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**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**50 CFR Part 218**

**[Docket No. 170201135-7754-02]**

**RIN 0648-BG65**

**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 Weapons System 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:** Final rule.

**SUMMARY:** Upon application from the U.S. Air Force (USAF) 86 Fighter Weapons Squadron (hereinafter referred to as 86 FWS), NMFS is issuing regulations under the Marine Mammal Protection Act (MMPA) for the taking of marine mammals incidental to Long Range Strike (LRS) Weapons System Evaluation Program (WSEP) exercises on the Barking Sands Underwater Range Expansion (BSURE) of the Pacific Missile Range Facility (PMRF) off Kauai, Hawaii. These regulations allow NMFS to issue a Letter of Authorization (LOA) for the incidental take of marine mammals during the USAF 86 FWS's specified activities carried out during the rule's period of effectiveness, set forth the permissible methods of taking, set forth other means of effecting the least practicable adverse impact on marine mammal species or

stocks and their habitat, and set forth requirements pertaining to the monitoring and reporting of the incidental take. The specific activities are classified as military readiness activities.

**DATES:** Effective on August 21, 2017, through August 22, 2022.

**ADDRESSES:** To obtain an electronic copy of the USAF 86 FWS's LOA application or other referenced documents, visit the Internet at:

*http://www.nmfs.noaa.gov/pr/permits/incidental/military.htm*. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at 1315 East-West Highway, SSMC III, Silver Spring, MD 20912.

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

**SUPPLEMENTARY INFORMATION:**

**Availability**

A copy of the 86 FWS's LOA application, NMFS proposed rule (82 FR 21156; May 5, 2017), the 86 FWS's *Final Environmental Assessment/Overseas Environmental Assessment (EA/OEA) for the Long Range Strike Weapon Systems Evaluation Program at Kauai, Hawaii*, and NMFS Finding of No Significant Impact (FONSI) may be obtained by visiting the internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental/military.htm*. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address (see **ADDRESSES**).

**Background**

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1371(a)(5)(A)) directs the Secretary of Commerce 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 for up to five years if, after notice and public comment, the agency makes certain findings and issues regulations that set forth permissible methods of taking pursuant to that activity, as well as monitoring and reporting requirements. Section 101(a)(5)(A) of the MMPA and the implementing regulations at 50 CFR part 216, subpart I provide the legal basis for issuing this rule and any subsequent LOA pursuant to those regulations. As directed by this legal authority, this final rule contains mitigation, monitoring, and reporting requirements.

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 Secretary sets forth permissible methods of taking and other means of effecting the least practicable impact on the species or stock and its habitat. 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 National Defense Authorization Act for Fiscal Year 2004 (Section 319, Public Law 108–136, November 24, 2003) (NDAA of 2004) 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, 16 U.S.C. 1362(18)(B)): “(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).

### **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 the proposed action (*i.e.*, the issuance of regulations and an LOA) with respect to potential impacts on the human environment.

Accordingly, NMFS has adopted the 86 FWS’s EA/OEA, after an independent evaluation of the document found that it included adequate information analyzing the effects on the human environment of issuing incidental take authorizations. The 86 FWS made the draft EA/EOA available for public comment from July 27 through August 26, 2016; no public comments were received. The final EA/EOA is available at

<http://www.afcec.af.mil/What-We-Do/Environment/Pacific-Range-Strike-Environmental-Assessment/>. On August 11, 2017, NMFS issued a Finding of No Significant Impact (FONSI) which is available for review at <http://www.nmfs.noaa.gov/pr/permits/incidental/military.htm>.

### **Summary of Request**

On December 21, 2016, NMFS received an adequate and complete application from the 86 FWS for regulations for the taking of 16 species of marine mammals representing 16 stocks incidental to LRS WSEP activities in the BSURE area of the PMRF off Kauai, Hawaii. On January 6, 2017, we published a notice of receipt of the 86 FWS’s application in the *Federal Register* (82 FR 1702), requesting public comment. We considered those comments and subsequently published a notice of proposed rulemaking in the *Federal Register* on May 5, 2017 (82 FR 21156), again requesting public comments. Since publishing the proposed rule, the 86

FWS revised the number of munitions it would deploy annually, significantly decreasing the amount of live weapon explosions per year. This decreases the number of anticipated and authorized takes for this activity (see “Estimated Take” section) compared to what was presented in the proposed rule. In addition, the USAF 86 FWS has worked with NMFS to greatly enhance marine mammal monitoring, resulting in increased detection probabilities, and thereby decreasing the likelihood of take of marine mammals.

NMFS previously issued an incidental harassment authorization (IHA) to the 86 FWS authorizing the taking of marine mammal species incidental to similar activities in 2016 (81 FR 67971; October 3, 2016). The 86 FWS complied with all the requirements (*e.g.*, mitigation, monitoring, and reporting) of the previous IHA; information regarding their monitoring results may be found in the *Potential Effects of the Specified Activities on Marine Mammals and their Habitat* section of this final rule.

#### *Summary of Major Provisions within the Final Rule*

Following is a summary of some of the major provisions applicable to 86 FWS’s LRS WSEP training missions. We have determined that 86 FWS’s adherence to the mitigation, monitoring, and reporting measures included in this rule would achieve the least practicable adverse impact on the affected marine mammals. The provisions, which are generally designed to minimize the duration and total volume of explosive detonations, include:

- Restricting missions to daylight hours, only on weekdays, and only during the summer (June through August) or fall (September through November) months.
- Limiting activity to one mission per calendar year with the 2017 mission limited to one day (dropping 8 small diameter bombs only) and the 2018 through 2022 missions limited to 4 days of training over a 5-day period. We note the proposed rule stated that training would occur

for five days per mission; however, the 86 FWS has clarified the fifth day is a contingency day and no training will occur on the fifth day if the scheduled four days of training are completed.

- Limiting each mission day to four hours of training. This training duration limitation was presented in the proposed rule.

- Reducing the number and type of munitions. We note this constitutes a 40 to 92 percent reduction in total munitions from the proposed rule depending upon mission year.

- Conducting a systematic aerial survey covering 8 miles (mi) (13 kilometers (km)) using military aircraft equipped with sensor pods (*e.g.*, Sniper advanced targeting pods) before, during and after each training day. A helicopter-based survey (*i.e.*, the monitoring method presented in the application and proposed rule) will take place only as back-up should a sensor not be available. This monitoring plan is to be implemented in lieu of the helicopter surveys included in the proposed rule.

- Monitoring for marine mammals within the weapon impact area using range cameras stationed on Makaha Ridge before, during and after training each mission day. This requirement constitutes an additional method of monitoring for marine mammals that was not included in the proposed rule.

- Delaying mission activities if a marine mammal is observed in the designated exclusion zone (2.3 mile (mi) (3,704 m) for all missions and delaying missions if a marine mammal is observed within the Level A and/or Level B harassment zone but no take is authorized, resuming only after the animal is observed exiting the exclusion zone or the exclusion zone has been clear of any additional sightings for a period of 30 minutes. In the proposed rule, a mitigation measure was included that required mission delays if a protected species was observed within an impact zone; however, we have authorized the taking of marine mammals; therefore, this measure has

been altered to a more practicable, consistent, and specified distance from the target site, which would avoid take in a manner that is not authorized (*e.g.*, mortality, slight lung injury, Level A harassment of mid-frequency cetaceans).

- Shifting the target site as far from a marine mammal observation as possible if it has been determined the mission may continue without taking a marine mammal in a manner not authorized. This mitigation measure is new to the final rule in an effort to further minimize impacts to marine mammals.

- Delaying missions if adverse weather conditions impair the ability of aircraft to operate safely. This measure was included in the proposed rule.

- Notifying NMFS Pacific Islands Regional Office (PIRO) and Pacific Islands Region Marine Mammal Stranding Network of scheduled mission activities at least 72 hours prior to executing training exercises, within 24 hours of mission completion, and immediately if a dead or injured marine mammal is sighted.

- Submitting a report of marine mammal surveys and LRS WSEP activities to the Office of Protected Resources (OPR) and PIRO 90 days after expiration of the current authorization. If subsequent regulations and LOA are requested, a draft report will be included with the incidental take authorization application.

- Collecting passive acoustic monitoring (PAM) data using the U.S. Navy's hydrophones on the PMRF range before, during, and after LRS WSEP missions. These data will be stored at the Space and Naval Warfare Systems Command (SPAWAR) and analyzed to better understand the effects of WSEP training activities on marine mammals. A report will be submitted to NMFS 90 days after expiration of this rule or included with an application requesting future MMPA

authorizations, whichever is first. Please see the *Monitoring and Reporting* section for more details.

- Delaying training if an unauthorized take of a marine mammal (*i.e.*, mortality or serious injury; take of marine mammal species not authorized) occurs, and reporting the incident to OPR, PIRO, and the Pacific Islands Region Stranding Network representative immediately followed by a report to NMFS within 24 hours.

- Notifying OPR, PIRO, and the Pacific Island Region Stranding Network immediately, should a marine mammal be sighted that is dead or seriously injured, when such mortality or injury is clearly not a result of LRS WSEP activities (*e.g.*, exhibiting advanced decomposition and/or scavenger wounds).

### **Detailed Description of the Specified Activity**

The proposed rule (82 FR 21156; May 5, 2017) and the 86 FWS EA/OEA include a complete description of the USAF's specified training activities for which NMFS is authorizing incidental take of marine mammals in this final rule. Surface and sub-surface detonations are the stressors most likely to result in impacts on marine mammals that could rise to the level of harassment. The aforementioned documents can be found at <http://www.nmfs.noaa.gov/pr/permits/incidental/military.htm>). The description of location, delivery aircraft, and weapon types remain unchanged, and we incorporate this description by reference, and provide a summary below. However, the 86 FWS has reduced the amount of live (containing explosive charges) missiles and bombs and duration of each mission that would occur under this rule, and we provide more detailed information below.

