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Takes of Marine Mammals Incidental to Specified Activities; U.S. Navy Training and Testing Activities in the Atlantic Fleet Training and Testing Study Area; Final Rule

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 216 and 218

[Docket No. 130109022–3936–02]

RIN 0648–BC53

Takes of Marine Mammals Incidental to Specified Activities; U.S. Navy Training and Testing Activities in the Atlantic Fleet Training and Testing Study Area

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

ACTION: Final rule.

SUMMARY: Upon application from the U.S. Navy (Navy), we (the National Marine Fisheries Service) are issuing regulations under the Marine Mammal Protection Act to govern the unintentional taking of marine mammals incidental to training and testing activities conducted in the Atlantic Fleet Training and Testing (AFTT) Study Area from November 2013 through November 2018. These regulations allow us to issue Letters of Authorization (LOA) for the incidental take of marine mammals during the Navy's specified activities and timeframes, set forth the permissible methods of taking, set forth other means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat, and set forth requirements pertaining to the monitoring and reporting of the incidental take.

DATES: *Effective date:* December 3, 2013.

Applicability date: November 14, 2013 through November 13, 2018.

ADDRESSES: To obtain an electronic copy of the Navy's application, our Record of Decision, or other referenced documents, visit the internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications.* Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned 1315 East West Highway, Silver Spring, MD 20910.

FOR FURTHER INFORMATION CONTACT: Brian D. Hopper, Office of Protected Resources, NMFS, (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Availability

A copy of the Navy's application may be obtained by visiting the internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications.* The Navy's Final Environmental Impact Statement/Overseas Environmental Impact Statement (FEIS/OEIS) for AFTT may be viewed at *http://www.aftteis.com.* Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

Background

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1361 et seq.) directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and regulations are issued. We are required to grant authorization for the incidental taking of marine mammals if we find that the total taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant). We must also set forth the permissible methods of taking and requirements pertaining to the mitigation, monitoring, and reporting of such takings. NMFS has defined negligible impact in 50 CFR 216.103 as ''an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.''

The National Defense Authorization Act of 2004 (NDAA) (Pub. L. 108–136) amended section 101(a)(5)(A) of the MMPA by removing the small numbers and specified geographical region provisions; 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 April 13, 2012, NMFS received an application from the Navy requesting two LOAs for the take of 42 species of marine mammals incidental to Navy training and testing activities to be conducted in the AFTT Study Area over 5 years. The Navy submitted addendums on September 24, 2012 and December 21, 2012, and NMFS considered the application complete. The Navy requests authorization to take marine mammals by Level A and Level B harassment and mortality during training and testing activities. The Study Area includes several existing study areas, range complexes, and testing ranges (Atlantic Fleet Active Sonar Training (AFAST), Northeast, Virginia Capes (VACAPES), Cherry Point (CHPT), Jacksonville (JAX), Gulf of Mexico (GOMEX), Naval Surface Warfare Center, Panama City, Naval Undersea Warfare Center Newport, South Florida Ocean Measurement Facility (SFOMF), and Key West) plus pierside locations and areas on the high seas where maintenance, training, or testing may occur. These activities are considered military readiness activities. Marine mammals present in the Study Area may be exposed to sound from active sonar and underwater detonations. In addition, incidental takes of marine mammals may occur from ship strikes. The Navy requests authorization to take 42 marine mammal species by Level B harassment and 32 marine mammal species by Level A harassment. In addition, the Navy requests authorization for take by serious injury or mortality individuals of 16 marine mammal species due to the use of explosives, and 11 total marine mammals (any species except North Atlantic right whale) over the course of the 5-year rule due to vessel strike.

The Navy's application and the AFTT FEIS/OEIS contain acoustic thresholds that, in some instances, represent changes from what NMFS has used to evaluate the Navy's activities for previous authorizations. The revised thresholds, which the Navy developed in coordination with NMFS, are based on the evaluation and inclusion of new information from recent scientific studies; a detailed explanation of how they were derived is provided in the AFTT FEIS/OEIS Criteria and Thresholds Technical Report. The revised thresholds are adopted for this rulemaking after providing the public with an opportunity for review and comment via the proposed rule for this action published on January 31, 2013 (78 FR 7050).

Further, more generally, NMFS is committed to the use of the best available science. NMFS uses an adaptive transparent process that allows for both timely scientific updates and public input into agency decisions regarding the use of acoustic research and thresholds. NMFS is currently in the process of re-evaluating acoustic

thresholds based on the best available science, as well as how these thresholds are applied under the MMPA to all activity types (not just for Navy activities). This re-evaluation could potentially result in changes to the acoustic thresholds or their application as they apply to future Navy activities. However, it is important to note that while changes in acoustic criteria may affect the enumeration of ''takes,'' they do not necessarily change the evaluation of population level effects or the outcome of the negligible impact analysis. In addition, while acoustic criteria may also inform mitigation and monitoring decisions, the Navy has a robust adaptive management program that regularly addresses new information and allows for modification of mitigation and/or monitoring measures as appropriate.

Description of Specified Activities

The proposed rule (78 FR 7050, January 31, 2013) and AFTT FEIS/OEIS include a complete description of the Navy's specified activities that are being authorized in this final rule. Sonar use, underwater detonations, and ship strike are the stressors most likely to result in impacts on marine mammals that could rise to the level of harassment, thus necessitating MMPA authorization. Below we summarize the description of the specified activities.

Overview of Training Activities

Training activities are categorized into eight functional warfare areas (anti-air warfare; amphibious warfare; strike warfare; anti-surface warfare; anti-submarine warfare; electronic warfare; mine warfare; and naval special warfare). The Navy determined that the following stressors used in these warfare areas are most likely to result in impacts on marine mammals:

- Amphibious warfare (underwater detonations)
- Anti-surface warfare (underwater detonations)
- Anti-submarine warfare (active sonar, underwater detonations)
- Mine warfare (active sonar, underwater detonations)
- Naval special warfare (underwater detonations)

Overview of Testing Activities

Testing activities may occur independently of or in conjunction with training activities. Many testing activities are conducted similarly to Navy training activities and are also categorized under one of the primary mission areas. Other testing activities are unique and are described within their specific testing categories. The Navy determined that stressors used during the following testing activities are most likely to result in impacts on marine mammals:

- Naval Air Systems Command (NAVAIR) Testing
  - Anti-surface warfare testing (underwater detonations)
  - Anti-submarine warfare testing (active sonar, underwater detonations)
  - Mine warfare testing (active sonar, underwater detonations)
- Naval Sea Systems Command (NAVSEA) Testing
  - New ship construction (active sonar, underwater detonations)
  - Shock trials (underwater detonations)
  - Life cycle activities (active sonar, underwater detonations)
  - Range activities (active sonar, underwater detonations)
  - Anti-surface warfare/anti-submarine warfare testing (active sonar, underwater detonations)
  - Mine warfare testing (active sonar, underwater detonations)
  - Ship protection systems and swimmer defense testing (active sonar)
  - Unmanned vehicle testing (active sonar)
  - Other testing (active sonar)
- Office of Naval Research (ONR) and Naval Research Laboratory (NRL) Testing
  - ONR/NRL research, development, test, and evaluation (active sonar)

Classification of Non-Impulsive and Impulsive Sources Analyzed

In order to better organize and facilitate the analysis of about 300 sources of underwater non-impulsive sound or impulsive energy, the Navy developed a series of source classifications, or source bins. This method of analysis provides the following benefits:

- Allows for new sources to be covered under existing authorizations, as long as those sources fall within the parameters of a ''bin;''
- Simplifies the data collection and reporting requirements anticipated under the MMPA;
- Ensures a conservative approach to all impact analysis because all sources in a single bin are modeled as the loudest source (e.g., lowest frequency, highest source level, longest duty cycle, or largest net explosive weight within that bin);
- Allows analysis to be conducted more efficiently, without compromising the results;
- Provides a framework to support the reallocation of source usage (hours/explosives) between different source bins, as long as the total number and severity of marine mammal takes remain within the overall analyzed and authorized limits. This flexibility is required to support evolving Navy training and testing requirements, which are linked to real world events.

A description of each source classification is provided in Tables 1, 2, and 3. Non-impulsive sources are grouped into bins based on the frequency, source level when warranted, and how the source would be used. Impulsive bins are based on the net explosive weight of the munitions or explosive devices. The following factors further describe how non-impulsive sources are divided:

- Frequency of the non-impulsive source:
  - Low-frequency sources operate below 1 kilohertz (kHz)
  - Mid-frequency sources operate at or above 1 kHz, up to and including 10 kHz
  - High-frequency sources operate above 10 kHz, up to and including 100 kHz
  - Very high-frequency sources operate above 100 kHz, but below 200 kHz
- Source level of the non-impulsive source:
  - Greater than 160 decibels (dB), but less than 180 dB
  - Equal to 180 dB and up to 200 dB
  - Greater than 200 dB

How a sensor is used determines how the sensor's acoustic emissions are analyzed. Factors to consider include pulse length (time source is on); beam pattern (whether sound is emitted as a narrow, focused beam, or whether sound is emitted in all directions); and duty cycle (how often a transmission occurs in a given time period during an event).

There are also non-impulsive sources with characteristics that are not anticipated to result in takes of marine mammals. These sources have low source levels, narrow beam widths, downward directed transmissions, short pulse lengths, frequencies beyond known hearing ranges of marine mammals, or some combination of these factors. These sources were not modeled by the Navy, but are qualitatively analyzed in Table 1–5 of the LOA application and the AFTT FEIS/OEIS.

TABLE 1—IMPULSIVE TRAINING AND TESTING SOURCE CLASSES ANALYZED FOR ANNUAL ACTIVITIES

Source class	Representative munitions	Net explosive weight (lbs)
E1	Medium-caliber projectiles	0.1–0.25 (45.4–113.4 g).
E2	Medium-caliber projectiles	0.26–0.5 (117.9–226.8 g).
E3	Large-caliber projectiles	>0.5–2.5 (>226.8 g–1.1 kg).
E4	Improved Extended Echo Ranging Sonobuoy	>2.5–5.0 (1.1–2.3 kg).
E5	5 in. (12.7 cm) projectiles	>5–10 (>2.3–4.5 kg).
E6	15 lb. (6.8 kg) shaped charge	>10–20 (>4.5–9.1 kg).
E7	40 lb. (18.1 kg) demo block/shaped charge	>20–60 (>9.1–27.2 kg).
E8	250 lb. (113.4 kg) bomb	>60–100 (>27.2–45.4 kg).
E9	500 lb. (226.8 kg) bomb	>100–250 (>45.4–113.4 kg).
E10	1,000 lb. (453.6 kg) bomb	>250–500 (>113.4–226.8 kg).
E11	650 lb. (294.8 kg) mine	>500–650 (>226.8–294.8 kg).
E12	2,000 lb. (907.2 kg) bomb	>650–1,000 (>294.8–453.6 kg).
E13	1,200 lb. (544.3 kg) HBX charge	>1,000–1,740 (>453.6–789.3 kg).
E14	2,500 lb HBX charge	>1,740–3,625.
E15	5,000 lb HBX charge	>3,625–7,250.

TABLE 2—ACTIVE ACOUSTIC (NON-IMPULSIVE) SOURCE CLASSES ANALYZED FOR ANNUAL ACTIVITIES

Source class category	Source class	Description
Low-Frequency (LF): Sources that produce low-frequency (less than 1 kHz) signals.	LF3	Low-frequency sources greater than 200 dB.
	LF4	Low-frequency sources equal to 180 dB and up to 200 dB.
	LF5	Low-frequency sources greater than 160 dB, but less than 180 dB.
Mid-Frequency (MF): Tactical and non-tactical sources that produce mid-frequency (1 to 10 kHz) signals.	MF1	Hull-mounted surface ship sonar (e.g., AN/SQS–53C and AN/SQS–60).
	MF1K	Kingfisher mode associated with MF1 sonar.
	MF2	Hull-mounted surface ship sonar (e.g., AN/SQS–56).
	MF2K	Kingfisher mode associated with MF2 sonar.
	MF3	Hull-mounted submarine sonar (e.g., AN/BQQ–10).
	MF4	Helicopter-deployed dipping sonar (e.g., AN/AQS–22 and AN/AQS–13).
	MF5	Active acoustic sonobuoys (e.g., DICASS).
	MF6	Active sound underwater signal devices (e.g., MK–84).
	MF8	Active sources (greater than 200 dB) not otherwise binned.
	MF9	Active sources (equal to 180 dB and up to 200 dB) not otherwise binned.
	MF10	Active sources (greater than 160 dB, but less than 180 dB) not otherwise binned.
	MF11	Hull-mounted surface ship sonar with an active duty cycle greater than 80%.
	MF12	Towed array surface ship sonar with an active duty cycle greater than 80%.
High-Frequency (HF): Tactical and non-tactical sources that produce high-frequency (greater than 10 kHz but less than 200 kHz) signals.	HF1	Hull-mounted submarine sonar (e.g., AN/BQQ–10).
	HF2	High-Frequency Marine Mammal Monitoring System.
	HF3	Other hull-mounted submarine sonar (classified).
	HF4	Mine detection and classification sonar (e.g., Airborne Towed Minehunting Sonar System).
	HF5	Active sources (greater than 200 dB) not otherwise binned.
	HF6	Active sources (equal to 180 dB and up to 200 dB) not otherwise binned.
	HF7	Active sources (greater than 160 dB, but less than 180 dB) not otherwise binned.
	HF8	Hull-mounted surface ship sonar (e.g., AN/SQS–61).
Anti-Submarine Warfare (ASW): Tactical sources such as active sonobuoys and acoustic countermeasures systems used during the conduct of anti-submarine warfare training and testing activities.	ASW1	Mid-frequency Deep Water Active Distributed System (DWADS).
	ASW2	Mid-frequency Multistatic Active Coherent sonobuoy (e.g., AN/SSQ–125)—Sources that are analyzed by item.
	ASW2	Mid-frequency Multistatic Active Coherent sonobuoy (e.g., AN/SSQ–125)—Sources that are analyzed by hours.
	ASW3	Mid-frequency towed active acoustic countermeasure systems (e.g., AN/SLQ–25).
	ASW4	Mid-frequency expendable active acoustic device countermeasures (e.g., MK–3).
Torpedoes (TORP): Source classes associated with the active acoustic signals produced by torpedoes.	TORP1	Lightweight torpedo (e.g., MK–46, MK–54, or Anti-Torpedo Torpedo).
	TORP2	Heavyweight torpedo (e.g., MK–48).
Doppler Sonars (DS): Sonars that use the Doppler effect to aid in navigation or collect oceanographic information.	DS1	Low-frequency Doppler sonar (e.g., Webb Tomography Source).

TABLE 2—ACTIVE ACOUSTIC (NON-IMPULSIVE) SOURCE CLASSES ANALYZED FOR ANNUAL ACTIVITIES—Continued

Source class category	Source class	Description
Forward Looking Sonar (FLS): Forward or upward looking object avoidance sonars.	FLS2–FLS3	High-frequency sources with short pulse lengths, narrow beam widths, and focused beam patterns used for navigation and safety of ships.
Acoustic Modems (M): Systems used to transmit data acoustically through the water.	M3	Mid-frequency acoustic modems (greater than 190 dB).
Swimmer Detection Sonars (SD): Systems used to detect divers and submerged swimmers.	SD1–SD2	High-frequency sources with short pulse lengths, used for detection of swimmers and other objects for the purposes of port security.
Synthetic Aperture Sonars (SAS): Sonars in which active acoustic signals are post-processed to form high-resolution images of the seafloor.	SAS1	MF SAS systems.
	SAS2	HF SAS systems.
	SAS3	VHF SAS systems.

TABLE 3—EXPLOSIVE SOURCE CLASSES ANALYZED FOR NON-ANNUAL TRAINING AND TESTING ACTIVITIES

Source class	Representative munitions	Net explosive weight [1] (lbs)
E1	Medium-caliber projectiles	0.1–0.25
E2	Medium-caliber projectiles	0.26–0.5
E4	Improved Extended Echo Ranging Sonobuoy	2.6–5
E16	10,000 lb. HBX charge	7,251–14,500
E17	40,000 lb. HBX charge	14,501–58,000

TABLE 4—ACTIVE ACOUSTIC (NON-IMPULSIVE) SOURCES ANALYZED FOR NON-ANNUAL TRAINING AND TESTING

Source class category	Source class	Description
Low-Frequency (LF): Sources that produce low-frequency (less than 1 kHz) signals.	LF5	Low-frequency sources greater than 160 dB, but less than 180 dB.
Mid-Frequency (MF): Tactical and non-tactical sources that produce mid-frequency (1 to 10 kHz) signals.	MF9	Active sources (equal to 180 dB and up to 200 dB) not otherwise binned.
High-Frequency (HF): Tactical and non-tactical sources that produce high-frequency (greater than 10 kHz but less than 180 kHz) signals.	HF4	Mine detection and classification sonar (e.g., AN/AQS–20).
	HF5	Active sources (greater than 200 dB) not otherwise binned.
	HF6	Active sources (equal to 180 dB and up to 200 dB) not otherwise binned.
	HF7	Active sources (greater than 160 dB, but less than 180 dB) not otherwise binned.
Forward Looking Sonar (FLS): Forward or upward looking object avoidance sonars.	FLS2–FLS3	High-frequency sources with short pulse lengths, narrow beam widths, and focused beam patterns used for navigation and safety of ships.
Sonars (SAS): Sonars in which active acoustic signals are post-processed to form high-resolution images of the seafloor.	SAS2	HF SAS systems.

Authorized Action

Training

The Navy's training activities in the AFTT Study Area are described in Table 5. Detailed information about each activity (stressor, training event, description, sound source, duration, and geographic location) can be found in Appendix A of the AFTT FEIS/OEIS.

TABLE 5—TRAINING ACTIVITIES WITHIN THE STUDY AREA

Stressor	Training event	Description	Source class	Number of events per year
Anti-Submarine Warfare (ASW)				
Non-Impulsive	Tracking Exercise/Torpedo Exercise—Submarine (TRACKEX/TORPEX—Sub).	Submarine crews search, track, and detect submarines. Exercise torpedoes may be used during this event.	ASW4; MF3; HF1; TORP2.	102.
Non-Impulsive	Tracking Exercise/Torpedo Exercise—Surface (TRACKEX/TORPEX—Surface).	Surface ship crews search, track and detect submarines. Exercise torpedoes may be used during this event.	ASW1,3,4; MF1,2,3,4,5,11,12; HF1; TORP1.	764.
Non-Impulsive	Tracking Exercise/Torpedo Exercise—Helicopter (TRACKEX/TORPEX—Helo).	Helicopter crews search, detect and track submarines. Recoverable air launched torpedoes may be employed against submarine targets.	ASW4; MF4,5; TORP1.	432.

TABLE 5—TRAINING ACTIVITIES WITHIN THE STUDY AREA—Continued

Stressor	Training event	Description	Source class	Number of events per year
Non-Impulsive	Tracking Exercise/Torpedo Exercise—Maritime Patrol Aircraft (TRACKEX/TORPEX—MPA).	Maritime patrol aircraft crews search, detect, and track submarines. Recoverable air launched torpedoes may be employed against submarine targets.	MF5; TORP1	752.
Non-Impulsive	Tracking Exercise—Maritime Patrol Aircraft Extended Echo Ranging Sonobuoy (TRACKEX—MPA sonobuoy).	Maritime patrol aircraft crews search, detect, and track submarines with extended echo ranging sonobuoys. Recoverable air launched torpedoes may be employed against submarine targets.	ASW2	160.
Non-Impulsive	Anti-Submarine Warfare Tactical Development Exercise.	Multiple ships, aircraft and submarines coordinate their efforts to search, detect and track submarines with the use of all sensors. Anti-Submarine Warfare Tactical Development Exercise is a dedicated ASW event.	ASW3,4; HF1; MF1,2,3,4,5.	4.
Non-Impulsive	Integrated Anti-Submarine Warfare Course (IAC).	Multiple ships, aircraft, and submarines coordinate the use of their sensors, including sonobuoys, to search, detect and track threat submarines. IAC is an intermediate level training event and can occur in conjunction with other major exercises.	ASW 2,3,4; HF1; MF1,2,3,4,5,6.	5.
Non-Impulsive	Group Sail	Multiple ships and helicopters integrate the use of sensors, including sonobuoys, to search, detect and track a threat submarine. Group sails are not dedicated ASW events and involve multiple warfare areas.	ASW 2,3; HF1; MF1,2,3,4,5,6.	20.
Non-Impulsive	ASW for Composite Training Unit Exercise (COMPTUEX).	Anti-Submarine Warfare activities conducted during a COMPTUEX.	ASW 2,3,4; HF1; MF1,2,3,4,5,6,12.	5.
Non-Impulsive	ASW for Joint Task Force Exercise (JTFEX)/Sustainment Exercise (SUSTAINEX).	Anti-Submarine Warfare activities conducted during a JTFEX/SUSTAINEX.	ASW2,3,4; HF1; MF1,2,3,4,5,6,12.	4.
Mine Warfare (MIW)				
Non-Impulsive	Mine Countermeasures Exercise (MCM)—Ship Sonar.	Littoral combat ship crews detect and avoid mines while navigating restricted areas or channels using active sonar.	HF4	116.
Non-Impulsive	Mine Countermeasures—Mine Detection.	Ship crews and helicopter aircrews detect mines using towed and laser mine detection systems (e.g., AN/AQS–20, ALMDS).	HF4	2,538.
Non-Impulsive	Coordinated Unit Level Helicopter Airborne Mine Countermeasure Exercises.	Helicopters aircrew members train as a squadron in the use of airborne mine countermeasures, such as towed mine detection and neutralization systems.	HF4	8.
Non-Impulsive	Civilian Port Defense	Maritime security operations for military and civilian ports and harbors. Marine mammal systems may be used during the exercise.	HF4	1 event every other year.
Other Training Activities				
Non-Impulsive	Submarine Navigational (SUB NAV).	Submarine crews locate underwater objects and ships while transiting in and out of port.	HF1; MF3	282.
Non-Impulsive	Submarine Navigation Under Ice Certification.	Submarine crews train to operate under ice. During training and certification other submarines and ships simulate ice.	HF1	24.
Non-Impulsive	Surface Ship Object Detection	Surface ship crews locate underwater objects that may impede transit in and out of port.	MF1K; MF2K	144.
Non-Impulsive	Surface Ship Sonar Maintenance.	Pierside and at-sea maintenance of sonar systems.	MF1,2	824.
Non-Impulsive	Submarine Sonar Maintenance	Pierside and at-sea maintenance of sonar systems.	MF3	220.

TABLE 5—TRAINING ACTIVITIES WITHIN THE STUDY AREA—Continued

Stressor	Training event	Description	Source class	Number of events per year
Amphibious Warfare (AMW)				
Impulsive	Naval Surface Fire Support Exercise—At Sea (FIREX [At Sea]).	Surface ship crews use large-caliber guns to support forces ashore; however, the land target is simulated at sea. Rounds impact the water and are scored by passive acoustic hydrophones located at or near the target area.	E5	50.
Anti-Surface Warfare (ASUW)				
Impulsive	Maritime Security Operations (MSO)—Anti-swimmer Grenades.	Boat crews engage in force protection activities by using anti-swimmer grenades to defend against hostile divers (e.g., Visit, Board, Search, and Seizure; Maritime Interdiction Operations; Force Protection; and Anti-Piracy Operation).	E2	12.
Impulsive	Gunnery Exercise (Surface-to-Surface) (Ship)—Medium-Caliber (GUNEX [S–S]—Ship).	Ship crews engage surface targets with ship's medium-caliber guns.	E1; E2	827.
Impulsive	Gunnery Exercise (Surface-to-Surface) (Ship)—Large-Caliber (GUNEX [S–S]—Ship).	Ship crews engage surface targets with ship's large-caliber guns.	E3; E5	294.
Impulsive	Gunnery Exercise (Surface-to-Surface) (Boat) (GUNEX [S–S]—Boat Medium-Caliber).	Small boat crews engage surface targets with medium-caliber guns.	E1; E2	434.
Impulsive	Missile Exercise (Surface-to-Surface) (MISSILEX [S–S]).	Surface ship crews defend against threat missiles and other surface ships with missiles.	E10	20.
Impulsive	Gunnery Exercise (Air-to-Surface) (GUNEX [A–S] Medium-Caliber).	Fixed-wing and helicopter aircrews, including embarked personnel, use medium-caliber guns to engage surface targets.	E1; E2	715.
Impulsive	Missile Exercise (Air-to-Surface)—Rocket (MISSILEX [A–S]).	Fixed-wing and helicopter aircrews fire both precision-guided missiles and unguided rockets against surface targets.	E5	210.
Impulsive	Missile Exercise (Air-to-Surface) (MISSILEX [A–S]).	Fixed-wing and helicopter aircrews fire both precision-guided missiles and unguided rockets against surface targets.	E6; E8	248.
Impulsive	Bombing Exercise (Air-to-Surface) (BOMBEX [A–S]).	Fixed-wing aircrews deliver bombs against surface targets.	E8; E9; E10; E12	930.
Impulsive	Sinking Exercise (SINKEX)	Aircraft, ship, and submarine crews deliver ordnance on a seaborne target, usually a deactivated ship, which is deliberately sunk using multiple weapon systems.	E3; E5; E8; E9; E10; E11; E12.	1.
Anti-Submarine Warfare (ASW)				
Impulsive	Tracking Exercise—Maritime Patrol Aircraft Extended Echo Ranging Sonobuoy (TRACKEX—MPA sonobuoy).	Maritime patrol aircraft crews search, detect, and track submarines with extended echo ranging sonobuoys. Recoverable air launched torpedoes may be employed against submarine targets.	E4	160.
Impulsive	Group Sail	Multiple ships and helicopters integrate the use of sensors, including sonobuoys, to search, detect and track a threat submarine. Group sails are not dedicated ASW events and involve multiple warfare areas.	E4	20.
Impulsive	ASW for Composite Training Unit Exercise (COMPTUEX).	Anti-Submarine Warfare activities conducted during a COMPTUEX.	E4	6.
Impulsive	ASW for Joint Task Force Exercise (JTFEX)/Sustainment Exercise (SUSTAINEX).	Anti-Submarine Warfare activities conducted during a JTFEX/SUSTAINEX.	E4	4.
Mine Warfare (MIW)				
Impulsive	Explosive Ordnance Disposal (EOD)/Mine Neutralization.	Personnel disable threat mines. Explosive charges may be used.	E1; E4; E5; E6; E7; E8.	618.
Impulsive	Mine Countermeasures—Mine Neutralization—Remotely Operated Vehicles.	Ship crews and helicopter aircrews disable mines using remotely operated underwater vehicles.	E4	762.

TABLE 5—TRAINING ACTIVITIES WITHIN THE STUDY AREA—Continued

Stressor	Training event	Description	Source class	Number of events per year
Impulsive	Civilian Port Defense	Maritime security operations for military and civilian ports and harbors. Marine mammal systems may be used during the exercise.	E2; E4	1 event every other year.

Testing

The Navy's testing activities are described in Tables 6 and 7.

TABLE 6—NAVAL AIR SYSTEMS COMMAND TESTING ACTIVITIES WITHIN THE STUDY AREA

Stressor	Testing event	Description	Source class	Number of events per year
Anti-Submarine Warfare (ASW)				
Non-Impulsive	Anti-Submarine Warfare Torpedo Test.	This event is similar to the training event Torpedo Exercise. The test evaluates anti-submarine warfare systems onboard rotary wing and fixed wing aircraft and the ability to search for, detect, classify, localize, and track a submarine or similar target.	TORP1	242.
Non-Impulsive	Kilo Dip	A kilo dip is the operational term used to describe a functional check of a helicopter deployed dipping sonar system. The sonar system is briefly activated to ensure all systems are functional. A kilo dip is simply a precursor to more comprehensive testing.	MF4	43.
Non-Impulsive	Sonobuoy Lot Acceptance Test	Sonobuoys are deployed from surface vessels and aircraft to verify the integrity and performance of a lot, or group, of sonobuoys in advance of delivery to the Fleet for operational use.	ASW2; MF5,6	39.
Non-Impulsive	ASW Tracking Test—Helicopter	This event is similar to the training event anti-submarine warfare Tracking Exercise—Helicopter. The test evaluates the sensors and systems used to detect and track submarines and to ensure that helicopter systems used to deploy the tracking systems perform to specifications.	MF4,5	428.
Non-Impulsive	ASW Tracking Test—Maritime Patrol Aircraft.	This event is similar to the training event anti-submarine warfare Tracking Exercise—Maritime Patrol Aircraft. The test evaluates the sensors and systems used by maritime patrol aircraft to detect and track submarines and to ensure that aircraft systems used to deploy the tracking systems perform to specifications and meet operational requirements.	ASW2; MF5,6	75.
Mine Warfare (MIW)				
Non-Impulsive	Airborne Towed Minehunting Sonar System Test.	Tests of the Airborne Towed Minehunting Sonar System to evaluate the search capabilities of this towed, mine hunting, detection, and classification system. The sonar on the Airborne Towed Minehunting Sonar System identifies mine-like objects in the deeper parts of the water column.	HF4	155.

