapon release would be delayed until one of the following conditions is met: (1) the animal is observed exiting the impact area; (2) the animal is thought to have exited the impact area based on its course and speed; or (3) the impact area has been clear of any additional sightings for a period of 30 minutes. All weapons will be tracked and their water entry points will be documented.

Post-mission surveys would begin immediately after the mission is complete and the Range Safety Officer declares the human safety area is reopened. Approximate transit time from the perimeter of the human safety area to the weapon impact area would depend on the size of the human safety area and vary between aircraft but is expected to be less than 30 minutes. Post-mission surveys would be conducted by the same aircraft and aircrew that conducted the pre-mission surveys and would follow the same patterns as pre-mission surveys but would focus on the area down current of the weapon impact area to determine if protected species were affected by the mission (observation of dead or injured animals). If physical injury or mortality occurs to a protected species due to LRS WSEP missions, NMFS would be notified immediately.

Based on the ranges presented in Table 5 and factoring operational limitations (e.g. fuel constraints) associated with the mission, 86 FWS estimates that during pre-mission surveys, the planned monitoring area would be approximately 2 nm (3,704 m) from the target area radius around the impact point, with surveys typically flown in a star pattern, which is consistent with requirements already in place for similar actions at PMRF and encompasses the entire TTS threshold ranges (sound exposure level, or SEL) for mid-frequency cetaceans, half of the PTS SEL range for high-frequency cetaceans, the entire PTS ranges for low-frequency cetaceans, and half of the TTS range for LF cetaceans. Given operational constraints, surveying these larger areas would not be feasible.

We have carefully evaluated 86 FWS's proposed mitigation measures in the context of ensuring that we prescribe the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and
- The practicability of the measure for applicant implementation.

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed here:

1. Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).

2. A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing takes by behavioral harassment only).

3. A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to stimuli that we expect to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

4. A reduction in the intensity of exposures (either total number or number at biologically important time or location) to training exercises that we expect to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing the severity of harassment takes only).

5. Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

6. For monitoring directly related to mitigation—an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of 86 FWS’s proposed measures, as well as other measures that may be relevant to the specified activity, we have determined that the mitigation measures, including visual aerial surveys and mission delays if protected species are observed in the impact area, provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance (while also considering personnel safety, practicality of implementation, and the impact of effectiveness of the military readiness activity).

### **Monitoring and Reporting**

In order to issue an Authorization for an activity, section 101(a)(5)(D) of the MMPA states that we 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 an authorization must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and our expectations of the level of taking or impacts on populations of marine mammals present in the action area.

86 FWS submitted measures for marine mammal monitoring and reporting in their IHA application. Any monitoring requirement we prescribe should improve our understanding of one or more of the following:

- Occurrence of marine mammal species in action area (*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 responses to acute stressors, or impacts of chronic exposures (behavioral or physiological).
- How anticipated responses to stressors impact either: (1) Long-term fitness and survival of an individual; or (2) Population, species, or stock.
- Effects on marine mammal habitat and resultant impacts to marine mammals.
- Mitigation and monitoring effectiveness.

NMFS will include the following measures in the LRS WSEP Authorization.

They are:

(1) 86 FWS will track the use of the PMRF for mission activities and protected species observations, through the use of mission reporting forms.

(2) 86 FWS will submit a summary report of marine mammal observations and LRS WSEP activities to the NMFS Pacific Islands Regional Office (PIRO) and the Office of Protected Resources 90 days after expiration of the current Authorization. This report must include the following information: (i) Date and time of each LRS WSEP

exercise; (ii) a complete description of the pre-exercise and post-exercise activities related to mitigating and monitoring the effects of LRS WSEP exercises on marine mammal populations; (iii) an accounting of the munitions use; and (iv) results of the LRS WSEP exercise monitoring, including number of marine mammals (by species) that may have been harassed due to presence within the activity zone.

(3) 86 FWS will monitor for marine mammals in the proposed action area. If 86 FWS personnel observe or detect any dead or injured marine mammals prior to testing, or detects any injured or dead marine mammal during live fire exercises, 86 FWS must cease operations and submit a report to NMFS within 24 hours.