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. 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.

Mission training will take place on the U.S. Navy's PMFR. The PMFR is the world's largest instrumented, multi-dimensional testing and training missile range, covering over 1,100 square miles (2,800 km<sup>2</sup>) of instrumented underwater range and over 42,000 square miles (109,000 km<sup>2</sup>) of controlled airspace. Within the PMFR, activities would occur only in the BSURE area, which lies in Warning Area 188A (W-188A). Specifically, the impact area is in the most northern portion of the BSURE approximately 44 nautical miles (nmi) (81 km) offshore of Kauai, Hawaii, in a water depth of about 15,240 feet (ft) (4.6 km) (see Figure 2-2 of 86 FWS's application). The BSURE is outfitted with 41 recently installed replacement hydrophones with response of approximately 50 hertz (Hz) to 48 kHz. The 18 legacy BSURE hydrophones (some not operational) have responses of approximately 100 Hz to 19 kHz and are located in similar positions to some of the replacement hydrophones. Hydrophones spacing ranges from approximately 13,123 ft (4 km) to over 22,966 ft (7 km), in water depths ranging from 5,577 ft (1.7 km) to 15,412 ft (4.7 km).

LRS WSEP training missions, classified as military readiness activities, refer to the deployment of live (containing explosive charges) missiles and bombs from aircraft toward the water surface. Depending on the requirements of a given mission, munitions may be inert (containing no explosives or only a "spotting" charge) or live (containing explosive charges). Live munitions may detonate above, at, or slightly below (10 ft (3 m)) the water surface.

Air-to-surface training missions include testing of the Joint Air-to-Surface Stand-off Missile/Joint Air-to-Surface Stand-off Missile-Extended Range (JASSM/JASSM-ER), Small Diameter Bomb-I/II (SDB-I/II), High-speed Anti-Radiation Missile (HARM), Joint Direct Attack Munition/Laser Joint Direct Attack Munition (JDAM/LJDAM), and Miniature Air-Launched Decoy (MALD), including detonations above the water, at the water surface, and slightly below the water surface (Table 1). The JASSM is a stealthy precision cruise missile designed for launch outside area defenses against hardened, medium-hardened, soft, and area type targets. The JASSM has a range of more than 200 nmi (370 km) and carries a 1,000-lb warhead with approximately 300 lbs of 2,4,6-trinitrotoluene (TNT) equivalent net explosive weight (NEW). The specific explosive used is AFX-757, a type of plastic bonded explosive (PBX). The SDB-I is a 250-lb air-launched GPS-INS guided weapon for fixed soft to hardened targets. SDB-II expands the SDB-I capability with network enabling and uses a tri-mode sensor infrared, millimeter, and semi-active laser to attack both fixed and movable targets. Both munitions have a range of up to 60 nmi (111 km). The SDB-I contains 37 lbs of TNT-equivalent NEW, and the SDB-II contains 23 lbs NEW. The explosive used in both SDB-I and SDB-II is AFX-757. The HARM is a supersonic air-to-surface missile designed to seek and destroy enemy radar-equipped air defense systems. It has a range of up to 80 nmi (148 km) and contains 45 lbs of TNT-equivalent NEW. The explosive used is PBXN-107. The JDAM is a smart GPS-INS weapon that uses an unguided gravity bomb and adds a guidance and control kit, converting it to a precision-guided munition. The LJDAM variant adds a laser sensor to the JDAM, permitting guidance to a laser designated target. Both JDAM and LJDAM contain 192 lbs of TNT-equivalent NEW with multiple fusing options, with detonations occurring upon impact or with up to a 10-millisecond delay. The MALD is an air-launched, expendable decoy with ranges up to

500 nmi (926 km) to include a 200 nmi (370 km) dash with a 30-minute loiter mode. It has no warhead, and no detonation would occur upon impact with the water surface.

Mission aircraft may consist of fighter aircraft including F-16, F-15, A-10, and bombers such as B-1 and B-52. Weapon deployment will occur from at least one aircraft. These aircraft will be outfitted with sensors (*e.g.*, target sniper pods) capable of observing very small targets from high altitudes and multiple miles away. Support aircraft associated with range clearance activities before and during the mission, air-to-air refueling operation support, and chase aircraft will also be outfitted with these sensors. Aircraft supporting LSR WSEP missions would primarily operate at high altitudes—only flying below 3,000 ft 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 and sea turtles).

All munitions would be detonated within a four hour timeframe daily. Since the publication of the proposed rule, the USAF clarified the five mission days described in the proposed rule actually constitute four bombing days and one day set aside as contingency (*e.g.*, if weather or logistics prevent detonations on one of the four training days). In addition, the 86 FWS revised the extent of their mission by greatly reducing the amount of live munitions used each year. In total over the life of these regulations, the original amount of live munitions dropped would have been 530; however, that is now reduced to 220 live bombs and missiles for a total 5-year reduction of 58 percent. The amount of weapon reduction per year is provided in Table 1.

**Table 1. Maximum Amount of Munitions, by Type, to be Released by the USAF 86 FWS.**

Type of Munition	NEW (lb)	Detonation Scenario	Number of Proposed Live Weapon Releases																		
			2017		2018		2019		2020		2021										
			Original	Final	Original	Final	Original	Final	Original	Final	Original	Final									

JASSM/ JASSM-ER	300	Surface	6	0	6	2	6	4	6	4	6	4
SDB-I	37	Surface	30	8	30	14	30	14	30	14	30	14
SDB-II	23	Surface	30	0	30	0	30	10	30	16	30	20
HARM	45	Surface	10	0	10	6	10	6	10	10	10	10
JDAM/LJDAM	192	Subsurface <sup>1</sup>	30	0	30	16	30	16	30	16	30	16
ANNUAL TOTAL			106	8	106	38	106	50	106	60	106	64
% Reduction			92%		64%		53%		43%		40%	

Releases of live ordnance associated with missions conducted under this rule would result in either airbursts, surface detonations, or subsurface detonations (10 ft (3 m) water depth). Up to four SDB I/II munitions could be released simultaneously, such that each ordnance would hit the water surface within a few seconds of each other. Aside from the SDB-I/II releases, all other weapons would be released separately, impacting the water surface at different times. Prior to weapon release, a range sweep of the hazard area would be conducted by participating mission aircraft or other appropriate aircraft, potentially including S-61N helicopter, C-26 aircraft, fighter aircraft (F-15E, F-16, F-22), or the Coast Guard’s C-130 aircraft, to clear the area of civilian vessels and aircraft. The size and shape of the hazard area is determined by the maximum distance a weapon could travel in any direction during its descent and typically adjusted for potential wind speed and direction, resulting in a maximum composite safety footprint for each mission (each footprint boundary is at least 10 nmi from the Kauai coastline).

Proposed mitigation, monitoring, and reporting measures are described in detail later in this document (please see the *Mitigation and Monitoring and Reporting* sections).

**Comments and Responses**

A notice of receipt of USAF 86 FWS's application published in the *Federal Register* on January 6, 2017 (82 FR 1702). NMFS published a proposed rule in the *Federal Register* on May 5, 2017 (82 FR 21156). During the 30-day public comment period on the proposed rule, NMFS received comments from the Marine Mammal Commission (MMC), Dr. Robin Baird from Cascadia Research Collective (CRC), Earthjustice on behalf of the Animal Welfare Institute, Center for Biological Diversity, Conservation Council for Hawai'i, Natural Resources Defense Council, and the Ocean Mammal Institute (herein after "EarthJustice"), the Center for Regulatory Effectiveness (CRE), and 18 members of the general public. Following are the comments received and NMFS' responses.

*Comment 1:* The MMC was concerned that the methods used by the USAF to estimate range-to-effects (*i.e.*, distances to various thresholds) are overly conservative and do not match the range-to-effects produced by the Navy included in the Navy's Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS) and Letter of Authorization Application for Training and Research, Development, Test, and Evaluation within the Hawaii-Southern California Fleet Training and Testing Study Area (HSTT) for Phase II. The MMC recommended NMFS review the USAF and Navy's modeling of range-to-effects to ensure the results are comparable for similar munitions at the various thresholds, including the same trends in range-to-effects based on the same metric (*i.e.*, SEL vs  $SPL_{peak}$ ). The MMC subsequently recommended NMFS revise the estimated numbers of takes based on any changes to the range-to-effects, and thus impact areas, after comparison with the Navy ranges.

*NMFS Response:* The acoustic and take estimate models used by the USAF were thoroughly reviewed by NMFS acoustic experts. While we understand this approach is more simplistic than the sophisticated models used by the Navy and result in more conservative ranges

to effects and take numbers, the USAF methods are scientifically sound. Every depth bin was treated independently; therefore, each has its own range-to-effects associated with it. The ranges to which the MMC refers (Table 5 in the proposed rule) represent the maximum estimated range, or radius, from the detonation point to the point for any depth bin at which the various thresholds extend for all munitions proposed to be released in a 24-hour time period. Total exposures (takes) were found by taking the volume of a disk with a given thickness in depth and radius equal to the range-to-effect for that depth bin, multiplied by the dive-profile-weighted animal densities, and then summing all of those density-weighted disk volumes. The mitigation range is based on the maximum range, regardless of which depth that occurs, rather than some average range over depth bins or just the near-surface bins. Further, instead of assuming equal density throughout the water column, they combined marine mammal density (obtained from the Navy's Marine Species Density Database (U.S. Department of the Navy, 2016) with depth information so that impact estimates are based on three-dimensional density distributions. NMFS believes this is an appropriate and acceptable approach to determine the number of takes, by species, requested and authorized.