TABLE 6—NAVAL AIR SYSTEMS COMMAND TESTING ACTIVITIES WITHIN THE STUDY AREA—Continued

Stressor	Testing event	Description	Source class	Number of events per year
Anti-Surface Warfare (ASUW)				
Impulsive	Air to Surface Missile Test	This event is similar to the training event Missile Exercise Air to Surface. Test may involve both fixed wing and rotary wing aircraft launching missiles at surface maritime targets to evaluate the weapons system or as part of another systems integration test.	E6; E10	239.
Impulsive	Air to Surface Gunnery Test	This event is similar to the training event Gunnery Exercise Air to Surface. Strike fighter and helicopter aircrews evaluate new or enhanced aircraft guns against surface maritime targets to test that the gun, gun ammunition, or associated systems meet required specifications or to train aircrew in the operation of a new or enhanced weapons system.	E1	165.
Impulsive	Rocket Test	Rocket testing evaluates the integration, accuracy, performance, and safe separation of laser-guided and unguided 2.75-in rockets fired from a hovering or forward flying helicopter or from a fixed wing strike aircraft.	E5	332.
Anti-Submarine Warfare (ASW)				
Impulsive	Sonobuoy Lot Acceptance Test	Sonobuoys are deployed from surface vessels and aircraft to verify the integrity and performance of a lot, or group, of sonobuoys in advance of delivery to the Fleet for operational use.	E3; E4	39.
Impulsive	ASW Tracking Test—Helicopter	This event is similar to the training event anti-submarine warfare Tracking Exercise—Helicopter. The test evaluates the sensors and systems used to detect and track submarines and to ensure that helicopter systems used to deploy the tracking systems perform to specifications.	E3	428.
Impulsive	ASW Tracking Test—Maritime Patrol Aircraft.	This event is similar to the training event anti-submarine warfare Tracking Exercise—Maritime Patrol Aircraft. The test evaluates the sensors and systems used by maritime patrol aircraft to detect and track submarines and to ensure that aircraft systems used to deploy the tracking systems perform to specifications and meet operational requirements.	E3; E4	75.
Mine Warfare (MIW)				
Impulsive	Airborne Mine Neutralization System Test.	Airborne mine neutralization tests evaluate the system's ability to detect and destroy mines. The Airborne Mine Neutralization System Test uses up to four unmanned underwater vehicles equipped with HF sonar, video cameras, and explosive neutralizers.	E4; E11	165.
Impulsive	Airborne Projectile-based Mine Clearance System.	An MH–60S helicopter uses a laser-based detection system to search for mines and to fix mine locations for neutralization with an airborne projectile-based mine clearance system. The system neutralizes mines by firing a small or medium-caliber inert, supercavitating projectile from a hovering helicopter.	E11	237.

TABLE 6—NAVAL AIR SYSTEMS COMMAND TESTING ACTIVITIES WITHIN THE STUDY AREA—Continued

Stressor	Testing event	Description	Source class	Number of events per year
Impulsive	Airborne Towed Minesweeping Test.	Tests of the Airborne Towed Minesweeping System would be conducted by a MH–60S helicopter to evaluate the functionality of the system and the MH–60S at sea. The system is towed from a forward flying helicopter and works by emitting an electromagnetic field and mechanically generated underwater sound to simulate the presence of a ship. The sound and electromagnetic signature cause nearby mines to explode.	E11	72.

TABLE 7—NAVAL SEA SYSTEMS COMMAND TESTING ACTIVITIES WITHIN THE STUDY AREA

Stressor	Testing event	Description	Source class	Number of events per year
New Ship Construction				
Non-Impulsive	Surface Combatant Sea Trials—Pierside Sonar Testing.	Tests ship's sonar systems pierside to ensure proper operation.	MF1,9,10; MF1K	12.
Non-Impulsive	Surface Combatant Sea Trials—Anti-Submarine Warfare Testing.	Ships demonstrate capability of countermeasure systems and underwater surveillance and communications systems.	ASW3; MF 1,9,10; MF1K.	10.
Non-Impulsive	Submarine Sea Trials—Pierside Sonar Testing.	Tests ship's sonar systems pierside to ensure proper operation.	M3; HF1; MF3,10	6.
Non-Impulsive	Submarine Sea Trials—Anti-Submarine Warfare Testing.	Submarines demonstrate capability of underwater surveillance and communications systems.	M3; HF1; MF3,10	12.
Non-Impulsive	Anti-submarine Warfare Mission Package Testing.	Ships and their supporting platforms (e.g., helicopters, unmanned aerial vehicles) detect, localize, and prosecute submarines.	ASW1,3; MF4,5,12; TORP1.	24.
Non-Impulsive	Mine Countermeasure Mission Package Testing.	Ships conduct mine countermeasure operations.	HF4	8.
Life Cycle Activities				
Non-Impulsive	Surface Ship Sonar Testing/Maintenance.	Pierside and at-sea testing of ship systems occurs periodically following major maintenance periods and for routine maintenance.	ASW3; MF1, 9,10; MF1K.	16.
Non-Impulsive	Submarine Sonar Testing/Maintenance.	Pierside and at-sea testing of submarine systems occurs periodically following major maintenance periods and for routine maintenance.	HF1,3; M3; MF3	28.
Non-Impulsive	Combat System Ship Qualification Trial (CSSQT)—In-port Maintenance Period.	All combat systems are tested to ensure they are functioning in a technically acceptable manner and are operationally ready to support at-sea CSSQT events.	MF1	12.
Non-Impulsive	Combat System Ship Qualification Trial (CSSQT)—Undersea Warfare (USW).	Tests ships ability to track and defend against undersea targets.	HF4; MF1,2,4,5; TORP1.	9.
NAVSEA Range Activities				
Naval Surface Warfare Center, Panama City Division (NSWC PCD)				
Non-Impulsive	Unmanned Underwater Vehicles Demonstration.	Testing and demonstrations of multiple Unmanned Underwater Vehicles and associated acoustic, optical, and magnetic systems.	HF5,6,7; LF5; FLS2; MF9; SAS2.	1 per 5 year period.
Non-Impulsive	Mine Detection and Classification Testing.	Air, surface, and subsurface vessels detect and classify mines and mine-like objects.	HF1,4; MF1K; SAS2	81.
Non-Impulsive	Stationary Source Testing	Stationary equipment (including swimmer defense systems) is deployed to determine functionality.	LF4; MF8; SD1,2	11.

TABLE 7—NAVAL SEA SYSTEMS COMMAND TESTING ACTIVITIES WITHIN THE STUDY AREA—Continued

Stressor	Testing event	Description	Source class	Number of events per year
Non-Impulsive	Special Warfare Testing	Testing of submersibles capable of inserting and extracting personnel and/or payloads into denied areas from strategic distances.	MF9	110.
Non-Impulsive	Unmanned Underwater Vehicle Testing.	Unmanned Underwater Vehicles are deployed to evaluate hydrodynamic parameters, to full mission, multiple vehicle functionality assessments.	FLS2; HF 5,6,7; LF5; MF9; SAS2.	88.
Naval Undersea Warfare Center Division, Newport (NUWCDIVNPT)				
Non-Impulsive	Torpedo Testing	Non-explosive torpedoes are launched to record operational data. All torpedoes are recovered.	TORP1; TORP2	30.
Non-Impulsive	Towed Equipment Testing	Surface vessel or Unmanned Underwater Vehicle deploys equipment to determine functionality of towed systems.	LF4; MF9; SAS1	33.
Non-Impulsive	Unmanned Underwater Vehicle Testing.	Unmanned Underwater Vehicles are deployed to evaluate hydrodynamic parameters, to full mission, multiple vehicle functionality assessments.	HF6,7; LF5; MF10; SAS2.	123.
Non-Impulsive	Semi-Stationary Equipment Testing.	Semi-stationary equipment (e.g., hydrophones) is deployed to determine functionality.	ASW3,4; HF 5,6; LF 4,5; MF9,10.	154.
Non-Impulsive	Unmanned Underwater Vehicle Demonstrations.	Testing and demonstrations of multiple Unmanned Underwater Vehicles and associated acoustic, optical, and magnetic systems.	FLS2; HF5,6,7; LF5; MF9; SAS2.	1 per 5 year period.
Non-Impulsive	Pierside Integrated Swimmer Defense Testing.	Swimmer defense testing ensures that systems can effectively detect, characterize, verify, and defend against swimmer/diver threats in harbor environments.	LF4; MF8; SD1	6.
South Florida Ocean Measurement Facility (SFOMF)				
Non-Impulsive	Signature Analysis Activities	Testing of electromagnetic, acoustic, optical, and radar signature measurements of surface ship and submarine.	ASW2; HF1,6; LF4; M3; MF9.	18.
Non-Impulsive	Mine Testing	Air, surface, and sub-surface systems detect, counter, and neutralize ocean-deployed mines.	HF4	33.
Non-Impulsive	Surface Testing	Various surface vessels, moored equipment and materials are tested to evaluate performance in the marine environment.	FLS2; HF5,6,7;LF5;MF9; SAS2.	33.
Non-Impulsive	Unmanned Underwater Vehicles Demonstrations.	Testing and demonstrations of multiple Unmanned Underwater Vehicles and associated acoustic, optical, and magnetic systems.	FLS2; HF5,6,7; LF5; MF9; SAS2.	1 per 5 year period.
Additional Activities at Locations Outside of NAVSEA Ranges				
Anti-Surface Warfare (ASUW)/Anti-Submarine Warfare (ASW) Testing				
Non-Impulsive	Torpedo (Non-explosive) Testing	Air, surface, or submarine crews employ inert torpedoes against submarines or surface vessels. All torpedoes are recovered.	ASW3,4; HF1; M3; MF1,3,4,5; TORP1,2.	26.
Non-Impulsive	Torpedo (Explosive) Testing	Air, surface, or submarine crews employ explosive torpedoes against artificial targets or deactivated ships.	TORP1; TORP2	2.
Non-Impulsive	Countermeasure Testing	Towed sonar arrays and anti-torpedo torpedo systems are employed to detect and neutralize incoming weapons.	ASW3; HF5; TORP 1,2.	3.
Non-Impulsive	Pierside Sonar Testing	Pierside testing to ensure systems are fully functional in a controlled pierside environment prior to at-sea test activities.	ASW3; HF1,3; M3; MF1,3.	23.
Non-Impulsive	At-sea Sonar Testing	At-sea testing to ensure systems are fully functional in an open ocean environment.	ASW4; HF1; M3; MF3.	15.

TABLE 7—NAVAL SEA SYSTEMS COMMAND TESTING ACTIVITIES WITHIN THE STUDY AREA—Continued

Stressor	Testing event	Description	Source class	Number of events per year
Mine Warfare (MIW) Testing				
Non-Impulsive	Mine Detection and Classification Testing.	Air, surface, and subsurface vessels detect and classify mines and mine-like objects.	HF4	66.
Non-Impulsive	Mine Countermeasure/Neutralization Testing.	Air, surface, and subsurface vessels neutralize threat mines that would otherwise restrict passage through an area.	HF4; M3	14.
Shipboard Protection Systems and Swimmer Defense Testing				
Non-Impulsive	Pierside Integrated Swimmer Defense Testing.	Swimmer defense testing ensures that systems can effectively detect, characterize, verify, and defend against swimmer/diver threats in harbor environments.	LF4; MF8; SD1	3.
Unmanned Vehicle Testing				
Non-Impulsive	Unmanned Vehicle Development and Payload Testing.	Vehicle development involves the production and upgrade of new unmanned platforms on which to attach various payloads used for different purposes.	MF9; SAS2	111.
Other Testing Activities				
Non-Impulsive	Special Warfare Testing	Special warfare includes testing of submersibles capable of inserting and extracting personnel and/or payloads into denied areas from strategic distances.	HF1; M3; MF9	4.
Ship Construction and Maintenance				
New Ship Construction				
Impulsive	Aircraft Carrier Sea Trials—Gun Testing—Medium-Caliber.	Medium-caliber gun systems are tested using non-explosive and explosive rounds.	E1	410 per 5 year period.
Impulsive	Surface Warfare Mission Package—Gun Testing—Medium Caliber.	Ships defense against surface targets with medium-caliber guns.	E1	5.
Impulsive	Surface Warfare Mission Package—Gun Testing—Large Caliber.	Ships defense against surface targets with large-caliber guns.	E3	5.
Impulsive	Surface Warfare Mission Package—Missile/Rocket Testing.	Ships defense against surface targets with medium range missiles or rockets.	E6	15.
Impulsive	Mine Countermeasure Mission Package Testing.	Ships conduct mine countermeasure operations.	E4	8.
Ship Shock Trials				
Impulsive	Aircraft Carrier Full Ship Shock Trial.	Explosives are detonated underwater against surface ships.	E17	1 per 5 year period.
Impulsive	DDG 1000 Zumwalt Class Destroyer Full Ship Shock Trial.	Explosives are detonated underwater against surface ships.	E16	1 per 5 year period.
Impulsive	Littoral Combat Ship Full Ship Shock Trial.	Explosives are detonated underwater against surface ships.	E16	2 per 5 year period.
NAVSEA Range Activities				
Naval Surface Warfare Center, Panama City Division (NSWC PCD)				
Impulsive	Mine Countermeasure/Neutralization Testing.	Air, surface, and subsurface vessels neutralize threat mines and mine-like objects.	E4	15.
Impulsive	Ordnance Testing	Airborne and surface crews defend against surface targets with small-, medium-, and large-caliber guns, as well as line charge testing.	E5; E14	37.

TABLE 7—NAVAL SEA SYSTEMS COMMAND TESTING ACTIVITIES WITHIN THE STUDY AREA—Continued

Stressor	Testing event	Description	Source class	Number of events per year
Additional Activities at Locations Outside of NAVSEA Ranges				
Anti-Surface Warfare (ASUW)/Anti-Submarine Warfare (ASW) Testing				
Impulsive	Torpedo (Explosive) Testing	Air, surface, or submarine crews employ explosive torpedoes against artificial targets or deactivated ships.	E8; E11	2.
Mine Warfare (MIW) Testing				
Impulsive	Mine Countermeasure/Neutralization Testing.	Air, surface, and subsurface vessels neutralize threat mines that would otherwise restrict passage through an area.	E4; E8	14.
Other Testing Activities				
Impulsive	At-Sea Explosives Testing	Explosives are detonated at sea	E5	4.

Vessels

Representative Navy vessel types, lengths, and speeds used in both training and testing activities are shown in Table 8. While these speeds are representative, some vessels operate outside of these speeds due to unique training or safety requirements for a given event. Examples include increased speeds needed for flight operations, full speed runs to test engineering equipment, time critical positioning needs, etc. Examples of decreased speeds include speeds less than 5 knots or completely stopped for launching small boats, certain tactical maneuvers, target launch or retrievals, UUVs etc.

TABLE 8—TYPICAL NAVY BOAT AND VESSEL TYPES WITH LENGTH GREATER THAN 18 METERS USED WITHIN THE AFTT STUDY AREA

Vessel type (>18 m)	Example(s) (specifications in meters (m) for length, metric tons (mt) for mass, and knots for speed)	Typical operating speed (knots)
Aircraft Carrier	Aircraft Carrier (CVN) length: 333 m beam: 41 m draft: 12 m displacement: 81,284 mt max. speed: 30+ knots.	10 to 15.
Surface Combatants	Cruiser (CG) length: 173 m beam: 17 m draft: 10 m displacement: 9,754 mt max. speed: 30+ knots.	10 to 15.
	Destroyer (DDG) length: 155 m beam: 18 m draft: 9 m displacement: 9,648 mt max. speed: 30+ knots.	
	Frigate (FFG) length: 136 m beam: 14 m draft: 7 m displacement: 4,166 mt max. speed: 30+ knots.	
	Littoral Combat Ship (LCS) length: 115 m beam: 18 m draft: 4 m displacement: 3,000 mt max. speed: 40+ knots.	
Amphibious Warfare Ships	Amphibious Assault Ship (LHA, LHD) length: 253 m beam: 32 m draft: 8 m displacement: 42,442 mt max. speed: 20+ knots.	10 to 15.
	Amphibious Transport Dock (LPD) length: 208 m beam: 32 m draft: 7 m displacement: 25,997 mt max. speed: 20+ knots.	
	Dock Landing Ship (LSD) length: 186 m beam: 26 m draft: 6 m displacement: 16,976 mt max. speed: 20+ knots.	
Mine Warship Ship	Mine Countermeasures Ship (MCM) length: 68 m beam: 12 m draft: 4 m displacement: 1,333 max. speed: 14 knots.	5 to 8.
Submarines	Attack Submarine (SSN) length: 115 m beam: 12 m draft: 9 m displacement: 12,353 mt max. speed: 20+ knots.	8 to 13.
	Guided Missile Submarine (SSGN) length: 171 m beam: 13 m draft: 12 m displacement: 19,000 mt max. speed: 20+ knots.	
Combat Logistics Force Ships	Fast Combat Support Ship (T–AOE) length: 230 m beam: 33 m draft: 12 m displacement: 49,583 max. speed: 25 knots.	8 to 12.
	Dry Cargo/Ammunition Ship (T–AKE) length: 210 m beam: 32 m draft: 9 m displacement: 41,658 mt max speed: 20 knots.	
	Fleet Replenishment Oilers (T–AO) length: 206 m beam: 30 m draft: 11 displacement: 42,674 mt max. speed: 20 knots.	
	Fleet Ocean Tugs (T–ATF) length: 69 m beam: 13 m draft: 5 m displacement: 2,297 max. speed: 14 knots.	
Support Craft/Other	Landing Craft, Utility (LCU) length: 41m beam: 9 m draft: 2 m displacement: 381 mt max. speed: 11 knots.	3 to 5.
	Landing Craft, Mechanized (LCM) length: 23 m beam: 6 m draft: 1 m displacement: 107 mt max. speed: 11 knots.	
Support Craft/Other Specialized High Speed.	MK V Special Operations Craft length: 25 m beam: 5 m displacement: 52 mt max. speed: 50 knots.	Variable.

Duration and Location

The description of the location of authorized activities has not changed from what was provided in the proposed rule (78 FR 7050, January 31, 2013; page 7066) and AFTT FEIS/OEIS (*http://www.aftteis.com*). For a complete description, please see those documents. Training and testing activities will be conducted in the AFTT Study Area from November 2013 through November 2018. The Study Area includes several existing study areas, range complexes, and testing ranges: the Atlantic Fleet Active Sonar Training (AFAST) Study Area; Northeast Range Complexes; Naval Undersea Warfare Center Division, Newport (NUWCDIVNPT) Testing Range; Virginia Capes (VACAPES) Range Complex; Cherry Point (CHPT) Range Complex; Jacksonville (JAX) Range Complex; Naval Surface Warfare Center (NSWC) Carderock Division, South Florida Ocean Measurement Facility (SFOMF) Testing Range; Key West Range Complex; Gulf of Mexico (GOMEX) Range Complex; and Naval Surface Warfare Center, Panama City Division (NSWC PCD) Testing Range. In addition, the Study Area includes Narragansett Bay, the lower Chesapeake Bay and St. Andrew Bay for training and testing activities. Ports included for Civilian Port Defense training events include Earle, New Jersey; Groton, Connecticut; Norfolk, Virginia; Morehead City, North Carolina; Wilmington, North Carolina; Kings Bay, Georgia; Mayport, Florida; Beaumont, Texas; and Corpus Christi, Texas. The Study Area includes pierside locations where Navy surface ship and submarine sonar maintenance and testing occur. The Study Area also includes channels and transit routes to ports and facilities associated with ports and shipyards.

Description of Marine Mammals in the Area of the Specified Activities

There are 48 marine mammal species with possible or known occurrence in the AFTT Study Area, 45 of which are managed by NMFS, of which 39 are cetacean species (8 mysticetes and 31 odontocetes) and six are pinnipeds. To address a public comment on population structure, and consistent with NMFS most recent Stock Assessment Report, a single species may include multiple stocks recognized for management purposes (e.g., bottlenose dolphin), while other species are grouped into a single stock due to limited species-specific information (e.g., beaked whales belonging to the genus *Mesoplodon*). However, when there is sufficient information available, the Navy's take estimates and NMFS' negligible impact determination are based on stock-specific numbers. Eight marine mammal species are listed under the Endangered Species Act (ESA; 16 U.S.C. 1531 *et seq.*): bowhead whale, North Atlantic right whale, humpback whale, sei whale, fin whale, blue whale, sperm whale, and ringed seal.

The Description of Marine Mammals in the Area of the Specified Activities section has not changed from what was in the proposed rule (78 FR 7050, January 31, 2013; pages 7066–7073). Table 9 of the proposed rule provided a list of marine mammals with possible or confirmed occurrence within the AFTT Study Area, including stock, abundance, and status. Although not repeated in this final rule, we have reviewed these data, determined them to be the best available scientific information for the purposes of the rulemaking, and consider this information part of the administrative record for this action.

The Navy's LOA application, proposed rule (78 FR 7050, January 31, 2013), and the AFTT FEIS/OEIS include a complete description of information on the status, distribution, abundance, vocalizations, density estimates, and general biology of marine mammal species.

Potential Effects of Specified Activities on Marine Mammals

For the purpose of MMPA authorizations, NMFS' effects assessments serve five 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 harassment or mortality); (2) to prescribe other means of effecting the least practicable adverse impact on such species or stock and its habitat (i.e., mitigation); (3) to determine whether the specified activity would have a negligible impact on the affected species or stocks of marine mammals (based on the likelihood that the activity would adversely affect the species or stock through effects on annual rates of recruitment or survival); (4) to determine whether the specified activity would have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses; and (5) to prescribe requirements pertaining to monitoring and reporting.

In the Potential Effect of Specified Activities on Marine Mammals section of the proposed rule, we included a qualitative discussion of the different ways that Navy training and testing activities may potentially affect marine mammals without consideration of mitigation and monitoring measures (78 FR 7050, January 31, 2013; pages 7077–7092). Marine mammals may experience: direct physiological effects (e.g., threshold shift and non-acoustic injury); acoustic masking; impaired communication; stress responses; behavioral disturbance; stranding; behavioral responses from vessel movement; and injury or death from vessel collisions. NMFS made no changes to the information contained in that section of the proposed rule, and it adopts that discussion for purposes of this final rule.

NMFS is constantly evaluating new science and how to best incorporate it into our decisions. This process involves careful consideration of new data and how it is best interpreted within the context of a given management framework. Since publication of the proposed rule, studies have been published regarding behavioral responses that are relevant to the proposed activities and energy sources: Moore and Barlow, 2013, DeRuiter *et al.,* 2013, and Goldbogen *et al.,* 2013, among others. These articles are specifically addressed in the Comments and Responses section of this document. Each of these articles is about the importance of context (e.g., behavioral state of the animals, distance from the sound source, etc.) in evaluating behavioral responses of marine mammals to acoustic sources. In addition, New *et al.,* (2013) was released after publication of the proposed rule. This study uses energetic models to investigate the survival and reproduction of beaked whales. The model suggests that impacts to habitat quality may affect adult female beaked whales' ability to reproduce; and therefore, a reduction in energy intake over a long period of time may have the potential to impact reproduction. However, the AFTT Study Area continues to support high densities of beaked whales and there is no data to suggest a decline in this population.

Also since the publication of the proposed rule, the Final report of the Independent Scientific Review Panel investigating potential contributing factors to a 2008 mass stranding of melon-headed whales (*Peponocephala electra*) in Antsohihy, Madagascar was released. This report suggests that the operation of high-powered 12kHz multi-beam echosounders was a plausible and likely initial trigger that caused a large group of melon-headed whales to leave their typical habitat and then ultimately strand as a result of secondary factors such as malnourishment and

dehydration. The report indicates that the risk of this particular convergence of factors and ultimate outcome is likely very low, but recommends that the potential be considered in environmental planning (for example, through rapid response contingency plans). Because of the association between tactical MFA sonar use and a small number of marine mammal strandings, the Navy and NMFS have been considering and addressing the potential for strandings in association with Navy activities for years. In addition to a suite of mitigation intended to more broadly minimize impacts to marine mammals, the Navy and NMFS have a detailed Stranding Response Plan that outlines reporting, communication, and response protocols intended both to minimize the impacts of, and enhance the analysis of, any potential stranding in areas where the Navy operates.

Mitigation

In order to issue regulations and LOAs under section 101(a)(5)(A) of the MMPA, NMFS must set forth the ''permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.'' NMFS duty under this ''least practicable adverse impact'' standard is to prescribe mitigation reasonably designed to minimize, to the extent practicable, any adverse population-level impacts, as well as habitat impacts. While population-level impacts can be minimized by reducing impacts on individual marine mammals, not all takes translate to population level impacts. NMFS' objective under the ''least practicable adverse impact'' standard is to design mitigation targeting those impacts on individual marine mammals that are most likely to lead to adverse population-level effects.

The NDAA of 2004 amended the MMPA as it relates to military readiness activities and the ITA 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 training and testing activities described in the Navy's LOA application are considered military readiness activities.

NMFS reviewed the proposed activities and the suite of proposed mitigation measures as described in the Navy's LOA application to determine if they would result in the least practicable adverse effect on marine mammal species and stocks, which includes a careful balancing of the degree to which the mitigation measures are expected to reduce the likelihood and/or magnitude of adverse impacts to marine mammal species or stocks and their habitat with the likely effect of the measures on personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. Included below are the mitigation measures the Navy proposed in their LOA application.

NMFS described the Navy's proposed mitigation measures in detail in the proposed rule (78 FR 7050, January 31, 2013; pages 7092–7098). These required mitigation measures, summarized below, have not changed with the exception of the extension of the boundary in the eastern Gulf of Mexico planning awareness area to further protect a population of Bryde's whale that has been exclusively observed in that area year-round. NMFS worked with the Navy in the development of the Navy's initial proposed measures, which have been informed through years of experience and monitoring. As described in the mitigation conclusions below and in responses to comments, and the AFTT FEIS/OEIS, additional measures were considered and analyzed, but ultimately not chosen for implementation. Below is a summary of the mitigation measures initially proposed by the Navy. For additional details regarding the Navy's mitigation measures, see Chapter 5 in the AFTT FEIS/OEIS.

- At least one lookout during applicable training and testing activities requiring mitigation;
- Mitigation zones during impulsive and non-impulsive sources to avoid or reduce the potential for onset of the lowest level of injury, PTS, out to the predicted maximum range (Tables 11 and 12);
- Mitigation zones of 457 meters (1,500 ft) around whales and 183 meters (600 ft) around all other marine mammals (except bow riding dolphins) during vessel movement;
- A mitigation zone of 229 meters (750 ft) around marine mammals during use of towed in-water devices from a manned platform;
- Mitigation zones during non-explosive gunnery exercises, missile exercises, and bombing exercises to avoid or reduce the potential for a direct strike from munitions;
- Mitigation measures within pre-defined mitigation areas.

TABLE 11—PREDICTED RANGES TO TTS, PTS, AND RECOMMENDED MITIGATION ZONES

Activity category	Representative source (bin) [1]	Predicted average range to TTS	Predicted average range to PTS	Predicted maximum range to PTS	Recommended mitigation zone
Non-Impulsive Sound					
Low-Frequency and Hull-Mounted Mid-Frequency Active Sonar.	SQS–53 ASW hull-mounted sonar (MF1).	3,821 yd. (3.5 km) for one ping.	100 yd. (91 m) for one ping.	Not Applicable	6 dB power down at 1,000 yd. (914 m); 4 dB power down at 500 yd. (457 m); and shutdown at 200 yd. (183 m).
	Low-frequency sonar [2] (LF4).	3,821 yd. (3.5 km) for one ping.	100 yd. (91 m) for one ping.	Not Applicable	200 yd. (183 m) [2].
High-Frequency and Non-Hull Mounted Mid-Frequency Active Sonar.	AQS–22 ASW dipping sonar (MF4).	230 yd. (210 m) for one ping.	20 yd. (18 m) for one ping.	Not Applicable	200 yd. (183 m).
Explosive and Impulsive Sound					
Improved Extended Echo Ranging Sonobuoys.	Explosive sonobuoy (E4).	434 yd. (397 m) ...	156 yd. (143 m) ...	563 yd. (515 m) ...	600 yd. (549 m).

