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## National Oceanic and Atmospheric Administration

## 50 CFR Part 216

## Taking and Importing Marine Mammals; U.S. Navy Training in the Hawaii Range Complex; Final Rule

**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**50 CFR Part 216**

**[Docket No. 080519680–81530–02]**

**RIN 0648–AW86**

## Taking and Importing Marine Mammals; U.S. Navy Training in the Hawaii Range Complex

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

**ACTION:** Final rule.

**SUMMARY:** NMFS, upon application from the U.S. Navy (Navy), is issuing regulations to govern the unintentional taking of marine mammals incidental to training activities conducted within the Hawaii Range Complex (HRC) for the period of January 2009 through January 2014. The Navy's training activities are considered military readiness activities pursuant to the Marine Mammal Protection Act (MMPA), as amended by the National Defense Authorization Act of 2004 (NDAA). These regulations, which allow for the issuance of ''Letters of Authorization'' (LOAs) for the incidental take of marine mammals during the described activities and specified timeframes, prescribe the permissible methods of taking and other means of affecting the least practicable adverse impact on marine mammal species and their habitat, as well as requirements pertaining to the monitoring and reporting of such taking.

**DATES:** Effective January 5, 2009 through January 5, 2014.

**ADDRESSES:** A copy of the Navy's application, which contains a list of the references used in this document, NMFS' Record of Decision (ROD), and other documents cited herein, may be obtained by writing to Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910–3225 or by telephone via the contact listed here.

**FOR FURTHER INFORMATION CONTACT:** Jolie Harrison, Office of Protected Resources, NMFS, (301) 713–2289, ext. 166.

**SUPPLEMENTARY INFORMATION:** Extensive supplementary information was provided in the proposed rule for this activity, which was published in the **Federal Register** on Monday, June 23, 2008 (73 FR 35510). This information will not be reprinted here in its entirety; rather, all sections from the proposed rule will be represented herein and will contain either a summary of the material presented in the proposed rule or a note referencing the page(s) in the proposed rule where the information may be found. Any information that has changed since the proposed rule was published will be addressed herein. Additionally, this final rule contains a section that responds to the comments received during the public comment period.

### Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (Secretary) to allow, upon request, the incidental, but not intentional taking of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) during periods of not more than five consecutive years each if certain findings are made and regulations are issued or, if the taking is limited to harassment and of no more than 1 year, the Secretary shall issue a notice of proposed authorization for public review.

Authorization 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, and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such taking are set forth.

NMFS has defined ''negligible impact'' in 50 CFR 216.103 as:

> an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

The NDAA (Pub. L. 108–136) removed the ''small numbers'' and ''specified geographical region'' limitations and amended the definition of ''harassment'' as it applies to a ''military readiness activity'' to read as follows (Section 3(18)(B) of the MMPA):

> (i) Any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild [Level A Harassment]; or
>
> (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered [Level B Harassment].

### Summary of Request

On June 25, 2007, NMFS received an application from the Navy requesting authorization for the take of 24 species of marine mammals incidental to upcoming Navy training activities to be conducted within the HRC, which covers 235,000 nm$^2$ around the Main Hawaiian Islands (*see* map on page 17 of the application), over the course of 5 years. These training activities are classified as military readiness activities. These training activities may incidentally take marine mammals present within the HRC by exposing them to sound from mid-frequency or high frequency active sonar (MFAS/HFAS) or to underwater detonations at levels that NMFS associates with the take of marine mammals. The Navy requested authorization to take individuals of 24 species of marine mammals by Level B Harassment. Further, though they do not anticipate it to occur, the Navy requested authorization to take, by injury or mortality, up to 10 individuals each of 10 species over the course of the 5-year period (bottlenose dolphin, *Kogia spp.,* melon-headed whale, pantropical spotted dolphin, pygmy killer whale, short-finned pilot whale, striped dolphin, and Cuvier's, Longman's, and Blainville's beaked whale).

### Background of Navy Request

The proposed rule contains a description of the Navy's mission, their responsibilities pursuant to Title 10 of the United States Code, and the specific purpose and need for the activities for which they requested incidental take authorization. The description contained in the proposed rule has not changed (73 FR 35510).

### Description of the Specified Activities

The proposed rule contains a complete description of the Navy's specified activities that are covered by these final regulations, and for which the associated incidental take of marine mammals will be authorized in the related LOAs. The proposed rule describes the nature of the training exercises involving both mid- and high-frequency active sonar (MFAS and HFAS) and explosive detonations, as well as the MFAS and HFAS sound sources and explosive types. See 73 FR 35510, page 35512. The narrative description of the action contained in the proposed rule has not changed except for two corrections and one clarification, noted in the paragraph below. Tables 1–3 summarize and quantify the sonar exercise types, sonar sources, and explosive exercise types

used in these training exercises and contain minor corrections (from the proposed rule) that did not affect NMFS' analysis of the proposed action.

The last paragraph of the Mine Neutralization section of the proposed rule contained an error. For the final rule, the sentence beginning "Standard practices for tethered mines * * *" should be replaced with the following sentence: "Standard practice for tethered mines is to tie off the explosive counter charge as closely as possible to the mine case." In the proposed rule, Table 5 (which is Table 3 in this final rule) mistakenly indicated that IEER exercises would only occur in the summer months. In fact, IEER use in the winter months is typically rare and infrequent due to the required mitigation measures, but exercises may be planned for winter and NMFS and the Navy's analyses accounted for this fact. Table 3 includes the correction here. These two modifications are non-substantive and do not affect NMFS' determinations.

Last, Table 1 (in this final rule) indicates that RIMPAC exercises only occur in the summer (when humpback whales are not present) of every other year, which is accurate. Table 2 shows that the Navy plans to conduct the same number of sonar hours in each year. The needed clarification (to ensure no unanticipated humpback whale take occurs) follows: In the years without RIMPAC, the sonar hours conducted will be seasonally and spatially distributed such that no additional exposures of humpback whales to MFAS/HFAS would occur beyond those used to estimate take in the years with a RIMPAC. In a simple example, in a non-RIMPAC year, the Navy could choose to conduct the RIMPAC-sized lump of sonar hours either in the summer when humpbacks are not present, or in the winter but farther out to sea where their activities would not expose humpbacks to MFAS/HFAS, or some combination of those two. This clarification does not affect NMFS' determinations.

| Training Operation | Location Where Exercise May Be Conducted | Time of Year Conducted | Number of Training Events per/year | Average Length of Exercise (hrs) |
|---|---|---|---|---|
| **Other ASW (TRACKEX, TORPEX, etc.)** | Hawaii OpArea | Any time | 32 | 13.5 |
| **RIMPAC** | Hawaii OpArea | Summer Only** | 1 every other year | 1 month (44 individual ASW ops from 2-24 hours long) |
| **USWEX** | Hawaii OpArea | Any time | 5 | 3-4 days, including several 16-hr ASW ops |
| **Multi Strike Group** | Hawaii OpArea | Any time | 1* | 5 to 10 days including multiple 12-hr ASW ops |

**Table 1.** Summary of locations, durations, and times of year of ASW exercises.

* If a Multiple Strike Group Exercise were planned for any given year, either other exercises (of a different type) would be cancelled or limited to ensure that the specified number of sonar hours (and, therefore, take of marine mammals) was not exceeded or the Navy would seek separate MMPA authorization.

** as noted, RIMPAC exercises are limited to the summer months, when humpback whales are not in residence (and, therfore, RIMPAC exercises are not expected to result in the take of humpback whales)

In the years without RIMPAC, the sonar hours conducted would be seasonally and spatially distributed such that no additional exposures of humpback whales to MFAS/HFAS would occur beyond those used to estimate take in the years with RIMPAC

| Sonar Type | Description of Sonar | Source Depth (m) | Center Freq (kHz) | Source Level (dB) | Spacing (m)* | Vertical Directivitiy | Horizontal Directivity | Units per Hour | Total Amount per Year |
|---|---|---|---|---|---|---|---|---|---|
| **MK-48** | **Torpedo** | 27 | > 10 | classified | 144 | Omni | Omni | one torpedo run | 313 runs |
| **AN/SQS-53** | **Surface Ship** | 7 | 3.5 | 235 | 154 | Omni | 240° Forward | 120 pings | 1284 hours |
| **AN/SQS-56** | **Surface Ship** | 7 | 7.5 | 225 | 154 | Omni | 30° Forward | 120 pings | 383 hours |
| **AN/SSQ-62** | **Sonobuoy** | 27 | 8 | 201 | 450 | Omni | Omni | 8 sonobuoys | 2423 buoys |
| **AN/AQS-22** | **Helo Dipping** | 27 | 4.1 | 217 | 15 | Omni | Omni | 2 dips | 1010 dips |
| **AN/BQQ-10** | **Submarine** | 91 | classified | classified | n/a | Omni | Omni | 2 pings | 200 hours |

**Table 2.** Parameters used for modeling the six sonar sources and the estimated annual operation. Many of the actual parameters and capabilities of these sonars are classified. Parameters used for modeling were derived to be as representative as possible. When, however, there were a wide range of potential modeling values, a nominal parameter likely to result in the most impact was used so that the model would err towards overestimation.

*Spacing means distance between pings at the nominal speed

| Training Operation | Explosive Sources | Locations Where Exercises May be Conducted | Time of Year Conducted | Number of Training Events per/year | Average Length of Exercise (hrs) | Number of Rounds per/year |
|---|---|---|---|---|---|---|
| Mine Neutralization | 1 to 20-lb Demolition charge | Puuloa Underwater Range, Lima Landing, Naval Inactive Ship Maintenance Facility, MCBH, MCTAB, Barbers Point Range, Ewa Training Minefield | Any time | 68 | 6 | 68 |
| A-S MISSILEX | Penguin Maverick | Pacific Missile Range Facility (W-188) | Any time | 50 | 5.5 | 50 |
| S-S MISSILEX | Harpoon | Pacific Missile Range Facility (W-188) | Any time | 12 | 5 | 75 |
| BOMBEX | Mk82, Mk83, Mk84, Mk48 | Hawaii OpArea | Any time | 38 | 6 | 38 |
| SINKEX | Multiple sources as described in narrative | Hawaii OpArea | Any time | 6 | 14.5 | 6 |
| S-S GUNNEX | 5 inch round, 76-mm round | Warning Areas W-191, 192, 193, 194, 196, and Mela | Any time | 91 | 3.5 | 3,822 |
| Naval Surface Fire Support | 5 inch round, 76-mm round | Warning Area W-188 | Any time | 28 | 8.1 | 644 |
| IEER | SSQ-110A Sonobuoy | Hawaii OpArea | Any time | 4 | 4 to 8 | 960 |

**Table 3**. Summary of the location, duration, time of year, and nature of the exercises involving underwater detonations

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

There are 27 marine mammal species with possible or confirmed occurrence in the HRC. Seven marine mammal species listed as federally endangered under the Endangered Species Act (ESA) occur in the HRC: The humpback whale, North Pacific right whale, sei whale, fin whale, blue whale, sperm whale, and Hawaiian monk seal. The most abundant marine mammals appear to be dwarf sperm whales, striped dolphins, and Fraser's dolphins. The most abundant large whales are sperm whales. Table 4 provides the estimated abundance, estimated group size, and estimated probability of detection (based on Barlow 2006) of the marine mammal species that occur in the HRC.

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| Common Name | Scientific Name | Status | Occurs | Group Size* | Detection Probability** | | Estimated Abundance in Hawaii |
|---|---|---|---|---|---|---|---|
| | | | | | Group 1-20 | Group>20 | |
| MYSTICETES (baleen whales) | | | | | | | |
| Family Balaenidae (right whales) | | | | | | | |
| North Pacific right whale | *Eubalaena japonica* | E | Rare | | | | unknown |
| Family Balaenopteridae (rorquals) | | | | | | | |
| Humpback whale | *Megaptera novaeangliae* | E | Regular | 1.7 | | | 4,491 |
| Minke whale | *Balaenoptera acutorostrata* | | Regular | | | | unknown |
| Sei whale | *Balaenoptera borealis* | E | Rare | 3.4 | 0.9 | 0.9 | 236*** |
| Fin whale | *Balaenoptera physalus* | E | Rare | 2.6 | 0.9 | 0.9 | 236*** |
| Blue whale | *Balaenoptera musculus* | E | Rare | | | | unknown |
| Bryde's whale | *Balaenoptera edeni/brydei* | | Regular | 1.5 | 0.9 | 0.9 | 469 |
| ODONTOCETES (toothed whales) | | | | | | | |
| Family Physeteridae (sperm whale) | | | | | | | |
| Sperm whale | *Physeter macrocephalus* | E | Regular | 7.3 | 0.87 | 0.87 | 6,919 |
| Family Kogiidae (pygmy sperm whales) | | | | | | | |
| Pygmy sperm whale | *Kogia breviceps* | | Regular | 1 | 0.35 | 0.35 | 7,138 |
| Dwarf sperm whale | *Kogia sima* | | Regular | 2.3 | 0.35 | 0.35 | 17,519 |
| Family Ziphiidae (beaked whales) | | | | | | | |
| Cuvier's beaked whale | *Ziphius cavirostris* | | Regular | 2 | 0.23 | 0.23 | 15,242 |
| Blainville's beaked whale | *Mesoplodon densirostris* | | Regular | 2.3 | 0.45 | 0.45 | 2,872 |
| Longman's beaked whale | *Indopacetus pacificus* | | Regular | 17.8 | 0.76 | 0.96 | 1,007 |
| Family Delphinidae (dolphins) | | | | | | | |
| Rough-toothed dolphin | *Steno bredanensis* | | Regular | 14.8 | 0.76 | 1 | 8,709 |
| Bottlenose dolphin | *Tursiops truncatus* | | Regular | 9 | 0.76 | 1 | 3,215 |
| Pantropical spotted dolphin | *Stenella attenuata* | | Regular | 60 | 0.76 | 1 | 8,978 |
| Spinner dolphin | *Stenella longirostris* | | Regular | 31.7 | 0.76 | 1 | 3,351 |
| Striped dolphin | *Stenella coeruleoalba* | | Regular | 37.3 | 0.76 | 1 | 13,143 |
| Risso's dolphin | *Grampus griseus* | | Regular | 15.4 | 0.76 | 1 | 2,372 |
| Melon-headed whale | *Peponocephala electra* | | Regular | 89.2 | 0.76 | 1 | 2,950 |
| Fraser's dolphin | *Lagenodelphis hosei* | | Rare | 286.3 | 0.76 | 1 | 10,226 |
| Pygmy killer whale | *Feresa attenuata* | | Regular | 14.4 | 0.76 | 1 | 956 |
| False killer whale | *Pseudorca crassidens* | | Regular | 10.3 | 0.76 | 1 | 236 |
| Killer whale | *Orcinus orca* | | Regular | 6.5 | 0.9 | 0.9 | 349 |
| Short-finned pilot whale | *Globicephala macrorhynchus* | | Regular | 22.5 | 0.76 | 1 | 8,870 |
| Total Number of Delphinids in Hawaiian Waters (from Barlow 2006) | | | | | | | 63,354 |
| Total Number of Beaked Whales in Hawaiian Waters (from Barlow 2006) | | | | | | | 19,492 |
| PINNIPEDS (seals, sea lions, walruses) | | | | | | | |
| Family Phocidae (true seals) | | | | | | | |
| Hawaiian monk seal | *Monachus schauinslandi* | E | Regular | | | | 1252**** |
| Northern elephant seal | *Mirounga angustirostris* | | Rare | | | | |

**Table 4.** Species of marine mammals known to occur in the HRC (E means endangered under the ESA).

Source: U.S. Department of the Navy, 2005a; Barlow, 2003; Mobley, 2004; Barlow, 2006; Carretta et al., 2006

*Mean group sizes are the geometric mean of best estimates from multiple observers and have not been corrected for bias.

**Estimated from Barlow 2003

***For analysis purposes (and in the absence of specific data), abundance and density for fin and sei whales were estimated to be the same as for false killer whales, which have similarly small numbers in the area.

****Estimated abundance in the Main Hawaiian Islands is 77 animals

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The Navy has compiled information on the abundance, behavior, status and distribution, and vocalizations of marine mammal species in the Hawaiian waters from peer reviewed literature, the Navy Marine Resource Assessment, NMFS Stock Assessment Reports, and marine mammal surveys using acoustics or visual observations from aircraft or ships. This information may be viewed in the Navy's LOA application and/or the Navy's FEIS for the HRC (see **FOR FURTHER INFORMATION**). Additional information is available in NMFS Stock Assessment Reports, which may be viewed at: *http://www.nmfs.noaa.gov/pr/sars/species.htm.* As indicated in the proposed rule, based on their rare occurrence in the HRC, the Navy and NMFS do not anticipate any effects to Blue whales, North Pacific right whales, or Northern elephant seals and, therefore, they are not addressed further in this document.

Because the consideration of areas where marine mammals are known to selectively breed or calve are important to both the negligible impact finding necessary for the issuance of an MMPA

authorization and the need for NMFS to put forth the means of affecting the least practicable adverse impact paying particular attention to rookeries, mating grounds, and other areas of similar significance, the proposed rule contains a description of important reproductive areas, with a special focus on humpback whales (73 FR 35510, page 35519). That section includes a figure that generally illustrates humpback whale survey data collected between 1993 and 2003 and indicates areas of high and low density. The description contained in the proposed rule has not changed.

**A Brief Background on Sound**

The proposed rule contains a section that provides a brief background on the principles of sound that are frequently referred to in this rulemaking (73 FR 35510, pages 35521–35522). This section also includes a discussion of the functional hearing ranges of the different groups of marine mammals (by frequency) as well as a discussion of the two main sound metrics used in NMFS analysis (sound pressure level (SPL) and sound energy level (SEL)). The information contained in the proposed rule has not changed.

**Potential Effects of Specified Activities on Marine Mammals**

With respect to the MMPA, NMFS' effects assessment serves four primary purposes: (1) To prescribe the permissible methods of taking (*i.e.*, Level B Harassment (behavioral harassment), Level A Harassment (injury), or mortality, including an identification of the number and types of take that could occur by Level A or B harassment or mortality) and to prescribe other means of affecting the least practicable adverse impact on such species or stock and its habitat (*i.e.*, mitigation); (2) to determine whether the specified activity will have a negligible impact on the affected species or stocks of marine mammals (based on the likelihood that the activity will adversely affect the species or stock through effects on annual rates of recruitment or survival); (3) to determine whether the specified activity will have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (however, there are no subsistence communities that would be affected in the HRC, so this determination is inapplicable for the HRC); and (4) to prescribe requirements pertaining to monitoring and reporting.

In the Potential Effects of Specified Activities on Marine Mammals Section of the proposed rule NMFS included a qualitative discussion of the different ways that MFAS/HFAS and underwater explosive detonations may potentially affect marine mammals (some of which NMFS would not classify as harassment); 73 FR 35510, pages 35522–35534. Marine mammals may experience direct physiological effects (such as threshold shift), acoustic masking, impaired communications, stress responses, and behavioral disturbance. This section also included a discussion of some of the suggested explanations for the association between the use of MFAS and marine mammal strandings, such as behaviorally-mediated bubble growth, that have been observed a limited number of times in certain circumstances (the specific events are also described); 73 FR 35510, pages 35529–35534. The information contained in Potential Effects of Specified Activities on Marine Mammals Section from the proposed rule has not changed, except for one correction noted below.

The proposed rule contained an error in the Potential Effects of Specified Activities on Marine Mammals Section (73 FR 35510, page 35534). The statement ''A surface duct may be present * * *'' should be replaced with the following statement: ''Surface ducts are present approximately 53 percent of the time.'' Note that the Navy's model for estimating effects on marine mammals incorporates the likelihood of strong surface ducts in the HRC (pers. comm. J. Hibbard to J. Harrison, 2007) and the exposure estimates it produces reflect this.

Later, in the Estimated Take of Marine Mammals Section, NMFS relates the potential effects to marine mammals from MFAS/HFAS and underwater detonation of explosives discussed here to the MMPA regulatory definitions of Level A and Level B Harassment, and mortality, and quantifies those effects.

**Mitigation**

In order to issue an incidental take authorization (ITA) under section 101(a)(5)(A) of the MMPA, NMFS must prescribe regulations setting forth the ''permissible methods of taking pursuant to such activity, and other means of affecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.'' The National Defense Authorization Act (NDAA) of 2004 amended the MMPA as it relates to military readiness activities and the incidental take authorization process such that ''least practicable adverse impact'' shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the ''military readiness activity''. The HRC training activities described in the proposed rule are considered military readiness activities.

NMFS reviewed the Navy's proposed HRC activities and the proposed HRC mitigation measures (which the Navy refers to as Protective Measures) presented in the Navy's application to determine whether the activities and mitigation measures were capable of achieving the least practicable adverse effect on marine mammals. NMFS determined that further discussion was necessary regarding: (1) Humpback whales congregating in the winter in the shallow areas of the HRC in high densities to calve and breed; and (2) the potential relationship between the operation of MFAS/HFAS and marine mammal strandings.

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

(a) Avoidance or minimization of injury or death of marine mammals wherever possible (goals b, c, and d may contribute to this goal).

(b) A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to received levels of MFAS/HFAS, underwater detonations, or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing harassment takes only).

(c) A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to received levels of MFAS/HFAS, underwater detonations, or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing harassment takes only).

(d) A reduction in the intensity of exposures (either total number or number at biologically important time or location) to received levels of MFAS/HFAS, underwater detonations, or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing the severity of harassment takes only).

(e) A reduction in adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

(f) For monitoring directly related to mitigation—an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation (shut-down zone, etc.).

NMFS worked with the Navy to identify additional practicable and effective mitigation measures, which included a careful balancing of the likely benefit of any particular measure to the marine mammals with the likely effect of that measure on personnel safety, practicality of implementation, and impact on the ''military-readiness activity''. NMFS and the Navy developed two additional mitigation measures that address the concerns mentioned above, including a humpback whale cautionary area and a Stranding Response Plan.

The Navy's proposed mitigation measures, as well as the humpback whale cautionary area and the Stranding Response Plan, both of which are required under these regulations, were described in detail in the proposed rule (73 FR 35510, pages 35535–35541). The Navy's measures address personnel training, lookout and watchstander responsibilities, and operating procedures for training activities using both MFAS/HFAS and explosive detonations. No changes have been made to the mitigation measures described in the proposed rule, with one correction and one addition, addressed in the next paragraph. The final HRC Stranding Response Plan, which includes a shutdown protocol, a stranding investigation plan, and a requirement for Navy and NMFS to implement an MOA that will establish a framework whereby the Navy can (and provide the Navy examples of how they can best) assist NMFS with stranding investigations in certain circumstances, may be viewed at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*. Additionally, the mitigation measures are included in full in the codified text of the regulations.

The proposed rule contained a measure in which the Navy indicated that ''prior to conducting the exercise, remotely sensed sea surface temperature maps would be reviewed. SINKEX and air to surface missile (ASM) Training activities would not be conducted within areas where strong temperature discontinuities are present, thereby indicating the existence of oceanographic fronts'' (73 FR 35510, page 35537). The Navy included this measure in the LOA application in error. The removal of the measure does not change NMFS' analysis and therefore the measure is not included in the final rule. Additionally, the following measure has been added to the regulations: Night vision goggles shall be available to all ships and air crews for use as appropriate.