(4) 86 FWS must immediately report any unauthorized takes of marine mammals (*i.e.*, serious injury or mortality) to NMFS and to the respective Pacific Islands Region stranding network representative. 86 FWS must cease operations and submit a report to NMFS within 24 hours.

### **Estimated Numbers of Marine Mammals Taken by Harassment**

The NDAA amended the definition of harassment as it applies to a “military readiness activity” to read as follows (Section 3(18)(B) of the MMPA): (i) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild (Level A Harassment); or (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered (Level B Harassment).



NMFS previously described the physiological responses, and behavioral responses that could potentially result from exposure to explosive detonations. In this section, we will relate the potential effects to marine mammals from detonation of explosives to the MMPA regulatory definitions of Level A and Level B harassment. This section will also quantify the effects that might occur from the planned military readiness activities in PMRF BSURE area.

86 FWS thresholds used for onset of temporary threshold shift (TTS; Level B Harassment) and onset of permanent threshold shift (PTS; Level A Harassment) are consistent with the thresholds outlined in the Navy's report titled, "Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis Technical Report," which the Navy coordinated with NMFS. The report is available on the internet at: [http://nwtteis.com/Portals/NWTT/DraftEIS2014/SupportingDocs/NWTT\\_NMSDD\\_Technical\\_Report\\_23\\_January%202014\\_reduced.pdf](http://nwtteis.com/Portals/NWTT/DraftEIS2014/SupportingDocs/NWTT_NMSDD_Technical_Report_23_January%202014_reduced.pdf)

In August 2016, NMFS released its Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing, which established new thresholds for predicting auditory injury, which equates to Level A harassment under the MMPA. In the August 4, 2016, Federal Register Notice announcing the Guidance (81 FR 51694), NMFS explained the approach it would take during a transition period, wherein we balance the need to consider this new best available science with the fact that some applicants have already committed time and resources to the development of acoustic analyses based on our previous thresholds and have constraints that preclude the recalculation of take estimates, as well consideration of where the agency is in the decision-making pipeline. In that Notice, we included a non-exhaustive list of factors that

would inform the most appropriate approach for considering the new guidance, including: how far in the MMPA process the applicant has progressed; the scope of the effects; when the authorization is needed; the cost and complexity of the analysis; and the degree to which the Guidance is expected to affect our analysis.

In this case, the Air Force has requested an authorization for a one-day activity that would include one explosive release and two explosive bursts of four munitions timed a few seconds apart and occur in October. Our analysis in the proposed IHA for this action (81 FR 44277) (July 7, 2016) includes the consideration of, and we proposed to authorize, takes of small numbers of marine mammals by both Level A and Level B harassment. The extremely short duration of the activity (essentially three instantaneous events within a day) and the robust monitoring and mitigation measures we proposed minimize the likelihood that Level A harassment will occur. In short, although the new thresholds were not used in the calculation of take, we believe that the existing analysis, mitigation, and authorization adequately address the likely effects and protective measures.

#### *Level B Harassment*

Of the potential effects described earlier in this document, the following are the types of effects that fall into the Level B harassment category:

Behavioral Harassment—Behavioral disturbance that rises to the level described in the above definition, when resulting from exposures to non-impulsive or impulsive sound, is Level B harassment. Some of the lower level physiological stress responses discussed earlier would also likely co-occur with the predicted harassments, although these responses are more difficult to detect and fewer data exist relating these responses

to specific received levels of sound. When predicting Level B harassment based on estimated behavioral responses, those takes may have a stress-related physiological component.

Temporary Threshold Shift —As discussed in the proposed Federal Register notice (81 FR 44277) (July 7, 2016), TTS can affect how an animal behaves in response to the environment, including conspecifics, predators, and prey. NMFS classifies TTS (when resulting from exposure to explosives and other impulsive sources) as Level B harassment, not Level A harassment (injury).

#### *Level A Harassment*

Of the potential effects that were described earlier, the following are the types of effects that fall into the Level A Harassment category:

Permanent Threshold Shift —PTS (resulting from exposure to explosive detonations) is irreversible and NMFS considers this to be an injury.

Gastrointestinal (GI) Tract Injury – GI tract injury includes contusions and lacerations from blast exposures, particularly in air-containing regions of the tract.