Since development of the proposed rule, 86 FWS has reduced the amount of munitions it intends to detonate each year and clarified that each mission would only occur for a maximum of four days, annually, which represents a reduction from the proposed rule. The five days included in the proposed rule included one contingency day (*e.g.*, if poor weather or technical difficulty prevents one day of training). Further, the 86 FWS confirmed in 2017, the mission consists of dropping eight small diameter bombs in one day. However, the 86 FWS will retain the same 8 mi (13 km) monitoring zone as in the proposed rule.

*Comment 2:* Multiple commenters expressed concern that the proposed aerial survey that would occur prior to mission exercises and designed to trigger mitigation (*e.g.*, shut down, delay of mission) is insufficient to minimize impacts on marine mammals for several reasons, including low detection probability in high sea states, especially for inconspicuous and elusive animals such as dwarf sperm whales and beaked whales, as well as potentially using an inappropriate survey platform which may fly at altitudes and survey speeds prohibiting visual detection. They also noted the range is not in the lee of the island; therefore, sea states rating higher on the Beaufort scale are common.

*NMFS Response:* The 86 FWS is required to conduct their missions in a variety of sea states and marine conditions that would be operationally realistic, while still considering the safety of mission personnel. Therefore, no restrictions on sea state are included in the proposed or final rule. However, NMFS recognizes the efficacy of aerial surveys at detecting marine mammals is reduced as sea surface conditions deteriorate, particularly for deep diving and more cryptic cetaceans (*e.g.*, beaked whales). Therefore, we re-assessed the survey design, in concert with practicability, and worked with the 86 FWS to develop a more robust monitoring plan. As a result, the 86 FWS will substitute the helicopter survey platform with military aircraft (*e.g.*, F-16) equipped with aircraft sensors (*e.g.*, SNIPER target pods) capable of operating in high-definition forward-looking infrared (FLIR), high-definition television modes using synthetic aperture radar (SAR), or other operational sensors. The sniper pod hangs from the underbelly of the plane and, in this case, the pod would be used to “target” observations of marine mammals. The capabilities of the instrumentation within aircraft far exceeds that of the naked eye. It is believed that using these assets in addition to conducting visual surveys will provide multiple opportunities to ensure that marine mammals potentially on or near the water surface within the

required survey areas will be identified and can thus be avoided. In addition, because pilots are equipped with these sensors while in route to launch the bomb or missile, they will be monitoring for marine mammals on the flight path to the weapon impact area, allowing for monitoring up until right before missile/bomb detonation. Pre- during, and post-mission day survey protocol is fully described in the 86 FWS Mitigation and Monitoring Plan available at <http://www.nmfs.noaa.gov/pr/permits/incidental/military.htm>.

The 86 FWS will retain the option of using a helicopter to conduct the surveys should the target pods malfunction; however, this is not the preferred aerial platform.

*Comment 3:* Multiple commenters recommended the 86 FWS should utilize the Navy's MR3 hydrophones on the FRMP to conduct passive acoustic monitoring (PAM) for mitigation purposes. That is, the hydrophones should be monitored in real-time and used to call for mission delays or shut-downs. One commenter supplemented this recommendation by providing information that the instrumented hydrophone range at PMRF has frequently been used for real-time detection, classification and localization (DCL) of marine mammals on the range as part of research activities (Baird *et al.*, 2016; Baird *et al.*, 2015; Baird *et al.*, 2012) and that CRC has participated in 10 different field efforts off PMRF working in conjunction with the Navy to respond to marine mammals that are detected acoustically through the hydrophone system. Those efforts led the Navy to successfully direct a CRC small vessel to a variety of species of marine mammals on the range, including sperm whales, short-finned pilot whales, false killer whales, Blainville's beaked whales, bottlenose dolphins, and rough-toothed dolphins, demonstrating that groups can be successfully localized and classified as to species using this method. The MMC also noted Helble *et al.* (2015) indicated they were able to track multiple animals on PMRF hydrophones in real time, including humpback whales, a species that can be

problematic to localize. The MMC also cited Martin and Matsuyama (2015) as support that tracking of baleen whales is possible on the range.

*NMFS Response:* The efficacy of localizing on marine mammals is dependent on multiple factors: (1) where on the range the animals are located (due to differences in hydrophone spacing and bandwidth), (2) what species are present and the types and regularity of vocalizations produced (echolocation clicks or infrequent whistling are difficult or impossible to use for localizations in real time), and (3) the capabilities and knowledge of the personnel conducting the localizations. The proposed rule described NMFS' efforts to work with the 86 FWS and the Navy to investigate using PAM as a mitigation support tool and identifies the limitations of this technology at detecting, localizing, and identifying marine mammals to a degree that would be sufficient to warrant a shut down or delay in mission. The proposed rule outlined three primary limiting factors: (1) to develop an estimated position for an individual, it must be vocalizing for an extended duration and its vocalizations must be detected on at least three hydrophones; (2) small odontocetes and deep divers (*e.g.*, beaked whales) echolocate with a directed beam that makes detection of the call on multiple hydrophones difficult, and (3) the position estimation process must occur in an area with hydrophones spaced to allow the detection of the same echolocation click on at least three hydrophones (a spacing of less than four km in water depths of approximately two km is preferred). However, NMFS further investigated using PAM to trigger mitigation.

We reviewed the aforementioned reports cited in the comment letter and determined the weapon impact area used for LRS WSEP activities, which is located at the very north end of the PMRF underwater range, has significant technical differences in PAM capabilities compared to the majority of areas where the researchers have been directed to study marine mammals for the

Navy. The PMRF is comprised of three distinct regions: the SWTR, BSURE and Barking Sands Tracking Underwater Range (BARSTUR). The SWTR (Shallow Water Test Range) is the closest to shore and in the shallowest waters and comprises the smallest physical area with hydrophones. The majority of PMRF's hydrophones (118, although many are not operational) are at SWTR, and all are high pass filtered at ~10 kHz and located relatively close together (hydrophone spacing is designed to be a function of depth). The second largest area is the BARSTUR at 13.3 percent the size of BSURE, located just south of BSURE in shallower waters with 42 hydrophones (some not operational). Thirty six of the hydrophones are high pass filtered at ~10 kHz. Six BARSTUR hydrophones have lower frequency response (*i.e.*, ~ 100 Hz to ~ 48 kHz).

The largest and most northern area is the BSURE and is where the weapon impact area is located. The BSURE has 41 recently installed “replacement” hydrophones with response ~50 Hz to 48 kHz. The 18 legacy BSURE hydrophones (some not operational) have response ~100 Hz to ~ 19 kHz and are located in similar positions to some of the replacement hydrophones.

Hydrophones spacing ranges from approximately 4 km to over 7 km, in water depths ranging from 1.7 km to 4.7 km. In summary, the detection and localization capabilities on PMRF are not uniform throughout the range due to the number of hydrophones, frequency response, spacing, and depth logistics. For example, the depth and spacing of hydrophones in the BSURE is much greater (*i.e.*, deeper and farther apart) than in the SWTR and BARSTUR where the cited marine mammal tagging research effort using PAM detection assistance was concentrated. In addition, all hydrophones in the BSURE are located south of the weapon impact area; making the ability to detect and localize animals off the range (*i.e.*, to the north of the impact area) even more improbable. Finally, the process for localizing humpback whales in Helble *et al.* (2015) was fully

performed using recorded data in the laboratory with Matlab algorithms, not in real-time at PMRF. The paper did mention the algorithm as being suitable for real-time application; however, additional software work is required before the algorithm can be implemented into the M3R real-time system. The processing speed for localizing humpback whales in Helble *et al.* (2015) was also described as being “five times faster than real time” but that is describing the ability to process five days of recorded data in the laboratory in one day, which is important for processing large recorded data sets.

For these reasons as well as those cited in the proposed rule, NMFS has not included a requirement to use PAM to trigger mitigation. We note the U.S. Navy also does not use PAM to trigger mitigation on the PMRF. However, per the 86 FWS’s Mitigation and Monitoring Plan, the 86 FWS will collect acoustic data and provide a report to NMFS upon expiration of the LOA (or concurrent with a future LOA application, whichever is first) informing the potential impacts of the missions on marine mammals (see the *Monitoring and Reporting* section). The 86 FWS will utilize sensor pods and range cameras capable of detecting marine mammals before and during missions to trigger mitigation.

*Comment 4:* One commenter offered information with respect to NMFS’ assumption that marine mammals are expected to exhibit avoidance behavior in response to loud sounds within the BSURE, citing findings from research on cetaceans off Kauai showing that individuals of four different species of odontocetes exposed to relatively high source levels of mid-frequency active (MFA) sonar are not leaving the area (Baird *et al.*, 2014; Baird *et al.*, 2017). The commenter recommended against assuming that the responsive behaviors of animals moving away from an initial sound source will reduce the likelihood of repeated exposure or repeated TTS leading to PTS may not be correct for all species in this area.

*NMFS Response:* There is a paucity of data on behavioral responses of cetaceans to explosives, although in recent years there has been a concentrated effort to better understand the impacts of MFA sonar on marine mammals (*e.g.*, Baird *et al.*, 2012, 2014, 2017; Henderson *et al.*, 2014, Southall *et al.*, 2009, Tyack *et al.*, 2011). It is important to note MFA sonar is an intrinsically different source than explosives used here by the 86 FWS. The 86 FWS will not use sonar during the LRS WSEP missions. MFA is characterized as non-impulsive, narrowband sources with center frequencies of 2.6 and 3.3 kHz, while explosives are impulsive- noise with high peak sound pressure, short duration, fast rise-time, and broad frequency content times. Despite these differences, we expect the range of behavioral reactions from both sources to be somewhat similar. Henderson *et al.* (2014) found responses included changes in behavioral state or direction of travel, changes in vocalization rates and call intensity, or a lack of vocalizations while MFA sonar occurred. Similar to the findings noted by the commenter, 43 percent of focal groups exposed to sonar did not change their behavior, possibly due to tolerance and/or habituation. For more sensitive species (*e.g.*, beaked whales), avoidance behavior in response to MFA sonar has been well documented (Southall *et al.*, 2009, Tyack *et al.*, 2011).