NMFS has determined that the Navy's proposed mitigation measures (from the LOA application), along with the Humpback Whale Cautionary Area and the Stranding Response Plan (and when the Adaptive Management (see Adaptive Management below) component is taken into consideration) are adequate means of effecting the least practicable adverse impacts on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, while also considering personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. The justification for this conclusion is discussed in the Mitigation Conclusion section of the proposed rule (73 FR 35510, pages 35540–35541). The Mitigation Conclusion Section of the proposed rule has not changed.

**Research and Conservation Measures for Marine Mammals**

The Navy provides a significant amount of funding and support for marine research. The Navy provided $26 million in Fiscal Year 2008 and plans for $22 million in Fiscal Year 2009 to universities, research institutions, federal laboratories, private companies, and independent researchers around the world to study marine mammals. Over the past five years the Navy has funded over $100 million in marine mammal research. The U.S. Navy sponsors seventy percent of all U.S. research concerning the effects of human-generated sound on marine mammals and 50 percent of such research conducted worldwide. Major topics of Navy-supported research include the following:

- Better understanding of marine species distribution and important habitat areas,
- Developing methods to detect and monitor marine species before and during training,
- Understanding the effects of sound on marine mammals, sea turtles, fish, and birds, and
- Developing tools to model and estimate potential effects of sound.

The Navy's Office of Naval Research currently coordinates six programs that examine the marine environment and are devoted solely to studying the effects of noise and/or the implementation of technology tools that will assist the Navy in studying and tracking marine mammals. The six programs are as follows:

- Environmental Consequences of Underwater Sound,
- Non-Auditory Biological Effects of Sound on Marine Mammals,
- Effects of Sound on the Marine Environment,
- Sensors and Models for Marine Environmental Monitoring,
- Effects of Sound on Hearing of Marine Animals, and
- Passive Acoustic Detection, Classification, and Tracking of Marine Mammals.

The Navy has also developed the technical reports referenced within this document and the HRC EIS, such as the Marine Resource Assessments. Furthermore, research cruises by NMFS and by academic institutions have received funding from the U.S. Navy.

The Navy has sponsored several workshops to evaluate the current state of knowledge and potential for future acoustic monitoring of marine mammals. The workshops brought together acoustic experts and marine biologists from the Navy and other research organizations to present data and information on current acoustic monitoring research efforts and to evaluate the potential for incorporating similar technology and methods on instrumented ranges. However, acoustic detection, identification, localization, and tracking of individual animals still requires a significant amount of research effort to be considered a reliable method for marine mammal monitoring. The Navy supports research efforts on acoustic monitoring and will continue to investigate the feasibility of passive acoustics as a potential mitigation and monitoring tool.

Overall, the Navy will continue to fund ongoing marine mammal research, and is planning to coordinate long term monitoring/studies of marine mammals on various established ranges and operating areas. The Navy will continue to research and contribute to university/external research to improve the state of the science regarding marine species biology and acoustic effects. These efforts include mitigation and monitoring programs; data sharing with NMFS and via the literature for research and development efforts; and future research as described previously.

*Long-Term Prospective Study*

Apart from this final rule, NMFS, with input and assistance from the Navy and several other agencies and entities, will perform a longitudinal observational study of marine mammal strandings to systematically observe and record the types of pathologies and

diseases and investigate the relationship with potential causal factors (*e.g.*, sonar, seismic, weather). The proposed rule contained an outline of the proposed study (73 FR 35510, pages 35541–35542). No changes have been made to the longitudinal study as described in the proposed rule.

**Monitoring**

In order to issue an ITA for an 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 LOAs 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.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

(a) An increase in the probability of detecting marine mammals, both within the safety zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the effects analyses.

(b) An increase in our understanding of how many marine mammals are likely to be exposed to levels of MFAS/HFAS (or explosives or other stimuli) that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS.

(c) An increase in our understanding of how marine mammals respond (behaviorally or physiologically) to MFAS/HFAS (at specific received levels), explosives, or other stimuli expected to result in take and how anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival)

(d) An increased knowledge of the affected species.

(e) An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

(f) A better understanding and record of the manner in which the authorized entity complies with the incidental take authorization.

*Proposed Monitoring Plan for the HRC*

As NMFS indicated in the proposed rule, the Navy has (with input from NMFS) fleshed out the details of and made improvements to the HRC Monitoring Plan. Additionally, NMFS and the Navy have incorporated a recommendation from the public, which recommended the Navy hold a workshop to discuss the Navy's Monitoring Plan (see Monitoring Workshop section). The final HRC Monitoring Plan, which is summarized below, may be viewed at *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications.*

The draft Monitoring Plan for the HRC has been designed as a collection of focused ''studies'' (described fully in the HRC Monitoring Plan) to gather data that will allow the Navy to address the following questions:

(a) Are marine mammals exposed to mid-frequency active sonar (MFAS), especially at levels associated with adverse effects (*i.e.*, based on NMFS' criteria for behavioral harassment, TTS, or PTS)? If so, at what levels are they exposed?

(b) If marine mammals are exposed to MFAS in the HRC, do they redistribute geographically within the HRC as a result of continued exposure? If so, how long does the redistribution last?

(c) If marine mammals are exposed to MFAS, what are their behavioral responses to various levels?

(d) What are the behavioral responses of marine mammals that are exposed to explosives at specific levels?

(e) Is the Navy's suite of mitigation measures for MFAS and explosives (e.g., PMAP, major exercise measures agreed to by the Navy through permitting) effective at avoiding TTS, injury, and mortality of marine mammals?

Data gathered in these studies will be collected by qualified, professional marine mammal biologists that are experts in their field. They will use a combination of the following methods to collect data:

- Visual Surveys—Vessel, Aerial and Shore-based.
- Passive Acoustic Monitoring (PAM).
- Marine Mammal observers (MMOs) on Navy Vessels.
- Marine Mammal Tagging.

In the five proposed study designs (all of which cover multiple years), the above methods will be used separately or in combination to monitor marine mammals in different combinations before, during, and after training activities utilizing MFAS/HFAS or explosive detonations. Table 5 contains a summary of the Monitoring effort that is planned for each study in each year (effort may vary slightly between years or study type, but overall effort will remain constant). The HRC Monitoring Plan is designed to collect data on all marine mammals and sea turtles encountered during monitoring studies. However, priority will be given to ESA-listed species and taxa in which MFAS exposure and strandings have been linked under certain circumstances. Because of the important reproductive area and the fact that humpback whales are present in very high densities in certain areas of the HRC, the Navy plans to dedicate a designated subset of their monitoring effort specifically to these high-density areas.

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| STUDY 1,3, 4 (exposures and behavioral responses) | FY09 | FY10 | FY11 | FY12* | FY13* |
|---|---|---|---|---|---|
| Aerial surveys | ASW events – 40 hours<br><br>Explosives: 3 nearshore events | ASW events - 40 hours of active sonar<br><br>Explosives: 3 nearshore events plus 1-2 SINKEX | ASW events - 40 hours of active sonar<br><br>Explosives: 3 nearshore events | ASW events - 40 hours of active sonar<br><br>Explosives: 3 nearshore events plus 1-2 SINKEX | ASW events - 40 hours of active sonar<br><br>Explosives: 3 nearshore events |
| Marine Mammal Observers | ASW events – 40 hours | ASW events - 80 hours | ASW events - 80 hours | ASW events - 80 hours | ASW events - 80 hours |
| Tagging | Order tags, secure permit | ASW events – goal of 15 individuals | ASW events – goal of 25 individuals | ASW events – goal of 30 individuals | ASW events – goal of 30 individuals |
| Vessel surveys (study 3 & 4 only) | ASW events - 40 hours<br><br>Explosives- 2 nearshore events | ASW events - 80 hours<br><br>Explosives- 3 nearshore events | ASW events - 80 hours<br><br>Explosives- 3 nearshore events | ASW events - 80 hours<br><br>Explosives- 3 nearshore events | ASW events - 80 hours<br><br>Explosives- 3 nearshore events |
| Shore based surveys (study 4 only) | Explosives -nearshore events, as they occur, with "high ground" for monitoring | Explosives -nearshore events, as they occur, with "high ground" for monitoring | Explosives -nearshore events, as they occur, with "high ground" for monitoring | Explosives -nearshore events, as they occur, with "high ground" for monitoring | Explosives -nearshore events, as they occur, with "high ground" for monitoring |
| **STUDY 2 (geographic redistribution)** | **FY09** | **FY10** | **FY11** | **FY12** | **FY13** |
| Aerial surveys before and after training events | ASW events – 40 hours | ASW events – 40 hours | ASW events – 40 hours | ASW events – 40 hours | ASW events – 40 hours |
| Passive Acoustics | Order devices and determine best location | Install 10 autonomous devices in the HRC & begin recording | Install five more devices (if needed), continue recording & begin analysis | Continue recording and analyzing data from 10-15 devices | Continue recording and analyzing data from 10-15 devices |
| **Study 5 (mitigation effectiveness)** | **FY09** | **FY10** | **FY11** | **FY12** | **FY13** |
| Marine mammal observers and lookout comparison | ASW events – 40 hours<br><br>Explosives – 40 hrs | ASW events – 60 hours<br><br>Explosives – 40 hrs | ASW events – 100 hours<br><br>Explosives – 40 hrs | ASW events – 100 hours<br><br>Explosives – 40 hrs | ASW events – 100 hours<br><br>Explosives – 40 hrs |
| Aerial surveys | ASW – 40 hours | ASW events – 40 hours | ASW events – 40 hours | ASW events – 40 hours | ASW events – 40 hours |

**Table 5**. Planned Monitoring Effort as Outlined in HRC Monitoring Plan

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*Monitoring Workshop*

During the public comment period on the proposed rule for the HRC, NMFS received a comment which, in consultation with the Navy, we have chosen to incorporate into the final rule (in a modified form). One commenter recommended that a workshop or panel be convened to solicit input on the monitoring plan from researchers, experts, and other interested parties. The HRC proposed rule included an adaptive management component and both NMFS and the Navy believe that a workshop would provide a means for Navy and NMFS to consider input from participants in determining whether or how to modify monitoring techniques to more effectively accomplish the goals of monitoring set forth earlier in the document. NMFS and the Navy believe that this workshop concept is valuable in relation to all of the Range Complexes and major training exercise LOAs that NMFS is working on with the Navy at this time, and consequently this single Monitoring Workshop will be included as a component of all of the LOAs that NMFS will be processing for the Navy in the next year or so.

The Navy, with guidance and support from NMFS, will convene a Monitoring Workshop, including marine mammal and acoustic experts as well as other interested parties, in 2011. The Monitoring Workshop participants will review the monitoring results from the previous two years of monitoring pursuant to the HRC rule as well as monitoring results from other Navy rules issued after HRC (*e.g.*, the Atlantic

Fleet Active Sonar Training, Southern California Range Complex, and other rules). The Monitoring Workshop participants would provide their individual recommendations to the Navy and NMFS on the monitoring plan(s) after also considering the current science (including Navy R&D developments) and working within the framework of available resources and feasibility of implementation. NMFS and the Navy would then analyze the input from the Monitoring Workshop participants and determine the best way forward from a national perspective. Subsequent to the Monitoring Workshop, modifications would be applied to monitoring plans as appropriate.

*Integrated Comprehensive Monitoring Plan*

In addition to the Monitoring Plan for the HRC, the Navy will complete an Integrated Comprehensive Monitoring Program (ICMP) Plan by the end of 2009. The ICMP will provide the overarching coordination that will support compilation of data from range-specific monitoring plans (*e.g.*, HRC Range Complex plan) as well as Navy funded research and development (R&D) studies. The ICMP will coordinate the monitoring programs progress towards meeting its goals and develop a data management plan. The ICMP will be evaluated annually to provide a matrix for progress and goals for the following year, and will make recommendations on adaptive management for refinement and analysis of the monitoring methods.

The primary objectives of the ICMP are to:

- Monitor and assess the effects of Navy activities on protected species;
- Ensure that data collected at multiple locations is collected in a manner that allows comparison between and among different geographic locations;
- Assess the efficacy and practicality of the monitoring and mitigation techniques;
- Add to the overall knowledge-base of marine species and the effects of Navy activities on marine species.

The ICMP will be used both as: (1) A planning tool to focus Navy monitoring priorities (pursuant to ESA/MMPA requirements) across Navy Range Complexes and Exercises; and (2) an adaptive management tool, through the consolidation and analysis of the Navy's monitoring and watchstander data, as well as new information from other Navy programs (*e.g.*, R&D), and other appropriate newly published information.

In combination with the 2011 Monitoring Workshop and the adaptive management component of the HRC rule and the other planned Navy rules (*e.g.* AFAST and SOCAL), the ICMP could potentially provide a framework for restructuring the monitoring plans and allocating monitoring effort based on the value of particular specific monitoring proposals (in terms of the degree to which results would likely contribute to stated monitoring goals, as well as the likely technical success of the monitoring based on a review of past monitoring results) that have been developed through the ICMP framework, instead of allocating based on maintaining an equal (or commensurate to effects) distribution of monitoring effort across Range complexes. For example, if careful prioritization and planning through the ICMP (which would include a review of both past monitoring results and current scientific developments) were to show that a large, intense monitoring effort in Hawaii would likely provide extensive, robust and much-needed data that could be used to understand the effects of sonar throughout different geographical areas, it may be appropriate to have other Range Complexes dedicate money, resources, or staff to the specific monitoring proposal identified as ''high priority'' by the Navy and NMFS, in lieu of focusing on smaller, lower priority projects divided throughout their home Range Complexes.

The ICMP will identify:

- A means by which NMFS and the Navy would jointly consider prior years' monitoring results and advancing science to determine if modifications are needed in mitigation or monitoring measures to better effect the goals laid out in the Mitigation and Monitoring sections of the HRC rule.
- Guidelines for prioritizing monitoring projects.
- If, as a result of the workshop and similar to the example described in the paragraph above, the Navy and NMFS decide it is appropriate to restructure the monitoring plans for multiple ranges such that they are no longer evenly allocated (by Range Complex), but rather focused on priority monitoring projects that are not necessarily tied to the geographic area addressed in the rule, the ICMP will be modified to include a very clear and unclassified recordkeeping system that will allow NMFS and the public to see how each Range Complex/project is contributing to all of the ongoing monitoring (resources, effort, money, etc.).

*Past Monitoring in the HRC*

The proposed rule contained a detailed review of the previous marine mammal monitoring conducted in the HRC, which was conducted in compliance with the terms and conditions of multiple biological opinions issued for MFAS training activities (73 FR 35510, pages 35544–35548). No changes have been made to the discussion contained in the proposed rule.

**Adaptive Management**

The final regulations governing the take of marine mammals incidental to Navy training exercises in the HRC will contain an adaptive management component. Our understanding of the effects of MFAS/HFAS and explosives on marine mammals is still in its relative infancy, and yet the science in this field continues to improve. These circumstances make the inclusion of an adaptive management component both valuable and necessary within the context of 5-year regulations for activities that have been associated with marine mammal mortality in certain circumstances and locations (though not the HRC). The use of adaptive management will give NMFS the ability to consider new data from different sources to determine (in coordination with the Navy) on an annual basis if mitigation or monitoring measures should be modified or added (or deleted) if new data suggests that such modifications are appropriate (or are not appropriate) for subsequent annual LOAs.

Following are some of the possible sources of applicable data:

- Results from the Navy's monitoring from the previous year (either from the HRC or other locations).
- Findings of the Workshop that the Navy will convene in 2011 to analyze monitoring results to date, review current science, and recommend modifications, as appropriate to the monitoring protocols to increase monitoring effectiveness.
- Compiled results of Navy funded research and development (R&D) studies (presented pursuant to the ICMP, which is discussed elsewhere in this document).
- Results from specific stranding investigations (either from the HRC or other locations, and involving coincident MFAS/HFAS or explosives training or not involving coincident use).
- Results from the Long Term Prospective Study described below.
- Results from general marine mammal and sound research (funded by

the Navy (described below) or otherwise).

Mitigation measures could be modified or added (or deleted) if new data suggest that such modifications would have (or do not have) a reasonable likelihood of accomplishing the goals of mitigation laid out in this final rule and if the measures are practicable. NMFS would also coordinate with the Navy to modify or add to (or delete) the existing monitoring requirements if the new data suggest that the addition of (or deletion of) a particular measure would more effectively accomplish the goals of monitoring laid out in this final rule. The reporting requirements associated with this rule are designed to provide NMFS with monitoring data from the previous year to allow NMFS to consider the data and issue annual LOAs. NMFS and the Navy will meet annually to discuss the monitoring reports, Navy R&D developments, and current science and whether mitigation or monitoring modifications are appropriate.

**Reporting**

In order to issue an ITA for an 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''. Effective reporting is critical to ensure compliance with the terms and conditions of an LOA, and to provide NMFS and the Navy with data of the highest quality based on the required monitoring.

As NMFS noted in its proposed rule, additional detail has been added to the reporting requirements since they were outlined in the proposed rule. The updated reporting requirements are all included below. A subset of the information provided in the monitoring reports may be classified and not releasable to the public.

NMFS will work with the Navy to develop tables that allow for efficient submission of the information required below.

*General Notification of Injured or Dead Marine Mammals*

Navy personnel will ensure that NMFS (regional stranding coordinator) is notified immediately (or as soon as operational security allows) if an injured or dead marine mammal is found during or shortly after, and in the vicinity of, any Navy training exercise utilizing MFAS, HFAS, or underwater explosive detonations. The Navy will provide NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available). The Stranding Response Plan contains more specific reporting requirements for specific circumstances.

*Annual HRC Monitoring Plan Report*

The Navy shall submit a report annually on October 1 describing the implementation and results (through August 1 of the same year) of the HRC Monitoring Plan, described above. Data collection methods will be standardized across range complexes to allow for comparison in different geographic locations. Although additional information will also be gathered, the marine mammal observers (MMOs) collecting marine mammal data pursuant to the HRC Monitoring Plan shall, at a minimum, provide the same marine mammal observation data required in the MFAS/HFAS major Training Exercises section of the Annual HRC Exercise Report referenced below.

The HRC Monitoring Plan Report may be provided to NMFS within a larger report that includes the required Monitoring Plan Reports from multiple Range Complexes.

*Annual HRC Exercise Report*

The Navy will submit an Annual HRC Exercise Report on October 1 of every year (covering data gathered through August 1 (or completion of RIMPAC if later than Aug 1)). This report shall contain the subsections and information indicated below.

**MFAS/HFAS Major Training Exercises**

This section shall contain the following information for Major Training Exercises (MTEs, which include RIMPAC, USWEX, and Multi Strike Group) conducted in the HRC:

*(a) Exercise Information (for each MTE):*

(i) Exercise designator.

(ii) Date that exercise began and ended.

(iii) Location.

(iv) Number and types of active sources used in the exercise.

(v) Number and types of passive acoustic sources used in exercise.

(vi) Number and types of vessels, aircraft, etc., participating in exercise.

(vii) Total hours of observation by watchstanders.

(viii) Total hours of all active sonar source operation.

(ix) Total hours of each active sonar source (along with explanation of how hours are calculated for sources typically quantified in alternate way (buoys, torpedoes, etc.)).

(x) Wave height (high, low, and average during exercise).

*(b) Individual marine mammal sighting info (for each sighting in each MTE).*

(i) Location of sighting.

(ii) Species (if not possible—indication of whale/dolphin/pinniped).

(iii) Number of individuals.

(iv) Calves observed (y/n).

(v) Initial Detection Sensor.

(vi) Indication of specific type of platform observation made from (including, for example, what type of surface vessel, *i.e.*, FFG, DDG, or CG)

(vii) Length of time observers maintained visual contact with marine mammal(s).

(viii) Wave height (in feet).

(ix) Visibility.

(x) Sonar source in use (y/n).

(xi) Indication of whether animal is <200yd, 200–500yd, 500–1000yd, 1000–2000yd, or >2000yd from sonar source in (x) above.

(xiii) Mitigation Implementation—Whether operation of sonar sensor was delayed, or sonar was powered or shut down, and how long the delay was.

(xiv) If source in use (x) is hullmounted, true bearing of animal from ship, true direction of ship's travel, and estimation of animal's motion relative to ship (opening, closing, parallel)

(xv) Observed behavior—Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animals (such as animal closing to bow ride, paralleling course/speed, floating on surface and not swimming, etc.)

(c) An evaluation (based on data gathered during all of the MTEs) of the effectiveness of mitigation measures designed to avoid exposing marine mammals to mid-frequency sonar. This evaluation shall identify the specific observations that support any conclusions the Navy reaches about the effectiveness of the mitigation.

**ASW Summary**

This section shall include the following information as summarized from both MTEs and non-major training exercises (unit-level exercises, such as TRACKEXs):

(i) Total annual hours of each type of sonar source (along with explanation of how hours are calculated for sources typically quantified in alternate way (buoys, torpedoes, etc.))

(ii) Total hours (from December 15 through April 15) of hullmounted active sonar operation occurring in the dense humpback areas generally shown on the Mobley map (73 FR 35510, page 35520)

plus a 5-km buffer, but not including the Pacific Missile Range Facility. NMFS and the Navy will work together to develop the exact boundaries of this area.

(iii) Total estimated annual hours of hull-mounted active sonar operation conducted in Humpback Whale Cautionary area between December 15 and April 15.

*(iv) Cumulative Impact Report*—To the extent practicable, the Navy, in coordination with NMFS, shall develop and implement a method of annually reporting non-major (i.e., other than RIMPAC, USWEX, or Multi-Strike Group Exercises) training exercises utilizing hull-mounted sonar. The report shall present an annual (and seasonal, where practicable) depiction of non-major training exercises geographically across the HRC. The Navy shall include (in the HRC annual report) a brief annual progress update on the status of the development of an effective and unclassified method to report this information until an agreed-upon (with NMFS) method has been developed and implemented.

**SINKEXs**

This section shall include the following information for each SINKEX completed that year:

*(a) Exercise info:*

(i) Location.

(ii) Date and time exercise began and ended.

(iii) Total hours of observation by watchstanders before, during, and after exercise.

(iv) Total number and types of rounds expended/explosives detonated.

(v) Number and types of passive acoustic sources used in exercise.

(vi) Total hours of passive acoustic search time.

(vii) Number and types of vessels, aircraft, etc., participating in exercise.

(viii) Wave height in feet (high, low and average during exercise).

(ix) Narrative description of sensors and platforms utilized for marine mammal detection and timeline illustrating how marine mammal detection was conducted.

*(b) Individual marine mammal observation (by Navy lookouts) info.*

(i) Location of sighting.

(ii) Species (if not possible—indication of whale/dolphin/pinniped).

(iii) Number of individuals.

(iv) Calves observed (y/n).

(v) Initial detection sensor.

(vi) Length of time observers maintained visual contact with marine mammal.

(vii) Wave height.

(viii) Visibility.

(ix) Whether sighting was before, during, or after detonations/exercise, and how many minutes before or after.

(x) Distance of marine mammal from actual detonations—or target spot if not yet detonated)—use four categories to define distance: (1) The modeled injury threshold radius for the largest explosive used in that exercise type in that OPAREA (91 m for SINKEX in HRC); (2) the required exclusion zone (1 nm for SINKEX in HRC); (3) the required observation distance (if different than the exclusion zone (2 nm for SINKEX in HRC); and (4) greater than the required observed distance. For example, in this case, the observer would indicate if < 91 m, from 91 m—1 nm, from 1 nm—2 nm, and > 2 nm.

(xi) Observed behavior—Watchstanders will report, in plain language and without trying to categorize in any way, the observed behavior of the animals (such as animal closing to bow ride, paralleling course/speed, floating on surface and not swimming etc.), including speed and direction.