Slight Lung Injury – These injuries may include slight blast injuries to the lungs but would be survivable.

#### *Mortality*

Mortality may include injuries that lead to mortality including primary (moderate to severe) blast injuries and barotrauma. Thresholds are based on the level of impact that would cause extensive lung injury resulting in mortality to one percent of exposed animals (Finneran and Jenkins, 2012).

Table 4 outlines the explosive thresholds used by NMFS for this Authorization when addressing noise impacts from explosives.

**Table 4. Explosive thresholds for Marine Mammals used by 86 FWS in its current acoustics impacts modeling.**

Functional Hearing Group	Mortality*	Level A Harassment			Level B Harassment	
		Slight Lung Injury*	GI Tract Injury	PTS	TTS	Behavioral
LF Cetaceans	$91.4M^{1/3} \left(1 + \frac{D}{10.1}\right)^{1/2}$	$39.1M^{1/3} \left(1 + \frac{D}{10.1}\right)^{1/2}$	Unweighted SPL: 237 dB re 1 $\mu$ Pa	Weighted SEL: 187 dB re 1 $\mu$ Pa <sup>2</sup> ·s	Weighted SEL: 172 dB re 1 $\mu$ Pa <sup>2</sup> ·s	Weighted SEL: 167 dB re 1 $\mu$ Pa <sup>2</sup> ·s
Unweighted SPL: 230 dB re 1 $\mu$ Pa				Unweighted SPL: 224 dB re 1 $\mu$ Pa (23 psi PP)		
MF Cetaceans			Unweighted SPL: 237 dB re 1 $\mu$ Pa	Weighted SEL: 187 dB re 1 $\mu$ Pa <sup>2</sup> ·s	Weighted SEL: 172 dB re 1 $\mu$ Pa <sup>2</sup> ·s	Weighted SEL: 167 dB re 1 $\mu$ Pa <sup>2</sup> ·s
Unweighted SPL: 230 dB re 1 $\mu$ Pa				Unweighted SPL: 224 dB re 1 $\mu$ Pa (23 psi PP)		
HF Cetaceans			Unweighted SPL: 237 dB re 1 $\mu$ Pa	Weighted SEL: 161 dB re 1 $\mu$ Pa <sup>2</sup> ·s	Weighted SEL: 146 dB re 1 $\mu$ Pa <sup>2</sup> ·s	Weighted SEL: 141 dB re 1 $\mu$ Pa <sup>2</sup> ·s
Unweighted SPL: 201 dB re 1 $\mu$ Pa				Unweighted SPL: 195 dB re 1 $\mu$ Pa (1 psi PP)		
Phocids (in water)			Unweighted SPL: 237 dB re 1 $\mu$ Pa	Weighted SEL: 192 dB re 1 $\mu$ Pa <sup>2</sup> ·s	Weighted SEL: 177 dB re 1 $\mu$ Pa <sup>2</sup> ·s	Weighted SEL: 172 dB re 1 $\mu$ Pa <sup>2</sup> ·s
Unweighted SPL: 218 dB re 1 $\mu$ Pa				Unweighted SPL: 212 dB re 1 $\mu$ Pa (6 psi PP)		

*M* = Animal mass based on species (kilograms); *D* = Water depth (meters); dB re 1  $\mu$ Pa = decibels referenced to 1 microPascal; dB re 1  $\mu$ Pa<sup>2</sup>·s = decibels reference to 1 microPascal-squared-seconds; GI = gastrointestinal; PTS = permanent threshold shift; SEL = sound exposure level; TTS = temporary threshold shift; SPL = sound pressure level; PP = peak pressure  
 \*Expressed in terms of acoustic impulse (Pascal – seconds (Pa·s))

86 FWS completed acoustic modeling to determine the distances to NMFS’s explosive thresholds from their explosive ordnance, which was then used with each species’ density to determine number of exposure estimates. Below is a summary of those modeling efforts.