TABLE 11—PREDICTED RANGES TO TTS, PTS, AND RECOMMENDED MITIGATION ZONES—Continued

Activity category	Representative source (bin) [1]	Predicted average range to TTS	Predicted average range to PTS	Predicted maximum range to PTS	Recommended mitigation zone
Explosive Sonobuoys Using 0.6–2.5 lb. NEW.	Explosive sonobuoy (E3).	290 yd. (265 m) ...	113 yd. (103 m) ...	309 yd. (283 m) ...	350 yd. (320 m).
Anti-Swimmer Grenades	Up to 0.5 lb. NEW (E2).	190 yd. (174 m) ...	83 yd. (76 m)	182 yd. (167 m) ...	200 yd. (183 m).
Mine Countermeasure and Neutralization Activities Using Positive Control Firing Devices.	NEW dependent (see Table 12)				
Mine Neutralization Diver-Placed Mines Using Time-Delay Firing Devices.	Up to 20 lb. NEW (E6).	647 yd. (592 m) ...	232 yd. (212 m) ...	469 yd. (429 m) ...	1,000 yd. (914 m).
Gunnery Exercises—Small- and Medium-Caliber Using a Surface Target.	40 mm projectile (E2).	190 yd. (174 m) ...	83 yd. (76 m)	182 yd. (167 m) ...	200 yd. (183 m).
Gunnery Exercises—Large-Caliber Using a Surface Target.	5 in. projectiles (E5 at the surface [3]).	453 yd. (414 m) ...	186 yd. (170 m) ...	526 yd. (481 m) ...	600 yd. (549 m).
Missile Exercises (Including Rockets) up to 250 lb. NEW Using a Surface Target.	Maverick missile (E9).	949 yd. (868 m) ...	398 yd. (364 m) ...	699 yd. (639 m) ...	900 yd. (823 m).
Missile Exercises Using 251–500 lb. NEW Using a Surface Target.	Harpoon missile (E10).	1,832 yd. (1.7 km)	731 yd. (668 m) ...	1,883 yd. (1.7 km)	2,000 yd. (1.8 km).
Bombing Exercises	MK–84 2,000 lb. bomb (E12).	2,513 yd. (2.3 km)	991 yd. (906 m) ...	2,474 yd. (2.3 km)	2,500 yd. (2.3 km) [2].
Torpedo (Explosive) Testing	MK–48 torpedo (E11).	1,632 yd. (1.5 km)	697 yd. (637 m) ...	2,021 yd. (1.8 km)	2,100 yd. (1.9 km).
Sinking Exercises	Various sources up to the MK–84 2,000 lb. bomb (E12).	2,513 yd. (2.3 km)	991 yd. (906 m) ...	2,474 yd. (2.3 km)	2.5 nm [2].
At-Sea Explosive Testing	Various sources of 10 lb. NEW and less (E5 at various depths [3]).	525 yd. (480 m) ...	204 yd. (187 m) ...	649 yd. (593 m) ...	1,600 yd. (1.4 km) [2].
Ordnance Testing—Line Charge Testing.	Numerous 5-lb. charges (E4).	434 yd. (397 m) ...	156 yd. (143 m) ...	563 yd. (515 m) ...	900 yd. (823 m) [2].
Ship Shock Trials in JAX Range Complex.	10,000-lb. charge (HBX).	5.8 nm	2.7 nm	4.8 nm	3.5 nm [4].
	40,000-lb. charge (HBX).	9.2 nm	3.6 nm	6.4 nm	3.5 nm [4].
Ship Shock Trials in VACAPES Range Complex.	10,000-lb. charge (HBX).	9 nm	2 nm	4.7 nm	3.5 nm [4].
	40,000-lb. charge (HBX).	10.3 nm	3.7 nm	7.6 nm	3.5 nm [4].

ASW: anti-submarine warfare; HBX: high blast explosive; JAX: Jacksonville; km: kilometer; lb.: pound; m: meter;
NEW: net explosive weight; nm: nautical mile; PTS: permanent threshold shift; TTS: temporary threshold shift;
VACAPES: Virginia Capes; yd.: yard.

[1] This table does not provide an inclusive list of source bins; bins presented here represent the source bin with the largest range to effects within the given activity category.

[2] Recommended mitigation zones are larger than the modeled injury zones to account for multiple types of sources or charges being used.

[3] The representative source bin E5 has different range to effects depending on the depth of activity occurrence (at the surface or at various depths).

[4] See Section 5.3.2.1.2.15 (Ship Shock Trials) in the FEIS/EIS regarding ship shock trial mitigation zones.

TABLE 12—PREDICTED RANGES TO EFFECTS AND MITIGATION ZONE RADIUS FOR MINE COUNTERMEASURE AND NEUTRALIZATION ACTIVITIES USING POSITIVE CONTROL FIRING DEVICES

Charge size net explosive weight (Bins)	General mine countermeasure and neutralization activities using positive control firing devices[1]				Mine countermeasure and neutralization activities using diver-placed charges under positive control[2]			
	Predicted average range to TTS	Predicted average range to PTS	Predicted maximum range to PTS	Recommended mitigation zone	Predicted average range to TTS	Predicted average range to PTS	Predicted maximum range to PTS	Recommended mitigation zone
2.6–5 lb. (E4)	434 yd. (397 m)	197 yd. (180 m)	563 yd. (515 m)	600 yd. (549 m)	545 yd. (498 m)	169 yd. (155 m)	301 yd. (275 m)	350 yd. (320 m).
6–10 lb. (E5)	525 yd. (480 m)	204 yd. (187 m)	649 yd. (593 m)	800 yd. (732 m)	587 yd. (537 m)	203 yd. (185 m)	464 yd. (424 m)	500 yd. (457 m).
11–20 lb. (E6)	766 yd. (700 m)	288 yd. (263 m)	648 yd. (593 m)	800 yd. (732 m)	647 yd. (592 m)	232 yd. (212 m)	469 yd. (429 m)	500 yd. (457 m).
21–60 lb. (E7)[3]	1,670 yd. (1.5 km)	581 yd. (531 m)	964 yd. (882 m)	1,200 yd. (1.1 km)	1,532 yd. (1.4 km)	473 yd. (432 m)	789 yd. (721 m)	800 yd. (732 m).
61–100 lb. (E8)[4]	878 yd. (802 m)	383 yd. (351 m)	996 yd. (911 m)	1,600 yd. (1.4 km)	969 yd. (886 m)	438 yd. (400 m)	850 yd. (777 m)	850 yd. (777 m).
251–500 lb. (E10)	1,832 yd. (1.7 km)	731 yd. (668 m)	1,883 yd. (1.7 km)	2,000 yd. (1.8 km)				Not Applicable.
501–650 lb. (E11)	1,632 yd. (1.5 km)	697 yd. (637 m)	2,021 yd. (1.8 km)	2,100 yd. (1.9 km)				Not Applicable.

km: kilometer; lb.: pound; m: meter; PTS: permanent threshold shift; TTS: temporary threshold shift; yd.: yard.

[1] These mitigation zones are applicable to all mine countermeasure and neutralization activities conducted in all locations specified in Tables 2.8–1 through 2.8–3 in the FEIS/OEIS.

[2] These mitigation zones are only applicable to mine countermeasure and neutralization activities involving the use of diver-placed charges. These activities are conducted in shallow water, and the mitigation zones are based only on the functional hearing groups with species that occur in these areas (mid-frequency cetaceans and sea turtles).

[3] The E7 bin was only modeled in shallow-water locations, so there is no difference for the diver-placed charges category.

[4] The E8 bin was only modeled for surface explosions, so some of the ranges are shorter than for sources modeled in the E7 bin, which occur at depth.

Time-Delay Firing Devices

When mine neutralization activities using diver placed charges (up to a 20 lb. NEW) are conducted with a time-delay firing device, the detonation is fused with a specified time-delay by the personnel conducting the activity and is not authorized until the area is clear at the time the fuse is initiated. During these activities, the detonation cannot be terminated once the fuse is initiated due to human safety concerns. During activities using up to a 20 lb. NEW (bin E6) detonation, the Navy will have four lookouts and two small rigid hull inflatable boats (two lookouts positioned in each of the two boats) monitoring a 1,000-yd (914-m) mitigation zone. In addition, when aircraft are used, the pilot or member of the aircrew will serve as an additional lookout. The Navy will monitor the mitigation zone for 30 minutes before, during, and 30 minutes after the activity to ensure that the area is clear of marine mammals and time-delay firing device events will only be conducted during daylight hours.

Vessel Strike

(1) Naval vessels will maneuver to keep at least 500 yds (457 m) away from any observed whale in the vessel's path and avoid approaching whales head-on. These requirements do not apply if a vessel's safety is threatened, such as when change of course will create an imminent and serious threat to a person, vessel, or aircraft, and to the extent vessels are restricted in their ability to maneuver. Restricted maneuverability includes, but is not limited to, situations when vessels are engaged in dredging, submerged activities, launching and recovering aircraft or landing craft, minesweeping activities, replenishment while underway and towing activities that severely restrict a vessel's ability to deviate course. Vessels will take reasonable steps to alert other vessels in the vicinity of the whale. Given rapid swimming speeds and maneuverability of many dolphin species, naval vessels would maintain normal course and speed on sighting dolphins unless some condition indicated a need for the vessel to maneuver.

(2) If a large whale surfaces within 500 yds (457 m) of a Navy vessel (or if a vessel is within this distance of a large whale for any other reason), the vessel should exercise caution, increase vigilance, and consider slower speed if operationally supportable and does not interfere with safety of navigation until the vessel has moved beyond a 500 yds (457 m) radius of the observed whale, or any subsequently observed whales (whales often travel in pairs within several body lengths of one another (fin/blue) and humpbacks in feeding aggregations).

(3) North Atlantic right whale Dynamic Management Areas (DMAs)—NMFS has established a program whereby temporary zones, called Dynamic Management Areas (DMAs), can be established quickly in locations throughout the species' range when right whales are observed outside of the geographic extend or effected period of Seasonal Management Areas (SMAs). DMAs are established when reliable sightings are obtained (derived primarily from systematic aircraft surveys for marine mammals using trained observers) of three of more right whales in U.S. waters within a 75 nm^2 (138.9 km^2) area, such that right whale density is ≥0.04 right whales/nm^2. Additional (15 nm2) areas are then delineated around the sighting location to account for potential whale movement and are incorporated into a single polygon that encompasses both the sighting location and its surrounding zone. Each DMA is established immediately (i.e., within 24 hours) upon confirmation of right whale sighting locations and automatically set to expire 15 days after the initial date. If whales remain in the area, the DMA may be extended for an additional 15 days. Maritime communities, including the Navy, are notified of the existence of a DMA via: NOAA Weather Radio; U.S. Coast Guard notice to mariners; an email distribution list; postings on the NMFS Office of Protected Resources ship strike Web site and the Northeast Fisheries Science Center's web-based interactive right whale sighting system; and an automatic return message via email is sent to mariners who seek information on whale-sighting locations. Mariners are requested, but not required, to either navigate around DMAs or travel through them at 10 knots or less. If a DMA is created the Navy will consider whether to either navigate around the area or travel through at slow safe speed consistent with mission training and safety of navigation. The Navy will receive notification regarding the creation of a DMA as well as information pertaining to its location, size, and duration through the U.S. Coast Guard's Notice to Mariners.

Cetacean and Sound Mapping

NMFS Office of Protected Resources routinely considers available information about marine mammal habitat use to inform discussions with applicants regarding potential spatio-temporal limitations on their activities that might help effect the least practicable adverse impact on species or stocks and their habitat (e.g., Humpback Whale Cautionary Area in Hawaii). Through the Cetacean and Sound Mapping effort (*www.cetsound.noaa.gov*), NOAA's Cetacean Density and Distribution Mapping Working Group (CetMap) is currently involved in a process to compile available literature and solicit expert review to identify areas and times where species are known to concentrate for specific behaviors (e.g., feeding, breeding/calving, or migration) or be range-limited (e.g., small resident populations). These areas, called Biologically Important Areas (BIAs), are useful tools for planning and impact assessments and are being provided to the public via the CetSound Web site, along with a summary of the supporting information. While these BIAs are useful tools for analysts, any decisions regarding protective measures based on these areas must go through the normal MMPA evaluation process (or any other statutory process that the BIAs are used to inform)—the designation of a BIA does not pre-suppose any specific management decision associated with those areas. Additionally, the BIA process is iterative and the areas will be updated as new information becomes available. Currently, NMFS has some BIAs in Hawaii (which were considered in the Comments and Responses section of the final rule for the Hawaii Southern California Training and Testing (HSTT) Study Area). The BIAs in other regions, such as the Atlantic and West Coast of the continental U.S. are preliminary and are being prepared for submission to a peer-reviewed journal for review. NMFS and the Navy have discussed the draft BIAs, what Navy activities take place in these areas (in the context of what their effects on marine mammals might be or whether additional mitigation is necessary), and what measures could be implemented to reduce impacts in these areas (in the context of their potential to reduce marine mammal impacts and their practicability). As a result of the Navy's Biological Assessment and Operational Assessment, the Navy is extending the boundary of the eastern Gulf of Mexico planning awareness area (an area in which major training exercises are limited) to further protect a resident population of Bryde's whales that has been observed exclusively in that area year-round. As we learn more about marine mammal density, distribution, and habitat use (and the BIAs are updated), NMFS and the Navy will continue to reevaluate appropriate time-area measures through the

Adaptive Management process outlined in these regulations.

Stranding Response Plan

NMFS and the Navy developed Stranding Response Plans for the Study Areas and Range Complexes that make up the AFTT Study Area in 2009 as part of previous incidental take authorizations (ITAs). The Stranding Response Plans specifically intended to outline applicable requirements in the event that a marine mammal stranding is reported in the east coast Range Complexes and AFTT Study Area during a major training exercise. NMFS considers all plausible causes within the course of a stranding investigation and these plans in no way presume that any strandings in a Navy range complex are related to, or caused by, Navy training and testing activities, absent a determination made during investigation. The plans are designed to address mitigation, monitoring, and compliance. The Navy is currently working with NMFS to refine these plans for the new AFTT Study Area and the revised plans will be made available here: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications.* Modifications to the Stranding Response Plan may also be made through the adaptive management process.

Mitigation Conclusions

NMFS has carefully evaluated the Navy's proposed suite of mitigation measures and considered a broad range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable adverse impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: the manner in which, and the degree to which, the successful implementation of the required mitigation measures is expected to reduce the likelihood and/or magnitude of adverse impacts to marine mammal species or stocks and their habitat; the proven or likely efficacy of the measures; and the practicability of the suite of measures for implementation, including consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

In some cases, additional mitigation measures are required beyond those that the applicant proposes. NMFS may consider the practicability of implementing a particular mitigation measure if the best available science indicates that the measure (either alone or in combination with other mitigation measures) has a reasonable likelihood of accomplishing or contributing to the accomplishment of one or more of the goals listed below, which, in turn, would be expected to lessen the likelihood and/or magnitude of adverse impacts on marine mammal species or stocks and their habitat:

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

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.).

Based on our evaluation of the Navy's proposed measures, as well as other measures considered by NMFS or recommended by the public, NMFS has determined that the Navy's proposed mitigation measures (especially when the adaptive management component is taken into consideration (see Adaptive Management, below)), along with the additions detailed in the Mitigation section above, are adequate means of effecting the least practicable adverse impacts on marine mammals 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.

Monitoring

Section 101(a)(5)(A) of the MMPA states that in order to issue an ITA for an activity, 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:

- An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the analyses mentioned below.
- An increase in our understanding of how many marine mammals are likely to be exposed to levels of active sonar (or in-water explosives or other stimuli) that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS.
- An increase in our understanding of how marine mammals respond to active sonar (at specific received levels), in-water 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) through any of the following methods:
  - Behavioral observations in the presence of active sonar compared to observations in the absence of sonar (need to be able to accurately predict received level and report bathymetric conditions, distance from source, and other pertinent information).
  - Physiological measurements in the presence of active sonar compared to observations in the absence of sonar (need to be able to accurately predict received level and report bathymetric conditions, distance from source, and other pertinent information).
  - Pre-planned and thorough investigation of stranding events that occur coincident to naval activities.

○ Distribution and/or abundance comparisons in times or areas with concentrated active sonar versus times or areas without sonar.

• An increased knowledge of the affected species.

• An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

NMFS described an overview of Navy monitoring and research, highlighted recent findings, and the Navy's proposed new approach to monitoring in the proposed rule (78 FR 7050, January 31, 2013; pages 7098–7100). Below is a summary of the Navy's Integrated Comprehensive Monitoring Program (ICMP) and the Navy's Strategic Planning Process for Marine Species Monitoring.

Integrated Comprehensive Monitoring Program (ICMP)—The Navy's ICMP is intended to coordinate monitoring efforts across all regions and to allocate the most appropriate level and type of effort for each range complex based on a set of standardized objectives, and in acknowledgement of regional expertise and resource availability. The ICMP is designed to be flexible, scalable, and adaptable through the adaptive management and strategic planning processes to periodically assess progress and reevaluate objectives. Although the ICMP does not specify actual monitoring field work or projects, it does establish top-level goals that have been developed in coordination with NMFS. As the ICMP is implemented, detailed and specific studies will be developed which support the Navy's top-level monitoring goals. In essence, the ICMP directs that monitoring activities relating to the effects of Navy training and testing activities on marine species should be designed to accomplish one or more of the top-level goals. Monitoring will address the ICMP top-level goals through a collection of specific regional and ocean basin studies based on scientific objectives. Quantitative metrics of monitoring effort (e.g., 20 days of aerial surveys) will not be a specific requirement. The adaptive management process and reporting requirements will serve as the basis for evaluating performance and compliance, primarily considering the quality of the work and results produced, as well as peer review and publications, and public dissemination of information, reports and data. Details of the current ICMP are available here: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications;* or at the Navy's marine species monitoring Web site: *http://www.navymarinespeciesmonitoring.us/.*

Strategic Planning Process for Marine Species Monitoring—The Navy also developed the Strategic Planning Process for Marine Species Monitoring, which establishes the guidelines and processes necessary to develop, evaluate, and fund individual projects based on objective scientific study questions. The process uses an underlying framework designed around top-level goals, a conceptual framework incorporating a progression of knowledge, and in consultation with the Scientific Advisory Group and other regional experts. The Strategic Planning Process for Marine Species Monitoring will be used to set intermediate scientific objectives, identify potential species of interest at a regional scale, and evaluate and select specific monitoring projects to fund or continue supporting for a given fiscal year. This process will also address relative investments to different range complexes based on goals across all range complexes, and monitoring would leverage multiple techniques for data acquisition and analysis whenever possible. The Strategic Planning Process for Marine Species Monitoring is also available on our Web site: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications;* or at the Navy's marine species monitoring Web site: *http://www.navymarinespeciesmonitoring.us/.*

Past and Current Monitoring in the AFTT Study Area

NMFS has received multiple years' worth of annual exercise and monitoring reports addressing active sonar use and explosive detonations within the AFTT Study Area. The data and information contained in these reports have been considered in developing mitigation and monitoring measures for the training and testing activities within the AFTT Study Area. The Navy's annual exercise and monitoring reports may be viewed at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications;* or at the Navy's marine species monitoring Web site: *http://www.navymarinespeciesmonitoring.us/.* NMFS' summary of the Navy's monitoring reports was included in the proposed rule (78 FR 7050, January 31, 2013; pages 7098–7102).

Monitoring for the AFTT Study Area

2014 will be a transitional year for Navy monitoring so that ongoing data collection from the Navy's current east coast rulemakings can be completed. Therefore, monitoring in 2014 will be a combination of previously funded FY–13 ''carry-over'' projects and new FY–14 project starts. A more detailed description of the Navy's planned projects starting in 2014 (and some continuing from previous years) is available on NMFS' Web site (*www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*). The Navy will update the status of its monitoring program and funded projects through their Navy Marine Species Monitoring Web site: *http://www.navymarinespeciesmonitoring.us/.* NMFS will provide one public comment period on the Navy's monitoring program during the 5-year regulations. At this time, the public will have an opportunity (likely in the second year) to comment specifically on the Navy's AFTT monitoring projects and data collection to date, as well as planned projects for the remainder of the regulations.

Through the adaptive management process (including annual meetings), the Navy will coordinate with NMFS and the Marine Mammal Commission (the Commission) to review and provide input for projects that will meet the scientific objectives that are used to guide development of individual monitoring projects. The adaptive management process will continue to serve as the primary venue for both NMFS and the Commission to provide input on the Navy's monitoring program, including ongoing work, future priorities, and potential new projects. The Navy will submit annual monitoring reports to NMFS as part of the AFTT rulemaking and LOA requirements. Each annual report will contain a section describing the adaptive management process and summarize the Navy's anticipated monitoring projects for the next reporting year. Following annual report submission to NMFS, the final rule language mandates a 3-month NMFS review prior to each report being finalized. This will provide ample time for NMFS and the Commission to comment on the next year's planned projects as well as ongoing regional projects or proposed new projects. Comments will be received by the Navy prior to the annual adaptive management meeting to facilitate a meaningful and productive discussion. NMFS and the Commission will also have the opportunity for involvement at monitoring program science review meetings and/or regional Scientific Advisory Group meetings. This will help keep NMFS and the Commission informed and able to understand the scientific considerations and limitations involved with planning and executing various monitoring projects.

Adaptive Management

Although substantial improvements have been made in our understanding of the effects of Navy training and testing activities (e.g., sonar, underwater detonations) on marine mammals, the science in this field is evolving fairly quickly. These circumstances make the inclusion of an adaptive management component both valuable and necessary within the context of 5-year regulations.

The reporting requirements associated with this rule are designed to provide NMFS with monitoring data from the previous year to allow us to consider whether any changes are appropriate. NMFS, the Navy, and the Commission will meet to discuss the monitoring reports, Navy R&D developments, current science, and whether mitigation or monitoring modifications are appropriate. The use of adaptive management allows NMFS to consider new information from different sources to determine (with input from the Navy regarding practicability) on an annual or biennial basis if mitigation or monitoring measures should be modified (including additions or deletions). Mitigation measures could be modified if new data suggests that such modifications would have a reasonable likelihood of reducing adverse effects to marine mammal species and their habitat and if the measures are practicable.

The following are some of the possible sources of applicable data to be considered through the adaptive management process: (1) Results from monitoring, exercise and testing reports, as required by MMPA authorizations; (2) compiled results of Navy funded R&D studies; (3) results from specific stranding investigations; (4) results from general marine mammal and sound research; and (5) any information which reveals that marine mammals may have been taken in a manner, extent, or number not authorized by these regulations or subsequent LOAs.

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 both to compliance as well as ensuring that the most value is obtained from the required monitoring. The proposed rule contains the proposed reporting requirements for the Navy (78 FR 7050, January 31, 2013; page 7102). Since then, the Navy has expanded upon those reports to include specific language for testing activities, which is detailed in the regulatory text at the end of this document. Reports from individual monitoring events, results of analyses, publications, and periodic progress reports for specific monitoring projects will be posted to the Navy's Marine Species Monitoring web portal: *http://www.navymarinespeciesmonitoring.us* and NMFS' Web site: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications.* There are several different reporting requirements that are further detailed in the regulatory text at the end of this document and summarized below.

General Notification of Injured or Dead Marine Mammals

Navy personnel will ensure that NMFS (the appropriate 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 or testing exercise utilizing sonar or underwater explosive detonations. The Navy will provide NMFS with species identification or a 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 photographs or video (if available). The AFTT Stranding Response Plan contains further reporting requirements for specific circumstances (*http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*).

Vessel Strike

Since the proposed rule, NMFS has added the following language to address monitoring and reporting measures specific to vessel strike. Most of this language comes directly from the Stranding Response Plan. This section has also been included in the regulatory text at the end of this document. In the event that a Navy vessel strikes a whale, the Navy shall do the following: Report to NMFS (pursuant to the established Communication Protocol) the:

- Species identification (if known);
- Location (latitude/longitude) of the animal (or location of the strike if the animal has disappeared);
- Whether the animal is alive or dead (or unknown); and
- The time of the strike.

As soon as feasible, the Navy shall report to or provide to NMFS, the:

- Size, length, and description (critical if species is not known) of animal;
- An estimate of the injury status (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared, etc.);
- Description of the behavior of the whale during event, immediately after the strike, and following the strike (until the report is made or the animal is no longer sighted);
- Vessel class/type and operational status;
- Vessel length;
- Vessel speed and heading; and
- To the best extent possible, obtain a photo or video of the struck animal, if the animal is still in view.

Within 2 weeks of the strike, provide NMFS:

- A detailed description of the specific actions of the vessel in the 30-minute timeframe immediately preceding the strike, during the event, and immediately after the strike (e.g., the speed and changes in speed, the direction and changes in direction, other maneuvers, sonar use, etc., if not classified); and
- A narrative description of marine mammal sightings during the event and immediately after, and any information as to sightings prior to the strike, if available.

Use established Navy shipboard procedures to make a camera available to attempt to capture photographs following a ship strike.

NMFS and the Navy will coordinate to determine the services the Navy may provide to assist NMFS with the investigation of the strike. The response and support activities to be provided by the Navy are dependent on resource availability, must be consistent with military security, and must be logistically feasible without compromising Navy personnel safety. Assistance requested and provided may vary based on distance of strike from shore, the nature of the vessel that hit the whale, available nearby Navy resources, or other factors.

Annual Monitoring and Exercise and Testing Reports

As noted above, reports from individual monitoring events, results of analyses, publications, and periodic progress reports for specific monitoring projects will be posted to the Navy's Marine Species Monitoring web portal and NMFS' Web site as they become available. Progress and results from all monitoring activity conducted within the AFTT Study Area, as well as required Major Training Event exercise activity, will be summarized in an annual report.

In the past, each annual report has summarized data for a single year. At

the Navy's suggestion, the annual reports under this final rule will take a cumulative approach in that each report will compare data from that year to all previous years. For example, the third annual report will include data from the third year and compare it to data from the first and second years. This will provide an ongoing cumulative look at the Navy's results and eliminate the need for a comprehensive monitoring and exercise summary report (as included in the proposed rule). A draft of the annual report will be submitted to NMFS for review in April of each year. NMFS will review the report and provide comments to be addressed by the Navy within 3 months.

Ship Shock Trials

The reporting requirements will be developed in conjunction with the individual test-specific mitigation plan for each ship shock trial. This will allow both Navy and NMFS to take into account specific information regarding location, assets, species, and seasonality.

Comments and Responses

On January 31, 2013, NMFS published a proposed rule (78 FR 7050) in response to the Navy's request to take marine mammals incidental to military readiness activities in the AFTT Study Area and solicited comments, information, and suggestions concerning the proposed rule. NMFS received over 900 comment letters from state agencies, environmental non-governmental organizations, the Commission, and interested members of the public. Comments specific to section 101(a)(5)(A) of the MMPA and NMFS' analysis of impacts to marine mammals are summarized, sorted into general topic areas, and addressed below and/or throughout the final rule. Comments specific to the FEIS/OEIS, which NMFS participated in developing as a cooperating agency and adopted, or that were also submitted to the Navy during the DEIS/OEIS public comment period are addressed in Appendix E (Public Participation) of the FEIS/OEIS. Last, some commenters presented technical comments on the general behavioral risk function that are largely identical to those submitted during the comment period for the AFAST proposed rule, the predecessor to the AFTT rule. The behavioral risk function remains unchanged since then, and here we incorporate our responses to those initial technical comments (74 FR 4844, Behavior Harassment Threshold section, pp. 4865–4867). Full copies of the comment letters may be accessed at *http://www.regulations.gov.*

Monitoring and Reporting

Comment 1: The Commission recommended that we require the Navy to use passive and active acoustics to supplement visual monitoring during implementation of mitigation measures for all activities that could cause Level A harassment or mortality. Specifically, the Commission questioned why passive and active acoustic monitoring used during the Navy's Surveillance Towed Array Sensory System Low Frequency Active (SURTASS LFA) activities is not applied here.

Response: The Navy requested Level A take of marine mammals for impulse and non-impulse sources during training and testing based on its acoustic analysis. The Navy also requested take of marine mammals by mortality for impulse sources, unspecified sources (impulse or non-impulse), and vessel strike. While it is impractical for the Navy to conduct passive acoustic monitoring during all training and testing activities, the Navy has engineered the use of passive acoustic detection for monitoring purposes, taking into consideration where the largest impacts could potentially occur, and the effectiveness and practicality of installing or using these devices. The Navy will use passive acoustic monitoring to supplement visual observations during Improved Extended Echo Ranging (IEER) sonobuoy activities, explosive sonobuoys using 0.6–2.5 pound (lb) net explosive weight, torpedo (explosive) testing, and sinking exercises, to detect marine mammal vocalizations. However, it is important to note that passive acoustic detections do not provide range or bearing to detected animals, and therefore cannot provide locations of these animals. Passive acoustic detections will be reported to lookouts to increase vigilance of the visual surveillance.

The active sonar system used by SURTASS LFA is unique to the platforms that use SURTASS LFA. Moreover, this system requires the platforms that carry SURTASS LFA to travel at very slow speeds for the system to be effective. For both of these reasons it is not possible for the Navy to use this system for the platforms analyzed in the AFTT FEIS/OEIS.

NMFS believes that the Navy's suite of mitigation measures (which include mitigation zones that exceed or meet the predicted maximum distance to PTS) will typically ensure that animals will not be exposed to injurious levels of sound. To date, the post-explosive monitoring reports submitted by the Navy for the East Coast Range Complexes and Gulf of Mexico do not show any evidence of injured marine mammals.

Comment 2: The Commission recommended that NMFS require the Navy to submit a proposed monitoring plan for public review and comment prior to issuance of final regulations.

Response: NMFS provided an overview of the Navy's Integrated Comprehensive Monitoring Program (ICMP) in the proposed rule (78 FR 7050, January 31, 2013). While the ICMP does not specify actual monitoring field work or projects, it does establish top-level goals that have been developed by the Navy and NMFS. As explained in the proposed rule, detailed and specific studies will be developed as the ICMP is implemented and funding is allocated.

Since the proposed rule was published, the Navy has provided a more detailed short-term plan for the first year of the rule. 2014 will be a transitional year with ongoing data collection straddling the shift from Phase I (metric-based) to Phase II Compliance Monitoring. Therefore, monitoring in 2014 will be a combination of previously funded FY–13 ''carry-over'' projects from Phase I and new FY–14 project starts under the vision for Phase II monitoring. A more detailed description of the Navy's planned projects starting in 2014 (and some continuing from previous years) are available on NMFS' Web site (*www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*).