(xii) Resulting mitigation implementation—Indicate whether explosive detonations were delayed, ceased, modified, or not modified due to marine mammal presence and for how long.

(xiii) If observation occurs while explosives are detonating in the water, indicate munition type in use at time of marine mammal detection.

**Improved Extended Echo-Ranging System (IEER) Summary**

This section shall include an annual summary of the following IEER information:

(i) Total number of IEER events conducted in the HRC.

(ii) Total expended/detonated rounds (buoys).

(iii) Total number of self-scuttled IEER rounds.

**Explosives Summary**

The Navy is in the process of improving the methods used to track explosive use to provide increased granularity. To the extent practicable, the Navy will provide the information described below for all of their explosive exercises. Until the Navy is able to report in full the information below, they will provide an annual update on the Navy's explosive tracking methods, including improvements from the previous year.

(i) Total annual number of each type of explosive exercise (of those identified as part of the ''specified activity'' in this final rule) conducted in the HRC.

(iii) Total annual expended/detonated rounds (missiles, bombs, etc.) for each explosive type.

*Sonar Exercise Notification*

The Navy shall submit to the NMFS Office of Protected Resources (specific contact information to be provided in LOA) either an electronic (preferably) or verbal report within fifteen calendar days after the completion of any major exercise (RIMPAC, USWEX, or Multi Strike Group) indicating:

(1) Location of the exercise.

(2) Beginning and end dates of the exercise.

(3) Type of exercise (*i.e.*, RIMPAC, USWEX, or Multi Strike Group).

*HRC 5-yr Comprehensive Report*

The Navy shall submit to NMFS a draft report that analyzes and summarizes all of the multi-year marine mammal information gathered during ASW and explosive exercises for which annual reports are required (Annual HRC Exercise Reports and HRC Monitoring Plan Reports). This report will be submitted at the end of the fourth year of the rule (November 2012), covering activities that have occurred through June 1, 2012.

*Comprehensive National ASW Report*

By June, 2014, the Navy shall submit a draft National Report that analyzes, compares, and summarizes the active sonar data gathered (through January 1, 2014) from the watchstanders and pursuant to the implementation of the Monitoring Plans the HRC, the Atlantic Fleet Active Sonar Training, the Southern California (SOCAL) Range Complex, the Marianas Range Complex, the Northwest Training Range, the Gulf of Alaska, and the East Coast Undersea Warfare Training Range.

The Navy shall respond to NMFS comments and requests for additional information or clarification on the HRC Comprehensive Report, the Comprehensive National ASW report, the Annual HRC Exercise Report, or the Annual HRC Monitoring Plan Report (or the multi-Range Complex Annual Monitoring Plan Report, if that is how the Navy chooses to submit the information) if submitted within 3 months of receipt. These reports will be considered final after the Navy has addressed NMFS' comments or provided the requested information, or three months after the submittal of the draft if NMFS does not comment by then.

**Comments and Responses**

On June 23, 2008 (73 FR 35510), NMFS published a proposed rule in

response to the Navy's request to take marine mammals incidental to military readiness training exercises in the HRC and requested comments, information and suggestions concerning the request. During the 30-day public comment period, NMFS received 8 comments from private citizens, comments from the Marine Mammal Commission (MMC) and the Office of Hawaiian Affairs, and several sets of comments from non-governmental organizations, including, the Natural Resources Defense Council (NRDC) (which commented on behalf of The Humane Society of the United States, the International Fund for Animal Welfare, Cetacean Society International, Ocean Mammal Institute, the International Ocean Noise Coalition, Seaflow, and the Ocean Futures Society and its founder Jean-Michel Cousteau), the Cascadia Research Collective (CRC), Ziphius EcoServices, and Smultea Environmental Sciences, LLC. The comments are summarized and sorted into general topic areas and are addressed below. Full copies of the comment letters may be accessed at *http://www.regulations.gov.*

*Monitoring and Reporting*

*Comment 1:* One commenter stated that ''It is advisable to hold a multi-day workshop to discuss controversial issues related to the problem.'' The commenter further indicated that the workshop should include representatives from the Navy, NMFS, relevant marine mammal researchers, NGOs (*e.g.*, NRDC), and invited experts on certain topics of interest. The goal of the workshop should be to move towards consensus on a way forward for the monitoring plan.

*Response:* NMFS believes that a workshop consisting of the Navy, NMFS, researchers, invited experts, and other interested parties, in combination with an adaptive management plan that allows for modification to the monitoring plan, would provide a means for the Navy to potentially make changes to the Monitoring Plan that would more effectively accomplish some of the goals of monitoring set forth earlier in the Monitoring section. NMFS and the Navy have coordinated on this point and the Navy will convene a workshop in 2011. The workshop and how it will interact with the adaptive management component are discussed in the Monitoring Workshop section of this final rule. The Monitoring Workshop participants will be asked to submit individual recommendations to the Navy and NMFS, and both agencies will work together to determine whether modifications to the HRC monitoring are necessary based on the recommendations. As necessary, NMFS would incorporate any changes into future LOAs and future rules. However, we disagree with the commenter's suggestion that the workshop participants seek to achieve consensus on a way forward for the monitoring plan. NMFS has statutory responsibility to prescribe regulations pertaining to monitoring and reporting, and will, in coordination with the Navy, develop the most effective and appropriate monitoring and reporting protocols for future authorizations.

*Comment 2:* Two commenters made several recommendations regarding the formatting and understandability of the monitoring plan.

*Response:* NMFS incorporated these recommendations where appropriate. For example, a map of the area that the ICMP covers was added to the plan, a list of the animals in the HRC was added, and bulleted lists will replace long paragraphs in some places. However, we did not incorporate the commenters recommendations in all cases, for example, the commenter recommended that a lot of the analysis contained in the proposed rule be included in the Monitoring plan, such as a summary of Southall *et al.,* 2007, or the regulatory definitions of Level A and Level B harassment, which NMFS believes would needlessly lengthen and complicate the Plan and generally be duplicative.

*Comment 3:* Two commenters asked for more detail, and associated references, in several areas of the methods sections.

*Response:* NMFS has provided additional detail (including citations) concerning the survey methods used in the monitoring plan in the final rule.

*Comment 4:* One commenter stated: ''The Navy improperly assumes that they have no impact on the marine mammals. It is clear that the draft plan begins with the assumption that the Navy has no impact on marine mammals, or that the current mitigation is adequate to eliminate impacts. This is not supported by facts, and it invalidates the entire purpose of the plan. The Navy must acknowledge that sonar testing may indeed impact marine mammals and provide references, and must be willing to work as an active partner in a plan to investigate the extent and severity of such impacts, and how to reduce them to insignificant levels. Otherwise, this entire exercise is just 'window dressing' and will be a major waste of taxpayer dollars.''

*Response:* NMFS disagrees with this commenter's assertion. It is possible that the commenter mistook the fact that the Navy phrased some of their goals as null hypotheses (''If marine mammals and sea turtles are exposed to MFAS, what are their behavioral responses? Are they different at various levels?'') to mean that they think there are no effects. The Navy's LOA application and EIS clearly discuss the potential adverse effects that marine mammals may experience when exposed to MFAS. The Navy has worked and will continue to work as an active partner to investigate the extent and severity of the impacts and how to reduce them (see Navy Research section of this final rule).

*Comment 5:* A few commenters asked why the Navy did not consider additional survey methods, or modifications to the existing methods, beyond those currently included in the plan, such as: Specified focal follows of one animal before, during, and after sonar; photo-identification of marine mammals to look at residency patterns; having a helicopter on board, on call to opportunistically observe marine mammals around sonar transmissions; or doing biopsy sampling to assess stress hormones.

*Response:* There are a lot of different methods available with which to monitor marine mammals and the Navy considered a wide range of methods in the development of their plan. NMFS considered all of the public comments (including the recommended additional survey methods) received during this rulemaking. Some of the methods suggested by the public, such as the photo-identification method, would likely be feasible and provide useful information, while other methods, such as having a helicopter on standby, would be difficult both financially and operationally. Nevertheless, the Navy must work within the framework of the available resources and the operational constraints associated with doing work in the vicinity of a complex military exercise. NMFS provided input during the development of the plan and believes that results from the required monitoring will provide valuable information regarding the effects of MFAS on marine mammals. Additionally, by including the Monitoring Plan as a requirement of the LOA, NMFS is compliant with the MMPA requirement to prescribe regulations setting forth the requirements pertaining to the monitoring and reporting of taking. That being said, the Navy and NMFS understand the importance of marine mammal monitoring to determine the effects of MFAS, which is why the Navy agreed to conduct the Workshop referred to in Comment 1 during which the workshop participants will review

and assess the monitoring results (from this Monitoring Plan and others from other Range complexes and areas) and make informed recommendations for how to move forward with the best Monitoring strategy.

*Comment 6:* The Marine Mammal Commission was supportive of the use of Adaptive Management, but wanted a more detailed implementation plan.

*Response:* NMFS has included additional detail regarding how adaptive management will be implemented. Please see the Adaptive Management, Monitoring Workshop, and Integrated Comprehensive Monitoring Plan sections of the final rule.

*Comment 7:* Multiple commenters questioned whether the Marine Mammal Observers identified in the Monitoring Plan are independent scientists or Navy employees? Some commenters questioned the objectivity of Navy scientists.

*Response:* Independent scientists will be conducting the vast majority of the observations pursuant to the Monitoring Plan. Navy scientists will be involved in a small portion of the field work and some of the post-monitoring analysis. The Navy is responsible for both the funding and implementation of a substantial amount of marine mammal and acoustic research and NMFS has no concerns regarding the objectivity of the reported results from either these research projects or the monitoring required pursuant to the MMPA authorization.

*Comment 8:* During aerial surveys, information on headings/orientation of animals should be collected as these data can later be examined to assess movement/response of animals relative to locations and received sound levels of MFAS and underwater detonations.

*Response:* As NMFS noted in the proposed rule, additional detail has been added to the Reporting Requirements section of the final rule. A requirement that Navy lookouts report the relative directions of both the marine mammals and the sonar source has been included. NMFS also included a requirement that the MMOs collecting data for the Monitoring Plan collect, at a minimum, the same data outlined in the Reporting Requirements section for the Navy lookouts.

*Comment 9:* One commenter was concerned that the Navy would not begin collecting data until mid-late 2009 when the ICMP was finalized.

*Response:* The ICMP is an overarching framework for all of the Navy's Range-specific MMPA Monitoring Plans and does not include a field-work component (rather it addresses prioritization, standardization, and summarization of actual data-gathering). The Navy actually began doing some of the data collection in 2007 outside of the commitments made through the HRC EIS process, and they will begin collecting field data pursuant to the HRC-specific Monitoring Plan shortly after the authorized exercises begin in early 2009.

*Comment 10:* Two commenters questioned whether the Navy had considered whether a statistically sound sample size had been developed to answer the questions that the monitoring is trying to answer. One commenter stated: ''To determine the sample sizes required to assess impacts and the validity of this monitoring effort, the statistical power should be estimated, with a range of potential effect sizes, and taking into account information available from previous monitoring efforts with vessel or aerial platforms, to predict sighting rates given the amount of effort planned. Planning on, for example, 40 hours of aerial surveys associated with a particular exercise, is likely to provide such small sample sizes of sightings that the power to assess redistribution of animals may be close to zero.''

*Response:* The Navy will contract a team of marine mammal experts to determine monitoring plan implementation, sample size and analysis parameters. The data from Hawaii will be pooled (as appropriate) with data collected from other range complexes to maximize data collection each year. No conclusions will be made without statistically valid sample size. Furthermore, the study designed to assess the redistribution of animals not only uses aerial surveys, but aerial surveys in conjunction with a passive acoustic component to include an array of ten to fifteen autonomous acoustic recording buoys, such as a High-frequency Acoustic Recording Package (HARP), which will be deployed for months at a time. Using both of these methods together, the Navy is more likely to detect a change in the distribution of marine mammals.

*Comment 11:* One commenter asserts that the deployment of five satellite tags on individuals prior to an exercise is not likely to be sufficient to assess reactions or redistribution during the exercise.

*Response:* The Navy has revised the HRC Monitoring Plan such that the goal is to tag 15 animals in FY 2010, 25 animals in FY 2011, and 30 animals in both FY 2012 and 2013.

*Comment 12:* One commenter stated: ''A large proportion of marine mammals are missed in aerial surveys; this needs to be taken into account when assessing the efficacy of using aerial surveys for monitoring potential behavioral impacts. The fact that observers on-board naval vessels sighted no marine mammals during USWEX 06–04 and 07–02 illustrates either that marine mammals are strongly reacting to sounds produced by these vessels at distances far greater than the observers are able to monitor (and are thus not being detected), or that the on-board observer program for mitigating impacts is extremely ineffective, contrary to the statement that 'data from watchstanders is generally useful to indicate the presence or absence of marine mammals within the safety zones' (pg. 35547).''

*Response:* The Navy has considered the strengths and weaknesses of the different marine mammal survey methods in the development of the Monitoring Plan. In order to monitor potential behavioral effects, the Navy's HRC Monitoring Plan outlines a study design that includes aerial monitoring, vessel monitoring, passive acoustic monitoring, and marine mammal tagging. NMFS disagrees with the assertion that a lack of marine mammal sightings during two exercises means that marine mammals must be strongly reacting at great distances—rather, it could mean that animals are avoiding the sound at a distance beyond which the watchstanders can see (which would not necessarily be classified as a strong reaction), and separately, it could be a reflection of the low marine mammal density in offshore Hawaii (also—we note that in some cases lookouts were only required to report the marine mammals that were detected within 2000 m—so other animals may have been detected at greater distances, but not reported. That issue has been corrected in the current reporting requirements, which require lookouts to report all sightings). The mitigation powerdown and shutdown zones are relatively close to the ship (1000, 500, and 200 yd) and there is no indication that lookouts are missing animals that are visibly detectable within these distances—Navy After Action Reports show anywhere from 0 to 26 marine mammal sightings in Hawaii for one exercise, and up to 133 sightings during an exercise in California, and report many sonar shutdowns (often when animals are much farther from the source than the distance at which shutdowns are required). Nonetheless, the Navy's Monitoring Plan includes a study designed to compare the detection rate of Navy lookouts (who are responsible for detecting marine mammals for mitigation

implementation) to scientifically trained marine mammal observers.

*Comment 13:* One commenter noted: ''The location of the Navy's training exercises are highly variable, with the exception of the Navy's ranges (PMRF, etc.)'' This commenter further asked if these ranges are being studied and whether there are fewer marine mammals in frequently used ranges than one might expect.

*Response:* The PMRF does not have one of prototype systems being tested at both the SOAR (Southern California Range Complex) and AUTEC (Bahamas) ranges. This prototype system being tested at SOAR and AUTEC currently has a limited ability to detect and localize a few numbers of two species of beaked whales of marine mammals in real time. At PMRF, data collected from range hydrophones have observed over 100,000 acoustic detections per hour and, on some, over 6 million acoustic detections in one day. This acoustic data may suggest more marine mammals present than expected (based on current stock assessment numbers). The range at PMRF is not currently being utilized for the analysis of marine mammal behavior during training exercises. The HRC Monitoring Plan does not contain a specific monitoring component for PMRF. It is difficult to make inferences regarding the reasons for marine mammal use (i.e., the number of animals) in any particular area with focused anthropogenic activities if observations were not made prior to the focused human activities. However, for the East Coast Undersea Warfare Training Range Complex (USWTR), the Navy has developed and implemented a monitoring plan that is surveying for marine mammals years in advance of the construction of the Range (which consists primarily of a large array of hydrophones) so that the abundance and distribution of marine mammals can be compared before and after the construction and operation of the Range.

*Mitigation*

*Comment 14:* One commenter asserts that NMFS' analysis ignores or improperly discounts an array of options that have been considered and imposed by other active sonar users, including avoidance of coastal waters, high-value habitat, and complex topography; the employment of a safety zone more protective than the 1000-yard power-down and 200-yard shutdown accepted by NMFS; general passive acoustic monitoring for whales; special rules for surface ducting and low-visibility conditions; monitoring and shutdown procedures for sea turtles and large schools of fish; and many others. The commenter further provides a detailed list of 30 additional measures that should be considered. Other commenters made additional recommendations of mitigation measures that should be considered.

*Response:* NMFS considered a wide range of mitigation options in our analysis, including those listed by the commenters. In order to issue an incidental take authorization (ITA) 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 affecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.'' The National Defense Authorization Act (NDAA) of 2004 amended the MMPA as it relates to military-readiness activities (which these Navy activities are) and the incidental take authorization process such that ''least practicable adverse impact'' shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the ''military readiness activity''. NMFS worked with the Navy to identify practicable and effective mitigation measures, which included a careful balancing of the likely benefit of any particular measure to the marine mammals with the likely effect of that measure on personnel safety, practicality of implementation, and impact on the ''military-readiness activity''. NMFS developed an Environmental Assessment (EA) specifically to help analyze the available mitigation measures in regard to potential benefits for marine mammals (*see* goals of mitigation in the Mitigation section of this proposed rule) and practicability for the Navy. That EA, which considered all of the measures recommended by these public comments, is currently available on the NMFS Web site (*http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*).

*Comment 15:* One commenter stated: ''The Navy should conduct long-term research on the distribution, abundance, and population structuring of protected species in the HRC. They should also conduct research and development of technologies to reduce the impacts of active acoustic sources on marine mammals.''

*Response:* The MMPA does not require that individuals who have received an incidental take authorization conduct research. However, the Navy has voluntarily developed and funded a number of research plans that are designed to address the issues raised by the commenter (*see* Research section).

*Comment 16:* One commenter asked whether the Navy intends to forewarn marine mammals by using small explosions or noise so that marine mammals would not be exposed to hazardous detonations.

*Response:* No. However, there are range clearance procedures to minimize the likelihood that animals would be exposed to hazardous levels of sound or pressure (*see* Mitigation section).

*Comment 17:* The marine species awareness training (MSAT) should be updated more often. So little is known about effects of sonar and underwater noise, and ongoing research constantly changes assumptions. NMFS, not the Navy, should decide when updates are ''appropriate.''

*Response:* The Navy solicited input from NMFS on the MSAT training, initially, and NMFS will continue to make recommendations regarding the MSAT training, as appropriate. However, a large portion of the information contained in the training is of a general nature that does not necessarily require frequent updates.

*Comment 18:* One commenter asked about the duration of a lookout's shift and was concerned that lookouts may fatigue quickly.

*Response:* Navy lookouts are critical to both training and operational success, as well as personnel safety. The Navy takes the potential fatigue of the lookout into consideration when scheduling them. A typical lookout shift is 4 hours, with the lookout rotating into a different location every 1 hour. NMFS does not believe that fatigue would set in within this relatively short time and typically recommends no longer than a 4-hour shift for marine mammal observers.

*Comment 19:* NRDC recommends prescription of specific mitigation requirements for individual categories (or sub-categories) of testing and training activities, in order to maximize mitigation given varying sets of operational needs. Also, the Navy should require that other nations abide by U.S. mitigation measures when training in the HRC, except where their own measures are more stringent.

*Response:* The Navy's standard protective measures include measures that are specific to certain categories of activities. For example, different exclusion zones are utilized for hull-mounted sonar and dipping sonar, and different range clearance procedures are used for SINKEXs and IEER exercises. Pursuant to the Navy's 2000 Policy for Environmental Compliance at Sea, when foreign navies participate in

exercises with the U.S. Navy, the U.S. Navy provides them with the mitigation requirements (under the MMPA and ESA) and strongly encourages foreign navies to implement the mitigation requirements.

*Comment 20:* The Marine Mammal Commission recommends that, if the National Marine Fisheries Service issues a final rule to authorize the taking of small numbers of marine mammals incidental to the proposed military training operations, the Navy be required to:

- Explain all analytical procedures and provide all data used to estimate take levels in sufficient detail that reviewers can understand, reconstruct, and verify the estimated risks;
- Calibrate and verify the performance of the proposed visual and passive acoustic monitoring programs before operations begin so that all interested parties can evaluate the effectiveness of the mitigation measures;
- Retain the power-down or shutdown period of 30 minutes for most marine mammals, expand it to 60 minutes for deep-diving species, and provide follow-up data on the effectiveness and costs associated with this mitigation measure;
- Suspend activities if a beaked whale or other marine mammal is killed or seriously injured and the death or injury appears to be associated with that activity, and resume the activity only after a review by the Service of the circumstances of the death or injury and the Navy's plans for avoiding additional incidents; and
- Provide a release date for the comprehensive report of monitoring and watchstander data from operations in the HRC, the Southern California Range Complex, and Atlantic Fleet Active Sonar Training activities.

*Response:* Following are the responses to the MMCs bulleted recommendations:

- NMFS believes that Appendix J of the Navy's HRC EIS (which is referenced in the rule) adequately explains the analytical procedures and provides the data used to estimate take levels in sufficient detail that the reviewers can understand and verify the estimated risks. However, reviewers would not be able to reconstruct the process exactly because inherent to the overall exposure model is the CASS/GRAB submodel, the specific details of which cannot be included in the EIS because the model is a Navy owned, restricted distribution model available only to U.S. Government Agencies and their contractors. This high fidelity acoustic propagation model (CASS/GRAB) used for marine mammal effects analysis is the same model used for the operational use of tactical sonar, and it is included in the Navy's Oceanographic and Atmospheric Master Library (OAML), which has a rigorous acceptance process for all databases, models and algorithms prior to being accepted into OAML.
- Navy lookouts are specifically trained to detect anomalies in the water around the ship and both the safety of Navy personnel and success in the training exercise depend on the lookout being able to detect objects (or marine mammals) effectively around the ship. NMFS has reviewed the Navy's After Action Reports from previous exercises and they show that lookouts are detecting marine mammals, and implementing sonar shutdowns as required when they do. That said, the HRC Monitoring Plan contains a study in which Navy lookouts will be on watch simultaneously with non-Navy marine mammal observers and their detection rates will be compared. The Navy's HRC Monitoring Plan contains a segment that will compare the detection capabilities of Navy watchstanders to non-Navy marine mammal observers. The passive acoustic systems used to assist with marine mammal detection are the same systems used in the tactical training, and their performance must be regularly calibrated and verified in order to be effectively used in the training exercises. Additionally, the regulations and subsequent authorization would require the Navy to provide ''an evaluation (based on data gathered during all of the major training exercises) of the effectiveness of mitigation measures designed to avoid exposing marine mammals to mid-frequency sonar. This evaluation shall identify the specific observations that support any conclusions the Navy reaches about the effectiveness of the mitigation included in the authorization.'' Last, the rule contains an adaptive management component that specifies that NMFS and the Navy will meet on an annual basis to evaluate the Navy Reports (on both Navy lookout observations as well as Monitoring Plan reporting) and other new information (such as Navy R & D developments or new science) to ascertain whether mitigation or monitoring modifications are appropriate.
- NMFS does retain the power-down or shutdown period of 30 minutes for most marine mammals, but does not concur with the MMC that we should expand the delay (until sonar can be restarted after a shutdown due to a marine mammal sighting) to 60 minutes for deep-diving species for the following reasons:
- Just because an animal can dive for longer than 30 minutes does not mean that they always do, so the 60 minute delay would only potentially add value in instances when animals had remained under water for more than 30 minutes.
- Navy vessels typically move at 10–12 knots (5–6 m/sec) when operating sonar and potentially much faster when not. Fish *et. al.* (2006) measured speeds of 7 species of odontocetes and found that they ranged from 1.4–7.30 m/sec. Essentially, if a vessel was moving at the typical sonar speed, or faster, an animal would need to be swimming near max speed for an hour to stay within the safety zone of a vessel. This further narrows the circumstances in which the 60-minute delay would add value.
- Additionally, the animal would need to have stayed in the immediate vicinity of the sound source for an hour. Considering the maximum area that both the vessel and the animal could cover in an hour, it is improbable that this would randomly occur. Moreover, considering that many animals have been shown to avoid both acoustic sources and ships without acoustic sources, it is improbable that a deep-diving cetacean (as opposed to a dolphin that might bow ride) would choose to remain in the immediate vicinity of the source. NMFS believes that it is unlikely that a single cetacean would remain in the safety zone of a Navy sound source for more than 30 minutes.
- Last, in many cases, the lookouts are not able to differentiate species to the degree that would be necessary to implement this measure. Plus, Navy operators have indicated that increasing the number of mitigation decisions that need to be made based on biological information is more difficult for the lookouts (because it is not their area of expertise). In this case NMFS does not believe that it will add to the protection of marine mammals in the vast majority of cases, and therefore we have not required it.
- NMFS is requiring the Navy to abide by a Stranding Response Plan (viewable at *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*) that clearly lays out the steps the Navy would take in the event of a stranding and summarizes how NMFS plans to handle the investigation in a timely manner. In the event of a live stranding, there is a 14-nm area around the animals in which the Navy will not operate sonar—to ensure that the distressed animals are not put at further risk. In the event of a stranding involving dead animals—NMFS' investigation will ideally include an

aerial survey to ensure that additional animals are not stranded in the vicinity. However, if the stranded animals are dead, the Navy will not be required to shut down. It is not possible to immediately determine whether sonar contributed to a marine mammal stranding and investigations into the cause of death of stranded marine mammals take months or more to complete, and are often inconclusive. It would be impracticable to delay the Navy's training activities for an indeterminate amount of time when we have no idea if their action contributed to the stranding. That said, NMFS and the Navy are committed to fully investigating strandings that occur coincident with major Navy training exercises and to using any information gathered in the implementation of adaptive management.