The zone of influence is defined as the area or volume of ocean in which marine mammals could be exposed to various pressure or acoustic energy levels caused by exploding ordnance. Refer to Appendix A of 86 FWS’s application for a description of

the method used to calculate impact areas for explosives. The pressure and energy levels considered to be of concern are defined in terms of metrics, criteria, and thresholds. A metric is a technical standard of measurement that describes the acoustic environment (*e.g.*, frequency, duration, temporal pattern, and amplitude) and pressure at a given location. Criteria are the resulting types of possible impact and include mortality, injury, and harassment. A threshold is the level of pressure or noise above which the impact criteria are reached.

Standard impulsive and acoustic metrics were used for the analysis of underwater energy and pressure waves in this document. Several different metrics are important for understanding risk assessment analysis of impacts to marine mammals: SPL is the ratio of the absolute sound pressure to a reference level, SEL is measure of sound intensity and duration, and positive impulse is the time integral of the pressure over the initial positive phase of an arrival.

The criteria and thresholds used to estimate potential pressure and acoustic impacts to marine mammals resulting from detonations were obtained from Finneran and Jenkins (2012) and include mortality, injurious harassment (Level A), and non-injurious harassment (Level B). In some cases, separate thresholds have been developed for different species groups or functional hearing groups. Functional hearing groups included in the analysis are low-frequency cetaceans, mid-frequency cetaceans, high-frequency cetaceans, and Phocid pinnipeds.

The maximum estimated range, or radius, from the detonation point to which the various thresholds extend for all munitions planned to be released in a 24-hour time period was calculated for each species based on explosive acoustic characteristics, sound

propagation, and sound transmission loss in the Study Area, which incorporates water depth, sediment type, wind speed, bathymetry, and temperature/salinity profiles (Table 5). The ranges were used to calculate the total area (circle) of the zones of influence for each criterion/threshold. To eliminate “double-counting” of animals, impact areas from higher impact categories (*e.g.*, mortality) were subtracted from areas associated with lower impact categories (*e.g.*, Level A harassment). The estimated number of marine mammals potentially exposed to the various impact thresholds was then calculated as the product of the adjusted impact area, animal density, and number of events. Since the model accumulates the energy from all detonations within a 24-hour timeframe, it is assumed that the same population of animals is being impacted within that time period. The population would refresh after 24 hours. In this case, only one mission day is planned for 2016, and therefore, only one event is modeled that would impact the same population of animals. Details of the acoustic modeling method are provided in Appendix A of the application.

The resulting total number of marine mammals potentially exposed to the various levels of thresholds is shown in Table 7. An animal is considered “exposed” to a sound if the received sound level at the animal’s location is above the background ambient acoustic level within a similar frequency band. The exposure calculations from the model output resulted in decimal values, suggesting in most cases that a fraction of an animal was exposed. To eliminate this, the acoustic model results were rounded to the nearest whole animal to obtain the exposure estimates from 2016 missions. Furthermore, to eliminate “double-counting” of animals, exposure results from higher impact categories (*e.g.*, mortality) were subtracted from lower impact categories (*e.g.*, Level A harassment).

For impact categories with multiple criteria and/or thresholds (*e.g.*, three criteria and four thresholds associated with Level A harassment), numbers in the table are based on the threshold resulting in the greatest number of exposures. These exposure estimates do not take into account the required mitigation and monitoring measures, which may decrease the potential for impacts.

**Table 5. Distances (m) to explosive thresholds from 86 FWS’s explosive ordnance.**

Species	Mortality <sup>1</sup>	Level A Harassment <sup>2</sup>				Level B Harassment		
		Slight Lung Injury	GI Tract Injury	PTS		TTS	Behavioral	
				237 dB SPL	Applicable SEL*		Applicable SPL*	Applicable SEL*
Humpback Whale	38	81	165	2,161	330	6,565	597	13,163
Blue Whale	28	59	165	2,161	330	6,565	597	13,163
Fin Whale	28	62	165	2,161	330	6,565	597	13,163
Sei Whale	38	83	165	2,161	330	6,565	597	13,163
Bryde’s Whale	38	81	165	2,161	330	6,565	597	13,163
Minke Whale	55	118	165	2,161	330	6,565	597	13,163
Sperm Whale	33	72	165	753	330	3,198	597	4,206
Pygmy Sperm Whale	105	206	165	6,565	3,450	20,570	6,565	57,109
Dwarf Sperm Whale	121	232	165	6,565	3,450	20,570	6,565	57,109
Killer Whale	59	126	165	753	330	3,198	597	4,206
False Killer Whale	72	153	165	753	330	3,198	597	4,206
Pygmy Killer Whale	147	277	165	753	330	3,198	597	4,206
Short-finned Pilot Whale	91	186	165	753	330	3,198	597	4,206
Melon-headed Whale	121	228	165	753	330	3,198	597	4,206
Bottlenose Dolphin	121	232	165	753	330	3,198	597	4,206