Additionally, NMFS will provide one public comment period on the Navy's monitoring program during the 5-year regulations. At this time, the public will have an opportunity (likely in the second year) to comment specifically on the Navy's AFTT monitoring projects and data collection to date, as well as planned projects for the remainder of the regulations. The public will also have the opportunity to review the Navy's monitoring reports, which will be posted and available for download every year from the Navy's marine species monitoring Web site: *http://www.navymarinespeciesmonitoring.us/.* Details of already funded AFTT monitoring projects and new start projects are available through the Navy's marine species monitoring Web site: *http://www.navymarinespeciesmonitoring.us/.* The Navy will update the status of their monitoring projects through the marine species monitoring site, which serves as a public portal for information regarding all aspects of the Navy's monitoring program, including background and guidance documents, access to reports,

and specific information on current monitoring projects.

Through the adaptive management process (including annual meetings), the Navy will coordinate with NMFS and the Commission to review and revise, if required, the list of intermediate scientific objectives that are used to guide development of individual monitoring projects. As described previously in the Monitoring section of this document, NMFS and the Commission will also have the opportunity to attend annual monitoring program science review meetings and/or regional Scientific Advisory Group meetings.

The Navy will continue to submit annual monitoring reports to NMFS, which describe the results of the adaptive management process and summarize the Navy's anticipated monitoring projects for the next reporting year. NMFS will have a 3-month review period to comment on the next year's planned projects, ongoing regional projects, and proposed new project starts. NMFS' comments will be submitted to the Navy prior to the annual adaptive management meeting to facilitate a meaningful and productive discussion between NMFS, the Navy, and the Commission.

Comment 3: One commenter shared concerns about how sequestration will affect the Navy's marine mammal monitoring program and research efforts.

Response: The Navy is required to comply with the terms of the regulations and LOAs regardless of sequestration.

Comment 4: One commenter suggested that Navy lookouts should be dedicated solely to the observation of marine mammals and turtles.

Response: The Navy has lookouts stationed onboard ships whose primary duty is to detect objects in the water, estimate the distance from the ship, and identify them as any number of inanimate or animate objects that are significant to a Navy exercise or as a marine mammal so that the mitigation measure can be implemented. Navy lookouts undergo extensive training to learn these skills and the Navy's Marine Species Awareness Training is used to make them more aware of marine mammal species and behaviors. However, because lookouts must be able to detect and identify multiple objects in the water to ensure the safety of the ship, they are not expected to solely observe for marine mammals and sea turtles.

Comment 5: NRDC recommended that the Navy use all available range assets for marine mammal monitoring.

Response: NMFS has worked with the Navy over the years to help develop the most effective mitigation protocols using the platforms and assets that are available for monitoring. The required mitigation measures in this document represent the maximum level of effort (e.g., numbers of lookouts and passive sonobuoys) that the Navy can commit to observing mitigation zones given the number of personnel that will be involved and the number and type of assets and resources available. The Navy has determined that it is impractical to increase visual and passive acoustic observations for the purpose of mitigation.

The National Defense Authorization Act 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.'' As explained in Chapter 5 of the AFTT FEIS/OEIS, it is impractical for the Navy to increase the level of marine mammal monitoring. The Navy has a limited number of resources (e.g., personnel and other assets) and the monitoring requirements in this rulemaking represent the maximum level of effort that the Navy can commit to marine mammal monitoring.

Mitigation

Comment 6: One commenter believes that using lookouts as the primary strategy for limiting potential impacts from Navy activities is inadequate.

Response: NMFS disagrees. Navy Lookouts are a vital aspect of this strategy for limiting potential impacts from Navy activities. Lookouts are qualified and experienced observers of the marine environment. All Lookouts take part in Marine Species Awareness Training so that they are better prepared to spot marine mammals. Their duties require that they report all objects sighted in the water to the Office of the Deck (OOD) and all disturbances that may be indicative of a threat to the vessel and its crew. Lookouts are on duty at all times, day and night, when a ship or surfaced submarine is moving through the water. Visual detections of marine mammals would be communicated immediately to a watch station for information disseminations and appropriate mitigation action. NMFS has carefully considered Navy's use of Lookouts and determined that in combination with the use of planning awareness areas to minimize impacts in areas of higher concern, the Stranding Response Plans, special measures to minimize impacts to North Atlantic right whales and the other mitigation measures identified, the Navy's mitigation plan will effect the least practicable adverse impacts on marine mammal species or stocks and their habitat.

Comment 7: One commenter asked that the Navy stay away from areas of high marine mammal density during their training and testing.

Response: Avoiding all areas of high marine mammal density for the purpose of mitigation would be impractical with respect to implementation of military readiness activities, would result in unacceptable impacts on readiness, and would increase safety risks to personnel for the following reasons: areas where training and testing activities are scheduled to occur are carefully selected to provide safety and allow realism of events, and the varying environmental conditions of these areas maximize the training realism and testing effectiveness; activity locations inevitably overlap with a wide array of marine mammal habitats, and limiting activities to avoid all of those areas would adversely impact the effectiveness of the training or testing activity, which would result in an unacceptable adverse risk to personnel safety and the ability to achieve mission goals.

However, the Navy has designated several Planning Awareness Areas (PAAs), in which activities are limited, based on areas of high productivity that have been correlated with high concentrations of marine mammals (e.g., persistent oceanographic features such as upwellings associated with the Gulf Stream front where it is deflected off the east coast near the Outer Banks of North Carolina), and areas of steep bathymetric contours that are frequented by deep-diving marine mammals (e.g., beaked whales and sperm whales). As part of the MMPA process and a result of public input, NMFS and the Navy considered additional available information related to known feeding and reproductive areas for certain species, as well as resident populations, and as a result of this process, the Navy has extended the boundary in the eastern Gulf of Mexico PAA to further protect a population of Bryde's whale that has been exclusively observed in that area year-round.

Comment 8: The Commission requested that NMFS require the Navy to cease use of sound sources and not reinitiate them for (1) at least 15 minutes if small odontocetes or pinnipeds enter the mitigation zone and

are not observed to leave; and (2) relevant time periods based on the maximum dive times of mysticetes or large- or medium-sized odontocetes if they enter the mitigation zone and are not observed to leave. Other commenters also suggested that activities should not resume until the animal is observed to exit the mitigation zone or the target has been repositioned more than 366 meters away from the last marine mammal sighting; and that monitoring the mitigation zone for 30 minutes, before, during, and after the activity is insufficient for deep-diving species.

Response: Section 5.3 of the AFTT FEIS/OEIS details the mitigation measures in place for each type of activity. These mitigation measures are also provided in the regulatory text at the end of this document. In summary, depending on the specific activity type and following the shutdown or delay of any acoustic activities, the Navy may resume activities if any one of the following conditions are met: (1) The animal is observed exiting the mitigation zone; (2) the animal is thought to have exited the mitigation zone based on a determination of its course and speed and the relative motion between the animal and the source; (3) the mitigation zone has been clear from any additional sightings for a period of 30 minutes (or 10 minutes for certain types of aircraft); or (4) the intended target location has been repositioned more than 400 yd (366 m) away from the location of the last sighting; (5) the ship has transited more than 140 yd (128 m) (large-caliber gunnery exercises) or 2,000 yd (1.8 km) (active sonar) beyond the location of the last sighting; or (6) dolphins are bow riding and there are no other marine mammal sightings within the mitigation zone.

The Commission expressed concern regarding the Navy's ability to determine the relative position of an animal. Understanding relative motion is a critical skill for Navy personnel, who receive training in target and contact tracking, target and contact interception, multi-ship maneuvering drills, etc. While an animal may occasionally act unpredictably, it is more likely that the animal will be seen leaving the mitigation zone or Navy personnel will be able to track the animal's location.

With regard to maximum dive times, NMFS disagrees that the clearance time should be lengthened for deep-diving species for the following reasons: (1) Just because an animal can dive for longer than 30 minutes does not mean that they always do, so a longer delay would only potentially add value in instances when animals had remained underwater for more than 30 minutes; (2) The animal would need to have stayed in the immediate vicinity of the sound source for more than 30 minutes. Considering the maximum area that both the vessel and the animal could cover in an hour, it is improbable that this would randomly occur. For example, during a 1-hour dive by a beaked whale or sperm whale, a mid-frequency active sonar ship moving at a nominal speed of 10 knots could transit up to 10 nautical miles from its original location. Additionally, the times when marine mammals are diving deep (i.e., the times when they are under the water for longer periods of time) are the same times that a large portion of their motion is in the vertical direction, which means that they are far less likely to keep pace with a horizontally moving vessel. 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 acoustic source; (3) Visual observers are not always able to differentiate species to the degree that would be necessary to implement this measure; and (4) Increasing clearance time is not operationally feasible for Navy activities that require aircraft surveillance because of fuel limitations. NMFS does not believe that increasing the clearance time based on maximum dive times will add to the protection of marine mammals in the vast majority of cases, and therefore, we have not required it.

Comment 9: The Commission recommended that NMFS require the Navy to either (1) adjust the size of the mitigation zone for mine neutralization activities using the average swim speed of the fastest swimming marine mammal occurring in the area where time-delay firing devices will be used and ensure that the zone is adequately monitored; or (2) authorize all model-estimated takes for Level A harassment and mortality for mine neutralization activities in which divers use time-delay firing devices.

Response: The Navy proposed a mitigation zone of 1,000 yards for all charge sizes (5, 10, and 20 lb) and for a maximum time-delay of 10 minutes. This is the maximum distance that lookouts in two small boats can realistically monitor. The use of more than two boats for monitoring during time-delay firing device events is impractical due to the Navy's limited personnel resources. The Navy's proposed mitigation zone covers the potential for mortality up to a 9-minute time delay (but not 10-minute). The proposed mitigation zone also covers the potential for injury up to a 5-minute time-delay for 10 and 20 lb charges, and a 6-minute time-delay for 5 lb charges, but not for time delays greater than 6 minutes for any charge size. As a result of the mitigation zone restriction and the Commission's recommendation, and based on the Navy's modeling results and mitigation effectiveness, the Navy has requested 6 mortalities and 48 Level A injuries for any training or testing event (not just underwater detonations), in case of an unavoidable incident.

Comment 10: Several commenters suggested that the proposed mitigation measures were inadequate because observers do not always detect marine mammals and cannot see as far as sound travels.

Response: It is the duty of Navy lookouts to detect marine mammals in the water and estimate the distance from the ship so that the mitigation measures (shut-down, power-down, etc.) can be implemented. Navy Lookouts undergo extensive training to learn these skills and the Marine Species Awareness Training is used to augment this general training with information specific to marine mammals. However, the mitigation measures the Navy is implementing are designed primarily to avoid and minimize the likelihood of mortality and injury, which are associated with acoustic exposures above a certain level, and therefore it is not necessary to see as far as sound travels to successfully implement the mitigation measures.

Comment 11: Several commenters requested that the proposed activities be limited to periods of good visibility, avoid biologically sensitive areas, establish meaningful buffer zones, and improve and expand mitigation methods.

Response: The Navy explained in Chapter 5 of the AFTT FEIS/OEIS that avoiding or reducing active sonar at night and during periods of low visibility for the purpose of mitigation would result in an unacceptable impact on readiness. In summary, the Navy must train in a variety of conditions (including at night and in low-visibility) to adequately train for military operations. However, certain activities, such as those involving explosives greater than 20 lb net explosive weight, are currently conducted during daylight hours only.

Planning Awareness Areas (PAAs) and Mitigation Areas for North Atlantic right whales are already in place for the Navy's training and testing activities.

Several PAAs have been designated by the Navy based on locations of high productivity correlated with high concentrations of marine mammals (such as persistent oceanographic features like upwellings associated with the Gulf Stream front where it is deflected off the east coast near the Outer Banks), and areas of steep bathymetric contours that are frequented by deep diving marine mammals such as beaked whales and sperm whales. In addition, the Cetacean Density and Distribution Mapping Working Group is currently involved in a process to compile available literature and solicit expert review to identify areas and times where species are known to concentrate for specific behaviors or be range-limited. These areas, called Biologically Important Areas (BIAs) are useful for planning and impact assessment. As a result of the Navy's Biological Assessment and Operational Assessment of potential mitigation measures, including draft BIAs, the Navy recommends extending the boundary of the eastern Gulf of Mexico planning awareness area to further protect a population of Bryde's whale that has been exclusively observed in that area year-round.

The Navy developed mitigation zones to avoid or reduce the potential for onset of the lowest level of injury, PTS, out to the predicted maximum range. Mitigating to the predicted maximum range to PTS also mitigates to the predicted maximum range to onset mortality (1 percent mortality), onset slight lung injury, and onset slight gastrointestinal tract injury, since the maximum range to effects for these criteria are shorter than for PTS. For low-frequency and hull-mounted mid-frequency active sonar, the Navy will implement a 6 dB power down at 1,000 yards (914 m), a 4 dB power down at 500 yards (457 m), and shutdown at 200 yards (183 m). Both powerdown criteria exceed the predicted average and maximum ranges to PTS. NMFS believes that these mitigation zone distances will help avoid the potential for onset of PTS in marine mammals and reduce the potential for TTS.

Comment 12: One commenter states that the Navy should not use active sonar and only use passive sonar. In addition, the commenter believes that testing should be conducted in another water environment such as a pool, river, lake, stream, or estuary.

Response: As stated in the Navy's AFTT FEIS/OEIS, the Navy uses sonar systems and other acoustic sensors in support of a variety of mission requirements. Primary uses include detection of and defense against submarines (anti-submarine warfare) and mines (mine warfare); safe navigation and effective communications; and oceanographic surveys. Active sonar emits sound waves that travel through the water, reflect off objects, and return to the receiver. Passive sonar uses listening equipment, such as an underwater microphone (hydrophone) and receiving sensors on ships, submarine, aircraft, and autonomous vehicles, to pick up underwater sounds. Although passive sonar can indicate the presence, character, and direction of ships and submarines, it has become increasingly ineffective at detecting modern, quieter submarines. Therefore, Navy training and testing activities must include active sonar in order to ensure safety of ships and crew and meet its statutory mission.

With respect to training in other water environments, the Navy indicated in its AFTT FEIS/OEIS that the ranges used for training and testing have evolved over decades because these geographic areas allow for the entire spectrum of training and testing to occur. In addition, no other locations match the unique attributes found in the AFTT Study Area, and no other potential locations where land ranges, OPAREAs, undersea terrain and ranges, testing ranges, and military airspace combine to provide the venues necessary for the training and testing realism and effectiveness required to train and certify naval forces.

Comment 13: Several commenters recommended that the Navy use more than one lookout during all training and testing activities.

Response: The Navy will have more than one lookout for several higher risk training and testing activities or where the ensonified area is larger, such as while using low-frequency and hull-mounted mid-frequency active sonar, mine countermeasure and neutralization activities, sinking exercises, and ship shock trials. For the reasons stated below, the Navy cannot use more than one lookout for all training and testing activities. However, a minimum of one lookout would always be required. The National Defense Authorization Act 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.'' As explained in Chapter 5 of the AFTT FEIS/OEIS, it is impractical for the Navy to increase visual observations for the purpose of mitigation beyond the amounts that have already been established in coordination with NMFS. The Navy has a limited number of resources (e.g., personnel and other assets) and the mitigation requirements in this rulemaking represent the maximum level of effort that the Navy can commit to observing mitigation zones. Also, the use of additional lookouts in association with lower risk activities with smaller ensonified areas would be not be expected to provide as much protective value as is provided for the activities mentioned above.

Comment 14: Several commenters suggested that the Navy limit their activities to periods of good visibility. More specifically, NRDC suggested that all weapons firing in missile, bombing, and sinking exercises involving detonations exceeding 20 lb. net explosive weight take place during the period 1 hour after sunrise to 30 minutes before sunset.

Response: The Navy explained in Chapter 5 of the AFTT FEIS/OEIS that avoiding or reducing active sonar at night and during periods of low visibility for the purpose of mitigation would result in an unacceptable impact on readiness. In summary, the Navy must train and test in a variety of conditions (including at night and in low-visibility) to adequately train for military operations and ensure that systems and equipment operate as intended. However, certain activities, such as those involving explosives greater than 20 lb net explosive weight, are currently conducted during daylight hours only. The Navy does not anticipate impacts to the training or testing programs, as long as training or testing requirements do not change; however, the Navy needs to retain the ability to conduct these activities at night if emergent requirements dictate the need for this capability.

The Navy will use passive acoustic monitoring to supplement visual observations during Improved Extended Echo Ranging (IEER) sonobuoy activities, explosive sonouboys using 0.6–2.5 pound net explosive weight, torpedo (explosive) testing, and sinking exercises, to detect marine mammal vocalizations. However, it is important to note that passive acoustic detections do not provide range or bearing to detected animals, and therefore cannot provide locations of these animals. Passive acoustic detections will be reported to lookouts to increase vigilance of the visual surveillance.

Comment 15: One commenter suggested that Navy training and testing activities could be significantly reduced

while still maintaining military readiness.

Response: The Navy has identified the level of training and testing requirements that are necessary to meet its legally mandated requirements. NMFS' must decide whether to authorize the take of marine mammals incidental to an applicant's proposed action based on the factors contained in the MMPA; NMFS does not permit or authorize the underlying action itself. In this case, NMFS has determined that the Navy's training and testing activities will have a negligible impact on the affected species or stocks and has met all other statutory requirements, therefore, we plan to issue the requested MMPA authorization.

Comment 16: NRDC and other commenters recommended an expansion of the Navy's mitigation zones during the use of MFAS to reflect international best practice (4 km) or the standard prescribed by the California Coastal Commission (2 km).

Response: The Navy developed mitigation zones to avoid or reduce the potential for onset of the lowest level of injury, PTS, out to the predicted maximum range. For low-frequency and hull-mounted mid-frequency active sonar, the Navy will implement a 6 dB power down at 1,000 yards (914 m), a 4 dB power down at 500 yards (457 m), and shutdown at 200 yards (183 m). Both powerdown criteria exceed the predicted average and maximum ranges to PTS. NMFS believes that these mitigation zone distances will help avoid the potential for onset of PTS in marine mammals and reduce the potential for TTS. These shutdown zones, combined with other mitigation measures, are expected to effect the least practicable adverse impact on marine mammal species or stocks and their habitat.

Furthermore, the Navy developed mitigation zones represent the maximum area the Navy can observe based on the platform of observation, number of personnel that will be involved, and the number and types of assets and resources available. Increasing the size of observed mitigation zones for the purposes of mitigation would be impractical with regard to implementation of military readiness activities and result in an unacceptable impact on readiness.

Comment 17: NRDC recommended that the Navy use sonar and other active acoustic sources at the lowest practicable source level.

Response: The Navy utilizes sonar and other active acoustic sources to support a variety of missions. Primary uses of sonar include detection of and defense against submarines (anti-submarine warfare) and mines (mine warfare); safe navigation and effective communications; and oceanographic surveys. The source levels must be adequate to perform these tasks, but mitigation measures (e.g., powerdown and shutdown) will be implemented if marine mammals are within or approaching established zones. The Navy will submit annual exercise and testing reports to NMFS that summarize exercise activities related to their activities. These reports will be made available to the public via NMFS' Web site and the U.S. Navy Marine Species Monitoring web portal.

Comment 18: NRDC suggested that the Navy delay or relocate activities when beaked whales are detected through passive acoustic monitoring, even if potentially occurring beyond the established mitigation zone.

Response: This recommendation is impractical for the Navy because operators of passive acoustic systems may not be able to identify whether a vocalization is from a beaked whale. However, all passive acoustic detections will be reported to lookouts to increase vigilance of the visual surveillance.

Comment 19: NRDC suggested that the Navy use gliders or other platforms for pre-activity monitoring to avoid significant aggregations of marine mammals and delay or relocate activities when significant aggregations of marine mammals are detected within the vicinity of an exercise.

Response: The development of passive acoustic detectors on gliders and other platforms is still in the research and development stages under funding from the Office of Naval Research and the Navy's new Living Marine Resources programs. While promising, many of the various technologies are still being tested and not ready for transition to compliance monitoring where a higher degree of performance is needed. Gliders, even if able to report in real-time, or even delayed near real-time, would only be able to document the presence of marine mammals, not the marine mammal distance from the glider or individual animal movement. In many places Navy activity occurs there are almost near constant small odontocete passive acoustic detections. Finally, gliders would only provide an indication that animals are in the area, but these same animals could easily move substantial distances over the course of just a few hours. In some cases, use of gliders in and around where Navy submarines also operate is an underwater safety hazard to the submarine and to the glider. Gliders and other passive acoustic platforms, therefore, are more appropriate for broad area searches within Navy ranges to document marine mammal seasonal occurrence, but are not practical as a mitigation tool.

The Navy will implement mitigation measures for all marine mammals, regardless of species, if they approach or enter a mitigation zone, which were calculated to help avoid the potential for onset of PTS and reduce the potential for TTS. Additionally, the Navy has already identified and limited activity in the PAAs, which were developed based on areas of high productivity correlated with high concentrations of marine mammals (such as persistent oceanographic features like upwellings associated with the Gulf Stream front where it is deflected off the east coast near the Outer Banks), and areas of steep bathymetric contours that are frequented by deep diving marine mammals such as beaked whales and sperm whales.

Comment 20: NRDC suggested that the Navy use simulated geography and planning of ship tracks to reduce or eliminate chokepoint exercises in near-coastal environments, particularly within canyons and channels or other important habitat. Similarly, NRDC suggested the use of dedicated aerial monitors during chokepoint exercises, major exercises, and near-coastal exercises.

Response: For decades, the Navy has been using simulated electronic depictions of land in some of its at-sea exercises. However, the types of exercises the commenter refers to are critical to realistic and effective training due to the unique sound propagation characteristics and they cannot be replicated by simulated geography. The Navy will implement mitigation for all training and testing activities to minimize any potential effects.

Specific aerial monitoring is not typically feasible given the limited duration of typical monitoring flights (less than 4 hours). In addition, there are significant flight safety considerations and airspace restrictions during major exercises when larger groups of military aircraft are present in high numbers at various altitudes.

It is important to note that the Navy does have a particular set of monitoring measures (intended to help reduce the chance of a stranding) that would be applied if circumstances are thought to make a stranding more likely (e.g., steep bathymetry, multiple vessels in a single area over an extended period of time, constricted channels or embayments). However, there are no areas with these

features included in the AFTT Study Area.

Comment 21: NRDC stated that the Navy did not account for reverberation in its modeling and also suggested the use of additional powerdowns when significant surface ducting conditions coincide with other conditions that elevate risk (such as during exercises involving the use of multiple systems or in beaked whale habitat).

Response: The Navy's propagation model used for all non-impulsive modeling accommodates surface and bottom boundary interactions (including reverberation), but does not account for side reflections that would be a factor in a highly reverberant environment, such as a depression or canyon, or in a man-made structure, such as a dredged harbor. The details of the Navy's propagation model are provided in a technical report (''Determination of acoustic effects on marine mammals and sea turtles for the Atlantic Training and Testing EIS/OEIS,'' *aftteis.com*).

Based on the lessons learned from five beaked whale stranding events, all of which took place outside of the AFTT Study Area, and occurred over approximately a decade, exposure of beaked whales to mid-frequency active 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 features are not present on the Atlantic Coast of the U.S. or in the Gulf of Mexico in the aggregate, scientific uncertainty exists regarding what other factors, or combination of factors, may contribute to beaked whale strandings.

To minimize risk to beaked whales, during exercise planning, several conditions will be considered: (1) Areas of at least 1000 m depth near a shoreline where there is rapid change in bathymetry on the order of 1000–6000 m occurring across a relatively short horizontal distance (e.g., 5 nm); (2) cases for which multiple ships or submarines (≥3) are operating active sonar in the same area over extended periods of time (≥6 hours) in close proximity (≤10 nm apart); (3) an area surrounded by land masses, separated by less than 35 nm and at least 10 nm in length, or an embayment, wherein operations involving multiple ships/subs (≥3) employing active sonar near land may produce sound directed toward the channel or embayment that may cut off the lines of egress for marine mammals; and (4) though not as dominant a condition as bathymetric features, the historical presence of a strong surface duct (i.e., mixed layer of constant water temperature extending from the sea surface to 100 or more feet).

If a major exercise must occur in an area where the above conditions exist in the aggregate, these conditions must be fully analyzed in environmental planning documentation. The Navy will increase vigilance by undertaking the following additional protective measure: a dedicated aircraft (Navy asset or contracted aircraft) will undertake reconnaissance of the embayment or channel ahead of the exercise participants to detect marine mammals that may be in the area exposed to active sonar. Where practical, the advance survey should occur within about 2 hours prior to sonar use and periodic surveillance should continue for the duration of the exercise. Any unusual conditions (e.g., presence of marine mammals, groups of species milling out of habitat, and any stranded animals) shall be reported to the Officer in Tactical Command, who should give consideration to delaying, suspending, or altering the activity. All mitigation zone power down requirements described in the Mitigation section will apply. Finally, the post-exercise report must include specific reference to any event conducted in areas where the above conditions exist, with exact location and time/duration of the event and noting results of surveys conducted.

Comment 22: NRDC suggested the suspension or postponement of chokepoint exercises during surface ducting conditions and scheduling of such exercises during daylight hours.

Response: See responses to Comments 14, 20, 21, and 34.

Comment 23: NRDC suggested the use of aerial surveys and ship-based surveys before, during, and after major exercises.

Response: As proposed, and detailed in the AFTT FEIS/OEIS, the Navy will implement pre-exercise aerial observation as a mitigation measure for Improved Extended Echo Ranging (IEER) sonobuoys and explosive buoys using 0.6–2.5 pound net explosive weight, mine countermeasure and neutralization activities using positive control firing devices involving explosives in bin E11 (501–650 pound net explosive weight), and sinking exercises. Aerial monitoring will continue throughout the duration of these exercises. This amount of monitoring represents the maximum level of effort that the Navy can commit to observing mitigation zones given the number of personnel and assets available. Surveys before, during, and after major exercises would require an inordinate amount of resources that are not available and would have a significant impact on readiness.

In addition to the monitoring required to implement mitigation, the Navy is also committed to a robust marine mammal monitoring program designed to answer specific questions about the effects of the Navy's activities on marine mammals. The Navy uses visual surveys (by trained protected species observers; from aircraft and vessels), passive acoustic monitoring devices, and tagging as some of the methods to best detect and evaluate any effects. See the Navy's monitoring reports at *http://www.navymarinespeciesmonitoring.us/*.

Comment 24: NRDC suggested the use of NMFS-certified observers for marine mammal detection and several commenters requested further information on the Navy's lookout effectiveness study. More specifically, NRDC suggested that the Navy complete a lookout effectiveness study comparing the abilities of Navy vessel-based lookouts and third-party protected species observers. If Navy lookouts are significantly less likely to detect marine mammals, NRDC recommends the use of NMFS-certified lookouts or other monitoring enhancements.

Response: The Navy has determined that the use of third-party observers (e.g., NMFS-certified protected species observers) in air or on surface platforms in addition to existing Navy lookouts for the purposes of mitigation is impractical for the following reasons: the use of third-party observers would compromise security for some activities involving active sonar due to the requirement to provide advance notification of specific times and locations of Navy platforms; reliance on the availability of third-party personnel could impact training and testing flexibility; the presence of additional aircraft in the vicinity of naval activities would raise safety concerns; and there is limited space aboard Navy vessels. Furthermore, Navy personnel are extensively trained in spotting items on or near the water surface and receive more hours of training than many third-party personnel.

The Navy undertakes monitoring of marine mammals during training and testing activities and has mitigation procedures designed to minimize risk to these animals. One key component of this monitoring and mitigation is the shipboard lookouts (also known as watchstanders), who are part of the standard operating procedure that ships use to detect objects (including marine mammals) within a specific area around the ship during events. The lookouts are an element of the Navy's monitoring plan, as required by NMFS and

specified in the LOAs. The goal is to detect marine mammals entering ranges of 200, 500, and 1,000 yd (183, 457, and 914 m) around the vessel, which correspond to distances at which various mitigation actions should be performed. In addition to the lookouts, officers on the bridge search visually and sonar operators listen for marine mammal vocalizations. All of these observers together are referred to as the observation team.

In 2010, the Navy initiated a study designed to evaluate the effectiveness of the Navy lookout team. The University of St. Andrews, Scotland, under contract to the Navy, developed an initial data collection protocol for use during the study. Between 2010 and 2012, trained Navy marine mammal observers collected data during nine field trials as part of a ''proof of concept'' phase. The goal of the proof of concept phase was to develop a statistically valid protocol for quantitatively analyzing the effectiveness of lookouts during Navy training exercises. Field trials were conducted in the HRC, SOCAL Range Complex, and Jacksonville Range Complex onboard one frigate, one cruiser, and seven destroyers. Preliminary analysis of the proof of concept data is ongoing. The Navy is also working to finalize the data collection process for use during the next phase of the study. While data was collected as part of this proof of concept phase, those data are not fairly comparable because protocols were being changed and assessed, nor are those data statistically significant. Therefore, it is improper to use these data to draw any conclusions on the effectiveness of Navy lookouts at this time.