*Comment 21:* The Navy should apply mitigation prescribed by the Hawaii Office of Planning and other state regulators, by the courts, by other navies or research centers, or by the U.S. Navy in the past or in other contexts. In addition, the Navy should engage in timely and regular reporting to NOAA, state coastal management authorities, and the public to describe and verify use of mitigation measures during testing and training activities.

*Response:* NMFS (with input from the Navy) has considered recommendations that have been received from the sources the commenter cites above. As mentioned in the response to Comment 14, NMFS developed an Environmental Assessment (EA), which is available at *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications,* specifically to help analyze the available mitigation measures in regard to potential benefits for marine mammals (see goals of mitigation in the Mitigation section of this proposed rule) and practicability for the Navy. The Navy will be required to submit annual reports and these reports will be made available to the public upon the Notice to the public (in the **Federal Register**) of the issuance of subsequent LOAs. The reports will include a description of the mitigation measures implemented during major exercises and will also include an evaluation of the effectiveness of any mitigation measure implemented.

*Acoustic Threshold for Behavioral Harassment*

*Comment 22:* The NRDC submitted a comprehensive critique of the risk function (authored by Dr. David Bain), which NMFS has posted on our Web site (*http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*). NRDC summarized some general limitations of the risk function and included a fairly detailed critique of the specific structure of and parameters chosen for use in the model. Following are some of the general topics addressed in the letter:

- Factors that Dr. Bain thinks should be addressed by the model, such as social interactions and multiple sources.
- Critique of the datasets that NMFS used to populate the risk function (described Level B Harasssment—Risk Function section of the proposed rule): (1) Controlled Laboratory Experiments with Odontocetes (SSC Dataset); (2) Mysticete Field Study (Nowacek *et. al.,* 2004), and (3) Odontocet Field Data (Haro Strait—USS Shoup).
- Consideration of some datasets that were considered by NMFS, but not used in the risk function.
- A critique of the parameters (A, B, and K) used in the risk function.
- A sensitivity analysis of the parameters (*i.e.*, takes were modeled while applying variable values for the A, B, and K values).

Dr. Bain included a summary of his concerns and an abbreviated version is included below. Additionally (and not included in the summary), Dr. Bain suggested that the effect of multiple sources may be both different and greater than the effects of fewer sources and provided supporting examples.

Dr. Bain's Summary follows (comments that were in Dr. Bains summary, but have been addressed elsewhere in this Comment Response section, are not included below):

- In summary, development of a function that recognizes individual variation is a step in the right direction.
- The selected equation is likely to produce underestimates of takes due to asymmetries in the number of individuals affected if parameters are either underestimated or overestimated due to uncertainty. Thus it will be important to use the risk function in a precautionary manner.
- The sensitivity analysis reveals the importance of using as many datasets as possible. First, for historical reasons, there has been an emphasis on high energy noise sources and the species tolerant enough of noise to be observed near them. Exclusion of the rarer datasets demonstrating responses to low levels of noise biases the average parameter values, and hence underestimates effects on sensitive species.
- A similar mistake was made with the right whale data. The level at which 100 percent of individuals responded was used as the value at which 50 percent of individuals responded (B+K). Likewise, the level at which 100 percent of killer whales responded to mid-frequency sonar is less than the value derived for B+K in the HRC SDEIS (Dept. Navy 2008b).
- It is likely that biological B values should be in the range from just detectable above ambient noise to120 dB re 1 μPa. The resulting mathematical B value could be tens of dB lower, not the 120 dB re 1 μPa proposed. For many species, risk may approach 100 percent in the range from 120–135 dB re 1 μPa, putting K in the 15–45 dB range.
- The A values do not seem well supported by the data, and in any case, are likely to be misleading in social species as the risk function is likely to be asymmetrical with a disproportionate number of individuals responding at low noise levels. Rather than one equation fitting all species well, parameters are likely to be species typical.
- As realistic parameter values are lower than those employed in the HRC SDEIS (Dept. Navy 2008b), AFAST DEIS (Dept. Navy 2008a) and related DEIS's, take numbers should be recalculated to reflect the larger numbers of individuals likely to be taken. The difference between the parameter values estimated here and those used in the SDEIS suggests takes were underestimated by two orders of magnitude.

*Response:* Many of the limitations outlined in Dr. Bains document were raised by other commenters and are addressed elsewhere in this Comment and Response Section and will not be raised and addressed again here. Below, NMFS responds to the specific points summarized above.

- *The effects of multiple sources:* Mathematically, the Navy's exposure model has already accounted for takes of animals exposed to multiple sources in the number of estimated takes. NMFS concurs with the commenter, however, in noting that the severity of responses of the small subset of animals that are actually exposed to multiple sources simultaneously could potentially be greater than animals exposed to a single source due to the fact that received level, both SPL and SEL, would be slightly higher and because contextually it could be perceived as more threatening to an animal to receive multiple stimuli coming from potentially multiple directions at once (for example, marine mammals have been shown to respond more severely to sources coming directly towards them, vs. obliquely (Wartzok, 2004)). However, it is also worth noting that according to information provided by the Navy, surface vessels do not typically operate closer than 10–20

miles from another surface vessel (and greater distance is ideal), and other sonar sources, such as dipping sonar and sonobuoys, are almost always used 20 or more miles away from the surface vessel. This means that if the two most powerful sources were operating at the closest distance they are likely to (10 miles), in the worst case scenario, animals that would have been exposed to 150 dB SPL or less (taken from table 16 of the proposed rule) may be exposed to slightly higher levels or to similar levels or less coming from multiple directions.

• *Underestimates of takes due to asymmetries in the number of individuals affected when parameters are underestimated and overestimated due to uncertainty:* The commenter's point is acknowledged. When a sensitivity analysis is conducted and parameters are varied (both higher and lower values used)—the degree of difference in take estimates is much greater when the parameter is adjusted in one direction than in the other, which suggests that the way that this generalized model incorporates uncertainty may not be conservative. However, in all cases when the adjustment of the parameter in a certain direction results in a disproportionately (as compared to an adjustment in the other direction) large increase in the number of takes, it is because the model is now estimating that a larger percentage of animals will be taken at greater distances from the source. This risk function is based completely on the received level of sound. As discussed in the proposed rule, there are other contextual variables that are very important to the way that an animal responds to a sound, such as nearness of the source, relative movement (approaching or retreating), or the animals familiarity with the source. Southall *et al.* (2007) indicates that the presence of high-frequency components and a lack of reverberation (which are indicative of nearness) may be more relevant acoustic cues of spatial relationship than simply exposure level alone. In the HRC, an animal exposed to between 120 and 130 dB may be more than 65 nm from the sonar source. NMFS is not aware of any data that describe the response of any marine mammals to sounds at that distance, much less data that indicate that an animal responded in a way we would classify as harassment at that distance. Because of this, NMFS does not believe it is currently possible or appropriate to modify the model to further address uncertainty if doing so results in the model predicting that much larger numbers of animals will be taken at great distances from the source when we have no data to suggest that that would occur.

• *Using many datasets:* NMFS has explained both in the rule, and then again elsewhere in these comments, why we chose the three datasets we did to define the risk function. As Dr. Bain points out, there are datasets that report marine mammal responses to lower levels of received sound. However, because of the structure of the curve NMFS is using and what it predicts (Level B Harassment), we need datasets that show a response that we have determined qualifies as harassment (in addition to needing a source that is adequately representative of MFAS and reliable specific received level information), which many of the lower level examples do not.

• *50-percent* vs. *100-percent response:* Dr. Bain asserts that two of the three datasets (Nowacek *et. al.,* 2004 and Haro Strait—USS SHOUP) that NMFS uses to derive the 50-percent response probability in the risk function actually report a 100-percent response at the indicated received levels. For the Haro Strait dataset, a range of estimated received levels at the closest approach to the J Pod were estimated. Given that neither the number of individual exposures or responses were available, the mean of this range was used as a surrogate for the 50-percent response probability in the development of the risk function. For the Nowacek data, NMFS used 139.2 dB, which is the mean of the received levels at which 5 of 6 animals showed a significant response to the signal. However, viewed another way, of 6 animals, one animal did not respond to the signal and the other five responded at received levels of 133 dB, 135 dB, 137 dB, 143 dB, and 148 dB, which means that 3 of the 6 animals (50 percent) showed a significant response at 139.2 dB or less.

• *120 dB basement value:* When the broad array of data reported from exposures across taxa and to varied sources are reviewed, NMFS believes that 120 dB is an appropriate B value for a curve designed to predict responses that rise to the level of an MMPA harassment (not just any response). The available data do not support the commenter's assertion that risk may approach 100 percent in the range from 120–135 dB for many species. For example, the Southall *et al.* (2007) summary of behavioral response data clearly shows, in almost every table (for all sound types), reports of events in which animals showed no observable response, or low-level responses NMFS would not likely consider harassment, in the 120 to 135-dB range. For the species (the harbor porpoise) for which the data do support that assertion, which the Southall *et al.* (2007) paper considers ''particularly sensitive'', NMFS has implemented the use of a species-specific step function threshold of 120 dB SPL.

• *The A value:* Please see the second bullet of this response for the first part of the answer. NMFS concurs with the commenter that species-specific parameters would likely be ideal, however there are not currently enough applicable data to support separate curves for each species. We note, though, that even with species-specific parameters, the context of the exposure will still likely result in a substantive variability of behavioral responses to the same received level by the same species.

• *Recalculation:* For the reasons described in the bullets above in this response, NMFS disagrees with the commenter's assertion that the parameters used in the proposed rule and the EIS are unrealistic and that they result in take estimates that are too small by two orders of magnitude. We do not believe that a recalculation is necessary.

The science in the field of marine mammals and underwater sound is evolving relatively rapidly. NMFS is in the process of revisiting our acoustic criteria with the goal of developing a framework (Acoustic Guidelines) that allows for the regular and defensible incorporation of new data into our acoustic criteria. We acknowledge that this model has limitations, however, they are primarily based on the lack of applicable quantitative data. We believe that the best available science has been used in the development of the criteria used in this and other concurrent Navy rules and that this behavioral harassment threshold far more accurately represents the number of marine mammals that will be taken than the criteria used in the RIMPAC 2006 authorization. We appreciate the input from the public and intend to consider it further as we move forward and develop the Acoustic Guidelines.

*Comment 23:* One commenter expressed the concern that NMFS blindly relies on TTS studies conducted on 7 captive animals of two species (to the exclusion of copious data on animals in the wild) as a primary source of data for the behavioral harassment threshold. The commenter further asserts that these studies (on highly trained animals that do not represent a normal range of variation within their own species, as they have been housed in a noisy bay for most of their lives)

have major deficiencies, which NMFS ignores by using the data.

*Response:* As mentioned in Comment 22, the SSC Dataset (Controlled Laboratory Experiments with Odontocetes) is not the primary source of data for the behavioral harassment threshold, it is one of three datasets (other two datasets are from wild species exposed to noise in the field) treated equally in the determination of the K value (equates to midpoint) of the behavioral risk function. NMFS recognizes that certain limitations may exist when one develops and applies a risk function to animals in the field based on captive animal behavioral data. However, we note that for the SSC Dataset: (1) Researchers had superior control over and ability to quantify noise exposure conditions; (2) behavioral patterns of exposed marine mammals were readily observable and definable; and, (3) fatiguing noise consisted of tonal noise exposures with frequencies contained in the tactical mid-frequency sonar bandwidth. NMFS does not ignore the deficiencies of these data, rather we weighed them against the value of the data and compared the dataset to the other available datasets and decided that the SSC dataset was one of the three appropriate datasets to use in the development of the risk function.

*Comment 24:* NMFS fails to include data from the July 2004 Hanalei Bay event, in which 150–200 melon-headed whales were embayed for more than 24 hours during the Navy's Rim of the Pacific exercise. According to the Navy's analysis, predicted mean received levels (from mid-frequency sonar) inside and at the mouth of Hanalei Bay ranged from 137.9 dB to 149.2 dB. NMFS' failure to incorporate these numbers into its methodology as another data set is not justifiable.

*Response:* NMFS' investigation of the Hanalei event concluded that there was insufficient evidence to determine causality. There are a number of uncertainties about sonar exposure and other potential contributing factors and assumptions inherent to a reconstruction of events in which sonar was the causative agent that simply preclude this determination. Because of this, NMFS did not use the numbers (137.9–149.2 dB) in our methodology. Additionally, even if NMFS had concluded that MFAS were the causative agent, insufficient evidence exists regarding the received level when the animals responded (there is no information regarding where they were when they would have first heard the sound).

*Comment 25:* One commenter stated ''NMFS excludes a substantial body of research on wild animals (and some research on other experimental animals as well, within a behavioral experimental protocol). Perhaps most glaringly, while the related DEIS prepared for the Navy's Atlantic Fleet Active Sonar Training activities appears to acknowledge the strong sensitivity of harbor porpoises by setting an absolute take threshold of 120 dB (SPL)—a sensitivity that, as NMFS has noted, is reflected in numerous wild and captive animal studies—the agencies improperly fail to include any of these studies in their data set. The result is clear bias, for even if one assumes (for argument's sake) that the SPAWAR data has value, NMFS has included a relatively insensitive species in setting its general standard for marine mammals while excluding a relatively sensitive one.''

*Response:* As explained in the Level B Harassment (Risk Function) section of the proposed rule the risk function is based primarily on three datasets (SSC dataset, Nowacek *et al.* (2004), and Haro Strait—USS SHOUP) in which marine mammals exposed to mid-frequency sound sources were reported to respond in a manner that NMFS would classify as Level B Harassment. NMFS considered the ''substantial body of research'' that the commenter refers to but was unable to find other datasets that were suitable in terms of all of the following: The equivalency of the sound source to MFAS, a reported behavioral response that NMFS would definitively consider Level B Harassment, and a received level reported with high confidence. The SSC dataset is only one of three used and, in fact, the other 2 datasets (which are from wild animals—killer whales and North Atlantic right whales) both report behavioral responses at substantively lower levels (*i.e.*, the ''relatively insensitive'' species is not driving the values in the function).

Separately, combined wild and captive data support the conclusion that harbor porpoises (high-frequency hearing specialists) are quite sensitive to a variety of anthropogenic sounds at very low exposures (Southall *et al.,* 2007). Southall *et al.* (which refer to harbor porpoises as particularly sensitive species) report that all recorded exposures exceeding 140 dB SPL induced profound and sustained avoidance behavior in wild harbor porpoises. Unlike for the mid-frequency and low-frequency species, there are also no reported instances where harbor porpoises were exposed to higher levels and did *not* have a high response score. For these reasons, harbor porpoises are considered especially sensitive and NMFS determined that it is appropriate to apply a more conservative threshold.

*Comment 26:* The risk function must take into account the social ecology of some marine mammal species. For species that travel in tight-knit groups, an effect on certain individuals can adversely influence the behavior of the whole. Should those individuals fall on the more sensitive end of the spectrum, the entire group or pod can suffer significant harm at levels below what the Navy would use as the mean. In developing its ''K'' parameter, NMFS must take account of such potential indirect effects.

*Response:* The risk function is intended to define the received level of MFAS at which exposed marine mammals will experience behavioral harassment. The issue the commenter raises is related to the Navy's exposure model—not the risk function. However, because of a lack of related data there is no way to numerically address this issue in the model. Although the point the commenter raises is valid, one could also assert that if certain animals in a tight knit group were less sensitive it would have the opposite effect on the group. Additionally, the modeling is based on uniform marine mammal density (distributed evenly over the entire area of potential effect), which does not consider the fact that marine mammals appearing in pods will be easier to detect and, therefore, the Navy will be more likely to implement mitigation measures that avoid exposing the animals to the higher levels received within 1000m of the source.

*Comment 27:* NMFS' threshold is applied in such a way as to preclude any assessment of long-term behavioral impacts on marine mammals. It does not account, to any degree, for the problem of repetition: the way that apparently insignificant impacts, such as subtle changes in dive times or vocalization patterns, can become significant if experienced repeatedly or over time.

*Response:* NMFS threshold does not preclude any assessment of long-term behavioral impacts on marine mammals. The threshold is a quantitative tool that NMFS uses to estimate individual behavioral harassment events. Quantitative data relating to long-term behavioral impacts are limited, and therefore NMFS' assessment of long-term behavioral impacts is qualitative in nature (*see* Diel Cycle section in Negligible Impact Analysis section). NMFS analysis discusses the potential significance of impacts that continue more than 24 hours and/or are repeated on subsequent days and, though it does

not quantify those impacts, further indicates that these types of impacts are not likely to occur because of the nature of the Navy's training activities and the large area over which they are conducted.

*Comment 28:* One commenter noted that the threshold used in the Proposed Rule differs from the one used by the Navy to estimate marine mammal take during previous exercises (i.e., instead of using an energy level (EL) standard of 173 dB re 1 microPa$^2$•s, NMFS applies a pressure (SPL)-based dose-response function that begins at 120 dB re 1 microPa and reaches its mean at 165 dB re 1 μPa). The commenter was concerned that under 173 dB (EL) threshold, the RIMPAC 2006 event was expected to result in slightly less than 33,000 behavioral takes of marine mammals—while under the risk function, RIMPAC events conducted with the same number of hours of sonar use would supposedly cause fewer than 6,000 takes. The commenter requests that NMFS provide a take estimate using the 173 dB (EL) standard.

*Response:* NMFS develops and implements thresholds based on the best available science, not on how changing the threshold will affect the number of estimated takes. As described in the proposed rule, the decision to use a risk continuum approach instead of a step function was based on the fact that behavioral responses are very individual and context-specific and a risk function allows for this variation to be considered in the take estimate, versus a step function, which assumes that every animal will be harassed at the same received level in every situation. Although both SPL and SEL are valuable metrics for predicting the behavioral responses of marine mammals to sound, SPL is currently the best metric with which to assess the available behavioral response data because it is the metric that has most often been measured or estimated during behavioral disturbance studies (Southall *et al.,* 2007). Additionally, SEL is more difficult to estimate in the field than SPL. Regarding the decrease in the number of estimated takes for current RIMPAC exercises as compared to RIMPAC 2006, NMFS notes the following items, other than the new threshold, that have contributed to the reduction in the take estimate:

- The RIMPAC 2006 take estimate was calculated for 532 hours of sonar, while the current RIMPAC estimate is based on 399 hours of sonar.
- In 2006, the Navy model did not subtract out the land mass area when multiplying the ensonified area by the animal density to determine the estimated marine mammal exposures. Currently, the Navy has implemented a post-modeling calculation that allows them to account for that.
- For the 2006 RIMPAC, all of the surface vessel sonar hours were modeled as using the 53C hull-mounted sonar source, though both 53C and 56C sources are used in Hawaii. The 56C hull-mounted sonar source is typically operated at 10 dB SPL lower source level than the 53C sonar source (225 vs. 235 dB), which means that the horizontal ensonified area around the source is at least 10 times smaller—which translates to substantially fewer animals exposed to received sound levels associated with MMPA takes. In modeling impacts for this rulemaking, the Navy more accurately modeled both 53C and 56C sonar sources in the exposure analysis, which contributes to the more realistic lower take estimate.
- Currently, the Navy applies marine mammal depth profiles to the take estimate that allows for consideration of where in the water column marine mammals are likely to be in relation to the propagated sound. Alternatively, in 2006, marine mammals were only distributed 2-dimensionally, which meant that an exposed animal was always counted as having been exposed to whatever the highest level of sound in the entire vertical water column was.

NMFS will continue to evaluate new science and thresholds will likely evolve gradually in response to applicable data. Requiring the Navy to calculate take estimates based on an outdated threshold would cost the Navy unnecessary resources and would not result in any added value to the effects analysis or the protection of marine mammals.

*Comment 29:* ''NMFS appears to have misused data garnered from the Haro Strait incident—one of only three data sets it considers—by including only those levels of sound received by the 'J' pod of killer whales when the USS Shoup was at its closest approach. These numbers represent the maximum level at which the pod was harassed; in fact, the whales were reported to have broken off their foraging and to have engaged in significant avoidance behavior at far greater distances from the ship, where received levels would have been orders of magnitude lower. We must insist that NMFS provide the public with the Navy's propagation analysis for the Haro Strait event, which it used in preparing its 2005 Assessment of the incident.''

*Response:* NMFS used the levels of sound received by the ''J'' pod when the USS Shoup was at its closest approach because a review of the videotapes and other materials by NMFS detailing the behavior of the animals in relation to the location of the Navy vessels showed that it was after the closest approach of the vessel that the whales were observed responding in a manner that NMFS would classify as ''harassed''. Though animals were observed potentially responding to the source at greater distances, NMFS scientists believed that the responses observed at greater distances were notably less severe and would not rise to the level of an MMPA harassment. Though the received levels observed in relation to the lesser responses could be used in some types of analytical tools, the risk continuum specifically requires that we use received sound levels that are representative of when an MMPA harassment occurred. The Navy's report may be viewed at: *http://www.acousticecology.org/docs/SHOUPNavyReport0204.pdf.*

*Acoustic Threshold for TTS*

*Comment 30:* NRDC argues that a 190 dB re 1 μPa$^2$-s TTS threshold would have ''fit the applicable data'' better than the 195–dB threshold (*i.e.*, the data better support a 190–dB TTS threshold) NMFS and the Navy have established for MFAS and would have had the advantage of being marginally more conservative given the enormous uncertainties surrounding the effects of mid-frequency sonar on marine mammals.