Pantropical Spotted Dolphin	147	277	165	753	330	3,198	597	4,206
Striped Dolphin	147	277	165	753	330	3,198	597	4,206
Spinner Dolphin	147	277	165	753	330	3,198	597	4,206
Rough-toothed Dolphin	121	232	165	753	330	3,198	597	4,206
Fraser's Dolphin	110	216	165	753	330	3,198	597	4,206
Risso's Dolphin	85	175	165	753	330	3,198	597	4,206
Cuvier's Beaked Whale	51	110	165	753	330	3,198	597	4,206
Blainville's Beaked Whale	79	166	165	753	330	3,198	597	4,206
Longman's Beaked Whale	52	113	165	753	330	3,198	597	4,206
Hawaiian Monk Seal	135	256	165	1,452	1,107	3,871	1,881	6,565

<sup>1</sup>Based on Goertner (1982)

<sup>2</sup>Based on Richmond *et al.* (1973)

\*Based on the applicable Functional Hearing Group

### *Density Estimation*

Density estimates for marine mammals were derived from the Navy's draft 2016 Technical Report of Marine Species Density Database (NMSDD). NMFS refers the reader to Section 3 of 86 FWS's application for detailed information on all equations used to calculate densities; also presented in Table 6.

**Table 6. Marine mammal fall density estimates within 86 FWS's PMRF**

Species	Density (animals/km <sup>2</sup> )
Humpback Whale	0.0211
Blue Whale	0.00005
Fin Whale	0.00006
Sei Whale	0.00016
Bryde's Whale	0.00010
Minke Whale	0.00423
Sperm Whale	0.00156
Pygmy sperm whale	0.00291
Dwarf sperm whale	0.00714
Killer Whale	0.00006



Species	Density (animals/km <sup>2</sup> )
False Killer Whale (insular)	0.00050
False Killer Whale (NWHI, pelagic)	0.00071
Pygmy Killer Whale	0.00440
Short-finned Pilot Whale	0.00919
Melon-headed Whale	0.00200
Bottlenose Dolphin	0.00316
Pantropical Spotted Dolphin	0.00623
Striped Dolphin	0.00335
Spinner Dolphin	0.00204
Rough-toothed Dolphin	0.00470
Fraser's Dolphin	0.02100
Risso's Dolphin	0.00470
Cuvier's Beaked Whale	0.00030
Blainville's Beaked Whale	0.00086
Longman's Beaked Whale	0.00310
Hawaiian Monk Seal	0.00003

### *Take Estimation*

Table 7 indicates the modeled potential for lethality, injury, and non-injurious harassment (including behavioral harassment) to marine mammals in the absence of mitigation measures. All other species had zero takes modeled for each category. 86 FWS and NMFS estimate that one marine mammal species could be exposed to injurious Level A harassment noise levels (187 dB SEL) and five species could be exposed to Level B harassment (TTS and Behavioral) noise levels in the absence of mitigation measures.

**Table 7. Modeled number of marine mammals potentially affected by LRS WSEP operations.**

Species	Mortality	Level A Harassment (PTS only)	Level B Harassment (TTS)	Level B Harassment (Behavioral)
Dwarf sperm whale	0	1	9	64
Pygmy sperm whale	0	0	3	26
Fraser's dolphin	0	0	1	0
Minke whale	0	0	1	2
Humpback whale	0	0	3	9
TOTAL	0	1	17	101

Based on the mortality exposure estimates calculated by the acoustic model, zero marine mammals are expected to be affected by pressure levels associated with mortality

or serious injury. Zero marine mammals are expected to be exposed to pressure levels associated with slight lung injury or gastrointestinal tract injury.