In addition, given the distance from shore and especially the dynamic and moving nature of major training events (MTEs) where sonar platforms can be widely dispersed and then move on to another area, aerial or ship-based civilian monitoring concurrent to MTEs would not be logistically practical or safe. Before and after surveys would only duplicate similar marine mammal sightings that have already been conducted under the previous Navy rulemakings. During the period from 2009 to 2012, the Navy has visually surveyed a great expanse of ocean within the AFAST Study Area and Gulf of Mexico Range Complex with marine mammal sightings described in annual monitoring reports as well as posted electronically on public online data portals. While contributing to the body of science on marine mammal occurrence, these broad area surveys are less informative for monitoring of Navy impacts to marine mammals. The Navy's revised monitoring plan consists of more focused objective-oriented studies to address both species-specific occurrence and determine impact or lack of impact from training and testing activities.

Comment 25: NRDC recommended that the Navy comply with underwater detonation and gunnery exercise mitigation measures as set forth in NMFS' final rule for the Southern California (SOCAL) Range Complex.

Response: The mitigation measures for underwater detonation and gunnery exercises in NMFS' final rule for the SOCAL Range Complex have been carried over to AFTT and HSTT (i.e., mitigation zones around the intended target, monitoring before and during the exercise, avoidance of sighted marine mammals). There have been some slight modifications to the time-delay firing device (TDFD) mitigation to account for resource limitations in the number of available boats and lookouts.

Comment 26: NRDC recommended the use of dedicated aerial monitoring for all Navy explosive activities using time-delay firing devices and/or all activities involving explosives greater than 20 lb. net explosive weight.

Response: Time-delay firing device events can occur over several hours and the exact detonation time is dependent on multiple variables including, but not limited to, weather, background traffic, training requirements, delays for mitigation, etc., that make it impractical and unsafe to have aircraft surveys. Time-delay firing device events also typically occur near commercial and military airspace that would pose a serious risk to the survey and non-survey aircraft.

Mitigation during explosive events (greater than 20 lb. net explosive weight) already includes the use of available aircraft for mitigation monitoring. However, these activities can occur offshore and over several hours duration, making a dedicated aerial survey platform unsafe and impractical. The Navy has mitigation zones in place designed to minimize potential effects from all explosive activities.

Comment 27: NRDC suggested avoidance and reduction in the use of time-delay firing devices in favor of explosives with positive controls.

Response: The Navy has explained their use of time-delay firing devices in previous documents (LOA application for the Silver Strand Training Complex, LOA application for the Hawaii Range Complex, the VACAPES LOA renewal, and the AFTT FEIS/OEIS). The Navy relies on both time-delay and positive control to initiate underwater detonations, depending on the training event and objectives. The Navy has cited time-delay firing devices as the simplest, safest, least expensive, most operationally acceptable method of initiating an underwater detonation. They are preferred due to their light weight, low magnetic signature, and reduced risk of accidental detonation from nearby radios or other electronics. Time-delay firing devices allow sufficient time for personnel to swim outside of the detonation plume radius and human safety buffer zone after the timer is set. The Navy considers it critical that personnel qualify annually with necessary time-delay certification, maintain proficiency, and train to face real-world scenarios that require the use of time-delay firing devices. However, the Navy does strive to use positive control detonation whenever feasible depending on the training need. Within the SSTC portion of HSTT for instance, during the last year of the 86 completed underwater detonations with charge weights between 10–20 lb net explosive weight, only two TDFDs were used; the remaining 84 detonations used positive control.

Time-delay firing devices raised concern in 2011, when three or four long-beaked common dolphins were killed in an explosion during an underwater detonation training event. About 5 minutes remained on a time-delay fuse when a pod of long-beaked common dolphins was observed, but attempts to guide the dolphins away from the area were unsuccessful. Following the event, the Navy worked with NMFS to develop a more robust monitoring and mitigation plan to ensure that marine mammal mortality and injury would not occur during activities that involve time-delay firing devices. NMFS incorporated additional mitigation and monitoring measures into the appropriate authorizations. Those additions are being carried over to the AFTT rule, with some modifications to the mitigation zone and number of observers due to the impracticality of the initial changes. As detailed in the proposed rule, NMFS believes that the Navy's modifications will still reduce the potential for injury and mortality because (1) the mitigation zone exceeds the predicted ranges to TTS and PTS; (2) the number of lookouts for a 1,000-yd (915-m) mitigation zone would not change; (3) the maximum net explosive weight would decrease; (4) monitoring 30 minutes before, during, and 30 minutes after the activity would still take place;

and (5) time-delay firing device activities are only conducted during daylight hours.

Comment 28: NRDC suggested that the Navy should evaluate before each major exercise whether reductions in sonar are possible, given the readiness status of the strike groups involved.

Response: The Navy only uses active sonar for validated training requirements, so this type of pre-exercise evaluation is unnecessary.

Comment 29: NRDC recommended that the Navy establish a plan and timetable for maximizing synthetic training in order to reduce the use of active sonar training.

Response: As described in section 2.5.1.3 of the AFTT FEIS/OEIS, the Navy currently uses computer simulation for training and testing whenever possible. Computer simulation can provide familiarity and complement live training; however, it cannot provide the fidelity and level of training necessary to prepare naval forces for deployment.

The Navy is required to provide a ready and capable force. In doing so, the Navy must operationally test major platforms, systems, and components of these platforms and systems in realistic combat conditions before full-scale production can occur. Substituting simulation for live training and testing fails to meet the Navy's statutory requirement to properly prepare forces for National defense.

Comment 30: NRDC recommended that specific mitigation requirements be prescribed for individual classes (or sub-classes) of training and testing activities in order to maximize mitigation given varying sets of operational needs.

Response: NMFS has already worked with the Navy to develop mitigation by activity type to reduce potential impacts on marine mammals. The regulatory text of this document details the different types of mitigation required for different activities.

Comment 31: NRDC recommended that the Navy submit timely, regular reports to NMFS, state coastal management authorities, and the public to describe and verify use of mitigation measures during training and testing activities.

Response: The Navy will be required to submit annual reports and the unclassified portions of these reports will be made available to the public through NMFS' Web site. The reports will include a description of the mitigation measures implemented during major training exercises and will also include an evaluation of the effectiveness of any mitigation measure implemented.

Comment 32: Several commenters recommended additional mitigation, including exclusion zones and time-area closures, and suggested that NMFS did not provide any additional mitigation to the Navy's proposed measures in order to reduce impacts on marine mammals.

Response: Exclusion zones (termed ''mitigation zones'' in the proposed rule and this document) are already in place for the Navy's training and testing activities. Training and testing activities require continuous access to large areas consisting potentially of thousands of square miles of ocean and air space to provide naval personnel the ability to train with and develop competence and confidence in their capabilities and their entire suite of weapons and sensors. Exercises may change mid-stream based on evaluators' assessment of performance and other conditions including weather or mechanical issues. These preclude use of a time-area closure scheme for access to water space.

NMFS has been heavily involved in developing the Navy's suite of mitigation measures since 2007. Many of the Navy's proposed mitigation measures were a result of NMFS' input over the past 5 years. It is also important to note that the NDAA of 2004 amended the MMPA to require the consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the ''military readiness activity'' when determining the ''least practicable adverse impact.'' Mitigation measures that the Navy considered, but could not implement, are included in the FEIS/OEIS.

Finally, NMFS did require additional measures beyond those initially proposed by the Navy in its application, including both the expansion of the Gulf of Mexico PAA to further protect the resident population of Bryde's whales as well as the 500-yd mitigation zone for whales around all vessels.

Comment 33: Several commenters suggested that the Navy's activities should be moved to pelagic sea depths, away from continental shelves and islands to reduce impacts on marine mammals.

Response: As stated in the AFTT FEIS/OEIS, the Navy has eliminated from consideration alternative training and testing locations because there are no other potential locations where land ranges, OPAREAs, undersea terrain and ranges, testing ranges, and military airspace combine to provide the venues necessary for the training and testing realism and effectiveness required to train and certify naval forces ready for combat operations. Training and testing in shallow water is an essential component to maintaining military readiness. Sound propagates differently in shallow water and operators must learn to train in this environment. Additionally, submarines have become quieter through the use of improved technology and have learned to hide in the higher ambient noise levels of the shallow coastal waters. In real world events, it is likely that sailors would be working in, and therefore must train in, and use systems that have been tested in, these types of environments.

However, the Navy has already reduced impacts in shallow areas by limiting activities in PAAs (as described elsewhere), and the ESA and MMPA permitting processes have resulted in additional mitigation measures, including geographic constraints within the AFTT study area to further protect a resident population of Bryde's whale in the Gulf of Mexico. In addition, following the implementation of the rule and issuance of LOAs, the adaptive management process will also provide a mechanism for considering if modifications to mitigation measures are necessary in the future.

Comment 34: NRDC recommended that the Navy avoid or reduce their activities during months with historically significant surface ducting conditions.

Response: The Navy's activities must be conducted during all months and in a variety of conditions in order for the Navy to meet its mission. Training schedules are driven by deployment requirements, which are established by the Department of Defense and the President. These schedules are dynamic based on real world events, ship availability, and numerous other factors that prevent the Navy from being confined to certain months. Similarly, Navy testing schedules are driven by Fleet maintenance, repair, and modernization needs; and the delivery of Navy ships, aircraft, and systems to support these training and deployment requirement, and cannot be confined to certain months. Therefore, the Navy's MMPA permit must support year round training and cannot be reduced during certain months.

Comment 35: NRDC recommended that the Navy delay activities or implement powerdowns during significant surface ducting conditions.

Response: Avoiding or reducing active sonar during strong surface ducts for the purpose of mitigation would increase safety risks to personnel, be impractical with regard to implementation of military readiness activities, and result in unacceptable

impacts on readiness for the following reasons: The Navy must train in the same manner as it will fight. Anti-submarine warfare can require a significant amount of time to develop the ''tactical picture,'' or an understanding of the battle space (e.g., area searched or unsearched, identifying false contacts, and understanding the water conditions). Training in surface ducting conditions is a critical component to military readiness because sonar operators need to learn how sonar transmissions are altered due to surface ducting, how submarines may take advantage of them, and how to operate sonar effectively in this environment. Furthermore, avoiding surface ducting would be impractical to implement because ocean conditions contributing to surface ducting change frequently, and surface ducts can be of varying duration. Surface ducting can also lack uniformity and may or may not extend over a large geographic area, making it difficult to determine where to reduce power and for what periods.

Comment 36: NRDC recommended that the Navy plan their ship tracks to avoid embayments and provide escape routes for marine mammals.

Response: As noted in the response to Comment 35 above, the Navy does have a particular set of monitoring measures (intended to help reduce the chance of a stranding) that would be applied if circumstances are thought to make a stranding more likely (e.g., steep bathymetry, constricted channels, etc.). However, there are no areas with these features in aggregate included in the AFTT Study Area.

Comment 37: NRDC recommended that the Navy be required to implement mitigation prescribed by state regulators, by the courts, by other navies or research centers, or from past Navy actions.

Response: NMFS and the Navy have worked together on developing a comprehensive suite of mitigation measures to reduce the impacts from Navy training and testing activities on marine mammal species or stocks and their habitat. During the process of developing mitigation measures, NMFS and the Navy considered all potentially applicable mitigation measures. NMFS has determined that the Navy's proposed mitigation measures, along with the Planning Awareness Areas, Stranding Response Plan, and Adaptive Management 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 Conclusions section of the proposed rule (78 FR 7050, January 31, 2013; page 7098).

Acoustic Thresholds

Comment 38: The Commission recommended that NMFS require the Navy to adjust all acoustic and explosive thresholds for low-, mid-, and high-frequency cetaceans by the appropriate amplitude factor (e.g., 16.5 or 19.4 dB), if the Type II weighting functions from Figure 6 of Finneran and Jenkins (2012) are to be used.

Response: The acoustic and explosive thresholds were adjusted based on weighting the exposures from the original research from which the thresholds were derived with the Type II weighing functions. The weighted threshold is not derived by a simple amplitude shift.

The high-frequency cetacean onset TTS threshold is based on the onset-TTS threshold derived from data in Lucke *et al.* (2009) for impulsive exposures. This threshold was subsequently adjusted in Finneran and Jenkins (2012) to reflect Type II high-frequency cetacean weighting. Therefore, a simple 19.4 dB adjustment to the thresholds presented in Southall *et al.* (2007) is not appropriate.

At the time the acoustic criteria and thresholds were developed, no direct measurements of TTS due to non-impulsive sound exposures were available for any high-frequency cetacean; therefore, the relationship between onset-TTS sound exposure level (SEL)-based thresholds (Type II weighted) for mid-frequency cetaceans exposed to impulsive and non-impulsive sounds (beluga data) was used to derive the onset-TTS threshold for high-frequency cetaceans exposed to non-impulsive sounds (6-dB difference). The derived high-frequency cetacean non-impulsive onset TTS threshold is consistent with data recently published by Kastelein, *et al.* (2012) on TTS measured after exposing a harbor porpoise to non-impulsive sounds.

Comment 39: The Commission requested an explanation of why data from Kastak *et al.* (2005) was used as the basis for explosive thresholds in pinnipeds and for the extrapolation process and factors used as the basis for associated TTS thresholds.

Response: The same offset between impulsive and non-impulsive TTS found for the only species where both types of sound were tested (beluga) was used to convert the Kastak *et al.* (2005) data (which used non-impulsive tones) to an impulsive threshold. This method is explained in Finneran and Jenkins (2012) and Southall *et al.* (2007).

Comment 40: The Commission recommended that NMFS require the Navy to provide the predicted average and maximum ranges for all impact criteria (behavioral response, TTS, PTS, onset slight lung injury, onset slight gastrointestinal injury, and onset mortality), all activities, and all functional hearing groups.

Response: The Navy discusses range to effects in sections 3.4.3.1.8.1 and 3.4.3.1.9.1 of the AFTT FEIS/OEIS. The active acoustic tables in section 3.4.3.1.8.1 illustrate the ranges to PTS, TTS, and behavioral response. The active acoustic tables for PTS and TTS show ranges for all functional hearing groups and the tables for behavioral response show ranges for low-, mid-, and high-frequency cetaceans. The active acoustic source class bins used to assess range to effects represent some of the most powerful sonar sources and are often the dominant source in an activity. The explosives table in section 3.4.3.1.9.1 illustrates the range to effects for onset mortality, onset slight lung injury, onset slight gastrointestinal tract injury, PTS, TTS, and behavioral response. The explosives table shows ranges for all functional hearing groups. The source class bins used for explosives range from the smallest to largest amount of net explosive weight. These ranges represent conservative estimates (i.e., longer ranges) based on assuming all impulses are 1-second in duration. In fact, most impulses are much shorter and contain less energy. Therefore, these ranges provide realistic maximum distances over which the specific effects would be possible.

NMFS believes that these representative sources provide adequate information to analyze potential effects on marine mammals. Because the Navy conducts training and testing in a variety of environments having variable acoustic propagation conditions, variations in acoustic propagation conditions are considered in the Navy's acoustic modeling and the quantitative analysis of acoustic impacts. Average ranges to effect are provided in the AFTT FEIS/OEIS to show the reader typical zones of impact around representative sources.

Comment 41: One commenter suggested, based on Kastelein *et al.* (2012), that using SEL may sometimes underestimate the amount of TTS experienced by a marine mammal.

Response: The basic assumption of using the SEL metric with TTS

thresholds is that the equal energy hypothesis (EEH) holds true in all situations (i.e., if the SELs of two sources are similar, a sound from a lower level source with a longer exposure duration may have similar risks to a sound from a higher level source with a shorter exposure duration). It is known from marine mammal and terrestrial mammal data that this is not always the case, especially in situations of long exposure periods with lower sound pressure levels. However, the EEH also does not account for any possible recovery between intermittent exposures and that non-impulsive, intermittent sources typically require higher SELs to induce TTS compared to continuous exposures of the same duration (Mooney *et al.,* 2009; Finneran *et al.,* 2010). Additionally, Kastelein *et al.* (2012b) expose animals to continuous durations of 7.5 minutes and longer, which do not necessarily reflect exposure durations expected for the majority of Navy sources.

Comment 42: One commenter claimed that a statement in the proposed rule suggested that NMFS believes that data from bottlenose dolphins and beluga whales represent the full diversity of mid-frequency cetaceans.

Response: The commenter is referring to a paper by Finneran and Jenkins (2012) titled ''Criteria and thresholds for U.S. Navy acoustic and explosive effects analysis.'' The authors do not claim that bottlenose dolphins and belugas encompass the full diversity of mid-frequency odontocetes. Rather, they state that these two species are diverse. Because both species showed similar TTS thresholds, and because TTS data has not been collected for other mid-frequency cetaceans, the TTS thresholds for bottlenose dolphins and belugas were applied to all mid-frequency cetaceans.

Comment 43: One commenter suggested that low-frequency cetaceans should be split into two groups because the blue and fin whales (and possibly sei whales) are more low-frequency specialists than others.

Response: NMFS does not plan on splitting low-frequency cetaceans into two groups. Although there is some variation among the 13 species of marine mammals identified in the proposed rule as ''low frequency'' cetaceans, these species all fall within the ''low frequency'' functional hearing group identified by Southall *et al.* (2007) where functional hearing is estimated to occur between approximately 7 Hz and 22 kHz.

Comment 44: One commenter referred specifically to the criteria and thresholds used for TTS as described in a paper by Finneran and Jenkins (2012) ''Criteria and Thresholds for Navy Acoustic Effects Analysis Technical Report.'' The commenter believes that scientific literature is at odds with the conclusions made in the Navy document and referred to the following quote on page 18 of the technical report, ''This means the (Type I) weighted exposure SEL for harbor seals under water is 183 dB re 1 $\mu Pa^2 \cdot s$.'' However, Kastelein *et al.* (2012a) note for harbor seals that ''[while] TTS onset (6 dB) is predicted to occur at 183 dB re 1 $\mu Pa^2 \cdot s$ . . . [i]n the present study, statistically significant TTS, at ca. 2.5 dB, began to occur at SELs of ~170 [136 dB SPL, 60 min.] and 178 dB re 1 $\mu Pa^2 \cdot s$ [148 dB SPL, 15 min.], but actual TTS onset is probably at lower SELs.'' The Kastelein *et al.* (2012a) study used two young (4–5 yr. old) female harbor seals, whereas the 183 dB figure originates from a study (Kastak *et al.* 2005) using one male that was 14 years old. Kastelein *et al.* (2012a) found that even for the same seal, ''thresholds changed [hearing became slightly less sensitive (3 dB) for 4 kHz test signals and slightly more sensitive (2 dB) for 5.7 kHz test signals] over time in the control sessions.'' The commenter claims the authors caution that ''[m]odeling TTS from exposure SPLs and duration (as done by Finneran *et al.* 2010) would require more data points, e.g., at lower and higher exposure SPLs, to find the SPL and duration thresholds at which TTS starts. It would be risky to fit a formula to the 14 SEL data points found in the present study because the TTS results of the two seals differ, and because this study shows that harbor seals' TTSs may reach asymptote after certain exposure durations.'' The highest TTS in the Kastelein *et al.* (2012a) study was 10 dB produced by 148 dB re 1 μPa at 120 and 240 min. exposures. The authors also stressed that the TTS may have an ecological impact, ''. . . reduc[ing] the audibility of ecologically and socially important sounds for seals. For example, a TTS of 6 dB would halve the distance at which the seal suffering that TTS would be able to detect another seal, a vociferous fish, or a predator acoustically . . .''

Response: There are some distinct differences between the Kastelein *et al.* 2012a study and Kastak *et al.* 2005, from which the current pinniped TTS onset criterion was derived, including differences associated with the sex and age of individuals tested, different background noise levels, and differences in experimental procedure, as well as different center frequency of exposure stimuli. It should be noted that a threshold shift of 6 dB is considered the minimum threshold shift clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.* 2000; Finneran *et al.* 2000; Finneran *et al.* 2002). Southall *et al.* 2007 also defined TTS onset as a 6 dB shift in threshold. Similarly, for humans, NIOSH (1998) regards the range of audiometric testing variability to be approximately 5 dB. Additionally, despite Kastelein *et al.* 2012a indicating possible ecological impacts associated with TTS, they also say ''Recovery from small TTSs (up to 10 dB), such as those caused by the sound exposures in the present study, is very fast (within 60 min). Reduced hearing for such a short period probably has little effect on the total foraging period of a seal, as long as TTS occurs infrequently.''

It should also be noted that the Navy's acoustic analysis indicated that predicted TTS in harbor seals was typically caused by higher sound pressure levels (greater than 160 dB re 1μPa) over much shorter total durations (on the order of a few seconds) than the exposure regime used by Kastelein *et al.* (2012a). Therefore, the most appropriate dataset of Kastelein *et al.* (2012a) to derive a TTS threshold for harbor seals that is relevant to the way Navy sound sources are used is the dataset that uses the highest exposure level (i.e., 148 dB re 1μPa). According to Figure 9 of Kastelein *et al.* (2012a) a 6–dB hearing threshold shift (i.e., a reliably detectable TTS) would occur at a sound exposure level of approximately 182–183 dB re 1$\mu Pa^2 \cdot s$. Therefore, the Kastelein *et al.* (2012a) results agree with the harbor seal TTS-inducing sound levels found by Kastak *et al.* (2005) and the phocid seal TTS thresholds currently used by the Navy in its acoustic analysis as described in Finneran and Jenkins (2012).

Comment 45: One commenter referred specifically to the criteria and thresholds used for behavioral effects as described in a paper by Finneran and Jenkins (2012) ''Criteria and Thresholds for Navy Acoustic Effects Analysis Technical Report.'' The commenter referred to the following quote on page 22 of the technical report, ''The BRF [Behavioral Response Function] relies on the assumption that sound poses a negligible risk to marine mammals if they are exposed to SPL below a certain ''basement'' value.'' The commenter referred to the basement value of 120 dB, but claims that the reasoning and literature interpretation behind the basement value is weak. The commenter then provided NMFS with examples

from other studies in support of their argument. For example, they referred to a study by Miller *et al.* (2012) involving controlled exposures of naval sonar to killer whales, pilot whales, and sperm whales. They scored responses based on behavioral severity scores of 1–3 (not likely to influence vital rates; 4–6 (could affect vital rates), to 7–9 (likely to influence vital rates). In 83% of LFAS (1–2 kHz) exposure sessions, the response was at a maximum severity of 4 or greater (could or likely to affect vital rates). Behavioral severity scores of 5, 6, and 7 occurred with RLs of just 90–99 dB in killer whales. Since many responses occurred at RLs below 120 dB, Miller *et al.* (2012) postulate that killer whales may be particularly sensitive ''. . . with some groups responding strongly to sonar at received SPLs just loud enough to be audible.'' The commenter claims that, in sperm whales, behavioral severity scores of 4 and 6 happened at RLs of 120–129 dB. Miller *et al.* (2012) note that ''. . . there is little indication in our results of a dose-response pattern in which higher severity changes are less common at lower received levels and more common at higher received levels. Instead, we scored behavioral responses to have occurred across a wide range of received levels. Seven scored responses to sonar started at received SPLs of < 110 dB re: 1 μPa''. They add that ''. . . though there was an overall tendency for increased risk of a severe behavioral response above 120 to 130 dB re: 1 μPa received SPLmax, our results do imply that any signal audible to the animal can represent some risk of a behavioral response at any severity level between 0 and 7.'' LFAS (1–2 kHz) exposure resulted in both a greater number and more severe scored responses than for MFAS (6–7 kHz), despite the behavioral and electrophysiological audiograms of 3 killer whales showing 10–40 dB less sensitivity at 1–2 kHz than 6–7 kHz. Taxonomically similar species also didn't react more similarly to naval sonar, leading Miller *et al.* (2012) to caution that ''. . . great care [must be applied] during the extrapolation of results from experimental studies on a particular species to other closely related species.''

Response: Behavioral responses can be complex and highly variable and may be influenced strongly by the context of exposure (e.g., sound source within a close proximity of a few kilometers) and exposure history of the individual, among several of other factors, including distance from the source, as has been discussed by Southall *et al.* (2007), Southall *et al.* (2012), and Ellison *et al.* (2011), among others. These responses were observed in animals that were being followed and approached by multiple ships, including the one with the sound source. However, no control was conducted that measured the response of animals to the presence of multiple ships without a sonar source. Killer whales in particular have demonstrated avoidance behavioral and other severe behavioral responses to being surrounded by multiple vessels (e.g. Erbe 2002, Kruse 1991, and Noren *et al.* 2009). There are several advantages associated with playback studies, like Miller *et al.* 2012 (i.e., highly controlled exposure, baseline behavioral data before exposure is available, etc.). However, an important consideration is that these situations may not always accurately reflect how an individual would behaviorally respond to an actual sound source that is often either much further away at comparable received levels or whose movement is independent from an individual's movement (i.e., not intentionally approaching an individual). For example, DeRuiter *et al.* 2013 recently observed that beaked whales (considered a particularly sensitive species) exposed to playbacks of U.S. tactical mid-frequency sonar from 89 to 127 dB at close distances responded notably (i.e., alter dive patterns), while individuals did not behaviorally respond when exposed to the similar received levels from actual U.S. tactical mid-frequency sonar operated at much further distances. Miller *et al.* 2012 even points out that ''the approach of the vessel from a starting distance of 6 to 8 km probably led to a more intense exposure than would be typical for actual exercises, where the motion of sonar vessels is independent of whale location. All of these factors make the experiments a realistic though possibly worse than normal scenario for sonar exposures from real navy activities.'' Similarly, we addressed Tyack *et al.* (2011) in the proposed rule (78 FR 7050, January 31, 2013), which indicates that beaked whales responded to mid-frequency signals at levels below 140 dB. In summary, a greater sample size is needed before robust and definitive conclusions can be drawn.

Comment 46: One commenter suggested that NMFS is inconsistent in applying behavioral response data from a few individuals to all mid-frequency cetaceans, but not applying behavioral response data from harbor porpoises to all high-frequency cetaceans. Another commenter further suggested that instead of distinguishing sensitive species and identifying separate thresholds, NMFS should instead include the data from the more sensitive species into the general threshold, thus lowering it. Last, one commenter suggests that the 140-dB threshold for beaked whales is not low enough because Tyack *et al.,* 2011 shows that some beaked whales are taken below 140 dB.

Response: NMFS's approach is consistent and appropriate for sensitive species. NMFS believes that the behavioral response data used to inform the behavioral response curve is the best data to generally predict behavioral responses across odontocetes. However, two exceptions to the use of the general behavioral response curve, for particularly sensitive species, have been established based on the best available science. A lower behavioral response threshold of 120 dB SPL is used for harbor porpoises because data suggest that this particular species is likely sensitive to a wide range of anthropogenic sounds at lower received levels, at least for initial exposures. There are no data to indicate whether other or all high-frequency cetaceans are as sensitive to anthropogenic sound as harbor porpoises are and therefore the general odontocete curve is applied to other high-frequency species. Similarly, beaked whales are considered particularly sensitive both because of their involvement in several strandings associated with MFAS exercises in certain circumstances and because of additional newer information showing certain behavioral responses at lower levels (Tyack *et al.,* 2011) and therefore NMFS and the Navy have utilized a lower behavioral response threshold of 140 dB.

Regarding the suggestion that the data from Tyack *et al.,* 2011 support the use of a behavioral threshold below 140 dB, NMFS disagrees. While Tyack *et al.,* 2011 does report tagged whales ceasing clicking when exposed to levels slightly below 140dB, it also reports that some beaked whales exposed above 140dB did not stop clicking, and further asserts that ''our results support a similar criterion of about 140dB SPL for beaked whale exposure to mid-frequency sounds.'' More importantly, as noted above, DeRuiter *et al.* 2013 recently reported on the importance of context (for example the distance of a sound source from the animal) in predicting behavioral responses as supported by observations that beaked whales exposed to playbacks of U.S. tactical mid-frequency sonar (such as those used in Tyack *et al.,* 2011) from 89 to 127 dB at close distances responded notably (i.e., alter dive patterns), while

individuals did not behaviorally respond when exposed to the similar received levels from actual U.S. tactical mid-frequency sonar operated at much further distances.

Behavioral responses of species to sound should not be confused with a particular functional hearing group's perception of loudness at specific frequencies. Behavioral responses can be highly variable and depend on a multitude of species-specific factors (among other factors, context, etc.), while hearing abilities are based on anatomy and physiology which is more likely to be conserved across similar species making extrapolations of auditory abilities more appropriate.

Comment 47: One commenter cited Melcon *et al.* 2012 to suggest that behavioral responses in marine mammals could occur below 120 dB (NMFS' acoustic threshold for Level B harassment from non-impulse sources).