*Response:* The most recent and best available scientific information, *i.e.*, Southall *et al.* (2007), support the application of the 195–dB SEL TTS-onset threshold for cetaceans and non-pulse sounds (such as MFAS). Published TTS data are limited to bottlenose dolphin and beluga (six publications); however, in order to be precautionary, where data exist for both species, the authors use the more conservative result (usually for beluga) to represent TTS-onset for all mid-frequency cetaceans. NMFS scientists and the authors of Southall *et al.* (2007) believe that the existing data support a 195–dB threshold.

*Acoustic Threshold for Injury*

*Comment 31:* One commenter stated that: ''The take estimates do not reflect other non-auditory physiological impacts, as from stress and from chronic exposure''.

*Response:* The commenter is correct, the Navy's estimated take numbers do not reflect non-auditory physiological impacts because the quantitative data necessary to address those factors in the exposure model do not exist. However, NMFS acknowledges that a subset of the

animals that are taken by Harassment will also likely experience non-auditory physiological effects and these effects are addressed in the proposed rule (*see* Stress Responses section).

*Comment 32:* The Navy's exclusive reliance on energy flux density as its unit of analysis does not take other potentially relevant acoustic characteristics into account. Reflecting this uncertainty, the Navy should establish a dual threshold for marine mammal injury.

*Response:* NMFS currently uses the injury threshold recommended by Southall *et al.* (2007) for MFAS. Specifically, NMFS uses the 215-dB SEL sound exposure level threshold (the commenter refers to it as energy flux density level). Southall *et al.* (2007) presents a dual threshold for injury, which also includes a 230–dB peak pressure level threshold. NMFS discussed this issue with the Navy early in the MMPA process and determined that the 215-dB SEL injury threshold was the more conservative of the two thresholds (*i.e.*, the 230-dB peak pressure threshold occurs much closer to the source than the 215-dB SEL threshold) and therefore it was not necessary to consider the 230-dB peak pressure threshold further. For example, an animal will be within the 215-dB SEL threshold and counted as a take before it is exposed to the 230-dB threshold. NMFS concurs with Southall *et al.* (2007), which asserts that for an exposed individual, whichever criterion is exceeded first, the more precautionary of the two measures should be used as the operative injury criterion.

*Comment 33:* One commenter suggested that the Navy has not explained how they determine when or how injuries or harassment of marine mammals have occurred during the specified activities.

*Response:* It is difficult to detect when animals experience behavioral harassment. Though it would likely be easier to detect if an animal were injured as a result of the Navy's activities, it is still difficult because of the fact that marine mammals spend a lot of time underwater (where they cannot be visually observed) and because of the large areas that Navy training activities cover (*i.e.*, they do not stay in one area for a long time). The Navy has a robust Monitoring Plan that utilizes vessel monitoring, aerial monitoring, passive acoustic monitoring, and tagging and is intended to detect and report marine mammal responses to MFAS exposure. However, in order to quantify the takes that are likely to occur as a result of particular training exercises, the Navy must make estimates based on the propagation of sound from their sources, the density of marine mammals in the area, and the acoustic thresholds, which predict at what received level of sound an animal will be harassed and were developed by NMFS using the best available science.

*Comment 34:* One commenter asserts that most whales injured or killed by sonar will not be found, or they will sink and die rather than beach themselves on shore. Further, the commenter states, the proposed tests and war games will likely injure and harass many more marine mammals than the number of takings requested by the Navy.

*Response:* For the reasons set forth in this rulemaking, NMFS does not believe that the Navy's training will result in more take than is authorized in these final regulations. The Navy has been conducting MFAS/HFAS training exercises in the HRC for over 40 years. Though monitoring specifically to determine the effects of sonar on marine mammals was not being conducted prior to 2006 and the symptoms indicative of potential acoustic trauma were not as well recognized prior to the mid-nineties, people have been collecting stranding data in Hawaii for 25 years. Though not all dead or injured animals are expected to end up on the shore (some may be preyed upon or float out to sea), one might expect that if marine mammals were being harmed by sonar with any regularity or in large numbers, more evidence would have been detected over the 40-yr period. An average of 24 stranding events per year are documented in Hawaii. However, as described in the rule, NMFS and the Navy have definitively determined that the use of MFAS was a contributing factor in 5 stranding events worldwide, none of which took place in Hawaii.

*Comment 35:* One commenter stated: ''[M]arine mammals are stressed by many other factors, the most critical being global warming, which is both increasing the temperature of the oceans and acidifying them, with observed changes in food supplies and timing of migrations. Allowing use of active sonar may be the last straw for some of these species. It is important to protect marine mammals until it is known that populations can sustain limited and completely quantified incidental harassment and death. Since that is not known at present, NOAA should not allow the Navy to proceed with active sonar testing as requested.''

*Response:* NMFS acknowledges that global warming is a threat to some species of marine mammals. For the reasons described in this rulemaking, NMFS believes that the Navy's model, combined with NMFS' designated thresholds, is able to adequately quantify the number of marine mammals that will likely be ''taken'' by the Navy's proposed activity. Further, based on the analysis contained in this rule, NMFS was able to conclude that the total taking of marine mammals over the 5-yr period incidental to the Navy's training activities would have a negligible impact on the affected species or stock (*i.e.*, would not have adverse effects on the annual rates of survival or recruitment in the affected populations or stocks). Therefore, NMFS has issued these regulations and plans to issue Letters of Authorization for this activity. Of note—pursuant to the MMPA, NMFS does not ''allow'' or disallow the Navy to proceed with their activities; rather, NMFS either authorizes or does not authorize the take of marine mammals incidental to the specified activities that are analyzed.

*Comment 36:* One commenter asserts that NMFS disregards data gained from actual whale mortalities. The commenter cites to peer-reviewed literature that indicates that sound levels at the most likely locations of beaked whales beached in the Bahamas strandings run far lower than the Navy's threshold for injury here: approximately 150–160 dB re 1 μPa for 50–150 seconds, over the course of the transit. A further modeling effort, undertaken in part by the Office of Naval Research, the commenter states, suggests that the mean exposure level of beaked whales, given their likely distribution in the Bahamas' Providence Channels and averaging results from various assumptions, may have been lower than 140 dB re 1 μPa. Last the commenter suggests that when duration is factored in, evidence would support a maximum energy level (''EL'') threshold for serious injury on the order of 182 dB re 1 $\mu Pa^2 \cdot s$, at least for beaked whales.

*Response:* No one knows where the beaked whales were when they were first exposed to MFAS in the Bahamas or the duration of exposure for individuals (in regards to maximum EL) and, therefore, we cannot accurately estimate the received level that triggered the response that ultimately led to the stranding. Therefore, NMFS is unable to quantitatively utilize any data from this event in the mathematical model utilized to estimate the number of animals that will be ''taken'' incidental to the Navy's proposed action. However, NMFS does not disregard the data; the proposed rule includes a qualitative discussion of the Bahamas stranding and four other strandings that NMFS and the Navy concur that the operation

of MFAS likely contributed to. These data illustrate a ''worst case scenario'' of the range of potential effects from sonar and the analysis of these strandings supports the Navy's request for authorization to take 10 individuals of several species by mortality over the 5-yr period.

*Comment 37:* One commenter states: ''NMFS fails to take proper account of published research on bubble growth in marine mammals, which separately indicates the potential for injury and death at lower [received sound] levels. According to the best available scientific evidence, gas bubble growth is the causal mechanism most consistent with the observed injuries. NMFS' argument to the contrary simply misrepresents the available literature.''

*Response:* The proposed rule contained a detailed discussion of the many hypotheses involving both acoustically-mediated and behaviorally-mediated bubble growth. NMFS concluded that there is not sufficient evidence to definitively say that any of these hypotheses accurately describe the exact mechanism that leads from sonar exposure to a stranding. Despite the many theories involving bubble formation (both as a direct cause of injury and an indirect cause of stranding), Southall *et al.* (2007) summarizes that scientific agreement or complete lack of information exists regarding the following important points: (1) Received acoustical exposure conditions for animals involved in stranding events; (2) pathological interpretation of observed lesions in stranded marine mammals; (3) acoustic exposure conditions required to induce such physical trauma directly; (4) whether noise exposure may cause behavioral reactions (such as atypical diving behavior) that secondarily cause bubble formation and tissue damage; and (5) the extent the post mortem artifacts introduced by decomposition before sampling, handling, freezing, or necropsy procedures affect interpretation of observed lesions.

*Comment 38:* One commenter states: ''[C]oncerning direct physiological effects, only a few studies provide empirical information on the levels at which noise-induced loss in hearing sensitivity occurs in nonhuman animals. Given the lack of data, and importance of hearing in the ocean, shouldn't we follow the precautionary principle for underwater noise?''

*Response:* The TTS thresholds are based on published data gathered from beluga whales, bottlenose dolphins, California sea lions, harbor seals, and elephant seals via several different studies. The PTS threshold (for estimating PTS onset, which is considered to occur in conditions causing 40 dB of TTS, based on research on several terrestrial mammal species) is derived by combining measured or estimated TTS onset levels in marine mammals and the estimated ''growth'' of TTS in certain terrestrial mammals exposed to increasing noise levels (Southall *et al.,* 2007). Precautionary choices were made at several decision points in the development of these thresholds and Southall *et al.* (2007) indicate that the approach is to ''acknowledge scientific uncertainty and to err on the side of overestimating the possibility of PTS (*i.e.*, on the side of underestimating the exposure required to cause PTS onset).'' For example, 40 dB of TTS is considered the onset of PTS; however, this is likely somewhat precautionary because, based on previous studies of terrestrial mammals, there is often complete recovery from TTS of this magnitude or greater (*i.e.*, PTS is not induced).

*Effects Analysis*

*Comment 39:* ''Why is impaired communication considered for these rules, but not in the Navy EIS?''

*Response:* The Navy's conceptual framework, the figure in the Navy's EIS in which they outline the potential effects on marine mammals from exposure to sonar, includes a box indicating behavioral changes to vocalizations. Further, the HRC EIS contains a detailed section on masking, which is closely associated with any communication impairment that might result from MFAS exposure (NMFS included a brief discussion of communication impairment in the same section as masking). Both NMFS and the Navy believe that both masking and communication impairment are relatively unlikely to occur as a result of MFAS exposure because of the pulse length and duty cycle of the MFAS signal.

*Comment 40:* One commenter asked why the MMPA rules find greater stress responses than the Navy EIS.

*Response:* Both the proposed rule and the EIS discuss stress responses as related to marine mammal exposure to MFAS. Because of the lack of quantitative data, neither document attempts to quantify the number of animals that will likely experience a stress response or the specific degree of distress these animals may experience—*i.e.*, the rule does not ''find greater stress responses'' than the EIS.

*Comment 41:* One commenter noted that the proposed rule said: ''Little is known about the breeding and calving behaviors of many of the marine mammals that occur in the HRC.'' Then he questioned how such precise predictions of harm can be made.

*Response:* What is not indicated above is that, though little is known about the breeding and calving behaviors of many of the marine mammals that occur in the HRC, what is known is that these behaviors are most likely occurring in areas outside of the HRC (mysticetes other than humpback whales) or that there are not likely specific focused areas of reproductive importance in the HRC. Therefore, we do not expect focused effects of sonar to occur in an important reproductive area. When this is combined with the fact that we do not expect injury of marine mammals to occur (because of the mitigation measures), we do predict a lack of harm.

*Comment 42:* One commenter noted the LOA application requirement to provide the anticipated impact of the activity upon the species or stock. The commenter indicated that there is not enough data to answer the question adequately and that they are skeptical of Navy data as it ''has been shown to be unreliable.'' Further, the commenter ''generally feels that it is unwise to rely on an applicant's data set and urge that independent analysis be done.'' Last, they assert that ''Because there is a paucity of Navy data regarding their own estimates for takes, it is reasonable for NMFS to take a conservative and precautionary view towards issuing permits regarding the extremely broad, long-term, and harmful actions proposed.''

*Response:* The commenter does not provide any information to support his assertion that the Navy data ''has been shown to be unreliable''. NMFS relies upon the data that the Navy (or any applicant) provides in our analysis, but also conducts an independent review of the data and incorporates additional data into our analysis as appropriate. Next, NMFS is not sure what the commenter meant when he stated: ''Because there is a paucity of Navy data regarding their own estimates for takes.'' NMFS strives to always make decisions based on the best scientific data. In circumstances of scientific uncertainty and potentially high risk when a decision is necessary, NMFS errs on the side of being more conservative, whenever that conclusion is supported by the agency's record.

*Comment 43:* One commenter stated: ''[T]here is a disconnect that exists between the modeling adopted by NMFS in estimating species take and the scope of the authorization that NMFS has issued. NMFS' rule would permit the Navy to operate anywhere

around the range without any substantive restriction. If NMFS' analysis is dependent on certain assumptions about the Navy's training—including, for example, the siting of exercises—it must incorporate those assumptions as limitations on the training that the Navy is authorized to perform. Otherwise, there can be no assurance that takes will remain within even the limits that NMFS has proposed.''

*Response:* As it relates to humpback whales only, NMFS analysis is dependent on certain assumptions about the Navy's training (the assumption that a relatively small portion of the overall Navy training will occur within the areas that are known to contain high densities of humpback whales in the winter months (referred to as the Mobley Area because of a map he compiled)). Because of the need for operational flexibility, the Navy cannot commit to limiting their sonar use over the entire Mobley Area (though they will implement the humpback whale cautionary area measure specifically in the Maui Basin). However, the following facts support the idea that hours of sonar training will be relatively low in the Mobley Area and that effects on humpback whales will be relatively less severe:

- SPORTS data from 2007 indicates that the Navy operated sonar for a total of approximately 30 hours in the Mobley Area.
- Though SPORTS was not operative prior to 2007, the Navy indicated that sonar use in the Mobley Area prior to 2007 was similarly limited.
- The Navy generally asserts that the majority of the exercises are in waters 2,000–4,000 km deep. This means that the exercises are 2–15 km (1–8 nm), or farther, out from the densest areas of humpbacks, which would suggest, based on propagation information provided by the Navy, that the majority of behavioral takes of humpbacks would occur at received levels less than 150–160 dB. This further suggests that the overall potential severity of the effects is likely less than one would anticipate if humpbacks were not selectively using the shallower, inshore areas and the Navy were not conducting the majority of their exercises in deeper areas.

That being said, however, NMFS concurs with the commenter that NMFS needs to ensure that the Navy's effects remain within the bounds of those anticipated by and analyzed within the rule. For this reason, NMFS has added a reporting requirement that requires the Navy to annually report the number of hours of sonar operation within the Mobley Area. The rule also includes an adaptive management component, which means that NMFS and the Navy have the flexibility to modify mitigation or monitoring measures if appropriate.

*Comment 44:* One commenter asserts that the Navy's exposure model fails to consider the following important points:

- Possible synergistic effects of using multiple sources in the same exercise, or the combined effects of multiple exercises.
- Indirect effects, such as the potential for mother-calf separation, that can result from short-term disturbance.
- In assuming animals are evenly distributed—the magnifying effects of social structure, whereby impacts on a single animal within a pod, herd, or other unit may affect the entire group.
- In assuming that every whale encountered during subsequent exercises is essentially a new whale—the cumulative impacts on the breeding, feeding, and other activities of species and stocks.

*Response:* The commenter is correct, the Navy's model does not consider the points listed above because the quantitative data necessary to include those concepts in a mathematical model do not currently exist. However, NMFS and the Navy have qualitatively addressed those concerns in their effects analyses in the rule and in the Navy's EIS.

*Comment 45:* One commenter noted that the numbers of modeled hours in the Navy's EIS and NMFS' Proposed Rule are lower than those set forth in the DEIS (by half), due, apparently, to the Navy's application of its new Sonar Positional Reporting System (SPORTS). The commenter further notes that the discrepancy in use hours between the DEIS and EIS raises some question about SPORTS' reliability. The commenter recommends that NMFS require the Navy to compare SPORTS data with logs retained by the Pacific Fleet, over a sample period, to confirm that SPORTS reporting does indeed capture all mid-frequency sonar use in the Hawaii Range Complex, and then publicly report the total number of sonar use hours occurring on the HRC on no less than an annual basis, to ensure that levels remain below the levels established here.

*Response:* SPORTS is the single method that the Navy has available to them to accurately keep track of hours of sonar operation. Prior to the implementation of this system, the Navy estimated the hours of sonar operation based on other operational factors, such as the length of the whole exercise. Their estimates were conservative, which is why the numbers went down when they began using the SPORTS. NMFS is requiring (*see* Reporting Requirements section) the Navy to report the number of hours of sonar operation on an annual basis, however, the Navy will decide how best to provide that information, which at this point in time includes the use of SPORTS.

*Comment 46:* One commenter stated: ''NMFS does not properly account for reasonably foreseeable reverberation effects (as in the Haro Strait incident), giving no indication that its modeling sufficiently represents areas in which the risk of reverberation is greatest.''

*Response:* The model does indirectly incorporate surface-ducting (surface reverberation), as conditions in the model are based on nominal conditions calculated from a generalized digitalized monthly average. Though the model does not consider reverberations, these effects are generally at received levels many orders of magnitude below those of direct exposures (as demonstrated in the Haro Strait analysis associated with bottom reverberation) and thus contribute essentially nothing to the cumulative SEL exposure and would not result in the exposure of an animal to a higher SPL than the direct exposure, which is already considered by the model.

*Comment 47:* How will oceanographic conditions (*e.g.*, water temperature profiles, water depth, salinity, etc.) be factored into the modeling of received sound levels of MFAS and underwater detonations? Which oceanographic data sources will be used?

*Response:* The Take Calculation section of the proposed rule generally discusses how these and other variables are factored into the take estimates and references Appendix J of the Navy's FEIS for HRC, which contains the details of the model and how these variables are incorporated. Due to the importance that propagation loss plays in ASW, the Navy has invested heavily over the last four to five decades in measuring and modeling environmental parameters. The result of this effort is the following collection of global databases of environmental parameters that are accepted as standards for all Navy modeling efforts:

- Water depth—Digital Bathymetry Data Base Variable Resolution (DBDBV),
- Sound speed—Generalized Dynamic Environmental Model (GDEM),
- Bottom loss—Low-Frequency Bottom Loss (LFBL), Sediment Thickness Database, and High-Frequency Bottom Loss (HFBL), and
- Wind speed—U.S. Navy Marine Climatic Atlas of the World.

*Comment 48:* One commenter cites concerns that the Navy's take estimates

(for monk seals specifically) are substantively lower in the FEIS than the DEIS. Further comments indicate some confusion regarding whether any monk seals are expected to be injured by the predicted exposures to MFAS or explosives.

*Response:* Though this comment is outside the purview of the MMPA, NMFS directs the commenter to the Navy's Supplement to the DEIS, which clearly explains that the implementation of the new system for keeping track of sonar hours (SPORTS) resulted in fewer estimated hours of sonar operation, which in turn results in lower take estimates. Separately, to clarify—based on the model, no monk seals will be exposed to any injurious levels of sound or pressure. Additionally, though a few seals were modeled as being exposed to levels that could result in TTS, NMFS believes that these exposures are not likely to occur when the mitigation is taken into consideration (see Negligible Impact Analysis).

*Comment 49:* One commenter stated: ''NMFS has not considered the best available evidence of population structuring in Hawaiian marine mammals: Notably, NMFS does not account (in its abundance estimates) for evidence of considerable site fidelity by Cuvier's and Blainville's beaked whales, which is suggestive of residency and additional population structuring. NMFS significantly overestimates the size of these populations and thus significantly underestimates the proportion that would be taken and the effects that its repeated activities would have.''

*Response:* NMFS' analysis includes qualitative consideration of the evidence of site fidelity by Cuvier's and Blainville's beaked whales (see Resident Populations/Additional Management Units section in the proposed rule). NMFS considers the abundance estimates of designated marine mammal stocks and these beaked whale groups have not been designated as separate stocks by NMFS. As discussed in the indicated section, if the nature of the Navy's training exercises was such that they were disproportionately conducting sonar in a certain fairly large area that largely overlapped with a particular demographically isolated population, stock, or resident population, additional analysis might be needed to determine what additional impacts might occur. However, due to the Navy's need to train in a variety of bathymetric conditions and in the vicinity of a variety of other resources throughout the Main Hawaiian Islands, the location of the Navy's training exercises are highly variable, and no focused impacts are anticipated in the vicinity of these groups.

*Comment 50:* One commenter asked why the rule finds a stronger correlation between sonar and marine mammal strandings than the Navy EIS and why the rule finds more serious effects than the Navy EIS?

*Response:* Both the EIS and the proposed rule discuss the association between the 5 specific marine mammal strandings and the use of MFAS and both the rule and the EIS discuss a wide range of potential physiological and behavioral effects on marine mammals from MFAS, ranging from avoidance to PTS to bubble formation that could cause tissue damage. The rule utilizes the same estimated take numbers that the EIS does. NMFS disagrees with the assumptions underlying the commenter's question and, therefore, cannot answer the question.

*General Opposition*

*Comment 51:* The NRDC urged NMFS to withdraw its proposed rule on the Hawaii Range Complex and to revise the document prior to its recirculation for public comment. They suggested NMFS revisit its profoundly flawed analysis of environmental impacts and prescribe mitigation measures that truly result in the least practicable adverse impact on marine species.

*Response:* NMFS has addressed specific comments related to the effects analysis here and the mitigation measures in the Mitigation Environmental Assessment. We do not believe that the analysis is flawed and we believe that the prescribed measures will result in the least practicable adverse impacts on the affected species or stock. Therefore, NMFS does not intend to withdraw its rule on the HRC.

*Comment 52:* A few commenters expressed general opposition to Navy activities and NMFS' issuance of an MMPA authorization.

*Response:* NMFS appreciates the commenter's concern for the marine mammals that live in the area of the proposed activities. However, the MMPA directs NMFS to issue an incidental take authorization if certain findings can be made. NMFS has determined that the Navy training activities in the HRC will have a negligible impact on the affected species or stock and, therefore, we plan to issue the requested MMPA authorization.

*MMPA*

*Comment 53:* One commenter stated: ''Currently, the Hawaiian monk seal population has reached a critical point where recovery of the species is questionable, which should be considered grounds for the termination of sonars in and around areas where the Hawaiian monk seal is known to be present.''

*Response:* As with other species, the Navy is required to powerdown if a monk seal is detected within 1000 yds of the sonar source (and powerdown further if the seal is detected within 500 yd and shutdown if the seal is detected within 200 yds). Monk seals generally forage at depths of less than 100 m (109 yd), but occasionally dive to depths of over 500 m (546 yd). The majority of ASW training in the HRC, however, takes place in waters 4 to 8 times deeper than even this known (500-m (546-yd)) maximum and it is very rare for ASW training to take place in waters as shallow as 100 m (109 yd) in depth. So, generally, monk seals are less likely to be in the vicinity of ASW activities, and we believe that watchstanders are likely to spot the seals before they could close within the distance necessary to sustain TTS, which would be less than 100 m (109 yd).

*Comment 54:* One commenter expressed general opposition to the marine mammal take that NMFS had proposed to authorize and presented several reasons why MFAS was not necessary. The same commenter discussed the purpose of the MMPA and suggested that the Navy had not earned the right to take any marine mammals.