NMFS considers PTS to fall under the injury category (Level A Harassment). There are different degrees of PTS ranging from slight/mild to moderate and from severe to profound. Profound PTS or the complete loss of the ability to hear in one or both ears is commonly referred to as deafness. In the case of authorizing Level A harassment, NMFS has estimated that one dwarf sperm whale could experience permanent threshold shifts of hearing sensitivity (PTS).

### **Negligible Impact Analysis and Determinations**

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.” 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 Level B harassment 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 behavioral harassment, we consider 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 the number and nature of estimated Level A harassment takes, the number of estimated mortalities, and effects on habitat.

To avoid repetition, the discussion below applies to all the species listed in Table 7 for which we propose to authorize incidental take for 86 FWS’s activities.

In making a negligible impact determination, we consider:

- The number of anticipated injuries, serious injuries, or mortalities;
- The number, nature, and intensity, and duration of Level B harassment;
- The context in which the takes occur (*e.g.*, impacts to areas of

significance, impacts to local populations, and cumulative impacts when taking into account successive/contemporaneous actions when added to baseline data);

- The status of stock or species of marine mammals (*i.e.*, depleted, not depleted, decreasing, increasing, stable, impact relative to the size of the population);
- Impacts on habitat affecting rates of recruitment/survival; and
- The effectiveness of monitoring and mitigation measures to reduce the number or severity of incidental take.

For reasons stated previously in this document, including modeling predictions that estimated no serious injury or death for any species, the use of mitigation measures, and the short duration of the activities, 86 FWS's specified activities are not likely to cause long-term behavioral disturbance, serious injury, or death. The takes from Level B harassment would be due to behavioral disturbance and TTS. The takes from Level A harassment would be due to PTS. We anticipate that any PTS incurred would be in the form of only a small degree of PTS and not total deafness.

While animals may be impacted in the immediate vicinity of the activity, because of the short duration of the actual individual explosions themselves (versus continual sound source operation) combined with the short duration of the LRS WSEP operations, NMFS has determined that there will not be a substantial impact on marine mammals or on the normal functioning of the nearshore or offshore waters off Kauai and its

ecosystems. We do not expect that the planned activity would impact rates of recruitment or survival of marine mammals since we do not expect mortality (which would remove individuals from the population) or serious injury to occur. In addition, the planned activity would not occur in areas (and/or times) of significance for the marine mammal populations potentially affected by the exercises (*e.g.*, feeding or resting areas, reproductive areas), and the activities would only occur in a small part of their overall range, so the impact of any potential temporary displacement would be negligible and animals would be expected to return to the area after the cessations of activities.

Although the planned activity could result in Level A (PTS only) and Level B (behavioral disturbance and TTS) harassment of marine mammals, the level of harassment is not anticipated to impact rates of recruitment or survival of marine mammals because the number of exposed animals is expected to be low due to the short-term (*i.e.*, four hours a day or less on one day) and site-specific nature of the activity. We do not anticipate that the effects would be detrimental to rates of recruitment and survival because we do not expect serious or extended behavioral responses that would result in energetic effects at the level to impact fitness.

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 mitigation and monitoring measures, and the short duration of the activities, NMFS finds that 86 FWS's LRS WSEP operations will result in the incidental take of marine mammals, by Level A and Level B harassment, and that the taking from the LRS WSEP exercises will have a negligible impact on the affected species or stocks.

**Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses**

There are no relevant subsistence uses of marine mammals 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)**

No marine mammal species listed under the ESA are expected to be affected by these activities. Therefore, NMFS has determined that a section 7 consultation under the ESA is not required.

#### **National Environmental Policy Act (NEPA)**

NMFS prepared an EA in accordance with the NEPA. NMFS determined that these activities will not have a significant effect on the human environment and signed a Finding of No Significant Impact (FONSI) in September 2016.

#### **Authorization**

As a result of these determinations, NMFS has issued an IHA to 86 FWS for conducting LRS WSEP activities, for a period of one year from the date of issuance, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: September 27, 2016.

---

Donna S. Wieting  
Director, Office of Protected Resources,  
National Marine Fisheries Service.