Response: First, it is important to note that not all marine mammal behavioral responses rise to the level of a ''take'' as considered under section 101(a)(5)(A) of the MMPA. NMFS' analysis of the Navy's activities does not state that marine mammals will not respond behaviorally to sounds below 120 dB; rather, the 120 dB level is taken as the estimate received level (RL) below which the risk of significant change in a biologically important behavior approaches zero for the risk assessment for sonar and other active acoustic sources. As stated in the proposed rule, the studies that inform the basement value of 120 dB are from data gathered in the field and related to several types of sound sources (of varying similarity to MFAS/HFAS). These sound sources include: vessel noise, drilling and machinery playback, low-frequency M-sequences (sine wave with multiple phase reversals) playback, tactical low-frequency active sonar playback, drill ships, Acoustic Thermometry of Ocean Climate (ATOC) source, and non-pulse playbacks. These studies generally indicate no (or very limited) responses to received levels in the 90 to 120 dB range and an increasing likelihood of avoidance and other behavioral effects in the 120 to 160 dB range. It is important to note that contextual variables play a very important role in the reported responses and the severity of effects are not linear when compared to received level. Melcon *et al.* (2012) also reported that ''probability of D calls given MA sonar decreased significantly with increasing received level'' and decreases seemed to start at levels around 120 dB. Additionally, whales were found to start vocalizing again once sonar ceased. Melcon *et al.'s* (2012) findings do not necessarily apply to every low-frequency cetacean in every scenario and results should be considered merely beyond the application to the BRF (i.e., within overall analysis) to more accurately determine the potential consequences of decreased feeding calls in various scenarios with overlapping Navy MFA exercises (e.g., in Melcon *et al.,* 2012 study there was an overlap of 9 percent of the total hours analyzed where MFA sonar was detected).

Comment 48: One commenter pointed out the increases in a beluga whale's average heart rate during acoustic playbacks (Lyamin *et al.,* 2011).

Response: The commenter referenced this paper in the context of acoustic criteria and thresholds for behavioral effects. It is important to note that this study was done on a beluga whale in captivity, captured two months prior to the experiment, and constrained to a stretcher. In natural circumstances (i.e., the wild), the animal would be able to move away from the sound source. Contextual variables such as distance, among numerous other factors, play a large role in determining behavioral effects to marine mammals from acoustic sources. This study is difficult to directly apply to the anticipated behavioral effects of the Navy's impulsive and non-impulsive sound sources on marine mammals because there are some distinct differences between the sound source used in this study and Navy sources. For one, the frequency of the sound source in the Lyamin *et al.* (2011) study ranged from 19 to 108 kHz (trying to test effects in range of best hearing), which is outside the frequency range of the majority of Navy sonar hours. Additionally, exposures that led to a response in this study were of 1-minute continuous duration, which again does not mimic exposure durations for the majority of Navy sources.

Comment 49: One commenter believes that certain studies are at odds with the conclusions made by the Navy and NMFS and referred specifically to the criteria and thresholds used for behavioral effects as described in a paper by Finneran and Jenkins (2012) ''Criteria and Thresholds for Navy Acoustic Effects Analysis Technical Report.'' The commenter referred to the following quote on page 24 of the technical report, ''an (unweighted) SPL of 120 dB re 1μPa is used for harbor porpoises as a threshold to predict behavioral disturbance. In support of their position, the commenter referred to text from a study by Kastelein *et al.,* (2012c),''[F]or 1–2 kHz sweeps without harmonics, a 50% startle response rate occurred at mean RLs of 133 dB re 1 μPa; for 1–2 kHz sweeps with strong harmonics at 99 dB re 1 μPa; for 6–7 kHz sweeps without harmonics at 101 dB re 1 μPa.'' Thus, according to the commenter, the presence of harmonics in sonar signals increases their detectability by harbor porpoises. Moreover, the startle response rate increased with increasing mean RL. This study and others show that there is no clear-cut relationship between the startle response and hearing threshold. To cause no startle response, single emissions (once every 3 min) had to be below a mean RL of 112 dB for 1–2 kHz sweeps without harmonics, below a mean RL of 80 dB for the same sweeps with harmonics, and below a mean RL of 83 dB for 6–7 kHz sweeps without harmonics (Kastelein *et al.,* 2012c). Harmonics can be reduced by lowering sonar signals' source levels. Harmonics can also be perceived to be even louder than the fundamental frequencies of sonars and therefore could influence harbor porpoise behavior more (Kastelein *et al.,* 2012c).

Response: All harbor porpoises exposed to (unweighted) sound pressure levels equal to or greater than 120 dB are considered behaviorally harassed. Since this metric is unweighted, the entire frequency content of the signal (including potential harmonics) are considered when comparing the received sound level with the behavioral threshold. Behavioral responses can be variable, with a number of factors affecting the response, including the harmonics associated with a sound source, as demonstrated in Kastelein *et al.,* 2012c. The presence of harmonics in the 1–2 kHz sweep had two related effects: (1) they increased the frequency range of the tonal (made it more high frequency); and therefore (2) they made the overall spectrum more broadband, with energy over 90 dB re 1 μPa from about 1–11 kHz, rather than the narrowband energy of the sweeps without harmonics (Kastelein *et al.,* 2012). However, as Kastelein points out, ''both the spectrum and the received level of an underwater noise appear to determine the effect the sound has..'', and as harmonics are related to the intensity of the sound, in most cases harmonics will not be perceived by an animal unless the intensity of the sound is already well over background levels. In addition, Kastelein *et al.* (2012) define a startle response as a ''short-latency defensive response that protects animals in the brief period (up to a few 100 ms) before cognitive evaluation of a situation can take place to allow an adaptive response'', and further states

''After about one strong tail movement, the animal's behavior returned to normal. The animal did not avoid the area near the transducer during sessions any more than usual.'' Therefore, this startle response did not indicate a behavioral disturbance. Furthermore, these sounds were below true ambient noise levels (as would be found outside of an artificially quiet pool) and are not likely to be produced at those levels outside of an artificial environment (e.g., tonals with harmonics would be at received levels far above the conservative 120 dB level used by NMFS and the Navy).

Southall *et al.* 2007 indicate a startle response is ''a brief, transient event [that] is unlikely to persist long enough to constitute significant disturbance.'' The 120 dB (unweighted) behavioral threshold used for harbor porpoises is associated with Level B harassment under the MMPA. Thus, the mere presence of a startle response, without any further information on whether an animal perceives and behaviorally responds to a sound as a threat, is not considered a behavioral response that rises to the level of behavioral harassment.

Comment 50: One commenter referred specifically to the criteria and thresholds used for TTS as described in a paper by Finneran and Jenkins (2012) ''Criteria and Thresholds for Navy Acoustic Effects Analysis Technical Report.'' The commenter referred to the following quote on page 20 of the technical report, ''Since no studies have been designed to intentionally induce PTS in marine mammals, onset-PTS levels for marine mammals must be estimated using available information'' . . . ''Data from Ward *et al.* (1958) reveal a linear relationship between TTS and SEL with growth rates of 1.5 to 1.6 dB TTS per dB increase in SEL. This value for the TTS growth rate is larger than those experimentally measured in a dolphin exposed to 3 and 20 kHz tones (Finneran and Schlundt, 2010), and so appears to be a protective value to use for cetaceans.'' The commenter then cites the following studies in support of their belief that recent literature is at odds with the conclusions made by the Navy and NMFS. According to the commenter, Kastak *et al.* (2008) and Reichmuth (2009) found that a harbor seal exposed to a maximum received sound pressure of 184 dB re 1 μPa with a duration of 60 s (SEL = 202 dB re 1 $\mu Pa^2 s$) a second time, showed an initial threshold shift in excess of 48 dB at 5.8 kHz, a half-octave above the fatiguing tone (4.1 kHz pure tone). This occurred suddenly with no warning, after ''a level of no measurable effect'', following progressive gradual increases in noise exposure level, i.e. this was a nonlinear response, in contrast to what is written above in the ''Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis.'' A permanent threshold shift of 7 to 10 dB remained after two years (Reichmuth 2009). Reichmuth notes that '' . . . tonal noise exposures, not commonly studied in terrestrial models of hearing, may be of particular concern with respect to residual auditory effects.''

Response: The commenter cites the TTS growth rate used for cetaceans; however, the reported TTS growth rate for a pinniped was used to develop the onset PTS threshold for all pinnipeds (including harbor seals). The onset PTS threshold used in this analysis is lower than the SEL reported in Kastak *et al.* (2008).

Comment 51: One commenter suggested that TTS should be considered a form of injury.

Response: NMFS developed acoustic criteria that estimate at what received level (when exposed to sonar or explosive detonations) TTS (Level B harassment) would occur. A number of investigators have measured TTS in marine mammals. These studies measured hearing thresholds in trained marine mammals before and after exposure to intense sound. For example, Ward (1997) suggested that TTS is within the normal bounds of physiological variability and tolerance and does not represent physical injury. In addition, Southall *et al.* (2007) indicates that although PTS is a tissue injury, TTS is not because the reduced hearing sensitivity following exposure to intense sound results primarily from fatigue, not loss, of cochlear hair cells and supporting structures, and is reversible. Accordingly, NMFS considers this to be a form of Level B harassment rather than Level A harassment (injury). NMFS is aware of recent studies by Kujawa and Liberman (2009) and Lin *et al.* (2011). These studies found despite completely reversible threshold shifts that leave cochlear sensory cells intact, large threshold shifts could cause synaptic level changes and delayed cochlear nerve degeneration in mice and guinea pigs, respectively. NMFS notes that the high level of TTS that led to the synaptic changes shown in these studies, is in the range of the high degree of TTS that Southall *et al.* (2007) used to calculate PTS levels. It is not known whether smaller levels of TTS would lead to similar changes. NMFS, however, acknowledges the complexity of noise exposure on the nervous system, and will re-examine this issue as more data become available.

Comment 52: With regards to the development of marine mammal auditory weighting functions, one commenter believes that there is insufficient recognition that at high enough amplitudes, the curves for hearing impairment are quite flat across all frequencies (suggesting that audiograms are irrelevant at these levels).

Response: The exposure levels where hearing impairment becomes flat across broad auditory frequency ranges are typically associated with high risks of permanent hearing loss and where the threshold of pain occurs. Auditory weighting functions are being applied to levels where the onset of TTS and PTS occur. Additionally, the peak pressure metric criteria (part of dual criteria for most sound sources) does not take weighting functions into consideration (i.e., this metric is unweighted), which offers additional protection from exposure to sounds that have the potential to have extremely high amplitudes.

Effects Analysis

Comment 53: One commenter stated that neither the Navy model nor any other model should be used to estimate takes unless and until it has been properly validated, which includes a reasonable correlation with real world empirical observations.

Response: The Navy Acoustic Effects Model is currently undergoing validation using real world empirical data. Predicted outputs of a standard NAEMO modeling run are being compared with a model run using in-situ data of marine mammal vocalization behavior, ship tracks, sound speed profiles, wind speeds, and sonar transmissions during a Navy exercise. Although validation is not yet complete, the Navy is required to use the best available science for its analysis. The Navy Acoustic Effects Model is considered the best available given that it incorporates various recommendations made by the Center for Independent Experts review of previous models as well as the latest literature on sound propagation and animal densities.

Comment 54: One commenter states that mortalities are currently being grossly underestimated by the Navy.

Response: NMFS disagrees. Several factors cause the Navy's acoustic effects model to overestimate potential effects, including mortalities. First, the onset mortality criterion is based on 1 percent of the animals receiving an injury that would not be recoverable and lead to

mortality; therefore, many animals that are predicted to suffer mortality under this analysis may actually recover from their injuries. Second, the metric used for the threshold of mortality (i.e., acoustic mass) is based on the animal's mass. The smaller the animal, the more susceptible that individual is to these effects. Under this analysis, all individuals of a given species are assigned the weight of that species' newborn calf or pup. Since many individuals in a population are obviously larger than a calf, the acoustic model overestimates the number of animals that may suffer mortality. Third, many explosions from ordnances such as bombs and missiles actually occur upon impact with above-water targets; however, for this analysis, these sources were modeled as exploding at 1 m below the surface. This overestimates the amount of explosive and acoustic energy entering the water and; therefore, overestimates the effects on marine mammals.

The Navy also estimated lethal take of large whales from vessel strikes and mortalities of beaked whales from strandings. To determine the appropriate number of MMPA incidental takes from vessel strikes, the Navy assessed the probability of Navy vessels hitting individuals of different species of large whales that occur in the AFTT Study Area incidental to specified training and testing activities. To do this, the Navy considered unpublished ship strike data compiled and provided by NMFS, Northeast Science Center and Southeast Science Center (1995–2012) and information in the LOA application regarding trends in the amount of vessel traffic related the their training and testing activities in the AFTT Study Area. During this time period, there were 19 reported ship strikes; therefore, the probability of a collision between a Navy vessel and a whale is 1.055 (19 strikes/18 years). This value was used as the rate parameter to calculate a series of Poisson probabilities (a Poisson distribution is often used to describe random occurrences when the probability of an occurrence is small (e.g., count data such a cetacean sighting data, or in this case strike data, are often described as a Poisson or over-dispersed Poisson distribution). The results of this analysis are provided in section 6.1.9.2 in the Navy's LOA application for AFTT. The Navy is requesting no more than 10 large whale injuries or mortalities over 5 years (no more than three large whale mortalities in a given year) due to vessel strike during training activities and no more than one large whale injury or mortality over 5 years due to vessel strike during testing activities. However, no more than three injuries or mortalities of any of the following species would be authorized to occur in a given year between both training and testing activities (two injuries or mortalities from training and one injury or mortality from testing): blue whale, fin whale, humpback whale, sei whale, and sperm whale. NMFS and the Navy do not anticipate this number of injuries or mortalities to occur due to vessel strikes; however, because of previously reported ship stikes and the need to authorize this form of taking in the unlikely event that it occurs, NMFS authorizes the take of no more than 10 large whale injuries or mortalities over 5 years (no more than three large whale mortalities in a given year) due to vessel strike during training activities and no more than one large whale injury or mortality over 5 years due to vessel strike during testing activities. This is considered an overestimate because the analysis estimated that only one whale may be struck per year and the Navy has only been involved in two strikes, with no confirmed marine mammal deaths, over the last five years.

The Navy has also requested the annual take, by mortality, of up to 10 beaked whales in any given year, and no more than 10 beaked whales over the 5-year LOA period, incidental to training activities. NMFS and the Navy do not anticipate any beaked whale strandings to occur; however, because of a lack of scientific consensus regarding the causal link between sonar and stranding events, NMFS cannot conclude with certainty the degree to which mitigation measures would eliminate or reduce the potential for serious injury or mortality. Therefore, NMFS authorizes the take of 10 beaked whales, by mortality, over the 5-year LOA period. This is considered an overestimate because mortalities are not anticipated and have not previously been reported during the 40 years the Navy has conducted similar exercises in the AFTT Study Area.

Comment 55: The Commission requested information regarding how the Navy determined takes that occur when multiple source types are used simultaneously.

Response: The Navy treated events involving multiple source types (e.g., acoustic vs. explosive) as separate events and did not sum the sound exposure levels. In most cases, explosives and sonar are not used during the same activities and therefore are unlikely to affect the same animals over the same time period.

The Navy did sum energy for multiple exposures of similar source types. For sonar, including use of multiple systems within any scenario, energy is accumulated within the following four frequency bands: low-frequency, mid-frequency, high-frequency, and very high-frequency. After the energy has been summed within each frequency band, the band with the greatest amount of energy is used to evaluate the onset of PTS or TTS. For explosives, including use of multiple explosives in a single scenario, energy is summed across the entire frequency band. This process is detailed in a technical report titled ''The Determination of Acoustic Effects on Marine Mammals and Sea Turtles'' on the AFTT EIS Web site (*http://www.aftteis.com*).

Comment 56: One commenter suggested that species population estimates should be based on minimum population estimates.

Response: NMFS considered the best population estimates when assessing impacts to marine mammal populations from Navy activities because we believe these provided the most accurate estimate based on the best available science.

Comment 57: One commenter claimed that the Navy's proposed activities are likely to result in jeopardy of the continued existence of ESA-listed species.

Response: Pursuant to section 7 of the Endangered Species Act, the Navy consulted with NMFS on its proposed action and NMFS consulted internally on the issuance of LOAs under section 101(a)(5)(A) of the MMPA. The purpose of that consultation was to determine whether the proposed action is likely to result in jeopardy of the continued existence of a species. In the Biological Opinion, NMFS concluded that the issuance of the rule and two LOAs are likely to adversely affect but are not likely to jeopardize the continued existence of the threatened and endangered species under NMFS' jurisdiction and are not likely to result in the destruction or adverse modification of critical habitat that has been designated for endangered or threatened species in the AFTT Study Area. The Biological Opinion for this action is available on NMFS' Web site (*http://www.nmfs.noaa.gov/pr/permits/incidental.html#applications*).

Comment 58: One commenter stated that the Navy's proposed activities are not just ''incidental,'' but serious and potentially catastrophic.

Response: In section 101(a)(5)(A) and (D) of the MMPA, incidental is defined as an unintentional, but not unexpected, taking. In other words, the Navy's activities are considered incidental because they may result in the

unintentional taking of marine mammals. The term incidental does not refer to the type or level of impacts that an activity may have on marine mammals.

Comment 59: One commenter suggested that the authorized take numbers should reflect the Navy's inability to mitigate for onset of TTS during every activity.

Response: As discussed in the proposed rule (78 FR 7102–7103, January 31, 2013), TTS is type of Level B harassment. In the Estimated Take of Marine Mammal section, we quantify the effects that might occur from the specific training and testing activities that the Navy proposes in the AFTT Study Area, which includes the number of takes by Level B harassment (behavioral harassment, acoustic masking and communication impairment, and TTS). Through this rulemaking, NMFS has authorized the Navy to take marine mammals by Level B harassment incidental to Navy training and testing activities in the AFTT Study Area. In order to issue an incidental take authorization (ITA), we must set forth the ''permissible methods of taking pursuant to such activity, and other means of effecting the least practical adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.'' We have determined that the mitigation measures implemented under this rule reduce the potential impacts to marine mammals from training and testing activities.

The Navy developed activity-specific mitigation zones based on the Navy's acoustic propagation model. Each recommended mitigation zone is intended to avoid or reduce the potential for onset of the lowest level of injury, PTS, out to the predicted maximum range. Mitigating to the predicted maximum range to PTS consequently also mitigates to the predicted maximum range to onset mortality (1 percent mortality), onset slight lung injury, and onset slight gastrointestinal tract injury, since the maximum range to effects for these criteria are shorter than for PTS. Furthermore, in most cases, the predicted maximum range to PTS also covers the predicted average range to TTS. In some instances, the Navy recommended mitigation zones that are larger or smaller than the predicted maximum range to PTS based on the associated effectiveness and operational assessments presented in section 5.3.2 of the AFTT FEIS/OEIS. NMFS worked closely with the Navy in the development of the recommendations and carefully considered them prior to adopting them in this final rule. The mitigation zones contained in this final rule represent the maximum area the Navy can effectively observe based on the platform of observation, number of personnel that will be involved, and the number and type of assets and resources available. As mitigation zone sizes increase, the potential for reducing impacts decreases. For instance, if a mitigation zone increases from 1,000 to 4,000 yd. (914 to 3,658 m), the area that must be observed increases sixteen-fold. The mitigation measures contained in this final rule balance the need to reduce potential impacts with the Navy's ability to provide effective observations throughout a given mitigation zone. Implementation of mitigation zones is most effective when the zone is appropriately sized to be realistically observed. The Navy does not have the resources to maintain additional Lookouts or observer platforms that would be needed to effectively observe mitigation zones of increased size.

Comment 60: One commenter cited Madsen *et al.* (2006) to suggest that airgun use could cause whales to stop feeding.

Response: NMFS referenced Madsen *et al.* (2006) in the behavioral disturbance (specifically, foraging) section of the proposed rule. However, airguns used during Navy testing are small (up to 60 in^3) compared to the airgun arrays used in Madsen *et al.* (2006), which ranged from 1,680 in^3 to 2,590 in^3. The results from Madsen *et al.* (2006) cannot be directly tied to the expected impacts from the Navy's limited use of small airguns during testing activities. The Navy will only use airguns an average of five times per year. Furthermore, airgun usage in the AFTT Study Area is a component of pierside integration swimmer defense activities, which does not overlap with any major marine mammal feeding areas.

Comment 61: One commenter referred to a quote in the discussion in the proposed rule concerning behavior disturbance and harbor porpoises that says ''. . . rapid habituation was noted in some but not all studies'' and refers NMFS to a paper by Kastelein *et al.* (2012) that hypothesized it is not always possible to differentiate between marine mammal habituation of a sound and hearing impairment.

Response: We do not have a perfect understanding of marine mammal behavioral responses, but we have sufficient information (based on multiple MFA sonar-specific studies, marine mammal hearing/physiology/anatomy, and an extensive body of studies that address impacts from other anthropogenic sources) to be able to assess potential impacts and design mitigation and monitoring measures to ensure that the Navy's action will avoid injury and mortality whenever possible, have the least practicable adverse impact on marine mammal species and stocks and their habitat, and have a negligible impact on the affected species and stocks.

In the Potential Effects of Specified Activities on Marine Mammals section of the proposed rule (78 FR 7050; January 31, 2013; pages 7077–7092), we included a qualitative discussion of the different ways that Navy training and testing operations involving active sound sources may potentially affect marine mammals, which was based on the MFA sonar-specific studies and other studies addressing impacts from non-MFA anthropogenic sources.

Comment 62: One commenter noted that the behavioral harassment analysis (page 7034; Table 21 in the HSTT proposed rule and page 7114; Table 22 in the AFTT proposed rule) shows that from 120–138 dB and 174–198 dB, very few low-frequency and mid-frequency cetaceans are behaviorally harassed. The commenter suggested that this is counter to the literature and requests an explanation for why high-frequency cetaceans are not included.

Response: The number of behavioral harassments is determined from the behavioral risk function criteria. At the lower received levels the probability is significantly decreased which results in lower numbers. For the higher received levels, the distance to these levels is relatively small, therefore encompassing a relatively small area. Since only a small area is ensonified, there is less chance for exposure. Additionally, at the higher receive levels it's possible an animal could experience TTS, and if the animal has already been counted under TTS it would not be reflected in the table. As depicted in table 3.4–12 of the AFTT FEIS/OEIS, the BRF table also applies to HF cetaceans.

To the commenter's last point, the table labeled ''Mid-frequency cetaceans'' (Table 23) should actually be labeled ''Mid- and High frequency cetaceans.'' There is one single behavioral harassment curve applied to both mid- and high frequency cetaceans and Table 23 lists the breakdown of takes for that curve.

Comment 63: Several commenters suggested that the Navy grossly underestimates the effects of its activities on the marine environment and that NMFS fails to consider longer

term effects or conduct a population level analysis.

Response: NMFS disagrees that impacts to marine mammals from the Navy's training and testing activities are grossly underestimated. The Navy's model uses the best available science to analyze impacts and often overestimates the potential effects by considering the worst case scenario. The Navy also analyzed the potential environmental impacts of their activities, including on marine mammal populations, in the AFTT FEIS/OEIS.

NMFS considers population level effects under our ''least practicable adverse impact'' standard and also when making a negligible impact determination. The Analysis and Negligible Impact Determination section of this Final Rule explicitly addresses the effects of the 5-year activity on populations, considering: when impacts occur in known feeding or reproductive areas; the number of mortalities; the status of the species; and other factors. Further, NMFS' duty under the ''least practicable adverse impact'' standard is to design mitigation targeting those impacts on individual marine mammals that are most likely to lead to adverse population-level effects. These mitigation measures are discussed in detail both in the Mitigation section of this final rule, and also considered in the Negligible Impact Determination section.

Comment 64: Several commenters suggested that NMFS failed to analyze the cumulative effects of the Navy's activities.

Response: Section 101(a)(5)(A) of the MMPA requires NMFS to make a determination that the harassment incidental to a specified activity will have a negligible impact on the affected species or stocks of marine mammals, and will not result in an unmitigable adverse impact on the availability of marine mammals for taking for subsistence uses. Neither the MMPA nor NMFS' implementing regulations specify how to consider other activities and their impacts on the same populations. However, consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338, September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into the negligible impact analysis via their impacts on the environmental baseline (e.g., as reflected in the density/distribution and status of the species, population size and growth rate, and ambient noise).

In addition, cumulative effects are addressed in the Chapter 4 of the AFTT FEIS/OEIS and NMFS' Biological Opinion for this action. These documents provided NMFS with information regarding other activities in the action area that affect marine mammals, an analysis of cumulative impacts, and other information relevant to the determination made under the MMPA.

Comment 65: One commenter claimed that NMFS' negligible impact determination is not accurate because the Navy's activities will result in hearing loss for 1,600 marine mammals and mortality of 130 marine mammals.

Response: Based on our analysis of the effects of the specified activity on marine mammals and their habitat, and dependent on the implementation of mitigation and monitoring measures, we have found that the total taking from Navy training and testing will have a negligible impact on the affected species and stocks. First of all, the negligible impact finding is made for each individual species and the numbers the commenter cites are totals for all 42 species, i.e., the numbers are not nearly that large for any individual species. Second, in some cases, as described throughout the document, the estimated takes by mortality and injury are not always expected to occur but rather are authorized to ensure that the Navy is in compliance for the maximum that could occur. Last, PTS is a reduction in hearing sensitivity within a particular frequency band (which often occurs naturally as animals age)—NMFS would not expect that complete hearing loss would result from exposure to Navy activities, as it would require an animal stay in very close proximity to a loud source for an extended period of time. As a result, we have promulgated regulations for these activities that prescribe the means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat and set forth requirements pertaining to the monitoring and reporting of that taking.

Comment 66: One commenter requested a list of unexploded ordnances, mitigation measures for unexploded ordnances, and the impacts on marine mammals from unexploded ordnances.

Response: The AFTT FEIS/OEIS addresses the potential impacts from the introduction of things like unexploded ordnance into the water column. As stated in the previous response, the AFTT DEIS/OEIS was made available to the public on May 11, 2012 and was referenced in our notice of receipt (77 FR 60679, October 4, 2012) and proposed rule (78 FR 7050, January 31, 2013). In summary, and as included in the Marine Mammal Habitat section of the proposed rule, chemical, physical, or biological changes in sediment or water quality would not be detectable. In the event of an ordnance failure, the energetic materials it contained would remain mostly intact. The explosive materials in failed ordnance items and metal components from training and testing would leach slowly and would quickly disperse in the water column. Unexploded ordnances are unlikely to affect marine mammals or their habitat.

Comment 67: The Commission recommended that NMFS authorize the total number of model-estimated Level A harassment and mortality takes rather than reducing the estimated numbers of Level A harassment and mortality takes based on the Navy's proposed post-model analysis. Specifically, the Commission was concerned that the Navy did not provide a basis for the assumption that animals would avoid repeated sound exposure (including sensitive species) or that the implementation of mitigation would prevent Level A harassment.

Response: The Navy's post-model assessment process was developed using the best available science and in coordination with NMFS, and appropriately accounts for mitigation and avoidance behavior. Relying solely on the output of the Navy Acoustic Effects Model presents an overestimate of acoustic impacts for higher order effects such as injury or mortality for the following reasons:

(1) Sensitive species (i.e., beaked whales and harbor porpoises) are modeled as if they would remain stationary and tolerate any very close anthropogenic encounters, although these species are known to avoid anthropogenic activity (see AFTT FEIS/OEIS Section 3.4.3.1.2.5 Behavioral Reactions).

(2) Implementation of mitigation (i.e., shut down zones) is not currently modeled; however, the Navy has developed mitigation measures in cooperation with NMFS that are considered effective at reducing environmental impacts while being operationally feasible (see AFTT FEIS/OEIS Chapter 5, Standard Operating Procedures, Mitigation, and Monitoring).

(3) Animals are assumed to remain horizontally stationary in the model and tolerate any disturbing or potentially injurious sound exposure, although animals have been observed to avoid sound sources with high source levels (see AFTT FEIS/OEIS Section 3.4.3.1.2.5 Behavioral Reactions).

(4) The model estimates the potential for mortality based on very conservative criteria (see AFTT FEIS/OEIS Section

3.4.3.1.4.1, Mortality and Injury from Explosives). With the implementation of proven mitigation and decades of historical information from conducting training and testing in the Study Area, the likelihood of mortality is very low.

The Navy has required that any ''incident'' (marine mammal mortality or otherwise) be reported since the 1990s. In that time, only four marine mammal mortalities have been reported in the AFTT and HSTT study area from training and testing activities. While it is possible that some mortalities may have gone undetected, it is highly unlikely that they would reach the high level of Level A harassments and mortalities as suggested by the raw model results.

The Navy's quantitative analysis of acoustic impacts is discussed in AFTT FEIS/OEIS Section 3.4.3.1.5, Quantitative Analysis, as well as in Section 6.1.5, Quantitative Analysis, in the Navy's LOA application. Specifically, post-model analysis taking into account sensitive species' avoidance of anthropogenic activity is discussed in AFTT FEIS/OEIS Section 3.4.3.1.5.5, Marine Mammal Avoidance of Sound Exposures. Background information discussing harbor porpoise and beaked whale sensitivity to vessels and aircraft is discussed in AFTT FEIS/OEIS Section 3.4.3.1.2.5, Behavioral Reactions. Reactions due to repeated exposures to sound-producing activities are discussed in AFTT FEIS/OEIS Section 3.4.3.1.2.6, Repeated Exposures.

The Navy's model-estimated effects (without consideration of avoidance or mitigation) are provided in a technical report (''Determination of Acoustic Effects on Marine Mammal and Sea Turtles'') available at *http://www.aftteis.com.* In addition to the information already contained within the AFTT FEIS/OEIS, and in response to public comments, the Navy has prepared a Technical Report which describes the process for the post-modeling analysis in further detail. This report is available at *http://www.aftteis.com.*

Comment 68: The Commission raised concerns regarding the Navy's approach to adjusting its take estimates based on both mitigation effectiveness scores and g(0)—the probability that an animal on a vessel's or aircraft's track line will be detected. Specifically, the Commission questioned how the Navy determined the appropriate adjustment factors because the information needed to judge mitigation effectiveness has not been made available. The Commission also stated that the Navy did not provide the criteria (i.e., the number and types of surveillance platforms, number of lookouts, and sizes of the respective zones) needed to elicit the three mitigation effectiveness scores and pointed out that the simple detection of a marine mammal does not guarantee that mitigation measures will be effective.