*Response:* Under section 101(a)(5)(A) of the MMPA, NMFS must make the decision of whether or not to issue an authorization based on the applicant's proposed action that the applicant submits—the MMPA does not contain a mechanism for NMFS to question the need for the action that the applicant has proposed (unless the action is illegal). Similarly, any U.S. citizen (including the Navy) can request and receive an MMPA authorization as long as all of the necessary findings can be made, it is not necessary that the Navy or any other entity ''earn the right''.

*Comment 55:* ''Any organism that frequents the HRC is protected by state law even when outside the three mile state boundary. Many of the species affected by active sonars are affected by this legislation. Therefore if any of these animals are thought to be caused harm, this would fall under state jurisdiction thus requiring state involvement in the decision making process. We call on NMFS to involve the state in the decision making process.''

*Response:* It is unclear what statute the commenter is referring to. In any case, however, NMFS may only authorize the take of marine mammals incidental to a specified activity. NMFS ensures that the proposed activities are

consistent with or in compliance with the applicable federal statutes before issuing an authorization.

*Other*

*Comment 56:* OHA advocates for a narrow view by NMFS of the number of take permits to be issued for the proposed actions and a determination that the proposed and even ongoing activities in the HRC do adversely affect Hawaiian Monk seals and other marine mammals.

*Response:* NMFS determined that the training activities proposed to be conducted in the HRC and the issuance of an MMPA authorization may affect listed marine mammals such as the Hawaiian monk seal. Consequently, the Navy and NMFS (the branch that issues an MMPA authorization) consulted with NMFS under section 7 of the ESA. In a Biological Opinions (BiOp), NMFS concluded that the Navy's training activities in the HRC and NMFS' issuance of these regulations and the 2009 LOA are not likely to jeopardize the continued existence of threatened or endangered species or destroy or adversely modify any designated critical habitat. NMFS also determined that the Navy's training activities and NMFS issuance of the LOA were likely to adversely affect the affected marine mammal stocks and species and issued an incidental take statement. The ITS issued for the LOA will contain implementing terms and conditions to minimize the effects on ESA-listed species of the marine mammal take authorized through the 2009 LOA.

*Comment 57:* One commenter was concerned that State commerce could be jeopardized as the sonar could negatively impact the humpback whale populations and other marine species, which draw over 900,000 visitors to the state. The commenter questioned whether these effects had been adequately addressed.

*Response:* NMFS recommends that the commenter review the Navy's EIS to obtain information about the potential socio-economic impacts resulting from the Navy's use of sonar in the HRC.

*Comment 58:* ''Fish are affected by sonars, airguns and other underwater noises. With possible physical damage, decreased catch size and altered behaviors resulting from HRC activities, the Magnuson Stevens Fishery Act may question the validity of these exercises.''

*Response:* NMFS reviewed the Navy's Essential Fish Habitat and Coral Reef Assessment for the HRC and concurred with the Navy that it is unlikely that the proposed project would have adverse impacts to EFH provided the proposed mitigation measures were implemented (see Essential Fish habitat Determination section).

*Comment 59:* A few members of the public submitted comments on the Navy's EIS that they did not clearly tie to the proposed rule.

*Response:* The purpose of this comment period was for the public to provide comments on the proposed rule. Responses were not provided to comments on the EIS if their bearing on the MMPA authorization was not clear.

*Comment 60:* How will all the sunken objects—hulks, sonobuoys, explosive devices, etc.—affect marine life? They will attract plant growth and animals that feed on the plants, changing the ecosystem. And what toxins will they release into the ocean?

*Response:* The Navy's HRC FEIS analyzed how sunken objects, such as sonobuoys and expended explosive devices, would affect marine life. The Navy found that the likelihood of a marine mammal or fish encountering and having an adverse interaction with expended materials was remote. Also, the Navy found that the potential ingestion of toxins, such as the small amount of propellant or stimulant remaining in the spent boosters or on pieces of missile debris, by marine mammals or fish species would be remote because of (1) atmospheric dispersion, (2) the diluting and neutralizing effects of seawater, and (3) the relatively small area that could potentially be affected.

*Comment 61:* The NRDC notes that NMFS is preparing an environmental assessment on the environmental effects of various mitigation measures, and suggests that if NMFS intends to rely on this document for its Final Rule, or if this document constitutes significant new information, NMFS must postpone finalizing the rule and open up its assessment to public comment.

*Response:* NMFS is not required to provide advance notice and opportunity for comment on the draft Environmental Assessment. This document does not constitute significant new information, rather it is a summary of the universe of mitigation measures (many of them recommended in public comments) that NMFS considered when developing the MMPA authorization with a discussion of their potential benefits to marine mammals and their practicability of implementation. Much of the information, especially as it relates to practicability of implementation, was included in the Navy's EIS. Finally, NMFS and the Navy have provided the public with a substantial amount of environmental information related to the HRC activities (*e.g.*, during the Navy's EIS process and NMFS' MMPA process).

*Comment 62:* One commenter was concerned about the effects of the Navy's training in the Papahānaumokuākea Marine National Monument, which contains the largest coral reef area in Hawaii, one of the largest and most important assemblages of tropical seabirds in the world, greater than 98 percent of the world's Laysan and black-footed albatrosses nests, the majority of the population of the Hawaiian monk seal, and over 90 percent of the Hawaiian green sea turtle nests there. The Navy proposes to increase the impacts to this remarkable area and the effects could be dramatic.

*Response:* Most of this comment does not pertain to NMFS' authority pursuant to the MMPA. However, NMFS notes that only a very small part of the Papahānaumokuākea Marine National Monument overlaps with the HRC, and it is in a remote portion of the HRC. Therefore, NMFS anticipates relatively few hours of sonar operation to occur in that area. Additionally, the effects of this action are temporary and acoustic in nature, and NMFS does not expect them to result in harm to the protected natural and cultural resources of these areas. The Northwestern Hawaiian Islands Marine National Monument proclamation contains the following language ''The prohibitions required by this proclamation shall not apply to activities and exercises of the Armed Forces (including those carried out by the United States Coast Guard) that are consistent with applicable laws.''

*Comment 63:* Several commenters included potentially technical comments that NMFS could not interpret from the context in which they were presented, such as: ''Sonar hours should not be averaged, because longer exposure leads to more disruption of feeding, caring for young, mating, resting, and other activities necessary to animals' long-term well-being'' or ''OHA also asks that NMFS consider the NMFS defined refresh rate of 24 hours, which represents the amount of time in which individual marine mammals can be harassed no more than once when considering authorizing their take permits for this proposed action.''

*Response:* NMFS is not responding to these comments because the meaning of the comment is not clear.

**Estimated Take of Marine Mammals**

As mentioned previously, with respect to the MMPA, NMFS' effects assessments serve three primary purposes: (1) To put forth the permissible methods of taking (*i.e.*, Level B Harassment (behavioral

harassment), Level A Harassment (injury), or mortality, including an identification of the number and types of take that could occur by Level A or B harassment or mortality) and to prescribe other means of effecting the least practicable adverse impact on such species or stock and its habitat (*i.e.*, mitigation); (2) to determine whether the specified activity will have a negligible impact on the affected species or stocks of marine mammals (based on the likelihood that the activity will adversely affect the species or stock through effects on annual rates of recruitment or survival); (3) to determine whether the specified activity will have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (however, there are no subsistence communities that would be affected in the HRC, so this determination is inapplicable for the HRC); and (4) to prescribe requirements pertaining to monitoring and reporting.

In the Estimated Take of Marine Mammals section of the proposed rule, NMFS related the potential effects to marine mammals from MFAS/HFAS and underwater detonation of explosives (discussed in the Potential Effects of Specified Activities on Marine Mammals Section) to the MMPA regulatory definitions of Level A and Level B Harassment and quantified (estimated) the effects on marine mammals that could result from the specific training activities that the Navy intends to conduct. The subsections of this analysis are discussed individually below.

*Definition of Harassment*

The Definition of Harassment section of the proposed rule contained the definitions of Level A and Level B Harassments, and a discussion of which of the previously discussed potential effects of MFAS/HFAS or explosive detonations fall into the categories of Level A Harassment (permanent threshold shift (PTS), acoustically mediated bubble growth, behaviorally mediated bubble growth, and physical disruption of tissues resulting from explosive shock wave) or Level B Harassment (temporary threshold shift (TTS), acoustic masking and communication impairment, and behavioral disturbance rising to the level of harassment); 73 FR 35510, pages 35549–35550. No changes have been made to the discussion contained in this section of the proposed rule.

*Acoustic Take Criteria*

In the Acoustic Take Criteria section of the proposed rule, NMFS described the development and application of the acoustic criteria for both MFAS/HFAS and explosive detonations (73 FR 35510, pages 35550–35555). No changes have been made to the discussion contained in this section of the proposed rule. NMFS has also summarized the acoustic criteria below.

For MFAS/HFAS, NMFS uses acoustic criteria for PTS, TTS, and behavioral harassment.

NMFS' TTS criteria (which indicate the received level at which onset TTS (>6 dB) is induced) for MFAS/HFAS are as follows:

- Cetaceans—195 dB re 1 $\mu Pa^2 - s$ (based on mid-frequency cetaceans—no published data exist on auditory effects of noise in low or high frequency cetaceans (Southall *et al.* (2007)).
- Pinnipeds (monk seals)—204 dB re 1 $\mu Pa^2 - s$ (based on data from elephant seals, which are the most closely related to the monk seal).

NMFS uses the following acoustic criteria for injury (Level A Harassment):

- Cetaceans—215 dB re 1 $\mu Pa^2 - s$ (based on mid-frequency cetaceans)—no published data exist on auditory effects of noise in low or high frequency cetaceans (Southall *et al.* (2007))
- Pinnipeds (monk seals)—224 dB re 1 $\mu Pa^2 - s$ (based on data from elephant seals, which are the most closely related to the monk seal).

For the behavioral harassment criteria, NMFS uses acoustic risk functions developed by NMFS and the Navy to estimate the probability of behavioral responses to MFAS/HFAS (interpreted as the percentage of the exposed population) that NMFS would classify as harassment for the purposes of the MMPA given exposure to specific received levels of MFAS (73 FR 35510, page 35554).

Table 13 in the proposed rule summarizes the acoustic criteria for explosive detonations (73 FR 35510, page 35555).

*Take Calculations*

Estimating the take that will result from the proposed activities entails the following four steps: Propagation model estimates animals exposed to sources at different levels; further modeling determines number of exposures to levels indicated in criteria above (*i.e.*, number of takes); post-modeling corrections refine estimates to make them more accurate; mitigation is taken into consideration in post-modeling analysis. More information regarding the models used, the assumptions used in the models, and the process of estimating take is available in Appendix J of the Navy's FEIS for the HRC.

(1) In order to quantify the types of take described in previous sections that are predicted to result from the Navy's specified activities, the Navy first uses a sound propagation model that predicts the number of animals that will be exposed to a range of levels of pressure and energy (of the metrics used in the criteria) from MFAS/HFAS and explosive detonations based on several important pieces of information, including:

- Characteristics of the sound sources
- Sonar source characteristics include: Source level (with horizontal and vertical directivity corrections), source depth, center frequency, source directivity (horizontal/vertical beam width and horizontal/vertical steer direction), and ping spacing.
- Explosive source characteristics include: The weight of an explosive, the type of explosive, the detonation depth, number of successive explosions.
- Transmission loss (in 20 representative environmental provinces across 8 sonar modeling areas) based on: Water depth; sound speed variability throughout the water column (presume surface duct is present in HRC); bottom geo-acoustic properties (bathymetry); and wind speed.
- The density of each marine mammal species in the HRC (*see* Table 14), horizontally distributed uniformly and vertically distributed according to dive profiles based on field data.

(2) Next, the criteria discussed in the previous section are applied to the estimated exposures to predict the number of exposures that exceed the criteria, *i.e.*, the number of takes by Level B Harassment, Level A Harassment, and mortality.

(3) During the development of the EIS for the HRC, NMFS and the Navy determined that the output of the model could be made more realistic by applying post-modeling corrections to account for the following:

- Acoustic footprints for sonar sources must account for land masses (by subtracting them out).
- Acoustic footprints for sonar sources should not be added independently, rather, the degree to which the footprints from multiple ships participating in the same exercise would typically overlap needs to be taken into consideration.
- Acoustic modeling should account for the maximum number of individuals of a species that could potentially be exposed to sonar within the course of 1 day or a discreet continuous sonar event if less than 24 hours.

(4) Mitigation measures are taken into consideration. For example, in some cases the raw modeled numbers of

exposures to levels predicted to result in Level A Harassment from exposure to sonar might indicate that 1 fin whale would be exposed to levels of sonar anticipated to result in PTS. However, a fin whale would need to be within approximately 10 m of the source vessel in order to be exposed to sound pressure levels that would result in PTS. Because of the mitigation measures (watchstanders and shutdown zone), size of fin whales, and nature of fin whale behavior, it is highly unlikely that a fin whale would be exposed to those levels, and therefore, NMFS would not expect fin whales to experience injury as a result of sonar use. Table 6 contains the Navy's take estimates as well as the number of takes that these regulations and the associated LOAs will authorize. The table contains a few minor corrections that did not affect NMFS analysis.

(5) The Navy's specified activities have been described based on best estimates of the number of MFAS/HFAS hours that the Navy will conduct. The exact number of hours may vary from year to year, but will not exceed the 5-year total indicated in Table 3 (by multiplying the yearly estimate by 5) by more than 10-percent. NMFS estimates that a 10-percent increase in sonar hours would result in approximately a 10-percent increase in the number of takes, and we have considered this possibility in our analysis.

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| Species | Total Estimated Exposures to Indicated Levels of Energy/Pressure from Explosive Detonations | | | | Total Estimated Exposures to Indicated Levels of Sound from MFAS/HFAS | | | Annual Take Authorized by these Regulations | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Level B Harassment | | Level A Harassment | Mortality | Level B Harassment | | Level A Harassment | | | |
| | 177 dB re 1 $\mu Pa^2$-s | 23 psi or 182 dB re 1 $\mu Pa^2$-s | 13 psi-ms / 205 dB re 1 $\mu Pa^2$-s | 31 psi-ms | Risk Function | 195 dB re 1 $\mu Pa^2$-s | 215 dB re 1 $\mu Pa^2$-s | | | |
| | Behavioral Harassment | TTS (mitigation considered) | Slight Lung / TM Injury | Onset Massive Lung Injury | Behavioral Harassment | TTS (mitigation considered) | PTS | Level B Harassment | Level A Harassment | Mortality |
| Bryde's whale | 0 | 0 | 0 | 0 | 64 | 0 | 0 | 64 | 0 | |
| Fin whale | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 46 | | |
| Sei whale | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 46 | | |
| Minke whale | 0 | 0 | 0 | 0 | 64 | 0 | 0 | 64 | | |
| Humpback whale | 5 | 12 (4)*** | 1 (0) | 0 | 9,677 | 199 (0)* | 0 | 9894 | | |
| Sperm whale | 9 | 5 (4)*** | 0 | 0 | 758 | 9 (0)* | 0 | 781 | | |
| Dwarf sperm whale | 13 | 13 | 0 | 0 | 2,061 | 35 | 0 | 2122 | 10 over 5 years | |
| Pygmy sperm whale | 4 | 5 | 0 | 0 | 842 | 14 | 0 | 865 | 10 over 5 years | |
| Cuvier's beaked whale | 16 | 8 | 0 | 0 | 1,121 | 5 | 0 | 1150 | 10 over 5 years | |
| Longman's beaked whale | 0 | 0 | 0 | 0 | 104 | 1 | 0 | 105 | 10 over 5 years | |
| Blainville's beaked whale | 2 | 2 | 0 | 0 | 347 | 6 | 0 | 357 | 10 over 5 years | |
| Unidentified beaked whale | 0 | 0 | 0 | 0 | 36 | 0 | 0 | 36 | | |
| Bottlenose dolphin | 0 | 1 (0)*** | 0 | 0 | 716 | 17 (9)* | 0 | 734 | 10 over 5 years | |
| False killer whale | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 46 | | |
| Killer whale | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 46 | | |
| Pygmy killer whale | 0 | 0 | 0 | 0 | 192 | 4 (0)* | 0 | 196 | 10 over 5 years | |
| Short-finned pilot whale | 2 | 5 (1)*** | 0 | 0 | 1,751 | 40 (0)* | 0 | 1798 | 10 over 5 years | |
| Risso's dolphin | 0 | 1 (0)*** | 0 | 0 | 486 | 10 (5)** | 0 | 497 | | |
| Melon-headed whale | 0 | 1 (0)*** | 0 | 0 | 583 | 13 (0)* | 0 | 597 | 10 over 5 years | |
| Rough-toothed dolphin | 2 | 4 (2)*** | 0 | 0 | 1,053 | 18 (9)** | 0 | 1077 | | |
| Fraser's dolphin | 6 | 6 (3)*** | 0 | 0 | 1,216 | 19 (10)** | 0 | 1247 | | |
| Pantropical spotted dolphin | 0 | 5 (0)*** | 1 (0) | 0 | 2,144 | 49 (25)** | 0 | 2199 | 10 over 5 years | |
| Spinner dolphin | 2 | 2 (1)*** | 0 | 0 | 410 | 7 (4)** | 0 | 421 | | |
| Striped dolphin | 2 | 7 (2)*** | 1 (0) | 0 | 3,126 | 73 (37)** | 0 | 3209 | 10 over 5 years | |
| Monk seal | 0 | 3 (0)*** | 0 | 0 | 104 | 3 (0)* | 0 | 110 | | |
| Total | 62 | 80 (45) | 0 | 0 | 27,039 | 522 (160) | 0 | 27707 | | |

**Table 6**. Estimated exposures of marine mammals to indicated acoustic thresholds, and authorized take. Parenthetical numbers indicate estimated number when mitigation is taken into consideration.

*Due to the animal size, average group size, or behavior of these species, watchstanders will very likely detect these animals and cease MFAS/HFAS operations before they are within the distance of the source that would put them at risk of TTS (120 m)

**Individuals of these species travel in group sizes that will allow for detection and shutdown prior to TTS exposure, however, they may also bow-ride and MFAS/HFAS sonar may operate if vessel attempted to change course but the animals stayed with the vessel, therefore, some TTS could occur

***As mentioned above, these animals are likely to be seen by watchstanders, and mitigation implemented, however the exclusion zone for the two largest explosive charges is not large enough to avoid all TTS, so estimated TTS takes potentially associated with those charges remain

NOTE: if calculated TTS takes are assumed not to occur because of mitigation, they are still included as a Level B behavioral harassment

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*Mortality*

Evidence from five beaked whale strandings, all of which have taken place outside the HRC, and have occurred over approximately a decade, suggests that the exposure of beaked whales to mid-frequency sonar in the presence of certain conditions (*e.g.*, multiple units using tactical sonar, steep bathymetry, constricted channels, strong surface ducts, etc.) may result in strandings, potentially leading to mortality. Although these physical

factors believed to contribute to the likelihood of beaked whale strandings are not present in the Hawaiian Islands in the aggregate, scientific uncertainty exists regarding what other factors, or combination of factors, may contribute to beaked whale strandings. Accordingly, to allow for scientific uncertainty regarding contributing causes of beaked whale strandings and the exact behavioral or physiological mechanisms that can lead to the ultimate physical effects (stranding and/or death), the Navy has requested authorization for take, by serious injury or mortality, of 10 individuals of each of the following species over the course of the five-year rule: bottlenose dolphin, *Kogia* spp., melon-headed whale, pantropical spotted dolphin, pygmy killer whale, short-finned pilot whale, striped dolphin, Cuvier's, Longman's, and Blainville's beaked whales. Although the Navy has requested take by serious injury or mortality, neither agency expects that marine mammal strandings or mortality would result from the operation of mid-frequency sonar during Navy exercises within the HRC.

**Effects on Marine Mammal Habitat**

NMFS' proposed rule for the HRC included a detailed section that addressed the effects of the Navy's training activities on Marine Mammal Habitat (73 FR 35510, pages 35559–35560). The analysis concluded that the Navy's training activities would have minimal effects on fish, essential fish habitat, or marine mammal habitat provided the Navy's mitigation measures were implemented. No changes have been made to the discussion contained in this section of the proposed rule.

**Analysis and Negligible Impact Determination**

Pursuant to NMFS' regulations implementing the MMPA, an applicant is required to estimate the number of animals that will be ''taken'' by the specified activities (*i.e.*, takes by harassment only, or takes by harassment, injury, and/or death). This estimate informs the analysis that NMFS must perform to determine whether the activity will have a ''negligible impact'' on the species or stock. Level B (behavioral) harassment occurs at the level of the individual(s) and does not assume any resulting population-level consequences, though there are known avenues through which behavioral disturbance of individuals can result in population-level effects (for example: Pink-footed geese (*Anser brachyrhynchus*) in undisturbed habitat gained body mass and had about a 46-percent reproductive success compared with geese in disturbed habitat (being consistently scared off the fields on which they were foraging) which did not gain mass and has a 17-percent reproductive success). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of Level B harassment takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), or any of the other variables mentioned in the first paragraph (if known), as well as the number and nature of estimated Level A takes, the number of estimated mortalities, and effects on habitat. Generally speaking, and especially with other factors being equal, the Navy and NMFS anticipate more severe effects from takes resulting from exposure to higher received levels (though this is in no way a strictly linear relationship throughout species, individuals, or circumstances) and less severe effects from takes resulting from exposure to lower received levels.

In the Analysis and Negligible Impact Determination section of the proposed rule, NMFS addressed the issues identified in the preceding paragraph in combination with additional detailed analysis regarding the severity of the anticipated effects, and including species (or group)-specific discussions, to determine that Navy training exercises utilizing MFAS/HFAS and underwater detonations will have a negligible impact on the marine mammal species and stocks present in the HRC. No changes have been made to the discussion contained in this section of the proposed rule.

**Subsistence Harvest of Marine Mammals**

NMFS has determined that the issuance of these regulations and subsequent LOAs for Navy training exercises in the HRC would not have an unmitigable adverse impact on the availability of the affected species or stocks for taking for subsistence uses, since there are no such uses in the specified area.

**Endangered Species Act (ESA)**

There are seven marine mammal species and five sea turtle species listed as threatened or endangered under the ESA with confirmed or possible occurrence in the study area: Humpback whale, North Pacific right whale, sei whale, fin whale, blue whale, sperm whale, and Hawaiian monk seal, loggerhead sea turtle, the green sea turtle, hawksbill sea turtle, leatherback sea turtle, and olive ridley sea turtle. Pursuant to section 7 of the ESA, the Navy has consulted with NMFS on this action. NMFS has also consulted internally on the issuance of regulations under section 101(a)(5)(A) of the MMPA for this activity. In a Biological Opinion (BiOp), NMFS concluded that the Navy's training activities in the HRC and NMFS' issuance of these regulations are not likely to jeopardize the continued existence of threatened or endangered species or destroy or adversely modify any designated critical habitat.

NMFS (the Endangered Species Division) will also issue BiOps and associated incidental take statements (ITSs) to NMFS (the Permits, Conservation, and Recreation Division) to exempt the take (under the ESA) that NMFS authorizes in the LOAs under the MMPA. Because of the difference between the statutes, it is possible that ESA analysis of the applicant's action could produce a take estimate that is different than the takes requested by the applicant (and analyzed for authorization by NMFS under the MMPA process), despite the fact that the same proposed action (*i.e.*, number of sonar hours and explosive detonations) was being analyzed under each statute. When this occurs, NMFS staff coordinate to ensure that that the most conservative (lowest) number of takes are authorized. For the Navy's proposed training in the HRC, coordination with the Endangered Species Division indicates that they will likely allow for a lower level of take of ESA-listed marine mammals than were requested by the applicant (because their analysis indicates that fewer will be taken than estimated by the applicant). Therefore, the number of authorized takes in NMFS' LOA(s) will reflect the lower take numbers from the ESA consultation, though the specified activities (*i.e.*, number of sonar hours, etc.) will remain the same. Alternately, these regulations indicate the maximum number of takes that may be authorized under the MMPA.