As described in the proposed rule, NMFS acknowledges that behavioral responses to sound are highly variable and context-specific, and that any reactions depend on numerous intrinsic and extrinsic factors (*e.g.*, species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, and time of day), as well as the interplay between factors. NMFS did not limit its analysis of potential impacts to avoidance. The proposed rule discusses that the onset of surface detonations could result in a number of temporary, short term changes in an animal's typical behavior, including, changing durations of surfacing and dives; number of blows per surfacing; moving direction and/or speed; reduced/ increased vocal activities;

changing/ cessation of certain behavioral activities (such as socializing or feeding); and visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping). The proposed rule also includes a discussion on potential tolerance and habituation.

For those animals that do avoid the area, we remain confident this behavior will reduce the potential for TTS and PTS. The avoidance reaction we predict does not necessarily need to occur on a large spatial scale (*e.g.*, moving to the lee side of the island), but could likely occur more locally, for example just outside strong received levels from the target site. Further, because of the planned reduction in number of explosives planned for each mission, the TTS and PTS zones are likely an overestimate, making any movement away from the impact site helpful in further reducing auditory impacts.

*Comment 5:* A marine mammal researcher commented that based on relative density and range-to-effects, it is unclear why no takes of Endangered Species Act (ESA)-listed sperm whales (*Physeter microcephalus*) were requested or proposed to be authorized in the rule when sei whale (*Balaenoptera borealis*) density (a species for which take is requested and authorized) is lower than sperm whale density.

*NMFS Response:* The 86 FWS evaluated the likelihood of taking incidental to the specified activities for sperm whales which are classified as a mid-frequency cetaceans. The range to effects for the sperm whale is less than that of sei whales (a low frequency hearing specialist). Considering sperm whale density (0.0016 animals/km<sup>2</sup>), the distance to the Level B behavioral isopleth minus the Level B TTS isopleth distance (11.95 km – 8.01 km), and assuming five training days per mission (the original schedule), the number of sperm whales possibly exposed to Level B harassment equaled 0.3 animals per year. When rounding, this probability becomes zero for sperm whales. For sei whales (0.0002 animals/ km<sup>2</sup>), the final

exposure value was 0.7 per year; therefore, it was rounded to one animal. The probability of taking both species is also decreased because the 86 FWS will only conduct four training days per mission, not the original five days included in the application. In summary, NMFS agrees there is a slight probability a sperm whale may be within the action area during training; however, this probability is very low. The 86 FWS did not request take of this species, and the 86 FWS is aware that take of sperm whales is not authorized.

*Comment 6:* A marine mammal researcher was concerned there is a potential for 86 FWS activities to overlap spatially and temporally with scientific research activities on the PMRF, and, as a result, those researchers may be displaced.

*NMFS Response:* The 86 FWS will issue a Notice to Mariners to inform the public that a military mission will be conducted and that portions of the Pacific Ocean will be temporarily closed for human safety concerns. The 86 FWS will also coordinate with NMFS OPR and PIRO once mission schedules have been set and no less than 72 hours prior to conducting each operation. If a researcher is concerned their planned research may be interrupted by 86 FWS activities, they may contact NMFS or the 86 FWS directly to determine when missions are scheduled. In addition, we do not anticipate a conflict with researchers, not only because of these alert requirements, but also because the weapon impact area is in the most northern part of the BSURE range in very deep water where small boat operations do not typically occur, and missions are to be conducted for only one day in 2017 and one to four days for the remainder of the effective period of this rule.

*Comment 7:* The MMC acknowledged the USAF would archive the PAM recordings for analysis when funding is available at a later time, but recommended fulfilling the monitoring requirements under section 101(a)(5) of the MMPA should be made a priority.

*NMFS Response:* The final rule contains monitoring and reporting requirements that fully comply with section 101(a)(5)(A) of the MMPA. The purpose of analyzing acoustic data is to better understand the effects of the missions on marine mammals using acoustic recordings from PMRF hydrophones. Because the year one mission will occur only for one day (eight small diameter bombs) and year two through five missions will occur for a maximum of four days (maximum of four hours per day), NMFS finds that requiring an assessment of animal behavior for each mission year would yield a data poor analysis because the amount of acoustic data collected in any given year is likely to be minimal, if any at all. Therefore, the 86 FWS will combine all data over the course of 5 years and provide NMFS a final report within 90 days after the rule expires. However, if 86 FWS applies for a subsequent rule prior to expiration of this rule, a draft acoustic monitoring report shall be submitted with that application.

*Comment 8:* Comments received from individual citizens who opposed harming animals can be summarized in four general statements: 1) the activities will kill animals or make them deaf, 2) the USAF should conduct activities in areas where marine life will not be harmed or should conduct “virtual” training, 3) the mitigation and monitoring are ineffective, and 4) a warning should be provided to marine mammals prior to the exercises to give them time to leave the area.

*NMFS Response:* The following responses correspond to the numbered statements above: 1) NMFS did not propose to authorize, nor are we authorizing, death or serious injury of marine mammals incidental to the specified activity in this rule, because take in this manner was not requested, and, for reasons provided in this rule and associated documents, we do not believe it will occur. While NMFS does believe there is potential for PTS, experiencing PTS does not mean an animal will become deaf to the degree they are unable to communicate and perform

other vital life functions. In addition, our thresholds are conservative in that they anticipate the accumulated energy at which animal may experience any level of PTS, not complete deafness. The distances also represent where the animal would have to remain relative to the detonation site for the duration of the exercise each day as described in the proposed rule. Because the amount of live weapons has been greatly reduced and marine mammal monitoring would occur up until weapon detonation, we believe the chance of PTS, while it still may exist slightly, is also greatly reduced. We do not expect animals to remain stationary; instead we expect them to move away from the source, not toward it, thereby reducing the potential for PTS. 2) NMFS must evaluate a proposed activity and is required to prescribe mitigation to affect the least practicable adverse impact. We do not have the authority to require the USAF to conduct missions elsewhere or use virtual training. 3) Please see our responses to the other public comments regarding mitigation and monitoring. 4) NMFS, in consultation with the USAF, considered a mitigation measure that involved conducting inert munition training or detonating small weapons prior to larger weapons. The 86 FWS indicated it is not known at this time in what order munitions will be detonated; however, NMFS has required that this mitigation measure be followed if the Project Engineer/Commanding Officer determines doing so will not interfere with the mission.

*Comment 9:* CRE does not oppose NMFS' issuance of the rule, but they do oppose NMFS' use of our "Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing—Acoustic Threshold Levels for Onset of Permanent and Temporary Threshold Shifts" (Technical Guidance) (NMFS 2016) in our analysis of the potential impacts of the USAF's military readiness activities on marine mammals. CRE commented that it is questionable whether NMFS has the authority to use the Technical Guidance until the Commerce

Secretary has completed his review required by Executive Order (EO) 13795. They further recommend NMFS remove any claim that the Office of Management and Budget (OMB) had approved an Information Collection Request for the Technical Guidance, and NMFS should correct information disseminations that suggest or require that the Technical Guidance may be used for any regulatory purpose.

*NMFS Response:* EO 13795 does not state the Technical Guidance cannot be used during the Secretary's review process; therefore, the Technical Guidance remains applicable during this time. Prior to its release, the Technical Guidance was subject to an internal review, three external peer reviews, as well as a follow-up peer review, three public comment periods, and received informal input from key Federal partners. As such, it represents the best available science. However, in accordance with EO 13795, NMFS solicited additional public comment on the Technical Guidance (82 FR 24950, May 31, 2017). NMFS will also consult the appropriate Federal agencies to assist the Secretary of Commerce in reviewing the Technical Guidance for consistency with the policy in section 2 of EO 13795. As mandated by the EO, at the conclusion of the review, the Secretary will make a determination on how to proceed. At that point, NMFS will determine what information will be provided on our information disseminations. Further, the Technical Guidance explicitly states it is a guidance document and that ITA applicants are not required to use it. An applicant may propose an alternative approach if it is likely to produce a more accurate estimate of auditory impact for the project being evaluated. Finally, as explicitly explained in the Guidance, the scientific data compiled therein do not mandate any particular policy or regulatory choice, rather, they are used in the analyses that inform regulatory decisions and, as is appropriate in the case of the MMPA, the regulatory decisions are subject to notice and comment.

## Description of Marine Mammals in the Area of Specified Activities

There are 25 marine mammal species with potential or confirmed occurrence in the proposed activity area. Not all of these species occur in this region during the project timeframe, or the likelihood of occurrence is very low. The “Description of Marine Mammals in the Area of the Specified Activities” section included in the proposed rule (82 FR 21156; May 5, 2017) and sections 3 and 4 of the USAF’s application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. These descriptions have not changed and are incorporated here by reference. Additional information regarding population trends and threats may be found in NMFS’s Stock Assessment Reports (SAR; [www.nmfs.noaa.gov/pr/sars/](http://www.nmfs.noaa.gov/pr/sars/)) and more general information about these species (e.g., physical and behavioral descriptions) may be found on NMFS’s website ([www.nmfs.noaa.gov/pr/species/mammals/](http://www.nmfs.noaa.gov/pr/species/mammals/)). Additional information may be found in the USAF 86 FWS EA/EOA for LRS WSEP training exercises in the BSURE of the PMRF, which is available online at <http://www.afcec.af.mil/What-We-Do/Environment/Pacific-Range-Strike-Environmental-Assessment/>.