Response: The Navy Acoustic Effects Model currently does not have the ability to account for mitigation or horizontal animal movement; either as representative animal movements or as avoidance behavior (see AFTT FEIS/OEIS Section 3.4.3.1.5.4, Model Assumptions and Limitations). While the Navy will continue to incorporate best available science and modeling methods into future versions of the Navy Acoustic Effects Model, it was appropriate to perform post-model analysis to account for mitigation and avoidance behavior not captured by the Navy Acoustic Effects Model.

A summary of the current status of the Navy's Lookout effectiveness study and why the data cannot be used in the analysis was added in Section 5.3.1.2.4, Effectiveness Assessment for Lookouts, of the AFTT FEIS/OEIS. Both NMFS and the Navy believe consideration of marine mammal sightability and activity-specific mitigation effectiveness in its quantitative analysis is appropriate in order to provide decision makers a reasonable assessment of potential impacts under each alternative. A comprehensive discussion of the Navy's quantitative analysis of acoustic impacts, including the post-model analysis to account for mitigation and avoidance, is presented in the Navy's LOA application. The assignment of mitigation effectiveness scores and the appropriateness of consideration of sightability using detection probability, g(0), when assessing the mitigation in the quantitative analysis of acoustic impacts is discussed in AFTT FEIS/OEIS Section 3.4.3.1.5.6, Implementing Mitigation to Reduce Sound Exposures. Additionally, the activity category, mitigation zone size and number of Lookouts is provided in AFTT FEIS/OEIS Tables 5.3–2 and 5.4–1. In addition to the information already contained within the AFTT EIS/OEIS, and in response to public comments, the Navy has prepared a Technical Report which describes the process for the post-modeling analysis in further detail. This report is available at *http://www.aftteis.com.*

NMFS believes that detection of a marine mammal within the Navy's relatively small mitigation zones will help prevent animals from being exposed to sounds levels that constitute Level A harassment (injury). The Navy's relatively small mitigation zones help increase the likelihood that an animal will be detected before incurring PTS. Details on implementation of mitigation can be found in the annual exercise reports provided to NMFS and briefed annually to NMFS and the Commission. The annual exercise reports can be found at *http://www.navymarinespeciesmonitoring.us/* and at *http://www.nmfs.noaa/pr/permits/incidental.htm#applications.* For more information on how mitigation is implemented see AFTT EIS/OEIS Chapter 5.

Comment 69: The Commission further stated that the Navy's post-model analysis approach is confusing because the Navy is inconsistent in its use of the terms ''range to effects zone'' and ''mitigation zone,'' which are not the same. More importantly, some of the mitigation zones are smaller than the estimated range to effects zones.

Response: The terms ''range to effects zone'' and ''mitigation zone'' are used appropriately in the discussion of mitigation in both the Navy's LOA application and in AFTT FEIS/OEIS Section 5.3.2 (Mitigation Zone Procedural Measures). In summary, the range to effects zone is the distance over which the specific effects would be expected, and the mitigation zone is the distance that the Lookout will be implementing mitigation within and is developed based on the range to effects distance for injury (i.e. PTS).

In all cases except ship shock trials, the mitigation zones encompass the ranges to PTS for the most sensitive marine mammal functional hearing group (see AFTT FEIS/OEIS Table 5.3–2), which is usually the high-frequency cetacean hearing group. Therefore, the mitigation zones are even more protective for the remaining functional hearing groups (i.e., low-frequency cetaceans, mid-frequency cetaceans, and pinnipeds), and likely cover a larger portion of the potential range to onset of TTS. The Navy believes that ranges to effect for PTS that are based on spherical spreading best represent the typical range to effects near a sonar source; therefore, the ranges to effects for sonar presented in Table 11–1 of the Navy's LOA application have been revised as shown in Table 5.3–2 of the AFTT FEIS/OEIS. The predicted ranges to onset of PTS for a single ping are provided for each marine mammal functional hearing group in Table 3.4–9 of the AFTT FEIS/OEIS. The single ping range to onset of PTS for sonar in Sonar Bin MF1 (i.e., AN/SQS–53), the most powerful source bin analyzed, is no greater than 100 m for any marine mammal functional hearing group.

Furthermore, as discussed in Section 3.4.3.1.8.1 (Range to Effects) of the AFTT FEIS/OEIS, there is little overlap of PTS footprints from successive pings, indicating that in most cases, an animal predicted to receive PTS would do so from a single exposure (i.e., ping). Additional discussion regarding consideration of mitigation in the quantitative analysis of sonar and other active acoustic sources is provided in AFTT FEIS/OEIS Section 3.4.3.1.8.2, Avoidance Behavior and Mitigation Measures as Applied to Sonar and Active Acoustic Sources.

Comment 70: The Commission noted that although the Navy states that lookouts will not always be effective at avoiding impacts to all species, it bases its g(0) estimates on seasoned researchers conducting the associated surveys, not Navy lookouts whose observer effectiveness has yet to be determined.

Response: A summary of the current status of the Navy's Lookout effectiveness study and why the data cannot be used in the analysis has been added in Section 5.3.1.2.4, Effectiveness Assessment for Lookouts, of the AFTT FEIS/OEIS. NMFS believes that consideration of marine mammal sightability and activity-specific mitigation effectiveness in the Navy's quantitative analysis is appropriate in order to provide a reasonable assessment of potential impacts under each alternative. A comprehensive discussion of the Navy's quantitative analysis of acoustic impacts, including the post-model analysis to account for mitigation and avoidance, is presented in the Navy's LOA application. Currently, the g(0) probabilities are the only quantitative measures available for estimating mitigation effectiveness.

However, the differences between Navy training and testing events and systematic line-transect marine mammal surveys suggest that the use of g(0), as a sightability factor to quantitatively adjust model-predicted effects based on mitigation, is likely to result in an underestimate of the protection afforded by the implementation of mitigation. For instance, mitigation zones for Navy training and testing events are significantly smaller (typically less than 1,000 yd radius) than the area typically searched during line-transect surveys, which includes the maximum viewable distance out to the horizon. In some cases, Navy events can involve more than one vessel or aircraft (or both) operating in proximity to each other or otherwise covering the same general area, potentially resulting in more observers looking at the mitigation zone than the two primary observers used in marine mammal surveys upon which g(0) is based. Furthermore, a systematic marine mammal line-transect survey is designed to sample broad areas of the ocean, and generally does not retrace the same area during a given survey. In contrast, many Navy training and testing activities involve area-focused events (e.g., anti-submarine warfare tracking exercise), where participants are likely to remain in the same general area during an event. In other cases, Navy training and testing activities are stationary (i.e., pierside sonar testing or use of dipping sonar), which allows Lookouts to focus on the same area throughout the activity. Both of these circumstances result in a longer observation period of a focused area with more opportunities for detecting marine mammals than are offered by a systematic marine mammal line-transect survey that only passes through an area once. Additional discussion regarding the use of detection probability, g(0), in the consideration of mitigation in the quantitative analysis is provided in AFTT FEIS/OEIS Section 3.4.3.1.5.6, Implementing Mitigation to Reduce Sound Exposures.

Comment 71: The Commission and others voiced concern that the Navy's post-model analysis cannot account for the magnitude of adjustment to take estimates from what was originally presented in the draft AFTT EIS/OEIS to what was presented in the proposed rule (78 FR 7050, January 31, 2013) and that the public does not have enough information to comment on this issue.

Response: A comprehensive discussion of the Navy's acoustic impact analysis, including modeling and the post-model analysis was included in section 6.1.5 of the Navy's LOA application, and is also discussed in Section 3.4.3.1.5, Quantitative Analysis, of the AFTT FEIS/OEIS. This information is sufficient to notify the public of the post-modeling analysis and provide the public an opportunity to comment. In addition to the information already contained within the AFTT FEIS/OEIS and the Navy's LOA application, and in response to public comments, the Navy prepared a Technical Report which describes the process for the post-modeling analysis in further detail. This report is available at *http://www.aftteis.com.* This report demonstrates that the differences in predicted impacts due to the post-modeling analysis and the corrections in modeling the proposed action made after publication of the AFTT DEIS/OEIS were not substantial changes in the proposed action that will significantly affect the environment in a manner not already considered in the AFTT DEIS/OEIS.

Comment 72: One commenter included several criticisms of the behavioral threshold used to assess impacts from airguns and pile-driving, including that it is outdated and uses an inappropriate metric.

Response: NMFS is committed to the use of the best available science and, as noted in the Summary at the beginning of the Final Rule, is in the process of updating and revising our acoustic thresholds. As has always been our process, we will solicit public input on revised draft thresholds before making any changes in the acoustic thresholds that applicants are required to use. The process for establishing new acoustic guidance is outlined on our Web site: *http://www.nmfs.noaa.gov/pr/acoustics/guidelines.htm.* Until revised criteria are finalized (after both public and peer-review), ensuring the inclusion and appropriate interpretation of any newer information, applicants should continue to use NMFS' current acoustic thresholds.

Vessel Strikes

Comment 73: The Commission recommended that NMFS require the Navy to use its spatially and temporally dynamic simulation models to estimate strike probabilities for specific activities.

Response: The Navy considered using a dynamic simulation model to estimate strike probability. However, the Navy determined that the use of historical data was a more appropriate way to analyze the potential for strike. The Navy's strike probability analysis in the AFTT FEIS/OEIS is based on data collected from historical use of vessels, in-water devices, and military expended materials, and the likelihood that these items may have the potential to strike an animal. This data accounts for real-world variables over the course of many years and is considered more accurate than model results.

Comment 74: NRDC recommended the application of ship-speed restrictions (10 knots) for Navy support vessels and/or other vessels while transiting high-value habitat for baleen whales and endangered species, or other areas of biological significance and/or shipping lanes (e.g., the Santa Barbara Channel).

Response: The Navy typically chooses to run vessels at slower speeds for efficiency and to conserve gas; however, some exercises, tests, or military needs require the Navy to exceed 10–15 knots. When transiting through North Atlantic right whale calving and foraging habitat, vessels will implement speed

reductions: (1) after they observe a right whale; (2) if they are within 5 nm (9 km) of a sighting reported within the past 12 hours (southeast) or week (northeast); or (3) when operating at night or during periods of poor visibility. The Navy will also be notified when Dynamic Management Areas are triggered around aggregations of right whales and consider whether to avoid the area or transit through at a slow, safe speed.

General Opposition

Comment 75: Multiple commenters stated that the NMFS proposal that allows only permit applicants and permit holders to file an administrative appeal of a permit decision is unacceptable.

Response: NMFS is not aware of any such proposal.

Comment 76: Multiple commenters expressed concern that, given the state of the oceans at this time, allowing the Navy's testing and training seems to go beyond a ''negligible impact.''

Response: The MMPA implementing regulations found at 50 CFR 216.103 define ''negligible impact'' as ''an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to adversely affect the species or stock through effects on annual rates of recruitment or survival.'' Therefore, the context under which NMFS makes a negligible impact determination is confined by regulation to the likely effects of the specified activity (in this case, Navy training and testing) on marine mammals and their habitat.

Comment 77: Several commenters expressed general opposition to Navy activities and NMFS' issuance of an MMPA authorization.

Response: NMFS appreciates the commenters' concern for the marine environment. However, the MMPA directs NMFS to issue an incidental take authorization if certain findings can be made. NMFS has determined that the Navy training and testing activities will have a negligible impact on the affected species or stocks and, therefore, we plan to issue the requested MMPA authorization.

Comment 78: One commenter asked if NMFS would consider that the Navy's activities can be conducted inside and outside of designated ranges and that there is essentially no boundary for their activities.

Response: The National Defense Authorization Act of 2004 (NDAA) (Pub. L. 108–136) removed the ''specified geographical region'' limitation of the MMPA as it applies to a ''military readiness activity.'' However, the Navy did designate a Study Area that includes existing range complexes plus pierside locations and areas on the high seas where maintenance, training, or testing may occur.

Comment 79: One commenter asked if NMFS would address issues raised in Dr. Lubchenco's 2010 letter to the Center for Environmental Quality, which noted a lack of knowledge on effects of sonar to marine mammals and the difficulties of limiting impacts from sonar where mitigation efforts depend on visual sightings.

Response: The Navy's LOA application and the AFTT FEIS/OEIS clearly discuss the potential impacts on marine mammals when exposed to sonar. The Navy has worked, and will continue to work, as an active partner to investigate the extent and severity of the impacts on marine mammals and how to reduce them. With respect to monitoring effectiveness, neither the Navy nor NMFS have indicated that monitoring (and the associated mitigation) will eliminate impacts. The MMPA requires that NMFS implement the means of effecting the least practicable adverse impacts on marine mammal species or stocks and their habitat, and NMFS has determined that required monitoring and associated mitigation measures accomplish this.

Comment 80: One commenter voiced concern about stranding networks not being equipped or willing to deal with the influx of marine mammals if NMFS authorizes the Navy's activities.

Response: The National Marine Mammal Stranding Network consists of over 120 organizations who partner with NMFS to investigate marine mammal strandings. Given the current fiscal environment, NMFS has needed to make tough budget choices, including reducing and defunding valuable programs. With the reduction in federal funding, response resources may be limited in some geographic regions.

In 2011, NMFS and the Navy signed a National Memorandum of Understanding (MOU) that established a framework for the Navy to assist NMFS with response to, and investigation of, Uncommon Stranding Events (USEs) during major training exercises by providing in-kind services to NMFS. The MOU is implemented through Regional Stranding Investigation Assistance Plans and outlines the region-specific Navy services that are available to assist with USE responses. As resources are available, the stranding network has and will continue to respond to marine mammal strandings.

Comment 81: One commenter claimed that Navy activities taking place in the Atlantic and Gulf of Mexico must be separated in NMFS' regulations.

Response: The Navy designated a Study Area that includes existing range complexes plus pierside locations and areas on the high seas where maintenance, training, or testing may occur. Combining the Navy's activities at each of these range complexes has no effect on how we analyze the impacts of Navy training and testing activities on marine mammals.

Comment 82: One commenter suggested that the Navy should not be allowed to increase their activities while the impacts on marine mammals are not fully documented or understood.

Response: It is important to note that, as stated in the Navy's LOA application and the proposed rule, the expansion of the AFTT Study Area from previous analyses is not an increase in areas where the Navy will train and test, but merely an expansion of the area to be included in our analysis and resulting authorization. Both NMFS and the Navy have a responsibility to use the best available science to support our analyses and decisions under the MMPA and NEPA. However, because the best available science is constantly changing and our current knowledge of marine mammal behavioral response is limited, NMFS utilizes an adaptive management approach. In so doing, we are able to continuously assess impacts and incorporate new mitigation or monitoring measures when necessary.

Comment 83: One commenter asked about the effects of missile launches on air and water quality; how much alumina oxide is released by rockets and missile launches and the effects on marine life; and the effects of hazardous materials discharged from Navy vessels on marine life.

Response: The AFTT FEIS/OEIS addresses all potential impacts to the human environment, which is available online at *http://www.aftteis.com.* The AFTT DEIS/OEIS was made availabile to the public on May 11, 2012 and was referenced in our notice of receipt (77 FR 60678, October 4, 2012) and the proposed rule (78 FR 7050, January 31, 2013).

Comment 84: One commenter asked about the impacts of testing new electromagnetic weapons systems on marine mammals and what studies have been done.

Response: The Navy did not request MMPA authorization for takes resulting from electromagnetic stressors. Data regarding the influence of magnetic fields and electromagnetic fields on cetaceans is inconclusive. Dolman *et al.* (2003) provides a literature review of the influences of marine wind farms on cetaceans. The literature focuses on harbor porpoises and dolphin species

because of their nearshore habitats. Teilmann *et al.* (2002) evaluated the frequency of harbor porpoise presence at wind farm locations around Sweden (the electrical current conducted by undersea power cables creates an electromagnetic field around those cables). Although electromagnetic field influences were not specifically addressed, the presence of cetacean species implies that at least those species are not repelled by the presence of electromagnetic fields around undersea cables associated with offshore wind farms. Based on the available literature, no evidence of electrosensitivity in marine mammals was found except recently in the Guiana dolphin (Czech-Damal *et al.* 2011). Based on the available literature, no evidence suggests any magnetic sensitivity for polar bears, sea otters, sea lions, fur seals, walrus, earless seals, and Sirenia (Normandeau *et al.* 2011). As described in the discussion below, some literature suggests that some cetaceans (whales, dolphins, and porpoises) may be sensitive to changes in magnetic fields, however, NMFS concurred with the Navy that the available data did not support the need for MMPA authorization at this time.

Comment 85: Earthjustice suggested that the Navy's DEIS/OEIS is fatally flawed because it fails to consider a ''no action'' alternative.

Response: The Council on Environmental Quality regulations require that agencies develop and analyze a range of alternatives to the proposed action, including a No Action Alternative. The No Action Alternative serves as a baseline description from which to compare the potential impacts of the proposed action. The Council on Environmental Quality provides two interpretations of the No Action Alternative, depending on the proposed action. One interpretation would mean the proposed action would not take place. For example, this interpretation would be used if the proposed action was the construction of a facility. The second interpretation, which applies to the AFTT FEIS/OEIS, allows the No Action Alternative to be the continuation of the present course of action until that action is changed. The purpose of a ''No Action Alternative'' is to ensure that agencies compare the potential impacts of the proposed action to the potential impacts of maintaining the status quo.

The AFTT FEIS/OEIS includes a ''No Action Alternative'' where the Navy would continue baseline training and testing activities, as defined by existing Navy environmental planning documents. The baseline testing activities also include those testing events that historically occur in the Study Area and have been subject to previous analyses. However, the No Action Alternative fails to meet the purpose of and need for the Navy's proposed action because it would not allow the Navy to meet current and future training and testing requirements necessary to achieve and maintain military readiness.

Comment 86: NRDC recommended that the Navy avoid fish spawning grounds and important habitat for fish species potentially vulnerable to significant behavioral change, such as wide-scale displacement within the water column or changes in breeding behavior.

Response: While NMFS considers impacts to prey species as a component of marine mammal habitat, these concerns are mostly outside the purview of the MMPA. Impacts to fish spawning grounds and habitat use are dealt with under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) as it relates to Essential Fish Habitat (EFH). The Navy determined that their activities may adversely affect EFH; therefore, the Navy concluded that a consultation under the MSFCMA was necessary. NMFS found that the proposed mitigation measures would adequately address impacts to EFH and made no additional EFH conservation recommendations.

Comment 87: NRDC recommended that the Navy dedicate research and technology development to reduce the impacts of active acoustic sources on marine mammals.

Response: As stated in the Navy Research section of the proposed rule (78 FR 7050, January 31, 2013; pages 7100–7101), the Navy provides a significant amount of funding and support to marine research. In summary, from 2004 to 2012, the Navy provided over $230 million for marine species research and currently sponsors 70 percent of all U.S. research concerning the effects of human-generated sound on marine mammals and 50 percent of such research conducted worldwide. The Navy's research and development efforts have significantly improved our understanding of the effects of Navy-generated sound in the marine environment. These studies have supported the modification of acoustic criteria to more accurately assess behavioral impacts to beaked whales and the thresholds for auditory injury for all species, and the adjustment of mitigation zones to better avoid injury. In addition, Navy scientists work cooperatively with other government researchers and scientists, universities, industry, and nongovernmental conservation organizations in collecting, evaluating, and modeling information on marine resources.

Comment 88: NRDC recommended that the Navy agree to additional clean-up and retrieval of the massive amount of discarded debris and expended materials associated with its proposed activities.

Response: The Navy conducted a full analysis of the potential impacts of military expended materials on marine mammals and will implement several mitigation measures to help avoid or reduce those impacts. This analysis is contained throughout Chapter 3 (Affected Environment and Environmental Consequences) of the AFTT FEIS/OEIS. The Navy determined that military expended materials related to training exercises under a worst-case scenario will not impact more than 0.00009 percent of the available soft bottom habitat annually within any of the range complexes. The Navy has standard operation procedures in place to reduce the amount of military expended materials to the maximum extent practical, including recovering targets and associated parachutes.

Estimated Take of Marine Mammals

In the Estimated Takes of Marine Mammals section of the proposed rule, NMFS described the potential effects to marine mammals from Navy training and testing activities in relation to the MMPA regulatory definitions of Level A and Level B harassment (78 FR 7050, January 31, 2013; pages 7102–7111). That information has not changed and is not repeated here.

Tables 13 and 14 provide a summary of non-impulsive thresholds to TTS and PTS for marine mammals. A detailed explanation of how these thresholds were derived is provided in the AFTT DEIS/OEIS Criteria and Thresholds Technical Report (*http://aftteis.com/DocumentsandReferences/AFTTDocuments/SupportingTechnicalDocuments.aspx*) and summarized in Chapter 6 of the Navy's LOA application (*http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*).

TABLE 13—ONSET TTS AND PTS THRESHOLDS FOR SONAR AND OTHER ACTIVE ACOUSTIC SOURCES

Group	Species	Onset TTS	Onset PTS
Low-Frequency Cetaceans	All mysticetes	178 dB re 1μPa2-sec (LF_{II})	198 dB re 1μPa2-sec (LF_{II}).
Mid-Frequency Cetaceans	Most delphinids, beaked whales, medium and large toothed whales.	178 dB re 1μPa2-sec (MF_{II})	198 dB re 1μPa2-sec (MF_{II}).
High-Frequency Cetaceans	Porpoises, Kogia spp.	152 dB re 1μPa2-sec (HF_{II})	172 dB re 1μPa2-secSEL (HF_{II}).
Phocidae In-water	Harbor, Hawaiian monk, elephant seals.	183 dB re 1μPa2-sec (P_{WI})	197 dB re 1μPa2-sec (P_{WI}).
Otariidae & Obodenidae In-water	Sea lions and fur seals	206 dB re 1μPa2-sec (O_{WI})	220 dB re 1μPa2-sec (O_{WI}).
Mustelidae In-water	Sea otters.		

Note: LF_{II}, MF_{II}, HF_{II}: New compound Type II weighting functions; P_{WI}, O_{WI}: Original Type I (Southall *et al.* 2007) for pinniped and mustelid in water.

TABLE 14—IMPULSIVE SOUND EXPLOSIVE CRITERIA AND THRESHOLDS FOR PREDICTING PHYSIOLOGICAL EFFECTS

Group	Species	Behavior		Slight Injury			Mortality
		Behavioral (for ≥2 pulses/24 hours)	TTS	PTS	GI Tract	Lung	
Low-frequency Cetaceans.	All mysticetes	167 dB SEL (LF_{II})	172 dB SEL (LF_{II}) or 224 dB Peak SPL.	187 dB SEL (LF_{II}) or 230 dB Peak SPL.	237 dB SPL or 104 psi	Equation 1	Equation 2.
Mid-frequency Cetaceans.	Most delphinids, medium and large toothed whales.	167 dB SEL (MF_{II}).	172 dB SEL (MF_{II}) or 224 dB Peak SPL.	187 dB SEL (MF_{II}) or 230 dB Peak SPL.			
High-frequency Cetaceans.	Porpoises and *Kogia* spp..	141 dB SEL (HF_{II}).	146 dB SEL (HF_{II}) or 195 dB Peak SPL.	161 dB SEL (HF_{II}) or 201dB Peak SPL.			
Phocidae	Hawaiian monk, elephant, and harbor seal.	172 dB SEL (P_{WI})	177 dB SEL (P_{WI}) or 212 dB Peak SPL.	192 dB SEL (P_{WI}) or 218 dB Peak SPL.			
Otariidae	Sea lions and fur seals.	195 dB SEL (O_{WI})	200 dB SEL (O_{WI})or 212 dB Peak SPL.	215 dB SEL (O_{WI}) or 218 dB Peak SPL.			
Mustelidae	Sea otters.						

Equation 1: $= 39.1M^{1/3}\ (1+[D_{Rm}/10.081])^{1/2}$ Pa - sec

Equation 2: $= 91.4M^{1/3}\ (1+[D_{Rm}/10.081])^{1/2}$ Pa - sec

Where:

M = mass of the animals in kg

D_{Rm} = depth of the receiver (animal) in meters

Existing NMFS criteria was applied to sounds generated by pile driving and airguns (Table 15).

TABLE 15—THRESHOLDS FOR AIRGUNS

Species groups	Underwater airgun criteria (sound pressure level, dB re 1 μPa)	
	Level A Injury threshold	Level B Disturbance threshold
Cetaceans (whales, dolphins, porpoises)	180 dB rms	160 dB rms.
Pinnipeds (seals)	190 dB rms	160 dB rms.

Take Request

The AFTT FEIS/OEIS considered all training and testing activities proposed to occur in the Study Area that have the potential to result in the MMPA defined take of marine mammals. The stressors associated with these activities included the following:

- Acoustic (sonar and other active non-impulse sources, explosives, swimmer defense airguns, weapons firing, launch and impact noise, vessel noise, aircraft noise);
- Energy (electromagnetic devices);
- Physical disturbance or strikes (vessels, in-water devices, military expended materials, seafloor devices);
- Entanglement (fiber optic cables, guidance wires, parachutes);
- Ingestion (munitions, military expended materials other than munitions); and

The Navy determined, and NMFS agrees, that three stressors could potentially result in the incidental taking of marine mammals from training and testing activities within the Study Area: (1) Non-impulsive stressors (sonar and other active acoustic sources), (2) impulsive stressors (explosives), and (3) vessel strikes. Non-impulsive and impulsive stressors have the potential to result in incidental takes of marine mammals by harassment, injury, or mortality. Vessel strikes have the potential to result in incidental take from direct injury and/or mortality. It is important to note that the Navy's take estimates represent the number of exposures—not the number of individual marine mammals that may be affected by training and testing activities. Some individuals may be harassed multiple times while other individuals may only be harassed once. Multiple exposures are especially likely

in areas where resident populations overlap with stationary activities.

Training Activities—Based on the Navy's model and post-model analysis (described in detail in Chapter 6 of their LOA application), Table 16 summarizes the Navy's take request for training activities for an annual maximum year (a notional 12-month period when all annual and non-annual events could occur) and the summation over a 5-year period (annual events occurring five times and non-annual events occurring three times). Table 17 summarizes the Navy's take request for training activities by species from the modeling estimates.

TABLE 16—SUMMARY OF ANNUAL AND 5-YEAR TAKE REQUESTED AND AUTHORIZED FOR TRAINING ACTIVITIES

MMPA category	Source	Annual authorization sought	5-Year authorization sought
		Training activities [4]	Training activities
Mortality	Impulsive	17 mortalities applicable to any small odontocete in any given year [3].	85 mortalities applicable to any small odontocete over 5 years [5].
	Unspecified	10 mortalities to beaked whales in any given year [1].	10 mortalities to beaked whales over 5 years [1].
	Vessel strike	No more than three large whale mortalities in any given year [2]..	No more than 10 large whale mortalities over 5 years [2].
Level A	Impulsive and Non-Impulsive.	351	1,753.
Level B	Impulsive and Non-Impulsive	2,053,473	10,263,631.

[1] Ten Ziphiidae beaked whale to include any combination of Blainville's beaked whale, Cuvier's beaked whale, Gervais' beaked whale, northern bottlenose whale, and Sowerby's beaked whale, and True's beaked whale (not to exceed 10 beaked whales total over the 5-year length of requested authorization).

[2] *For Training:* Because of the number of incidents in which the species of the stricken animal has remained unidentified, Navy cannot predict that proposed takes (either 3 per year or the 10 over the course of 5 years) will be of any particular species, and therefore seeks take authorization for any combination of large whale species (e.g., fin whale, humpback whale, minke whale, sei whale, Bryde's whale, sperm whale, blue whale, Blainville's beaked whale, Cuvier's beaked whale, Gervais' beaked whale, and unidentified whale species), excluding the North Atlantic right whale.

[3] Not to exceed five mortalities for the east coast or three mortalities within the Gulf of Mexico for any small odontocete species per year.

[4] Predictions shown are for the theoretical maximum year, which would consist of all annual training and one Civilian Port Defense activity. Civilian Port Defense training would occur biennially.

[5] Not to exceed 25 mortalities for the east coast or 15 mortalities within the Gulf of Mexico for any small odontocete species over five years.