The ITS(s) issued for each LOA will contain implementing terms and conditions to minimize the effect of the

marine mammal take authorized through the 2009 LOA (and subsequent LOAs in 2010, 2011, 2012, and 2013). With respect to listed marine mammals, the terms and conditions of the ITSs will be incorporated into the LOAs.

**NEPA**

NMFS participated as a cooperating agency on the Navy's Final Environmental Impact Statement (FEIS) for the Hawaii Range Complex, which was published on May 9, 2008. NMFS subsequently adopted the Navy's EIS for the purpose of complying with the MMPA. Additionally, NMFS prepared an Environmental Assessment (EA) that tiered off the Navy's FEIS. The EA analyzed the environmental effects of several different mitigation alternatives for the issuance of the HRC rule and subsequent LOAs. A finding of no significant impact was issued for the Mitigation EA on December 30, 2008.

**Determination**

Based on the analysis contained herein, and in the proposed rule (and other related documents), of the likely effects of the specified activity on marine mammals and their habitat and dependent upon the implementation of the mitigation measures, NMFS finds that the total taking from Navy training exercises utilizing MFAS/HFAS and underwater explosives in the HRC over the 5 year period will have a negligible impact on the affected species or stocks and will not result in an unmitigable adverse impact on the availability of marine mammal species or stocks for taking for subsistence uses because no subsistence uses exist in the HRC. NMFS has issued regulations for these exercises that prescribe the means of effecting the least practicable adverse impact on marine mammals and their habitat and set forth requirements pertaining to the monitoring and reporting of that taking.

**Classification**

This action does not contain a collection of information requirement for purposes of the Paperwork Reduction Act.

Pursuant to the procedures established to implement section 6 of Executive Order 12866, the Office of Management and Budget has determined that this final rule is significant.

Pursuant to the Regulatory Flexibility Act, the Chief Counsel for Regulation of the Department of Commerce has certified to the Chief Counsel for Advocacy of the Small Business Administration that this final rule, if adopted, would not have a significant economic impact on a substantial number of small entities. The Regulatory Flexibility Act requires Federal agencies to prepare an analysis of a rule's impact on small entities whenever the agency is required to publish a notice of proposed rulemaking. However, a Federal agency may certify, pursuant to 5 U.S.C. section 605(b), that the action will not have a significant economic impact on a substantial number of small entities. The Navy is the entity that will be affected by this rulemaking, not a small governmental jurisdiction, small organization or small business, as defined by the Regulatory Flexibility Act. Any requirements imposed by a Letter of Authorization issued pursuant to these regulations, and any monitoring or reporting requirements imposed by these regulations, will be applicable only to the Navy. Because this action, if adopted, would directly affect the Navy and not a small entity, NMFS concludes the action would not result in a significant economic impact on a substantial number of small entities.

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 effective date of the measures contained in the final rule. Since January 23, 2007, the Navy has been conducting military readiness activities employing mid-frequency active sonar (MFAS) pursuant to a 2-year MMPA National Defense Exemption (NDE). The NDE serves as a bridge to long-term compliance with the MMPA while the Navy prepared its Environmental Impact Statement and pursued the necessary MMPA incidental take authorization for the HRC. The NDE will expire on January 23, 2009, by which time it is imperative that the regulations and the measures identified in a subsequent LOA become effective. Any delay of these measures would result in either: (1) A suspension of ongoing or planned naval exercises, which would disrupt vital sequential training and certification processes essential to national security; or (2) the Navy's non-compliance with the MMPA (should the Navy conduct exercises without an LOA), thereby resulting in the potential for unauthorized takes of marine mammals upon expiration of the NDE. National security interests and the need for MMPA compliance after January 23, 2009, dictate that these measures go into effect immediately. The Navy is the entity subject to the regulations and has informed NMFS that it is imperative that these measures be effective on or before January 23, 2009. Finally, as recognized by the President and the United States Supreme Court, the training proposed to be conducted in the HRC is in the paramount interest of the United States. Any delay in the implementation of these measures would raise serious national security implications. Therefore, these measures will become effective upon filing.

**List of Subjects in 50 CFR Part 216**

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

Dated: January 2, 2009.

**John Oliver,**

*Deputy Assistant Administrator for Operations, National Marine Fisheries Service.*

■ For reasons set forth in the preamble, 50 CFR Part 216 is amended as follows:

## PART 216—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

■ 1. The authority citation for part 216 continues to read as follows:

**Authority:** 16 U.S.C. 1361 *et seq.*

■ 2. Subpart P is added to part 216 to read as follows:

## Subpart P—Taking Marine Mammals Incidental to U.S. Navy Training in the Hawaii Range Complex (HRC)

Sec.

216.170 Specified activity and specified geographical region.
216.171 Effective dates and definitions.
216.172 Permissible methods of taking.
216.173 Prohibitions.
216.174 Mitigation.
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## Subpart P—Taking Marine Mammals Incidental to U.S. Navy Training in the Hawaii Range Complex (HRC)

### § 216.170 Specified activity and specified geographical region.

(a) Regulations in this subpart apply only to the U.S. Navy for the taking of marine mammals that occurs in the area outlined in paragraph (b) of this section and that occurs incidental to the activities described in paragraph (c) of this section.

(b) The taking of marine mammals by the Navy is only authorized if it occurs

within the Hawaii Operational Area, which extends from 16 to 43° N. lat. and from 150 to 179° degrees W. long.

(c) The taking of marine mammals by the Navy is only authorized if it occurs incidental to the following activities within the designated amounts of use:

(1) The use of the following mid-frequency active sonar (MFAS) and high frequency active sonar (HFAS) sources for U.S. Navy anti-submarine warfare (ASW) training in the amounts indicated below (+/ − 10 percent):

(i) AN/SQS–53 (hull-mounted sonar)—up to 6420 hours over the course of 5 years (an average of 1284 hours per year)

(ii) AN/SQS–56 (hull-mounted sonar)—up to 1915 hours over the course of 5 years (an average of 383 hours per year)

(iii) AN/AQS–22 (helicopter dipping sonar)—up to 5050 dips over the course of 5 years (an average of 1010 dips per year)

(iv) SSQ–62 (sonobuoys)—up to 12115 sonobuoys over the course of 5 years (an average of 2423 sonobuoys per year)

(v) MK–48 (torpedoes)—up to 1565 torpedoes over the course of 5 years (an average of 313 torpedoes per year)

(vi) AN/BQQ–10 (submarine mounted sonar)—up to 1000 hours over the course of 5 years (an average of 200 per year)

(2) The detonation of the underwater explosives indicated in paragraph (c)(2)(i) of this section conducted as part of the training exercises indicated in paragraph (c)(2)(ii) of this section:

(i) Underwater Explosives:

(A) 5″ Naval Gunfire (9.5 lbs).

(B) 76 mm rounds (1.6 lbs).

(C) Maverick (78.5 lbs).

(D) Harpoon (448 lbs).

(E) MK–82 (238 lbs).

(F) MK–83 (574 lbs).

(G) MK–84 (945 lbs).

(H) MK–48 (851 lbs).

(I) Demolition Charges (20 lbs).

(J) EER/IEER (5 lbs).

(ii) Training Events:

(A) Mine Neutralization—up to 340 exercises over the course of 5 years (an average of 68 per year).

(B) Air-to-Surface MISSILEX—up to 250 exercises over the course of 5 years (an average of 50 per year).

(C) Surface-to-Surface MISSILEX—up to 60 exercises over the course of 5 years (an average of 12 per year).

(D) BOMBEX—up to 195 exercises over the course of 5 years (an average of 38 per year).

(E) SINKEX—up to 30 exercises over the course of 5 years (an average of 6 per year).

(F) Surface-to-Surface GUNEX—up to 455 exercises over the course of 5 years (an average of 91 per year).

(G) Naval Surface Fire Support—up to 140 exercises over the course of 5 years (an average of 28 per year).

**§ 216.171 Effective dates and definitions.**

(a) Regulations are effective January 5, 2009 through January 5, 2014.

(b) The following definitions are utilized in these regulations:

(1) *Uncommon Stranding Event (USE)*—A stranding event that takes place during a major training exercise and involves any one of the following:

(i) Two or more individuals of any cetacean species (not including mother/calf pairs, unless of species of concern listed in next bullet) found dead or live on shore within a two day period and occurring on same shore lines or facing shorelines of different islands.

(ii) A single individual or mother/calf pair of any of the following marine mammals of concern: Beaked whale of any species, *Kogia* sp., Risso's dolphin, melon-headed whale, pilot whales, humpback whales, sperm whales, blue whales, fin whales, sei whales, or monk seal.

(iii) A group of 2 or more cetaceans of any species exhibiting indicators of distress.

(2) *Shutdown* (this definition specifically applies only to the word as used in § 216.174(a)(1)(xxviii)(A)(*1*) and (*2*))—The cessation of MFAS operation or detonation of explosives within 14 nm of any live, in the water animal involved in a USE.

**§ 216.172 Permissible methods of taking.**

(a) Under Letters of Authorization issued pursuant to §§ 216.106 and 216.177, the Holder of the Letter of Authorization may incidentally, but not intentionally, take marine mammals within the area described in § 216.170(b), provided the activity is in compliance with all terms, conditions, and requirements of these regulations and the appropriate Letter of Authorization.

(b) The activities identified in § 216.170(c) must be conducted in a manner that minimizes, to the greatest extent practicable, any adverse impacts on marine mammals and their habitat.

(c) The incidental take of marine mammals under the activities identified in § 216.170(c) is limited to the following species, by the indicated method of take and the indicated number of times:

(1) Level B Harassment (+/ − 10 percent of the number of takes indicated below):

(i) Mysticetes:

(A) Humpback whale (*Megaptera novaeangliae*)—49470 (an average of 9894 annually).

(B) Minke whale (*Balaenoptera acutorostrata*)—320 (an average of 64 annually).

(C) Sei whale (*Balaenoptera borealis*)—230 (an average of 46 annually).

(D) Fin whale (*Balaenoptera physalus*)—230 (an average of 46 annually).

(E) Bryde's whale (*Balaenoptera edeni*)—320 (an average of 64 annually).

(ii) Odontocetes:

(A) Sperm whales (*Physeter macrocephalus*)—3905 (an average of 781 annually).

(B) Pygmy sperm whales (*Kogia breviceps*)—4325 (an average of 865 annually).

(C) Dwarf sperm whale (*Kogia sima*)—10610 (an average of 2122 annually).

(D) Cuvier's beaked whale (*Ziphius cavirostris*)—5750 (an average of 1150 annually).

(E) Blainville's beaked whale (*Mesoplodon densirostris*)—1785 (an average of 357 annually).

(F) Longman's beaked whale (*Indopacetus pacificus*)—525 (an average of 105 annually).

(G) Rough-toothed dolphin (*Steno bredanensis*)—5385 (an average of 1077 annually).

(H) Bottlenose dolphin (*Tursiops truncatus*)—3670 ( an average of 734 annually).

(I) Pan-tropical dolphins (*Stenella attenuata*)—10995 (an average of 2199 annually).

(J) Spinner dolphins (*Stenella longirostris*)—2105 (an average of 421 annually).

(K) Striped dolphins (*Stenella coeruleoalba*)—16045 (an average of 3209 annually).

(L) Risso's dolphin (*Grampus griseus*)—2485 (an average of 497 annually).

(M) Melon-headed whale (*Peponocephala electra*)—2985 (an average of 597 annually).

(N) Fraser's dolphin (*Lagenodelphis hosei*)—6235 (an average of 1247 annually).

(O) Pygmy killer whale (*Feresa attenuata*)—980 (an average of 196 annually).

(P) False killer whale (*Pseudorca crassidens*)—230 (an average of 46 annually).

(Q) Killer whale (*Orcinus orca*)—230 (an average of 46 annually).

(R) Short-finned pilot whale (*Globicephala macrorynchus*)—8990 (an average of 1798 annually).

(iii) Pinnipeds: Hawaiian monk seal (*Monachus schauinslandi*)—550 (an average of 110 annually).

(2) Level A Harassment and/or mortality of no more than 10 individuals total of each of the species listed below over the course of the 5-year regulations: Bottlenose dolphin (*Tursiops truncatus*), Pygmy and Dwarf sperm whales (*Kogia breviceps* and *sima*), Melon-headed whale (*Peponocephala electra*), Pantropical spotted dolphin (*Stenella attenuata*), Pygmy killer whale (*Feresa attenuata*), Short-finned pilot whale (*Globicephala macrorynchus*), Striped dolphin (*Stenella coeruleoalba*), and Cuvier's beaked whale (*Ziphius cavirostris*), Blainville's beaked whale, (*Mesoplodon densirostris*), Longman's beaked whale (*Indopacetus pacificus*).

**§ 216.173 Prohibitions.**

Notwithstanding takings contemplated in § 216.172 and authorized by a Letter of Authorization issued under §§ 216.106 and 216.177, no person in connection with the activities described in § 216.170 may:

(a) Take any marine mammal not specified in § 216.172(c);

(b) Take any marine mammal specified in § 216.172(c) other than by incidental take as specified in § 216.172(c)(1) and (2);

(c) Take a marine mammal specified in § 216.172(c) if such taking results in more than a negligible impact on the species or stocks of such marine mammal; or

(d) Violate, or fail to comply with, the terms, conditions, and requirements of these regulations or a Letter of Authorization issued under §§ 216.106 and 216.177.

**§ 216.174 Mitigation.**

(a) When conducting training activities identified in § 216.170(c), the mitigation measures contained in the Letter of Authorization issued under §§ 216.106 of this chapter and 216.177 must be implemented. These mitigation measures include, but are not limited to:

(1) *Mitigation Measures for ASW training:* (i) All lookouts onboard platforms involved in ASW training events shall review the NMFS-approved Marine Species Awareness Training (MSAT) material prior to use of mid-frequency active sonar.

(ii) All Commanding Officers, Executive Officers, and officers standing watch on the Bridge shall have reviewed the MSAT material prior to a training event employing the use of mid-frequency active sonar.

(iii) Navy lookouts shall undertake extensive training in order to qualify as a watchstander in accordance with the Lookout Training Handbook (NAVEDTRA, 12968–D).

(iv) Lookout training shall include on-the-job instruction under the supervision of a qualified, experienced watchstander. Following successful completion of this supervised training period, Lookouts shall complete the Personal Qualification Standard program, certifying that they have demonstrated the necessary skills (such as detection and reporting of partially submerged objects).

(v) Lookouts shall be trained in the most effective means to ensure quick and effective communication within the command structure in order to facilitate implementation of mitigation measures if marine species are spotted.

(vi) On the bridge of surface ships, there shall be at least three people on watch whose duties include observing the water surface around the vessel.

(vii) All surface ships participating in ASW exercises shall, in addition to the three personnel on watch noted previously, have at all times during the exercise at least two additional personnel on watch as lookouts.

(viii) Personnel on lookout and officers on watch on the bridge shall have at least one set of binoculars available for each person to aid in the detection of marine mammals.

(ix) On surface vessels equipped with mid-frequency active sonar, pedestal mounted ''Big Eye'' (20x110) binoculars shall be present and in good working order.

(x) Personnel on lookout shall employ visual search procedures employing a scanning methodology in accordance with the Lookout Training Handbook (NAVEDTRA 12968–D).

(xi) After sunset and prior to sunrise, lookouts shall employ Night Lookouts Techniques in accordance with the Lookout Training Handbook.

(xii) Personnel on lookout shall be responsible for reporting all objects or anomalies sighted in the water (regardless of the distance from the vessel) to the Officer of the Deck.

(xiii) CPF shall distribute the final mitigation measures contained in the LOA and BO to the Fleet.

(xiv) Commanding Officers shall make use of marine species detection cues and information to limit interaction with marine species to the maximum extent possible consistent with safety of the ship.

(xv) All personnel engaged in passive acoustic sonar operation (including aircraft, surface ships, or submarines) shall monitor for marine mammal vocalizations and report the detection of any marine mammal to the appropriate watch station for dissemination and appropriate action.

(xvi) During mid-frequency active sonar training activities, personnel shall utilize all available sensor and optical systems (such as Night Vision Goggles) to aid in the detection of marine mammals.

(xvii) Navy aircraft participating in exercises at sea shall conduct and maintain, when operationally feasible and safe, surveillance for marine mammals as long as it does not violate safety constraints or interfere with the accomplishment of primary operational duties.

(xviii) Aircraft with deployed sonobuoys shall use only the passive capability of sonobuoys when marine mammals are detected within 200 yards (182 m) of the sonobuoy.

(xix) Marine mammal detections shall be reported immediately to assigned Aircraft Control Unit for further dissemination to ships in the vicinity of the marine species as appropriate where it is reasonable to conclude that the course of the ship will likely result in a closing of the distance to the detected marine mammal.

(xx) Safety Zones—When marine mammals are detected by any means (aircraft, shipboard lookout, or acoustically) the Navy shall ensure that MFAS transmission levels are limited to at least 6 dB below normal operating levels if any detected marine mammals are within 1000 yards (914 m) of the sonar dome (the bow).

(A) Ships and submarines shall continue to limit maximum MFAS transmission levels by this 6-dB factor until the marine mammal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards (1828 m) beyond the location of the last detection.

(B) The Navy shall ensure that MFAS transmissions will be limited to at least 10 dB below the equipment's normal operating level if any detected animals are within 500 yards (457 m) of the sonar dome. Ships and submarines shall continue to limit maximum ping levels by this 10-dB factor until the marine mammal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2000 yards (1828 m) beyond the location of the last detection.

(C) The Navy shall ensure that MFAS transmissions are ceased if any detected marine mammals are within 200 yards of the sonar dome. MFAS transmissions will not resume until the marine mammal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards beyond the location of the last detection.

(D) Special conditions applicable for dolphins and porpoises only: If, after conducting an initial maneuver to avoid close quarters with dolphins or porpoises, the Officer of the Deck concludes that dolphins or porpoises are deliberately closing to ride the vessel's bow wave, no further mitigation actions are necessary while the dolphins or porpoises continue to exhibit bow wave riding behavior.

(E) If the need for power-down should arise as detailed in ''Safety Zones'' in paragraph (a)(1)(xx) of this section, Navy shall follow the requirements as though they were operating at 235 dB—the normal operating level (i.e., the first power-down will be to 229 dB, regardless of at what level above 235 dB sonar was being operated).

(xxi) Prior to start up or restart of active sonar, operators shall check that the Safety Zone radius around the sound source is clear of marine mammals.

(xxii) Sonar levels (generally)—Navy shall operate sonar at the lowest practicable level, not to exceed 235 dB, except as required to meet tactical training objectives.

(xxiii) Helicopters shall observe/survey the vicinity of an ASW Exercise for 10 minutes before the first deployment of active (dipping) sonar in the water.

(xxiv) Helicopters shall not dip their sonar within 200 yards (183 m) of a marine mammal and shall cease pinging if a marine mammal closes within 200 yards (183 m) after pinging has begun.

(xxv) Submarine sonar operators shall review detection indicators of close-aboard marine mammals prior to the commencement of ASW training activities involving active mid-frequency sonar.

(xxvi) Night vision goggles shall be available to all ships and air crews, for use as appropriate.

(xxvii) Humpback Whale Cautionary Area: An area extending 5km (2.7 nm) from a line drawn from Kaunakakai on the island of Molokai to Kaena Point on the Island of Lanai; and an area extending 5 km (2.7 nm) from a line drawn from Kaunolu on the Island of Lanai to the most Northeastern point on the Island of Kahoolawe; and within a line drawn from Kanapou Bay on the Island of Kahoolawe to Kanahena Point on the Island of Maui and a line drawn from Cape Halawa on the Island of Molokai to Lipo Point on the Island of Maui, excluding the existing submarine operating area.

(A) Should national security needs require MFAS training and testing in the cautionary area between 15 December and 15 April, it must be personally authorized by the Commander, U.S. Pacific Fleet based on his determination that training and testing in that specific area is required for national security purposes. This authorization shall be documented by the CPF in advance of transiting and training in the cautionary area, and the determination shall be based on the unique characteristics of the area from a military readiness perspective, taking into account the importance of the area for humpback whales and the need to minimize adverse impacts on humpback whales from MFAS whenever practicable. Further, Commander, U.S. Pacific Fleet will provide specific direction on required mitigation measures prior to operational units transiting to and training in the cautionary area.

(B) The Navy shall provide advance notification to NMFS of any such activities (listed in paragraph (a)(1)(xxvii)(A)of this section).

(C) The Navy shall include in its periodic reports for compliance with the MMPA whether or not activities occurred in the Humpback Whale Cautionary Area and any observed effects on humpback whales due to the conduct of these activities.

(xxviii) The Navy shall abide by the letter of the ''Stranding Response Plan for Major Navy Training Exercises in the HRC'' to include the following measures:

(A) Shutdown Procedures—When an Uncommon Stranding Event (USE—defined in § 216.171(b)) occurs during a Major Training Exercise (MTE, including RIMPAC, USWEX, or Multi-Strike Group Exercise) in the HRC, the Navy shall implement the procedures described below.

(*1*) The Navy shall implement a Shutdown (as defined § 216.171(b)) when advised by a NMFS Office of Protected Resources Headquarters Senior Official designated in the HRC Stranding Communication Protocol that a USE involving live animals has been identified and that at least one live animal is located in the water. NMFS and Navy will maintain a dialogue, as needed, regarding the identification of the USE and the potential need to implement shutdown procedures.

(*2*) Any shutdown in a given area shall remain in effect in that area until NMFS advises the Navy that the subject(s) of the USE at that area die or are euthanized, or that all live animals involved in the USE at that area have left the area (either of their own volition or herded).

(*3*) If the Navy finds an injured or dead animal floating at sea during an MTE, the Navy shall notify NMFS immediately or as soon as operational security considerations allow. The Navy shall provide NMFS with species or description of the animal(s), the condition of the animal(s) including carcass condition if the animal(s) is/are dead), location, time of first discovery, observed behavior (if alive), and photo or video (if available). Based on the information provided, NMFS will determine if, and advise the Navy whether a modified shutdown is appropriate on a case-by-case basis.

(*4*) In the event, following a USE, that qualified individuals are attempting to herd animals back out to the open ocean and animals are not willing to leave, or animals are seen repeatedly heading for the open ocean but turning back to shore, NMFS and the Navy shall coordinate (including an investigation of other potential anthropogenic stressors in the area) to determine if the proximity of MFAS training activities or explosive detonations, though farther than 14 nm from the distressed animal(s), is likely contributing to the animals' refusal to return to the open water. If so, NMFS and the Navy will further coordinate to determine what measures are necessary to improve the probability that the animals will return to open water and implement those measures as appropriate.

(B) Within 72 hours of NMFS notifying the Navy of the presence of a USE, the Navy shall provide available information to NMFS (per the HRC Communication Protocol) regarding the location, number and types of acoustic/explosive sources, direction and speed of units using MFAS, and marine mammal sightings information associated with training activities occurring within 80 nm (148 km) and 72 hours prior to the USE event. Information not initially available regarding the 80 nm (148 km), 72 hour period prior to the event will be provided as soon as it becomes available. The Navy will provide NMFS investigative teams with additional relevant unclassified information as requested, if available.