Of the 25 species that may occur in Hawaiian waters, 16 species occur in densities great enough during the seasons the training exercises may occur (summer or fall) to warrant inclusion in this rule (Table 2). The final list of species is based on summer density estimates, a conservative range-to-effects, and duration of the activity.

**Table 2. Marine Mammal Species and Stocks Likely to Be Exposed to 86 FWS LRS WSEP Training Missions.**

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	N; Y	10,103 (0.300; 7,890; 2006)	83	Seasonal; throughout known breeding grounds during winter and spring (most common November through April)
Sei whale ( <i>Balaenoptera borealis</i> )	Hawaii	Y; Y	178 (0.90; 93; 2010)	0.2	Rare; limited sightings of seasonal migrants that feed at higher latitudes
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: 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
Family: Delphinidae					
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

Family: Ziphiidae					
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

<sup>1</sup>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.

<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 (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).

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

### *Marine Mammal Hearing*

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans).

Subsequently, NMFS (2016) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 dB threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and

the lower bound from Southall *et al.* (2007) retained. The functional groups and the associated frequencies are indicated in Table 3; note that these frequency ranges correspond to the range for the composite group, with the entire range not necessarily reflecting the capabilities of every species within that group (please refer to the proposed rule (82 FR 21156; May 5, 2017) for more detail.

**Table 3. Marine Mammal Hearing Groups (NMFS, 2016).**

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz 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, <i>Kogia</i> , river dolphins, cephalorhynchid, <i>Lagenorhynchus cruciger</i> & <i>L. australis</i> )	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>i.e.</i> , 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 <i>et al.</i> , 2007) and PW pinniped (approximation).	

### Potential Effects of Specified Activities on Marine Mammals and their Habitat

In the *Potential Effects of Specified Activities on Marine Mammals* section of the proposed rule (82 FR 21156; May 5, 2017), we included a qualitative discussion of the different ways that the USAF 86 FWS LRS WSEP training activities may potentially affect marine mammals without consideration of mitigation and monitoring measures. These effects are incorporated here by reference; however, we note the new information on decreased munition amount likely further reduces the chance and severity of these effects.

### Estimated Take

This section provides the number of incidental takes, by stock, authorized through this final rule, which informs both NMFS' consideration of the negligible impact determination.

Harassment is the only type of take expected to result from these activities. For this military readiness activity, the MMPA defines "harassment" as: (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).

Authorized takes primarily cover Level B harassment, as explosive detonations have the potential to result in disruption of behavioral patterns and/or TTS for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for mysticetes and high frequency species due to the size of the predicted auditory injury zones. Auditory injury is unlikely to occur for mid-frequency species. The proposed mitigation and monitoring measures are expected to minimize the severity of such taking to the extent practicable. No mortality or serious injury is 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. These elements and the method by which takes were calculated are described in detail in the

proposed rule for this action. While some aspects have not changed (*e.g.*, acoustic thresholds and modeling approach), we are reducing the amount of authorized take proposed from the proposed rule based on the significant reduction of explosives employed annually. Here, we again provide NMFS acoustic thresholds for explosives for reference and discuss the manner by which takes were estimated for a reduced number of munitions.

Based on the best available science, NMFS uses the acoustic and pressure thresholds indicated in Table 4 to predict the onset of behavioral harassment, PTS, tissue damage, and mortality.

**Table 4. Explosive acoustic and pressure thresholds for marine mammals.**

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)		

Based on the thresholds in Table 4, the USAF calculated the distances to each based on the amount of ordnance that could be dropped on any given day per the munition amounts included in the application. We also note that for sources that are detonated at shallow depths

such as is the case here, explosions may breach the surface with some of the acoustic energy escaping the water column. The source levels used in the acoustic model were not adjusted for this possible venting nor did subsequent analysis attempt to take this into account; therefore, this is another reason to identify the resulting analysis as conservative.

Although the amount of munitions included in each mission has been significantly reduced, the USAF was unable to recalculate these distances using the original modeling due to time and funding constraints. Therefore, the reduction in impacts (*i.e.*, take) was estimated using the correction factor discussed below Table 5. Although the prior calculations (Table 5) overestimate the range-to-effects, in the absence of mitigation, we continue to use these distances to conservatively inform the mitigation and monitoring measures. If during the course of this rule, the USAF is able to recalculate these zones based on the actual amount of munitions dropped per day, NMFS will reconsider, pursuant to the adaptive management provisions (see *Adaptive Management* section), the extent of the mitigation zones after review of the model.

**Table 5. Distances (m) to Explosive Thresholds Based on the Originally Proposed Amount of Munitions per Mission Day.**

Species	Mortality <sup>1</sup>	Level A Harassment				Level B Harassment		
		Slight Lung Injury	GI Tract Injury	PTS		TTS	Behavioral	
			237 dB SPL	SEL	SPL	SEL	SPL	SEL
<b>Low-frequency Cetaceans</b>								
Humpback Whale	99	200	204	5,415	1,241	55,464	2,266	59,039
Blue Whale	74	149						
Fin Whale	76	157						
Sei Whale	101	204						
Bryde's Whale	99	200						
Minke Whale	138	268						
<b>Mid-frequency Cetaceans</b>								
Sperm Whale	91	177	204	1,575	413	8,019	763	11,948
Killer Whale	149	287						

False Killer Whale (MHI Insular stock)	177	340						
False Killer Whale (all other stocks)	177	340						
Pygmy Killer Whale	324	604						
Short-finned Pilot Whale	217	413						
Melon-headed Whale	273	502						
Bottlenose Dolphin	273	509						
Pantropical Spotted Dolphin	324	604						
Striped Dolphin	324	604						
Spinner Dolphin	324	604						
Rough-toothed Dolphin	273	509						
Fraser's Dolphin	257	480						
Risso's Dolphin	207	384						
Cuvier's Beaked Whale	131	257						
Blainville's Beaked Whale	195	368						
Longman's Beaked Whale	133	261						
<b>High-frequency Cetaceans</b>								
Pygmy Sperm Whale	248	457	204	20,058	4,879	71,452	7,204	74,804
Dwarf Sperm Whale	273	509						

To determine the final amount of take authorized in the proposed rule, we considered the amount of take proposed based on the original amount of munitions released versus the final amount of munitions and the fact the 86 FWS would only conduct one day of training in 2017

and up to four days, annually, in 2018 through 2022 (the proposed rule considered five days of activity for each year). The amount of munition reduction ranges from 40 to 92 percent based on year. Based on these factors, we adjusted takes to be more realistic but also conservative to allow for adequate coverage (Table 6). For those species where take was equal to fewer than five animals, annually, we maintained this amount of take to account for random occurrence on any given day. For all other species, we reduced the amount of take by 20 percent (or one half of the lowest reduction for any given year (*i.e.*, 40 percent)).

**Table 6. Annual Original and Final Authorized Take Numbers by Species.**

Species	Mortality/Tissue Damage	Level A Harassment (PTS only*)		Level B Harassment (TTS)		Level B Harassment (Behavioral)	
		Original	Final	Original	Final	Original	Final
Humpback whale	0	4	<b>4</b>	54	<b>44</b>	38	<b>30</b>
Sei whale	0	0	<b>0</b>	0	<b>0</b>	3	<b>3</b>
Minke whale	0	1	<b>1</b>	11	<b>9</b>	19	<b>15</b>
Pygmy sperm whale	0	9	<b>7</b>	83	<b>66</b>	36	<b>29</b>
Dwarf sperm whale	0	22	<b>18</b>	203	<b>162</b>	87	<b>70</b>
Pygmy killer whale	0	0	<b>0</b>	1	<b>1</b>	25	<b>25*</b>
Short-finned pilot whale	0	0	<b>0</b>	5	<b>5</b>	36	<b>36*</b>
Melon-headed whale	0	0	<b>0</b>	1	<b>1</b>	152	<b>152*</b>
Bottlenose dolphin	0	0	<b>0</b>	2	<b>2</b>	32	<b>26</b>
Pantropical spotted dolphin	0	0	<b>0</b>	3	<b>3</b>	40	<b>40*</b>
Striped dolphin	0	0	<b>0</b>	2	<b>2</b>	51	<b>51*</b>
Spinner dolphin	0	0	<b>0</b>	1	<b>1</b>	29	<b>29*</b>
Rough-toothed dolphin	0	0	<b>0</b>	3	<b>3</b>	22	<b>22*</b>
Fraser's dolphin	0	0	<b>0</b>	10	<b>8</b>	273	<b>273*</b>
Risso's dolphin	0	0	<b>0</b>	2	<b>2</b>	25	<b>25*</b>
Longman's beaked whale	0	0	<b>0</b>	1	<b>1</b>	59	<b>59*</b>
<b>Total</b>	<b>0</b>	36	<b>30</b>	382	<b>310</b>	927	<b>885</b>

\*Denotes average group size.

We expect the amount of take we are authorizing to be a very conservative estimate and the likelihood of the 86 FWS reaching or exceeding that level of take is unlikely given the reduced amount of munitions proposed each year, the reduction of training duration, and the mitigation and monitoring measures. NMFS expects that Level A harassment is unlikely to occur

at the numbers proposed to be authorized because NMFS is authorizing (and analyzing) the modeled number of Level A harassment takes, which does not take the mitigation or avoidance measures into consideration.