(C) Memorandum of Agreement (MOA)—The Navy and NMFS shall develop a MOA, or other mechanism consistent with federal fiscal law requirements (and all other applicable laws), that will establish a framework whereby the Navy can (and provide the Navy examples of how they can best) assist NMFS with stranding investigations in certain circumstances.

(xxix) While in transit, naval vessels shall be alert at all times, use extreme caution, and proceed at a ''safe speed'' so that the vessel can take proper and effective action to avoid a collision with any marine animal and can be stopped

within a distance appropriate to the prevailing circumstances and conditions.

(xxx) When marine mammals have been sighted in the area, Navy vessels shall increase vigilance and take reasonable and practicable actions to avoid collisions and activities that might result in close interaction of naval assets and marine mammals. Actions may include changing speed and/or direction and are dictated by environmental and other conditions (e.g., safety, weather).

(2) *Mitigation for IEER*—The following are protective measures for use with Extended Echo Ranging/Improved Extended Echo Ranging (EER/IEER) given an explosive source generates the acoustic wave used in this sonobuoy.

(i) Crews shall conduct aerial visual reconnaissance of the drop area prior to laying their intended sonobuoy pattern. This search should be conducted below 500 yards (457 m) at a slow speed, if operationally feasible and weather conditions permit. In dual aircraft training activities, crews are allowed to conduct coordinated area clearances.

(ii) Crews shall conduct a minimum of 30 minutes of visual and acoustic monitoring of the search area prior to commanding the first post detonation. This 30-minute observation period may include pattern deployment time.

(iii) For any part of the briefed pattern where a post (source/receiver sonobuoy pair) will be deployed within 1,000 yards (914 m) of observed marine mammal activity, the Navy shall deploy the receiver ONLY and monitor while conducting a visual search. When marine mammals are no longer detected within 1,000 yards (914 m) of the intended post position, co-locate the explosive source sonobuoy (AN/SSQ–110A) (source) with the receiver.

(iv) When able, crews will conduct continuous visual and aural monitoring of marine mammal activity. This is to include monitoring of own-aircraft sensors from first sensor placement to checking off station and out of communication range of these sensors.

(v) *Aural Detection:* If the presence of marine mammals is detected aurally, then that shall cue the aircrew to increase the diligence of their visual surveillance. Subsequently, if no marine mammals are visually detected, then the crew may continue multi-static active search.

(vi) *Visual Detection:*

(A) If marine mammals are visually detected within 1,000 yards (914 m) of the explosive source sonobuoy (AN/SSQ–110A) intended for use, then that payload shall not be detonated. Aircrews may utilize this post once the marine mammals have not been re-sighted for 30 minutes, or are observed to have moved outside the 1,000 yards (914 m) safety buffer.

(B) Aircrews may shift their multi-static active search to another post, where marine mammals are outside the 1,000 yards (914 m) safety buffer.

(vii) Aircrews shall make every attempt to manually detonate the unexploded charges at each post in the pattern prior to departing the operations area by using the ''Payload 1 Release'' command followed by the ''Payload 2 Release'' command. Aircrews shall refrain from using the ''Scuttle'' command when two payloads remain at a given post. Aircrews will ensure that a 1,000 yard (914 m) safety buffer, visually clear of marine mammals, is maintained around each post as is done during active search operations.

(viii) Aircrews shall only leave posts with unexploded charges in the event of a sonobuoy malfunction, an aircraft system malfunction, or when an aircraft must immediately depart the area due to issues such as fuel constraints, inclement weather, and in-flight emergencies. In these cases, the sonobuoy will self-scuttle using the secondary or tertiary method.

(ix) The navy shall ensure all payloads are accounted for. Explosive source sonobuoys (AN/SSQ–110A) that cannot be scuttled shall be reported as unexploded ordnance via voice communications while airborne, then upon landing via naval message.

(x) Marine mammal monitoring shall continue until out of own-aircraft sensor range.

(3) *Mitigation for Demolitions (DEMOs) and Mine Countermeasure (MCM) Training (Up to 20 lb).*

(i) *Exclusion Zones*—Explosive charges shall not be detonated if a marine mammal is detected within 700 yards (640 m) of the detonation site.

(ii) *Pre-Exercise Surveys*—For MCM training activities, the Navy shall conduct a pre-exercise survey within 30 minutes prior to the commencement of the scheduled explosive event. The survey may be conducted from the surface, by divers, and/or from the air. If a marine mammal is detected within the survey area, the exercise shall be suspended until the animal voluntarily leaves the area.

(iii) *Post-Exercise Surveys*—Surveys within the same radius shall also be conducted within 30 minutes after the completion of the explosive event.

(iv) *Reporting*—Any evidence of a marine mammal that may have been injured or killed by the action shall be reported immediately to NMFS.

(v) *Mine Laying Training*—Though mine laying training operations involve aerial drops of inert training shapes on floating targets, measures 1, 2, and 3 for Demolitions and Mine countermeasures will apply to mine laying training. To the maximum extent feasible, the Navy shall retrieve inert mine shapes dropped during Mine Laying Training.

(4) *Mitigation for SINKEX, GUNEX, MISSILEX, and BOMBEX.* (i) All weapons firing shall be conducted during the period 1 hour after official sunrise to 30 minutes before official sunset.

(ii) Extensive range clearance operations shall be conducted in the hours prior to commencement of the exercise.

(iii) An exclusion zone with a radius of 1.0 nm (1.85 km) shall be established around each target. An additional buffer of 0.5 nm (0.93 km) shall be added to account for errors, target drift, and animal movements. Additionally, a safety zone, which extends out an additional 0.5 nm (0.93 km), shall be surveyed. Together, the zones extend out 2 nm (3.7 km) from the target.

(iv) A series of surveillance over-flights shall be conducted within the exclusion and the safety zones, prior to and during the exercise, when feasible. Survey protocol would be as follows:

(A) Overflights within the exclusion zone shall be conducted in a manner that optimizes the surface area of the water observed. This may be accomplished through the use of the Navy's Search and Rescue (SAR) Tactical Aid (TACAID).

(B) All visual surveillance activities shall be conducted by Navy personnel trained in visual surveillance. At least one member of the mitigation team shall have completed the Navy's marine mammal training program for lookouts.

(C) In addition to the overflights, the exclusion zone shall be monitored by passive acoustic means, when assets are available. This passive acoustic monitoring shall be maintained throughout the exercise. Potential assets include sonobuoys, which can be utilized to detect any vocalizing marine mammals in the vicinity of the exercise. The sonobuoys shall be re-seeded as necessary throughout the exercise. Additionally, passive sonar onboard submarines may be utilized to detect any vocalizing marine mammals in the area. The Officer Conducting the Exercise (OCE) shall be informed of any aural detection of marine mammals and would include this information in the determination of when it is safe to commence the exercise.

(D) On each day of the exercise, aerial surveillance of the exclusion and safety

zones shall commence two hours prior to the first firing.

(E) The results of all visual, aerial, and acoustic searches shall be reported immediately to the OCE. No weapons launches or firing would commence until the OCE declares the safety and exclusion zones free of marine mammals.

(F) If a marine mammal observed within the exclusion zone is diving, firing shall be delayed until the animal is re-sighted outside the exclusion zone, or 30 minutes has elapsed.

(G) During breaks in the exercise of 30 minutes or more, the exclusion zone shall again be surveyed for any marine mammals. If marine mammals are sighted within the exclusion zone, the OCE would be notified, and the procedure described in paragraph (a)(4)(iv)(F) of this section would be followed.

(H) Upon sinking of the vessel, a final surveillance of the exclusion zone shall be monitored for two hours, or until sunset, to verify that no marine mammals were harmed.

(v) Aerial surveillance would be conducted using helicopters or other aircraft based on necessity and availability. These aircraft shall be capable of (and shall, to the extent practicable) flying at the slow safe speeds necessary to enable viewing of marine mammals with unobstructed, or minimally obstructed, downward and outward visibility. The Navy may cancel the exclusion and safety zone surveys in the event that a mechanical problem, emergency search and rescue, or other similar and unexpected event preempts the use of one of the aircraft onsite for the exercise.

(vi) Where practicable, the Navy shall conduct the exercise in sea states that are ideal for marine mammal sighting, *i.e.,* Beaufort Sea State 3 or less. In the event of a Beaufort Sea State of 4 or above, the Navy shall utilize additional aircraft (conducting tight search patterns), if available, to increase survey efforts within the zones.

(vii) The exercise shall not be conducted unless the exclusion zone can be adequately monitored visually.

(viii) In the unlikely event that any marine mammals are observed to be harmed in the area, a detailed description of the animal shall be documented, the location noted, and if possible, photos taken. This information would be provided to NMFS.

(b) [Reserved]

**§ 216.175 Requirements for monitoring and reporting.**

(a) As outlined in the HRC Stranding Communication Plan, the Holder of the Authorization must notify NMFS immediately (or as soon as clearance procedures allow) if the specified activity identified in § 216.170(c) is thought to have resulted in the mortality or injury of any marine mammals, or in any take of marine mammals not identified in § 216.172(c).

(b) The Holder of the Letter of Authorization must conduct all monitoring and required reporting under the Letter of Authorization, including abiding by the HRC Monitoring Plan.

(c) The Navy shall complete an Integrated Comprehensive Monitoring Plan (ICMP) in 2009. This planning and adaptive management tool shall include:

(1) A method for prioritizing monitoring projects that clearly describes the characteristics of a proposal that factor into its priority.

(2) A method for annually reviewing, with NMFS, monitoring results, Navy R&D, and current science to use for potential modification of mitigation or monitoring methods.

(3) A detailed description of the Monitoring Workshop to be convened in 2011 and how and when Navy/NMFS will subsequently utilize the findings of the Monitoring Workshop to potentially modify subsequent monitoring and mitigation.

(4) An adaptive management plan.

(5) A method for standardizing data collection across Range Complexes.

(d) General Notification of Injured or Dead Marine Mammals—Navy personnel shall ensure that NMFS (regional stranding coordinator) is notified immediately (or as soon as clearance procedures allow) if an injured or dead marine mammal is found during or shortly after, and in the vicinity of, any Navy training exercise utilizing MFAS, HFAS, or underwater explosive detonations. The Navy shall provide NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available). The Navy shall consult the Stranding Response Plan to obtain more specific reporting requirements for specific circumstances.

(e) Annual HRC Monitoring Plan Report—The Navy shall submit a report annually on October 1 describing the implementation and results (through August 1 of the same year) of the HRC Monitoring Plan, described in § 216.175(b). Data collection methods will be standardized across range complexes to allow for comparison in different geographic locations. Although additional information will be gathered, the marine mammal observers (MMOs) collecting marine mammal data pursuant to the HRC Monitoring Plan shall, at a minimum, provide the same marine mammal observation data required in § 216.175(f)(1).

The HRC Monitoring Plan Report may be provided to NMFS within a larger report that includes the required Monitoring Plan Reports from multiple Range Complexes.

(f) Annual HRC Exercise Report—The Navy shall submit an Annual HRC Exercise Report on October 1 of every year (covering data gathered through August 1 (or completion of RIMPAC if later than Aug 1) of the same year). This report shall contain information identified in subsections 216.175(f)(1)—(f)(5).

(1) MFAS/HFAS Major Training Exercises—This section shall contain the following information for Major Training Exercises (MTEs, which include RIMPAC, USWEX, and Multi Strike Group) conducted in the HRC:

(i) Exercise Information (for each MTE):

(A) Exercise designator.

(B) Date that exercise began and ended.

(C) Location.

(D) Number and types of active sources used in the exercise.

(E) Number and types of passive acoustic sources used in exercise.

(F) Number and types of vessels, aircraft, etc., participating in exercise.

(G) Total hours of observation by watchstanders.

(H) Total hours of all active sonar source operation.

(I) Total hours of each active sonar source (along with explanation of how hours are calculated for sources typically quantified in alternate way (buoys, torpedoes, etc.)).

(J) Wave height (high, low, and average during exercise).

(ii) Individual marine mammal sighting info (for each sighting in each MTE).

(A) Location of sighting.

(B) Species (if not possible—indication of whale/dolphin/pinniped).

(C) Number of individuals.

(D) Calves observed (y/n).

(E) Initial Detection Sensor.

(F) Indication of specific type of platform observation made from (including, for example, what type of surface vessel, i.e., FFG, DDG, or CG).

(G) Length of time observers maintained visual contact with marine mammal.

(H) Wave height (in feet).

(I) Visibility.

(J) Sonar source in use (y/n).

(K) Indication of whether animal is <200yd, 200–500yd, 500–1000yd, 1000–

2000yd, or >2000yd from sonar source in paragraph (f)(1)(ii)(J) of this section.

(L) Mitigation Implementation—Whether operation of sonar sensor was delayed, or sonar was powered or shut down, and how long the delay was.

(M) If source in use (see paragraph (f)(1)(ii)(J) of this section) is hullmounted, true bearing of animal from ship, true direction of ship's travel, and estimation of animal's motion relative to ship (opening, closing, parallel).

(N) Observed behavior—Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animals (such as animal closing to bow ride, paralleling course/speed, floating on surface and not swimming, etc.).

(iii) An evaluation (based on data gathered during all of the MTEs) of the effectiveness of mitigation measures designed to avoid exposing to mid-frequency sonar. This evaluation shall identify the specific observations that support any conclusions the Navy reaches about the effectiveness of the mitigation.

(2) ASW Summary—This section shall include the following information as summarized from both MTEs and non-major training exercises (i.e., unit-level exercises, such as TRACKEXs):

(i) Total annual hours of each type of sonar source (along with explanation of how hours are calculated for sources typically quantified in alternate way (buoys, torpedoes, etc.)).

(ii) Total hours (from December 15 through April 15) of hullmounted active sonar operation occurring in the dense humpback areas plus a 5-km buffer, but not including the Pacific Missile Range Facility. The Navy shall work with NMFS to develop the exact boundaries of this area.

(iii) Total estimated annual hours of hull-mounted active sonar operation conducted in Humpback Whale Cautionary area between December 15 and April 15.

(iv) Cumulative Impact Report—To the extent practicable, the Navy, in coordination with NMFS, shall develop and implement a method of annually reporting non-major (i.e., other than RIMPAC, USWEX, or Multi-Strike Group Exercises) training exercises utilizing hull-mounted sonar. The report shall present an annual (and seasonal, where practicable) depiction of non-major training exercises geographically across the HRC. The Navy shall include (in the HRC annual report) a brief annual progress update on the status of development until an agreed-upon (with NMFS) method has been developed and implemented.

(3) SINKEXs—This section shall include the following information for each SINKEX completed that year:

*(i) Exercise information (gathered for each SINKEX):*

(A) Location.

(B) Date and time exercise began and ended.

(C) Total hours of observation by watchstanders before, during, and after exercise.

(D) Total number and types of rounds expended/explosives detonated.

(E) Number and types of passive acoustic sources used in exercise.

(F) Total hours of passive acoustic search time.

(G) Number and types of vessels, aircraft, etc., participating in exercise.

(H) Wave height in feet (high, low and average during exercise).

(I) Narrative description of sensors and platforms utilized for marine mammal detection and timeline illustrating how marine mammal detection was conducted.

(ii) *Individual marine mammal observation (by Navy lookouts) information (gathered for each marine mammal sighting):*

(A) Location of sighting.

(B) Species (if not possible, indicate whale, dolphin or pinniped).

(C) Number of individuals.

(D) Whether calves were observed.

(E) Initial detection sensor.

(F) Length of time observers maintained visual contact with marine mammal.

(G) Wave height.

(H) Visibility.

(I) Whether sighting was before, during, or after detonations/exercise, and how many minutes before or after.

(J) Distance of marine mammal from actual detonations (or target spot if not yet detonated)—use four categories to define distance:

(*1*) The modeled injury threshold radius for the largest explosive used in that exercise type in that OPAREA (91 m for SINKEX in HRC);

(*2*) The required exclusion zone (1 nm for SINKEX in HRC);

(*3*) The required observation distance (if different than the exclusion zone (2 nm for SINKEX in HRC); and

(*4*) Greater than the required observed distance. For example, in this case, the observer would indicate if < 91 m, from 91 m—1 nm, from 1 nm—2 nm, and > 2 nm.

(K) Observed behavior—Watchstanders will report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s) (such as animal closing to bow ride, paralleling course/speed, floating on surface and not swimming etc.), including speed and direction.

(L) Resulting mitigation implementation—Indicate whether explosive detonations were delayed, ceased, modified, or not modified due to marine mammal presence and for how long.

(M) If observation occurs while explosives are detonating in the water, indicate munition type in use at time of marine mammal detection.

(4) IEER Summary—This section shall include an annual summary of the following IEER information:

(i) Total number of IEER events conducted in the HRC.

(ii) Total expended/detonated rounds (buoys).

(iii) Total number of self-scuttled IEER rounds.

(5) Explosives Summary—To the extent practicable, the Navy will provide the information described below for all of their explosive exercises. Until the Navy is able to report in full the information below, they will provide an annual update on the Navy's explosive tracking methods, including improvements from the previous year.

(i) Total annual number of each type of explosive exercises (of those identified as part of the ''specified activity'' in this final rule) conducted in the HRC.

(ii) Total annual expended/detonated rounds (missiles, bombs, etc.) for each explosive type.

(g) Sonar Exercise Notification—The Navy shall submit to the NMFS Office of Protected Resources (specific contact information to be provided in LOA) either an electronic (preferably) or verbal report within fifteen calendar days after the completion of any major exercise. (RIMPAC, USWEX, or Multi Strike Group) indicating:

(1) Location of the exercise.

(2) Beginning and end dates of the exercise.

(3) Type of exercise (*e.g.*, RIMPAC, USWEX, or Multi Strike Group).

(h) HRC 5-yr Comprehensive Report—The Navy shall submit to NMFS a draft report that analyzes and summarizes all of the multi-year marine mammal information gathered during ASW and explosive exercises for which annual reports are required (Annual HRC Exercise Reports and HRC Monitoring Plan Reports). This report will be submitted at the end of the fourth year of the rule (November 2012), covering activities that have occurred through June 1, 2012.

(i) *Comprehensive National ASW Report*—By June 2014, the Navy shall submit a draft Comprehensive National Report that analyzes, compares, and summarizes the active sonar data gathered (through January 1, 2014) from the watchstanders in accordance with the Monitoring Plans for the HRC, the Atlantic Fleet Active Sonar Training, the Southern California (SOCAL) Range Complex, the Marianas Range Complex, the Northwest Training Range, the Gulf of Alaska, and the East Coast Undersea Warfare Training Range.

(j) The Navy shall respond to NMFS comments and requests for additional information or clarification on the HRC Comprehensive Report, the draft National ASW report, the Annual HRC Exercise Report, or the Annual HRC Monitoring Plan Report (or the multi-Range Complex Annual Monitoring Plan Report, if that is how the Navy chooses to submit the information) if submitted within 3 months of receipt. These reports will be considered final after the Navy has addressed NMFS' comments or provided the requested information, or three months after the submittal of the draft if NMFS does not comment by then.

(k) In 2011, the Navy shall convene a Monitoring Workshop in which the Monitoring Workshop participants will be asked to review the Navy's Monitoring Plans and monitoring results and make individual recommendations (to the Navy and NMFS) of ways of improving the Monitoring Plans. The recommendations shall be reviewed by the Navy, in consultation with NMFS, and modifications to the Monitoring Plan shall be made, as appropriate.

**§ 216.176 Applications for Letters of Authorization.**

To incidentally take marine mammals pursuant to the regulations in this subpart, the U.S. citizen (as defined by § 216.103 of this chapter) conducting the activity identified in § 216.170(c) (the U.S. Navy) must apply for and obtain either an initial Letter of Authorization in accordance with § 216.177 or a renewal under § 216.178.

**§ 216.177 Letters of Authorization.**

(a) A Letter of Authorization, unless suspended or revoked, will be valid for a period of time not to exceed the period of validity of this subpart, but must be renewed annually subject to annual renewal conditions in § 216.178.

(b) Each Letter of Authorization will set forth:

(1) Permissible methods of incidental taking;

(2) Means of effecting the least practicable adverse impact on the species, its habitat, and on the availability of the species for subsistence uses (*i.e.*, mitigation); and

(3) Requirements for mitigation, monitoring and reporting.

(c) Issuance and renewal of the Letter of Authorization will be based on a determination that the total number of marine mammals taken by the activity as a whole will have no more than a negligible impact on the affected species or stock of marine mammal(s).

**§ 216.178 Renewal of Letters of Authorization.**

(a) A Letter of Authorization issued under §§ 216.106 and 216.177 for the activity identified in § 216.170(c) will be renewed annually upon:

(1) Notification to NMFS that the activity described in the application submitted under § 216.176 will be undertaken and that there will not be a substantial modification to the described work, mitigation or monitoring undertaken during the upcoming 12 months;

(2) Timely receipt (by the dates indicated in these regulations) of the monitoring reports required under § 216.175(c) through (j); and

(3) A determination by the NMFS that the mitigation, monitoring and reporting measures required under § 216.174 and the Letter of Authorization issued under §§ 216.106 and 216.177, were undertaken and will be undertaken during the upcoming annual period of validity of a renewed Letter of Authorization.

(b) If a request for a renewal of a Letter of Authorization issued under this § 216.106 and § 216.178 indicates that a substantial modification, as determined by NMFS, to the described work, mitigation or monitoring undertaken during the upcoming season will occur, the NMFS will provide the public a period of 30 days for review and comment on the request. Review and comment on renewals of Letters of Authorization are restricted to:

(1) New cited information and data indicating that the determinations made in this document are in need of reconsideration, and

(2) Proposed changes to the mitigation and monitoring requirements contained in these regulations or in the current Letter of Authorization.

(c) A notice of issuance or denial of a renewal of a Letter of Authorization will be published in the **Federal Register**.

(d) NMFS, in response to new information and in consultation with the Navy, may modify the mitigation or monitoring measures in subsequent LOAs if doing so creates a reasonable likelihood of more effectively accomplishing the goals of mitigation and monitoring. Below are some of the possible sources of new data that could contribute to the decision to modify the mitigation or monitoring measures:

(1) Results from the Navy's monitoring from the previous year (either from the HRC or other locations).

(2) Findings of the Monitoring Workshop that the Navy will convene in 2011 (§ 216.175(q)).

(3) Compiled results of Navy funded research and development (R&D) studies (presented pursuant to the ICMP (§ 216.175(d)).

(4) Results from specific stranding investigations (either from the HRC Study Area or other locations, and involving coincident MFAS/HFAS or explosives training or not involving coincident use).

(5) Results from the Long Term Prospective Study. (6) Results from general marine mammal and sound research (funded by the Navy (or otherwise).

**§ 216.179 Modifications to Letters of Authorization.**

(a) Except as provided in paragraph (b) of this section, no substantive modification (including withdrawal or suspension) to the Letter of Authorization by NMFS, issued pursuant to §§ 216.106 and 216.177 and subject to the provisions of this subpart shall be made until after notification and an opportunity for public comment has been provided. For purposes of this paragraph, a renewal of a Letter of Authorization under § 216.178, without modification (except for the period of validity), is not considered a substantive modification.

(b) If the Assistant Administrator determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in § 216.172(c), a Letter of Authorization issued pursuant to §§ 216.106 and 216.177 may be substantively modified without prior notification and an opportunity for public comment. Notification will be published in the **Federal Register** within 30 days subsequent to the action.

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