### **Mitigation**

In order to issue regulations and a LOA under Section 101(a)(5)(A) 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 because there are no subsistence uses in Hawaii). 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)). The NDAA for FY 2004 amended the MMPA as it relates to military readiness activities and the incidental take authorization process such that “least practicable impact” shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

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.

The primary means of mitigating for impacts to marine mammals is mission delay if marine mammals are observed within certain distances from the weapon impact site during pre-mission surveys, during missions, or via range camera monitoring. Since promulgation of the proposed rule, the 86 FWS identified that the 2017 missions would be limited to one day involving only eight small diameter bombs (23 to 37 lb NEW). The 2018 through 2022 missions include more explosives than 2017 constituting all possible munitions types; however, in substantially less amount than included in the proposed rule. The range-to-effects distances modeled by the USAF includes 24 explosives ranging from 300 to 23 lb NEW. The USAF did not have the capability to remodel range to effects based on the reduced amount of munitions; therefore, we have outlined circumstances that conservatively accounts for this reduction separately for 2017 and jointly for 2018 through 2022. In the final rule, we identify an “exclusion zone” as absolutely triggering a delay while a “harassment zone” may or may not trigger a delay based on species observed and distance from the weapon impact site. The following circumstances apply to the implementation of exclusion zones and mitigation zones.

For all mission years, training shall be delayed if a marine mammal is observed within a 2.3 mi (3,704 m) exclusion zone. In the 86 FWS’s 2016 IHA, this was the monitoring and

mitigation zone established based on eight small diameter bombs (37 lb NEW) and one JASSM/JASSM-ER (300 lb NEW). This distance also greatly exceeds the maximum calculated range-to-effects for mortality and tissue injury when considering the original amount and type of munitions (Table 5). This exclusion zone will avoid any mortality or tissue damage, avoid PTS of mid-frequency cetaceans, and reduce the potential for severe PTS and TTS in low-frequency and high-frequency cetaceans. A standard minimum 2.3 mi (3,704 m) exclusion zone also allows for consistency in mitigation throughout each year for implementation ease. Therefore, NMFS has applied this exclusion zone as the threshold for mission delay mitigation for all training conducted during the effective dates of the regulations.

For all missions, delay of mission is to be triggered based on the location of an observed marine mammals relative to the weapon impact site. If a species is observed within a harassment zone identified in Table 5 (based on hearing group) and take is not authorized for that species or the 86 FWS has exceeded take for that species, mission delay mitigation would be triggered.

The USAF has also committed to delaying deployment of munitions if an animal is sighted anywhere within the 8 mi (13 km) monitoring area (see *Monitoring and Reporting* section below). However, delaying missions until an animal leaves the entire monitoring area may not be practicable or necessarily warranted because we have authorized take for select species. If an animal is observed within the 8 mi (13 km) monitoring area and the USAF 86 FWS has determined missions may resume without exceeding authorized take, the USAF may carry on with training. However, the 86 FWS will shift the target impact site (*i.e.*, the x, y coordinates of the detonation site) away from an animal sighting should mission delay mitigation not be triggered. The target site will be shifted to the farthest distance possible from the sighting but is confined to the two-mile wide weapon impact area.

If adverse weather conditions impair the ability of aircraft to operate safely, missions will either be delayed until the weather clears or cancelled for the day.

### **Monitoring and Reporting**

In order to issue regulations authorizing take incidental to a specified activity, Section 101(a)(5)(A) 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 proposed 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.

During the proposed rulemaking stage, the USAF 86 FWS proposed using a helicopter as a marine mammal survey platform and conducting such surveys before and after each day of training as this was the survey method used during the 2016 mission for which NMFS issued an IHA. However, in consideration of public comment and additional available methods, NMFS recommended monitoring enhancements intended to better address the increased duration and amount of activity covered in this rule as compared to the one-day activity in the IHA. As a result, the USAF 86 FWS, in consultation with NMFS, modified their Mitigation and Monitoring Plan to increase marine mammal detection probability and more clearly articulate the protocols followed for the survey. The Mitigation and Monitoring Plan, found at <http://www.nmfs.noaa.gov/pr/permits/incidental/military.htm>, provides detailed information. Here we summarize the major provisions; however, the USAF 86 FWS is responsible for implementing the full plan.

A pre-mission and post-mission survey will be conducted by a chase aircraft (*e.g.*, F-16, F-15) at altitudes ranging from 1,000 ft to 25,000 ft. The aircraft will be equipped with a sensor pod (*e.g.*, Sniper or Litening advanced targeting pods). Pre-mission surveys begin no less than 30 minutes prior to the start of a mission, primarily using visual lookouts who will scan the water surface in closely-spaced line-transect patterns as the aircraft circles above the monitoring area. In addition to having a dedicated marine mammal visual lookout, the aircraft's targeting pods, or

comparable sensor, will supplement the visual lookout surveys of the same area. Targeting pods have the ability to use high-definition forward looking infrared (FLIR) and high-definition television modes, both of which are displayed in real-time to the aircrew in the cockpit. Using thermal signatures, such as warm-blooded marine mammals in a comparatively cooler marine environment, it is expected that marine mammals at or near the water surface would be prominent and easy to identify in FLIR mode.

Advanced targeting pods are most frequently used by the USAF and are currently installed on F-16, F-15C/E, A-10, B-1, and B-52 aircraft. Combat aircrews receive extensive training and have gained combat experience using advanced targeting pods to track and identify targets that are similar in size, and in some cases smaller than, marine mammals. For example, the USAF was able to detect sharks from an AC-130 aircraft conducting a 3-mi (5-km) orbit at 15,000 ft altitude using an electro-optical/infrared sensor in the Gulf of Mexico within the Eglin Gulf Test and Training Range (see Figure 2 in the Mitigation and Monitoring Plan). Even though the aircraft and survey location are different than what is proposed under Long Range Strike WSEP activities, the capabilities to detect marine life near the water surface are expected to be similar.

Mission aircraft are capable of flying at various altitudes and airspeeds. As part of operational procedures, aircrew must conduct aerial surveillance of a potential impact or target area prior to releasing any weapons to confirm the location of the target and ensure the human safety zone around the impact area is clear. In order to accomplish this, the aircraft must operate at an appropriate altitude and airspeed that is operationally safe while meeting mission objectives. The range of altitudes and airspeeds at which this occurs varies across all aerial platforms; therefore, a specific altitude and airspeed requirement cannot be determined because

each LRSWSEP event will not have the same types of aircraft participating each year. However, regardless of aircraft type, the pre-mission aircraft will be equipped with a sensor pod to survey for marine mammals.

In addition to aerial surveys, there are other assets on the PMRF Range that will also be used to supplement the aerial surveys. Range cameras are installed on Makaha Ridge, at an elevation between 1,500 and 1,700 ft, and are able to see out to 50 nmi from the shore. Since the weapon impact area is approximately 44 nm from shore, it would be within the line of sight of the cameras. The optical lenses of the cameras have the zoom capability to see marine life if they are at or near the surface. The camera feed will be monitored by personnel within the mission control room at PMRF. Since these cameras will be used to track weapon impacts, they will be available to supplement aerial survey efforts by providing opportunistic sighting information. Therefore, during pre-mission surveys, the range cameras on Makaha Ridge will be zoomed in on the weapon impact area and will be monitored in real-time for at least 30 minutes prior to weapon release.

During the mission (*i.e.*, as aircraft are inbound to release weapons), aircrew of the plane carrying the weapon, the chase aircraft, and the range camera operator will observe for protected species. If a protected species is observed, weapon release will be delayed per the mitigation requirements. The mission aircraft pilot will divert effort to following the protected species until it is confirmed to be outside the mitigation zone and on a path away from the area (*i.e.*, on a heading and swim speed suggesting it is outside the mitigation zone).

NMFS may modify and augment the existing mitigation, monitoring, or reporting measures (after consulting with the 86 FWS regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the

mitigation and monitoring. Possible sources of data that could contribute to the decision to modify the mitigation, monitoring, and reporting measures in an LOA include, but is not limited to:

- (i) Results of new range-to-effects models based on maximum amount of weapons, by type, utilized during each mission;
- (ii) Results from 86 FWS's monitoring from the previous year(s);
- (iii) Results from other marine mammal and/or sound research or studies; or
- (iv) Any information that reveals marine mammals may have been taken in a manner, extent, or number not authorized by the regulations or subsequent LOA.

### **Adaptive Management**

The final regulations governing the take of marine mammals incidental to 86 FWS training activities on the BSURE area of the PMRF contain an adaptive management component. The reporting requirements associated with this final rule are designed to provide NMFS with monitoring data from the previous year to allow NMFS to consider whether any changes are appropriate. NMFS and the 86 FWS would meet to discuss the monitoring reports, activities, any updated modeling efforts, and current science and whether mitigation or monitoring modifications are appropriate. The use of adaptive management allows NMFS to consider new information from different sources to determine (with input from the 86 FWS regarding practicability) on an annual or biennial basis if mitigation or monitoring measures should be modified (including additions or deletions). Mitigation measures could be modified if new data suggests that such modifications would have a reasonable likelihood of reducing adverse effects to marine mammal species or stocks and their habitat and if the measures are practicable.

The following are some of the possible sources of applicable data to be considered through the adaptive management process: (1) results of new range-to-effects models based on maximum amount of weapons, by type, utilized during each mission; (2) results from 86 FWS's monitoring from the previous year(s); (3) Results from other marine mammal and/or sound research or studies; or (4) Any information that reveals marine mammals may have been taken in a manner, extent, or number not authorized by the regulations or subsequent LOA.

### **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’s 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).

Behavioral disruption due to Level B harassment would be limited to reactions such as startle responses, movements away from the area, and short-term changes to behavioral state. These impacts are expected to be temporary and of short duration because the specified activity would be limited to 4 hours per day for no more than 4 days per year. 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.

In terms of what is analyzed for the potential PTS (Level A harassment) in marine mammals as a result of 86 FWS's LRS WSEP operations, the ranges-to-effects identified are conservative (*i.e.*, the longest distance for any given depth bin) and, in some cases, include more energy than would be released per day due to reduced munition expenditure. The 86 FWS would also maintain an exclusion zone extending 2.3 mi from the target site and shift the target site away from an animal should it be observed (and delay mitigation is not triggered). In addition, marine mammals would likely begin to move away from the immediate area once bombing begins, decreasing exposure to the full amount of acoustic energy used to calculate ranges-to-effects. Therefore, we anticipate that, because of the mitigation measures, conservative range-to-effects analysis, and the likely short duration of exposures, any PTS incurred would be in the form of only a small degree of PTS, rather than 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 (*i.e.*, maximum of four hours per day over a maximum of four days per year), NMFS has determined there will not be a substantial impact on marine mammals or their habitat. We do not expect the activity would

impact rates of recruitment or survival of marine mammals due to mortality (which would remove individuals from the population) or serious injury because we do not expect those impacts to occur not are we authorizing that manner of take. In addition, the activity would occur only in a small part of a stock's overall range, and would not occur in any areas known to be specifically important or unique for feeding or reproductive behaviors when compared to overall range. Therefore, the impact of any potential temporary displacement would be negligible and animals would be expected to return to the area after the cessation of activities. In addition, although the activity could result in Level A harassment (PTS only, as opposed to slight lung injury or gastrointestinal tract injury) and Level B harassment (behavioral disturbance and TTS), the number of exposed animals is expected to be low due to the short-term and site-specific nature of the activity. Therefore, we do not anticipate the level of harassment to impact rates of recruitment or survival of marine mammals.

In past missions (October 2016), the 86 FWS completed pre- and post- aerial surveys. The 86 FWS did not observe any marine mammals during the pre-mission aerial survey before missions occurred, and did not observe any marine mammals after missions were completed. The 86 FWS was authorized for Level A and Level B harassment takes of five species, but the ordinance failed to detonate therefore, in addition to no marine mammal sightings, no take was documented.

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 proposed monitoring and mitigation measures, NMFS finds that the total marine mammal take from the proposed activity will have a negligible impact on all affected marine mammal 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 ESA 1973 (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 the final rule and LOA, NMFS consults internally, in this case with the ESA Interagency Cooperation Division, whenever we propose to authorize take for endangered or threatened species.

There is one marine mammal species under NMFS' jurisdiction that is listed as endangered or threatened under the ESA with confirmed or possible occurrence in the Study Area, the sei whale. The USAF 86 FWS consulted with NMFS pursuant to section 7 of the ESA, and NMFS also consulted internally on the issuance of a rule and LOA under section 101(a)(5)(A) of the MMPA for LRS WSEP training activities. NMFS issued a Biological Opinion concluding that the issuance of the rule and subsequent LOA are likely to adversely affect, but are not likely to jeopardize, the continued existence of the threatened and endangered species under NMFS' jurisdiction and are not likely to result in the destruction or adverse modification of critical habitat in the PMRF. The Biological Opinion for this action is available on NMFS' website (<http://www.nmfs.noaa.gov/pr/permits/incidental/military.htm>).

## **Classification**

The Office of Management and Budget has determined that this final rule is not significant for purposes of Executive Order 12866. This rule is not an Executive Order 13771 regulatory action because this rule is not significant under Executive Order 12866.

Pursuant to the Regulatory Flexibility Act (RFA), the Chief Counsel for Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration at the proposed rule stage that this rule would not have a significant economic impact on a substantial number of small entities. The USAF 86 FWS is the sole entity that would be affected by this rulemaking, and the USAF 86 FWS is not a small governmental jurisdiction, small organization, or small business, as defined by the RFA. Because this action directly affects the USAF 86 FWS and not a small entity, NMFS concluded the action will not result in a significant economic impact on a substantial number of small entities. No comments were received regarding this certification. As a result, a regulatory flexibility analysis is not required and none has been prepared.

The Assistant Administrator for Fisheries has determined that there is good cause under the Administrative Procedure Act (5 U.S.C 553(d)(3)) to waive the 30-day delay in the effective date of the measures contained in the final rule. NMFS is unable to accommodate the 30-day delay of effectiveness due to delays resulting from: late changes in the action (reductions in activity levels and increased monitoring protocol that would improve protections for marine mammals), and the resulting need for new take analysis to address decreased munitions in both this rule and the accompanying Biological Opinion. The USAF 86 FWS is the only entity subject to the regulations, and it has requested that NMFS issue the LOA prior to the scheduled August 24, 2017, training to avoid mission delays. A waiver of the 30-day delay of the effective

date of the final rule will allow the USAF 86 FWS to finalize operational procedures to ensure compliance with required mitigation, monitoring, and reporting requirements, and have MMPA authorization in place to support of the training exercise. Any delay of enacting the final rule would result in either: (1) A suspension of planned USAF training, which would disrupt vital training essential to national security; or (2) the USAF's procedural non-compliance with the MMPA (should the USAF conduct training without an LOA), thereby resulting in the potential for unauthorized takes of marine mammals. For these reasons, the Assistant Administrator finds good cause to waive the 30-day delay in the effective date.

**List of Subjects in 50 CFR Part 218**

Exports, Fish, Imports, Incidental take, Indians, Labeling, Marine mammals, Penalties, Reporting and recordkeeping requirements, Seafood, Transportation.

Dated: August 16, 2017.

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Samuel D. Rauch III,  
Deputy Assistant Administrator for Regulatory Programs,  
National Marine Fisheries Service.

For reasons set forth in the preamble, 50 CFR part 218 is amended as follows:

**PART 218 – REGULATIONS GOVERNING THE TAKE OF MARINE MAMMALS  
INCIDENTAL TO SPECIFIED ACTIVITIES**

1. The authority citation for part 218 continues to read as follows:

**Authority:** 16 U.S.C. 1361 *et seq.*, unless otherwise noted.

2. Add subpart F to part 218 to read as follows:

**Subpart F – Taking of Marine Mammals Incidental to the U.S. Air Force 86 Fighter Weapons Squadron Conducting Long Range Strike Weapons System Evaluation Program at the Pacific Missile Range Facility at Kauai, Hawaii.**

Sec.

218.50 Specified activity and specified geographical region.

218.51 Effective dates.

218.52 Permissible methods of taking.

218.53 Prohibitions.

218.54 Mitigation requirements.

218.55 Requirements for monitoring and reporting.

218.56 Letters of Authorization.

218.57 Renewals and Modifications of Letters of Authorization.

218.58 [Reserved]

218.59 [Reserved]

**Subpart F – Taking of Marine Mammals Incidental to the U.S. Air Force 86 Fighter Weapons Squadron Conducting Long Range Strike Weapons System Evaluation Program at the Pacific Missile Range Facility at Kauai, Hawaii.**

**§ 218.50 Specified activity and specified geographical region.**

(a) Regulations in this subpart apply only to the 86 Fighter Weapons Squadron (86 FWS) and those persons it authorizes to conduct activities on its behalf, for the taking of marine mammals as outlined in paragraph (b) of this section and incidental to Long Range Strike Weapons System Evaluation Program (LRS WSEP) missions.

(b) The taking of marine mammals by 86 FWS pursuant to a Letter of Authorization (LOA) is authorized only if it occurs at the Barking Sands Underwater Range Expansion (BSURE) area of the Pacific Missile Range Facility (PMRF) off Kauai, Hawaii.

**§ 218.51 Effective dates.**

Regulations in this subpart are effective August 21, 2017, through August 22, 2022.

**§ 218.52 Permissible methods of taking.**

Under a LOA issued pursuant to § 216.106 of this chapter and § 218.56, the Holder of the LOA (herein after 86 FWS) may incidentally, but not intentionally, take marine mammals by Level A and Level B harassment associated with LRS WSEP activities within the area described in § 218.50, provided the activities are in compliance with all terms, conditions, and requirements of these regulations in this subpart and the associated LOA.

**§ 218.53 Prohibitions.**

Notwithstanding takings contemplated in § 218.50 and authorized by an LOA issued under § 216.106 of this chapter and § 218.56, no person in connection with the activities described in § 218.50 may:

- (a) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or the LOA issued under § 216.106 of this chapter and § 218.56.
- (b) Take a marine mammal species or stock not specified in the LOA; and
- (c) Take a marine mammal species or stock specified in the LOA in any manner other than as specified.

**§ 218.54 Mitigation requirements.**

When conducting activities identified in § 218.50, the mitigation measures contained in the LOA issued under § 216.106 of this chapter and § 218.56 must be implemented. These mitigation measures shall include but are not limited to the following general conditions:

- (a) Execute missions during day-light hours only, no more than four hours per day, no more than one day during 2017, no more than four days per year for 2018 through 2022 over a five-day period, on weekdays, and only during summer (June through August) or fall (September through November) months.

(b) Delay live munition detonations if a marine mammal is observed within the designated exclusion zone (2.3 mile (mi) (3,704 m) from the weapon impact site), resuming only after the animal is observed exiting the exclusion zone or the exclusion zone has been clear of any additional sightings for a period of 30 minutes.

(c) Delay live munition detonations if a marine mammal is observed in an impact zone but outside of the 2.3 mi exclusion zone and if the manner of taking is not authorized (*e.g.*, animal is observed in Level A impact zone for that species and no Level A take is authorized), resuming only after the animal is observed exiting the zone.

(d) Shift the target site as far as possible from an observed marine mammal's location (but within the two-mile wide weapon impact area) if a marine mammal is observed during the pre-mission survey or during missions and continuing the mission will not result in an unauthorized take of a marine mammal.

(e) Suspend live munition detonations if an unauthorized take of a marine mammal occurs, and report the incident to NMFS Office of Protected Resources (OPR), NMFS Pacific Islands Regional Office (PIRO), and the Pacific Islands Region Marine Mammal Stranding Network representative immediately followed by a report to NMFS within 24 hours.

(f) Implement a best management practice, on a daily basis, of conducting inert munition training or small bomb detonations prior to detonating large bombs if the Project Engineer/Commanding Office determines this practice does not interfere with mission training.

(g) Additional mitigation measures as contained in an LOA.

#### **§ 218.55 Requirements for monitoring and reporting.**

(a) Holders of LOAs issued pursuant to § 218.56 for activities described in § 218.50(a) are required to cooperate with NMFS, and any other Federal, state, or local agency with authority

to monitor the impacts of the activity on marine mammals. Unless specified otherwise in the LOA, the Holder of the LOA must notify the Pacific Islands Region Stranding Coordinator, NMFS, by email, at least 72 hours prior to LRS WSEP missions.

(b) All marine mammal monitoring will be carried out in compliance with the 86 FWS Marine Mammal Mitigation and Monitoring Plan, dated August 2017.

(c) Aerial Surveys: The 86 FWS will conduct pre-, during, and post-training surveys each mission day.

(1) The marine mammal survey monitoring area will extend no less than approximately 8 mi (13 kilometers (km)) from the designated impact site.

(2) Surveys will utilize military aircraft equipped with advanced targeting sensor pods (*e.g.*, SNIPER pods) at altitudes and speeds ideal for detecting marine mammals using such equipment; aircraft will fly transect lines covering the entire eight mi monitoring area. A helicopter-based survey may substitute the military aircraft survey platform and use of sensor pods only if a sensor pod is not be available.

(3) A pre-mission marine mammal survey will commence no later than 30 minutes prior to beginning training activities.

(4) Aircraft personnel will also observe for marine mammals during training (*e.g.*, on approach to weapon launch location).

(5) Aircraft personnel will conduct a post-mission survey for marine mammals immediately following the end of training each mission day. A helicopter may be used in lieu of mission aircraft only if sensor pod is not available.

(d) Range Camera Surveys: 86 FWS personnel will use the Makaha Ridge range cameras to monitor for marine mammals within the weapon impact area at least 30 minutes prior to, during, and immediately after training activities.

(e) Helicopter surveys: If military aircraft equipped with a sensor pod cannot be used for marine mammal surveys, the 86 FWS may substitute a helicopter as the survey platform. The helicopter will fly at an approximately 200 feet altitude and will cover the 8 mi monitoring area. 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.

(f) Acoustic Monitoring:

(1) The 86 FWS will comply with all acoustic monitoring as described in the 86 FWS Mitigation and Monitoring Plan.

(2) Acoustic data from the PRMF hydrophones will be collected and stored by the 86 FWS. Data will be analyzed to better understand the effects of LRS WSEP missions. The results of the analysis will accompany any subsequent LOA request or, if no request is made, no later than 90 after expiration of the LOA.

(g) The 86 FWS will contact the Pacific Islands Region stranding coordinator, NMFS, by email, at least 72 hours prior to mission onset and one business day after completion of missions to declare that missions are complete.

(h) The Holder of the LOA is required to:

(1) Submit a draft report to NMFS OPR on all monitoring conducted under the LOA within 90 days of the completion of marine mammal monitoring or accompanying a subsequent application for regulations. A final report shall be prepared and submitted within 30 days

following resolution of comments on the draft report from NMFS. This report must contain the informational elements described in the Monitoring Plan, and shall also include:

- (i) Date and time of each LRS WSEP mission;
- (ii) A complete description of the pre-exercise, exercise, and post-exercise activities related to mitigating and monitoring the effects of LRS WSEP missions on marine mammals; and;
- (iii) Results of the monitoring program, including numbers by species/stock of any marine mammals noted injured or killed as a result of the LRS WSEP mission and number of marine mammals (by species if possible) that may have been harassed due to presence within the designated harassment zones.

(iv) The draft report will be subject to review and comment by NMFS. Any recommendations made by NMFS must be addressed in the final report prior to acceptance by NMFS. The draft report will be considered the final report for this activity under the LOA if NMFS has not provided comments and recommendations within 90 days of receipt of the draft report.

(2) Report injured or dead marine mammals:

(i) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the LOA, such as an injury for species not authorized (Level A harassment), serious injury, or mortality, the 86 FWS shall immediately cease the specified activities and immediately report the incident to Pacific Islands Regional Stranding Coordinator (888-256-9840), NMFS followed by a report submitted to NMFS Office of Protected Resources and the Pacific Islands Regional Office within 24 hours. The report must include the following information:

- (A) Time and date of the incident;
- (B) Description of the incident;
- (C) Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- (D) Description of all marine mammal observations in the 24 hours preceding the incident;
- (E) Species identification or description of the animal(s) involved;
- (F) Fate of the animal(s); and
- (G) Photographs or video footage of the animal(s).

(ii) Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with 86 FWS to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. The 86 FWS may not resume their activities until notified by NMFS.

(iii) In the event that 86 FWS discovers an injured or dead marine mammal, and the lead observer determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition), 86 FWS shall immediately report the incident to the Pacific Islands Regional Stranding Coordinator, followed by a report to NMFS Office of Protected Resources and the Pacific Island Regional Office within 24 hours of the discovery. The report must include the same information identified in paragraph (h)(2)(i) of this section. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with 86 FWS to determine whether additional mitigation measures or modifications to the activities are appropriate.

(iv) In the event that 86 FWS discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the activities authorized in the LOA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), 86 FWS shall report the incident to the Office of Protected Resources, NMFS, and the Pacific Islands Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. The 86 FWS shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.

(3) Additional Conditions:

(i) The Holder of the LOA must inform the Director, Office of Protected Resources, NMFS, (301-427-8400) or designee (301-427-8401) prior to the initiation of any changes to the monitoring plan for a specified mission activity.

(ii) A copy of the LOA must be in the possession of the safety officer on duty each mission day.

(iii) The LOA may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.

#### **§ 218.56 Letters of Authorization.**

(a) To incidentally take marine mammals pursuant to these regulations, 86 FWS must apply for and obtain an LOA.

(b) An LOA, unless suspended or revoked, may be effective for a period of time not to exceed the expiration date of these regulations.

(c) If an LOA expires prior to the expiration date of these regulations, 86 FWS must apply for and obtain a renewal of the LOA.

(d) In the event of projected changes to the activity or to mitigation and monitoring measures required by an LOA, 86 FWS must apply for and obtain a modification of the LOA as described in § 218.57.

(e) The LOA will set forth:

- (1) Permissible methods of incidental taking;
- (2) The number of marine mammals, by species and stock, authorized to be taken;
- (3) Means of effecting the least practicable adverse impact (*i.e.*, mitigation) on the species of marine mammals authorized for taking, on its habitat, and on the availability of the species for subsistence uses; and
- (4) Requirements for monitoring and reporting.

(f) Issuance of an LOA shall be based on a determination that the level of taking will be consistent with the findings made for the total taking allowable under these regulations.

(g) Notice of issuance or denial of an LOA will be published in the *Federal Register* within 30 days of a determination.

#### **§ 218.57 Renewals and Modifications of Letters of Authorization.**

(a) An LOA issued under § 216.106 of this chapter and § 218.56 for the activity identified in § 218.50(a) will be renewed or modified upon request by the applicant, provided that:

- (1) The proposed specified activity and mitigation, monitoring, and reporting measures, as well as the anticipated impacts, are the same as those described and analyzed for these regulations (excluding changes made pursuant to the adaptive management provision in paragraph (c)(1) of this section), and

(2) NMFS determines that the mitigation, monitoring, and reporting measures required by the previous LOA under these regulations were implemented.

(b) For an LOA modification or renewal request by the applicant that include changes to the activity or the mitigation, monitoring, or reporting (excluding changes made pursuant to the adaptive management provision in paragraph (c)(1) of this section) that do not change the findings made for the regulations or result in no more than a minor change in the total estimated number of takes (or distribution by species or years), NMFS may publish a notice of proposed LOA in the *Federal Register*, including the associated analysis illustrating the change, and solicit public comment before issuing the LOA.

(c) An LOA issued under § 216.106 of this chapter and § 218.56 for the activity identified in § 218.50(a) may be modified by NMFS under the following circumstances:

(1) Adaptive Management - NMFS may modify and augment the existing mitigation, monitoring, or reporting measures (after consulting with the 86 FWS regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring.

(i) Possible sources of data that could contribute to the decision to modify the mitigation, monitoring, and reporting measures in an LOA include, but is not limited to:

(A) Results of new range-to-effects models based on maximum amount of weapons, by type, utilized during each mission;

(B) Results from 86 FWS's monitoring from the previous year(s);

(C) Results from other marine mammal and/or sound research or studies; or

(D) Any information that reveals marine mammals may have been taken in a manner, extent, or number not authorized by the regulations or subsequent LOA.

(ii) If, through adaptive management, the modifications to the mitigation, monitoring, or reporting measures are substantial, NMFS will publish a notice of proposed LOA in the *Federal Register* and solicit public comment.

(2) Emergencies - If NMFS determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in the LOA issued pursuant to § 216.106 of this chapter and § 218.50, an LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the *Federal Register* within 30 days of the action.

**§ 218.58 [Reserved]**

**§ 218.59 [Reserved]**

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