TABLE 17—SPECIES-SPECIFIC TAKE REQUESTS AND AUTHORIZATION FROM IMPULSIVE AND NON-IMPULSIVE SOURCE EFFECTS FOR ALL TRAINING ACTIVITIES

Species	Annual [1]		Total over 5-year period	
	Level B	Level A	Level B	Level A
Mysticetes:				
Blue Whale*	147	0	735	0
Bryde's Whale	955	0	4,775	0
Minke Whale	60,402	16	302,010	80
Fin Whale*	4,490	1	22,450	5
Humpback Whale*	1,643	1	8,215	5
North Atlantic Right Whale*	112	0	560	0
Sei Whale*	10,188	1	50,940	5
Odontocetes—Delphinids:				
Atlantic Spotted Dolphin	177,570	12	887,550	60
Atlantic White-Sided Dolphin	31,228	3	156,100	15
Bottlenose Dolphin	284,728	8	1,422,938	40
Clymene Dolphin	19,588	1	97,938	5
Common Dolphin	465,014	17	2,325,022	85
False Killer Whale	713	0	3,565	0
Fraser's Dolphin	2,205	0	11,025	0
Killer Whale	14,055	0	70,273	0
Melon-headed Whale	20,876	0	104,380	0
Pantropical Spotted Dolphin	70,968	1	354,834	5
Pilot Whale	101,252	3	506,240	15
Pygmy Killer Whale	1,487	0	7,435	0
Risso's Dolphin	238,528	3	1,192,618	15
Rough Toothed Dolphin	1,059	0	5,293	0
Spinner Dolphin	20,414	0	102,068	0
Striped Dolphin	224,305	7	1,121,511	35
White-Beaked Dolphin	1,613	0	8,027	0
Odontocetes—Sperm Whales:				
Sperm Whale*	14,749	0	73,743	0
Odontocetes—Beaked Whales:				
Blainville's Beaked Whale	28,179	0	140,893	0
Cuvier's Beaked Whale	34,895	0	174,473	0
Gervais' Beaked Whale	28,255	0	141,271	0
Northern Bottlenose Whale	18,358	0	91,786	0

TABLE 17—SPECIES-SPECIFIC TAKE REQUESTS AND AUTHORIZATION FROM IMPULSIVE AND NON-IMPULSIVE SOURCE EFFECTS FOR ALL TRAINING ACTIVITIES—Continued

Species	Annual [1]		Total over 5-year period	
	Level B	Level A	Level B	Level A
Sowerby's Beaked Whale	9,964	0	49,818	0
True's Beaked Whale	16,711	0	83,553	0
Odontocetes—Kogia Species and Porpoises:				
Kogia spp.	5,090	15	25,448	75
Harbor Porpoise	142,811	262	711,727	1,308
Phocid Seals:				
Bearded Seal	0	0	0	0
Gray Seal	82	0	316	0
Harbor Seal	83	0	329	0
Harp Seal	4	0	12	0
Hooded Seal	5	0	25	0
Ringed Seal **	0	0	0	0

[1] Predictions shown are for the theoretical maximum year, which would consist of all annual training and one Civilian Port Defense activity. Civilian Port Defense training would occur biennially.
* ESA-Listed Species; ** ESA-proposed; PTS: permanent threshold shift; TTS: temporary threshold shift.

Testing Activities—Table 18 summarizes the Navy's take request and NMFS' authorization for testing activities and Table 19 specifies the Navy's take request and NMFS' authorization for testing activities by species from the modeling estimates. Table 20 summarizes the Navy's take request and NMFS' authorization for testing activities involving ship shock trials.

TABLE 18—SUMMARY OF ANNUAL AND 5-YEAR TAKE REQUESTS AND AUTHORIZATION FOR TESTING ACTIVITIES

[Excluding ship shock trials]

MMPA category	Source	Annual authorization sought	5-Year authorization sought
		Testing activities [2]	Testing activities [2]
Mortality	Impulsive	11 mortalities applicable to any small odontocete in any given year [2 3].	55 mortalities applicable to any small odontocete over 5 years [4].
	Unspecified	None	None.
	Vessel strike	No more than one large whale mortality in any given year [1].	No more than one large whale mortality over 5 years [1].
Level A	Impulsive and Non-Impulsive.	375	1,735.
Level B	Impulsive and Non-Impulsive.	2,441,640	11,559,236.

[1] *For Testing:* Because of the number of incidents in which the species of the stricken animal has remained unidentified, the Navy cannot predict that the proposed takes (one over the course of 5 years) will be of any particular species, and therefore seeks take authorization for any large whale species (e.g., fin whale, humpback whale, minke whale, sei whale, Bryde's whale, sperm whale, blue whale, Blainville's beaked whale, Cuvier's beaked whale, Gervais' beaked whale, and unidentified whale species), excluding the North Atlantic right whale.
[2] Excluding ship shock trials.
[3] Not to exceed four mortalities for the east coast or two mortalities within the Gulf of Mexico for any species of small odontocete per year.
[4] Not to exceed 20 mortalities for the east coast or 10 mortalities within the Gulf of Mexico for any species of small odontocete over five years.

TABLE 19—SPECIES-SPECIFIC TAKE REQUESTS AND AUTHORIZATION FROM IMPULSIVE AND NON-IMPULSIVE SOURCE EFFECTS FOR ALL TESTING ACTIVITIES

[Including ship shock trials]

Species	Annual [1 2]		Total over 5-year period	
	Level B	Level A	Level B	Level A
Mysticetes:				
Blue Whale *	18	0	82	0
Bryde's Whale	64	0	304	0
Minke Whale	7,756	15	34,505	28
Fin Whale *	599	0	2,784	0
Humpback Whale *	200	0	976	0
North Atlantic Right Whale *	87	0	395	0
Sei Whale *	796	0	3,821	0
Odontocetes—Delphinids:				
Atlantic Spotted Dolphin	24,429	1,854	104,647	1,964
Atlantic White-Sided Dolphin	10,330	147	50,133	166
Bottlenose Dolphin	33,708	149	146,863	190
Clymene Dolphin	2,173	80	10,169	87

TABLE 19—SPECIES-SPECIFIC TAKE REQUESTS AND AUTHORIZATION FROM IMPULSIVE AND NON-IMPULSIVE SOURCE EFFECTS FOR ALL TESTING ACTIVITIES—Continued

[Including ship shock trials]

Species	Annual [1 2]		Total over 5-year period	
	Level B	Level A	Level B	Level A
Common Dolphin	52,546	2,203	235,493	2,369
False Killer Whale	109	0	497	0
Fraser's Dolphin	171	0	791	0
Killer Whale	1,540	2	7,173	2
Melon-headed Whale	1,512	28	6,950	30
Pantropical Spotted Dolphin	7,985	71	38,385	92
Pilot Whale	15,701	153	74,614	163
Pygmy Killer Whale	135	3	603	3
Risso's Dolphin	24,356	70	113,682	89
Rough Toothed Dolphin	138	0	618	0
Spinner Dolphin	2,862	28	13,208	34
Striped Dolphin	21,738	2,599	97,852	2,751
White-Beaked Dolphin	1,818	3	8,370	3
Odontocetes—Sperm Whales:				
Sperm Whale *	1,786	5	8,533	6
Odontocetes—Beaked Whales:				
Blainville's Beaked Whale	4,753	3	23,561	3
Cuvier's Beaked Whale	6,144	1	30,472	1
Gervais' Beaked Whale	4,764	4	23,388	4
Northern Bottlenose Whale	12,096	5	60,409	6
Sowerby's Beaked Whale	2,698	0	13,338	0
True's Beaked Whale	3,133	1	15,569	1
Odontocetes—Kogia Species and Porpoises:				
Kogia spp.	1,163	12	5,536	36
Harbor Porpoise	2,182,872	216	10,358,300	1,080
Phocid Seals:				
Bearded Seal	33	0	161	0
Gray Seal	3,293	14	14,149	46
Harbor Seal	8,668	78	38,860	330
Harp Seal	3,997	14	16,277	30
Hooded Seal	295	0	1,447	0
Ringed Seal **	359	0	1,795	0

[1] Predictions shown are for the theoretical maximum year, which would consist of all annual testing; one CVN ship shock trial and two other ship shock trials (DDG or LCS); and Unmanned Underwater Vehicle (UUV) Demonstrations at each of three possible sites. One CVN, one DDG, and two LCS ship shock trials could occur within the 5-year period. Typically, one UUV Demonstration would occur annually at one of the possible sites.

[2] Ship shock trials could occur in either the VACAPES (year-round, except a CVN ship shock trial would not occur in the winter) or JAX (spring, summer, and fall only) Range Complexes. Actual location and time of year of a ship shock trial would depend on platform development, site availability, and availability of ship shock trial support facilities and personnel. For the purpose of requesting takes, the maximum predicted effects to a species for either location in any possible season are included in the species' total predicted effects.

* ESA-Listed Species; ** ESA-proposed; PTS: permanent threshold shift; TTS: temporary threshold shift.

TABLE 20—SUMMARY OF ANNUAL AND 5-YEAR TAKE REQUEST AND AUTHORIZATION FOR AFTT SHIP SHOCK TRIALS

MMPA category	Annual authorization sought [1]	5-year authorization sought
Mortality	20 mortalities applicable to any small odontocete in any given year [2].	25 mortalities applicable to any small odontocete over 5 years.[2]
Level A	7,383	7,779.
Level B	5,185	5,474.

[1] Up to three ship shock trials could occur in any one year (one CVN and two DDG/LCS ship shock trials), with one CVN, one DDG, and two LCS ship shock trials over the 5-year period. Ship shock trials could occur in either the VACAPES (year-round, except a CVN ship shock trial would not occur in the winter) or JAX (spring, summer, and fall only) Range Complexes. Actual location and time of year of a ship shock trial would depend on platform development, site availability, and availability of ship shock trial support facilities and personnel. For the purpose of requesting takes, the maximum predicted effects to a species for either location in any possible season are included in the species' total predicted effects.

[2] Not to exceed the following specified number of mortalities for each species: 20 mortalities of Atlantic spotted dolphins, clymene dolphins, common dolphins, Fraser's dolphins, melon-headed whales, pantropical spotted dolphins, spinner dolphins, and striped dolphins; 16 mortalities of Atlantic white-sided dolphins; 15 mortalities of pilot whales; 14 mortalities of bottlenose dolphins (offshore ecotype only); 9 mortalities of pygmy killer whales and white-beaked dolphins; 8 mortalities of Risso's dolphins; 6 mortalities of false killer whales and rough-toothed dolphins, and 2 mortalities of *Kogia* spp.

Of note, in the regulatory text below, NMFS quantifies take by presenting the 5-yr totals for each species for harassment (Level A and Level B, testing and training, all combined) and for mortality (testing and training combined). The specific types of harassment expected annually, and whether they will occur during testing or training, will continue to be specified in the LOAs as described in the preamble. This less specific language in

the regulations will provide potential flexibility in the event that a change in activities or our analysis of impacts results in changes in the anticipated types, numbers, or distribution of take. If such a change were to occur, NMFS would conduct an analysis to determine whether the changes fall within the scope of impacts contemplated by the rule and also whether they still result in a negligible impact. If the changes are expected to result in impacts that fall within the scope of the rule and if we still anticipate a negligible impact to result, NMFS would propose the issuance of a revised LOA and publish a notice in the **Federal Register** announcing our findings and requesting public comments. If not, the changes would need to be addressed through a new or amended rulemaking.

Marine Mammal Habitat

The Navy's training and testing activities could potentially affect marine mammal habitat through the introduction of sound into the water column, impacts to the prey species of marine mammals, bottom disturbance, or changes in water quality. Each of these components was considered in the AFTT DEIS/OEIS. Based on the information in the Marine Mammal Habitat section of the proposed rule (78 FR 7050, January 31, 2013; pages 7111–7113) and the supporting information included in the AFTT FEIS/OEIS, NMFS has determined that training and testing activities would not have adverse or long-term impacts on marine mammal habitat. Important marine mammal habitat areas are also addressed in the Comments and Responses section and the Cetacean and Sound Mapping section of this document. In summary, expected effects to marine mammal habitat will include elevated levels of anthropogenic sound in the water column; short-term physical alteration of the water column or bottom topography; brief disturbances to marine invertebrates; localized and infrequent disturbance to fish; a limited number of fish mortalities; and temporary marine mammal avoidance.

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 affected 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, New *et al.* (2013) developed a model to assess the link between feeding energetics of beaked whales (family Ziphiidae) and their requirements for survival and reproduction.

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.), as well as the number and nature of estimated Level A harassment 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.

The Navy's specified activities have been described based on best estimates of the maximum amount of sonar and other acoustic source use or detonations that the Navy would conduct. There may be some flexibility in that the exact number of hours, items, or detonations may vary from year to year, but take totals are not authorized to exceed the 5-year totals. Furthermore the Navy's take request is based on their model and post-model analysis. The requested number of Level B takes does not equate to the number of individual animals the Navy expects to harass (which is lower), but rather to the instances of take (i.e., exposures above the Level B harassment threshold) that will occur. Depending on the location, duration, and frequency of activities, along with the distribution and movement of marine mammals, individual animals may be exposed multiple times to impulse or non-impulse sounds at or above the Level B harassment threshold. However, the Navy is currently unable to estimate the number of individual animals that may be taken during training and testing activities. The model results estimate the overall number of takes that may occur to a smaller number of individuals. While the model shows that an increased number of exposures may take place (compared to the 2009 rulemakings for AFAST and the east coast range complexes), the types and severity of individual responses to training and testing activities are not expected to change.

Taking the above into account, considering the Analysis and Negligible Impact Determination section of the proposed rule (78 FR 7050, January 31, 2013; pages 7113–7125), and dependent upon the implementation of mitigation measures, NMFS has determined that the Navy's training and testing exercises will have a negligible impact on the marine mammal species and stocks present in the Study Area.

Species-Specific Analysis

In the discussions below, the ''acoustic analysis'' refers to the Navy's model results and post-model analysis. Using the best available information, including marine mammal density estimates, marine mammal depth occurrence distributions, oceanographic and environmental data, marine mammal hearing data, and criteria and thresholds for levels of potential effects, and in coordination with NMFS, the Navy performed a quantitative analysis to estimate the number of marine mammals that could be harassed by acoustic sources or explosives used during Navy training and testing activities. Marine mammal densities used in the model may overestimate actual densities when species data is limited and for species with seasonal migrations (e.g., North Atlantic right whales, humpbacks, blue whales, fin whales, sei whales). The quantitative analysis consists of computer modeled estimates and a post-model analysis to determine the number of potential mortalities and harassments. The model calculates sound energy propagation from sonars, other active acoustic sources, and explosives during naval activities; the sound or impulse received by animat dosimeters representing marine mammals distributed in the area around the modeled activity; and whether the sound or impulse received by a marine mammal exceeds the thresholds for effects. It is important to note that the Navy's take estimates represent the total number of takes and not the number of individuals taken, as a single individual may be taken multiple times over the course of a year.

Although this more complex computer modeling approach accounts

for various environmental factors affecting acoustic propagation, the current software tools do not consider the likelihood that a marine mammal would attempt to avoid repeated exposures to a sound or avoid an area of intense activity where a training or testing event may be focused. Additionally, the software tools do not consider the implementation of mitigation (e.g., stopping sonar transmissions when a marine mammal is within a certain distance of a ship or range clearance prior to detonations). In both of these situations, naval activities are modeled as though an activity would occur regardless of proximity to marine mammals and without any horizontal movement by the animal away from the sound source or human activities (e.g., without accounting for likely animal avoidance). The initial model results overestimate the number of takes (as described previously), primarily by behavioral disturbance. The final step of the quantitative analysis of acoustic effects is to consider the implementation of mitigation and the possibility that marine mammals would avoid continued or repeated sound exposures. Mitigation and marine mammal avoidance primarily reduce impacts by reducing Level A harassment to Level B harassment. NMFS provided input to the Navy on this process and the Navy's qualitative analysis is described in detail in Chapter 6 of their LOA application (*http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*). A detailed explanation of this analysis is also provided in the technical report Post-Model Quantitative Analysis of Animal Avoidance Behavior and Mitigation Effectiveness for Atlantic Fleet Training and Testing (*http://aftteis.com/DocumentsandReferences/AFTTDocuments/SupportingTechnicalDocuments.aspx*).

Mysticetes

The Navy's acoustic analysis indicates that numerous exposures of mysticete species to sound levels likely to result in Level B harassment may occur, mostly from sonar and other active acoustic stressors associated with mostly training and some testing activities in the AFTT Study Area. Of these species, North Atlantic right, humpback, blue, fin, and sei whales are listed as endangered under the ESA. Level B takes are anticipated to be in the form of behavioral harassment and no injurious takes of North Atlantic right, humpback, blue, fin, or sei whales from sonar, or other active acoustic stressors are expected. The majority of acoustic effects to mysticetes from sonar and other active sound sources during training activities would be primarily from anti-submarine warfare events involving surface ships and hull-mounted MFAS sonar. Most Level B harassments to mysticetes from sonar would result from received levels between 144 and 162 SPL. High-frequency systems are not within mysticetes' ideal hearing range and it is unlikely that they would cause a significant behavioral reaction. The only mysticete species that may be exposed to sound or energy from explosions resulting in the possibility of PTS is the minke whale. Exposures would occur primarily in the VACAPES Range Complex, followed by JAX, and Navy Cherry Point Range Complexes. However, the Navy's proposed mitigation zones for explosive activities extend beyond the predicted maximum range to PTS. The implementation of mitigation and the sightability of mysticetes (due to their large size) reduces the potential for a significant behavioral reaction or a threshold shift to occur.

Research and observations show that if mysticetes are exposed to sonar or other active acoustic sources they may react in a number of ways depending on the characteristics of the sound source, their experience with the sound source, and whether they are migrating or on seasonal grounds (i.e., breeding or feeding). Reactions may include alerting, breaking off feeding dives and surfacing, diving or swimming away, or no response at all. Additionally, migrating animals may ignore a sound source, or divert around the source if it is in their path. In the ocean, the use of sonar and other active acoustic sources is transient and is unlikely to repeatedly expose the same population of animals over a short period. Around heavily trafficked Navy ports and on fixed ranges, the possibility is greater for animals that are resident during all or part of the year to be exposed multiple times to sonar and other active acoustic sources. A few behavioral reactions per year, even from a single individual, are unlikely to produce long-term consequences for that individual or the population. Furthermore, the implementation of mitigation measures and sightability of sei whales (due to their large size) would further reduce the potential impacts.

Mysticetes exposed to the sound from explosions may react in a number of ways, which may include alerting; startling; breaking off feeding dives and surfacing; diving or swimming away; or showing no response at all. Occasional behavioral reactions to intermittent explosions are unlikely to cause long-term consequences for individual mysticetes or populations. Furthermore, the implementation of mitigation measures and sightability of sei whales (due to their large size) would further reduce the potential impacts in addition to reducing the potential for injury.

In addition to Level B takes, the Navy is requesting no more than 10 large whale injuries or mortalities over 5 years (no more than three large whale mortalities in a given year) due to vessel strike during training activities and no more than one large whale injury or mortality over 5 years due to vessel strike during testing activities. However, no more than three injuries or mortalities of any of the following species would be authorized to occur in a given year between both training and testing activities (two injuries or mortalities from training and one injury or mortality from testing): blue whale, fin whale, humpback whale, sei whale, and sperm whale. The Navy provided a detailed analysis of strike data in section 6 of their LOA application. Marine mammal mortalities were not previously authorized by NMFS in the 2009 rulemakings for AFAST and the other east coast Range Complexes. However, over a period of 18 years (1995 to 2012), there have been 19 Navy vessel strikes in the AFAST Study Area. The highest average number of strikes over any 5-year period was two strikes per year from 2001 to 2005. Over the last 5 years on the east coast, the Navy was involved in only two strikes, with no confirmed marine mammal deaths as a result of a vessel strike. The number of injuries or mortalities from vessel strike is not expected to be an increase over the past decade, but rather NMFS is proposing to authorize these takes for the first time.

North Atlantic Right Whale

North Atlantic right whales may be exposed to sonar or other active acoustic stressors associated with training and testing activities throughout the year. Exposures may occur in feeding grounds off the New England coast, on migration routes along the east coast, and on calving grounds in the southeast off the coast of Florida and Georgia; however, mitigation areas will be established in these areas with specific measures to further reduce impacts to North Atlantic right whales from acoustic effects or ship strikes. Acoustic modeling predicts that North Atlantic right whales could be exposed to sound that may result in 60 instances of TTS and 51 takes by behavioral harassment per year from annually recurring training activities. The majority of these impacts are predicted within the JAX Range

Complex where animals spend winter months calving. Annually recurring testing activities could expose North Atlantic right whales to sound that may result in 11 instances of TTS and 66 takes by behavioral harassment per year. These impacts are predicted in Rhode Island inland waters and within the Northeast Range Complexes. North Atlantic right whales may be exposed to sound or energy from explosions associated with training activities throughout the year. The acoustic analysis predicts one TTS exposure to a North Atlantic right whale annually from recurring training activities, but no impacts on North Atlantic right whales due to annually recurring testing activities or ship shock trials. Testing activities that use explosives would not occur in the North Atlantic right whale mitigation areas, although the sound and energy from explosions associated with testing activities may be detectable within the mitigation areas.

The Navy and NMFS do not anticipate that a North Atlantic right whale would be struck by a vessel during training or testing activities because of the extensive measures in place to reduce the risk of a vessel strike to the species. For example, the Navy would receive information about recent North Atlantic right whale sightings before transiting through or conducting training or testing activities in the mitigation areas. During transits, vessels would exercise extreme caution and proceed at the slowest speed that is consistent with safety, mission, training, and operations. In the southeast North Atlantic right whale mitigation area, vessels will reduce speed when the observe a North Atlantic right whale, when they are within 5 nm (9 km) of a sighting reported in the past 12 hours, or when operating at night or during periods of poor visibility. The Navy would also minimize to the maximum extent practicable north-south transits through the southeast North Atlantic right whale mitigation area. Similar measures to reduce the risk of ship strikes would be implemented in the northeast and mid-Atlantic mitigation areas. In addition, the Navy will be notified of North Atlantic right whale Dynamic Management Areas (DMAs). If a DMA is created, the Navy will consider whether to either navigate around the area or travel through at slow safe speed consistent with mission training and safety of navigation. The Navy will receive notification regarding the creation of a DMA as well as information pertaining to its location, size, and duration through the U.S. Coast Guard's Notice to Mariners.

Due to the importance of North Atlantic right whale critical habitat for feeding and reproductive activities, takes that occur in those areas may have more severe effects than takes that occur while whales are just transiting and not involved in feeding or reproductive behaviors. To address these potentially more severe effects, NMFS and the Navy have included mitigation measures to minimize impacts (both number and severity) in both the northeast and southeast designated right whale critical habitat as well as the migratory corridor which connects them. Additional mitigation measures pertaining to training and testing activities within the mitigation areas are described below.

In the southeast North Atlantic right whale mitigation area, no training or testing activities using sonar or other active acoustic sources would occur with the exception of object detection/navigational sonar training and maintenance activities for surface ships and submarines while entering/exiting Mayport, Florida. Training activities involving helicopter dipping sonar would occur off of Mayport, Florida within the right whale mitigation area; however, the majority of active sonar activities would occur outside the southeast mitigation area. In the northeast North Atlantic right whale mitigation area, hull-mounted sonar would not be used (except for sonar used for navigation training and object detection). However, a limited number of torpedo exercises would be conducted in August and September when many North Atlantic right whales have migrated south out of the area. Of course, North Atlantic right whales can be found outside of designated mitigation areas and sound from nearby activities may be detectable within the mitigation areas. Acoustic modeling predictions consider these potential circumstances.

Training activities that use explosives are not conducted in the southeast North Atlantic right whale mitigation area. Training activities that use explosives would not occur in the northeast North Atlantic right whale mitigation area. Although, the sound and energy from explosions associated with training activities may be detectable within the mitigation areas.

The western North Atlantic minimum stock size is based on a census of individual whales identified using photo-identification techniques. Review of the photo-identification recapture database in July 2010 indicated that 396 individually recognized whales in the catalogue were known to be alive in 2007. This value is a minimum and does not include animals alive prior to 2007, but not recorded in the individual sightings database as seen during December 1, 2004 to July 6, 2010 (note that matching of photos taken during 2008–2010 was not complete at the time the data were received). It also does not include some calves known to be born during 2007, or any other individual whales seen during 2007, but not yet entered into the catalogue. In addition, this estimate has no associated coefficient of variation.

Acoustic analysis indicates that no North Atlantic right whales will be exposed to sound levels likely to result in Level A harassment. In addition, modeling predicts no potential for serious injury or mortality to North Atlantic right whales. Moreover, NMFS believes that Navy Lookouts would detect right whales and implement the appropriate mitigation measure before an animal could approach to within a distance necessary to result in injury. Any takes that do occur would likely be short term and at a lower received level and would likely not affect annual rates of recruitment or survival.

Humpback Whale

The acoustic analysis predicts that humpback whales could be exposed to sound associated with training activities that may result in 1 PTS, 1,128 TTS and 514 takes by behavioral harassments per year. The majority of these impacts are predicted in the JAX, Navy Cherry Point, VACAPES, and Northeast Range Complexes. Further, the analysis predicts that humpback whales could be exposed to sound associated with testing activities that may result in 94 TTS and 100 behavioral reactions per year as a result of annually recurring testing activities. Humpback whales may be exposed to sound or energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts that humpback whales could be exposed to sound or energy from explosions that may result in 1 TTS per year as a result of annually recurring training activities and 1 TTS to a humpback whale due to ship shock trials over a 5-year period. All predicted impacts would be to the Gulf of Maine stock because this is the only humpback whale stock present within the Study Area.

Important feeding areas for humpbacks are located in the Northeast, which is an area where there are lower levels of Navy training and testing activities. In addition, Stellwagen Bank National Marine Sanctuary contains some of this important area and the Navy does not plan to conduct any activities within Stellwagen Bank that may impact humpback whales. The

Navy has designated several planning awareness areas (PAAs) based on locations of high productivity that have been correlated with high concentrations of marine mammals, including important feeding areas in the Northeast, and would avoid conducting major training exercises involving active sonar in PAAs.

Sei Whale

The acoustic analysis predicts that sei whales could be exposed to sound associated with training activities that may result in 1 PTS, 6,604 TTS, and 3,582 takes by behavioral harassment per year from annually recurring training activities. The majority of these impacts are predicted in the VACAPES, Navy Cherry Point, and JAX Range Complexes, with a relatively small percent predicted in the GOMEX and Northeast Range Complexes and in areas outside of OPAREAS and range complexes. Sei whales could be exposed to sound associated with testing activities that may result in 439 TTS and 316 takes by behavioral harassment per year as a result of annually recurring testing activities. Sei whales may be exposed to sound and energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts that one sei whale could be exposed annually to sound from explosions associated with training activities that may cause TTS and one sei whale could exhibit a behavioral reaction. Annually recurring testing activities involving explosives may result in 1 TTS for a sei whale per year and 7 TTS due to exposure to explosive sound and energy from ship shock trials over a 5-year period. All predicted impacts would be to the Nova Scotia stock because this is the only sei whale stock present within the Study Area.

The Northeast contains areas that are important for sei whales. Whaling records (Jonsgard and Darling, 1977) and observed sei whale feeding behavior (CeTap, 1982; Kenney and Winn, 1986) indicate that sei whales in the North Atlantic feed primarily on copepods and secondarily on euphausiids from April to July in the deeper water off the southwestern and eastern edge of Georges Bank and into the southwestern section of the Gulf of Maine (Mizroch *et al.,* 1984). This offshore pattern has been shown to change in response to prey availability. In 1986, sei whales were reported feeding in the shallow waters of Stellwagen Bank (southern Gulf of Maine) from April through October in response to an increase in copepod availability (Kenney *et al.,* 1996; Payne *et al.,* 1990; Schilling *et al.,* 1992). Mizroch *et al.* (1984) also reported a personal communication with R.D. Kenney that sei whales feed at more inshore locations, such as the Great South Channel (in 1987 and 1989), when copepod abundance is elevated in the area. Unpublished sighting data of feeding sei whales is forthcoming from the Provincetown Center for Coastal Studies and will be incorporated into future spatial and temporal delineations of sei whale feeding areas.

The Navy has evaluated the types and levels of training and testing activities that could occur in the important sei whale area described above and concluded that only minimal training or testing activities will occur in this area; however, if training or testing requirements change, the Navy will need to retain the ability to conduct activities in this area if emergent requirements dictate that this area is needed to meet specific training or testing requirements. In addition, the Navy's measures to protect North Atlantic right whales in the Northeast feeding grounds overlap some feeding areas for other large whales in the NE., including sei whales, and the mitigation measures in place in these areas for the North Atlantic right whale also provide protection to sei whales.

Sei whales in the North Atlantic belong to three stocks: Nova Scotia; Iceland-Denmark Strait; and Northeast Atlantic. The Nova Scotia stock occurs in the U.S. Atlantic waters. The best available abundance estimate for the Nova Scotia stock is 386 individuals.

Fin Whale

The acoustic analysis predicts that fin whales could be exposed to sound associated with training activities that may result in 1 PTS, 2,880 TTS and 1,608 takes by behavioral harassment per year. The majority of these impacts are predicted in the VACAPES, Navy Cherry Point, and JAX Range Complexes, with a relatively small percent of impacts predicted in the GOMEX and Northeast Range Complexes. Fin whales could be exposed to sound associated with testing activities that may result in 263 TTS and 282 takes by behavioral harassment per year as a result of annually recurring testing activities. The majority of these impacts are predicted within the Northeast Range Complexes with lesser impacts in the VACAPES, Navy Cherry Point, JAX, and GOMEX Range Complexes. Fin whales may be exposed to sound or energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts one TTS and one take by behavioral harassment for fin whales annually from training activities, 1 TTS to fin whales per year from annually recurring testing activities, and 6 TTS per 5-year period due to ship shock trials. All predicted impacts would be to the Western North Atlantic stock because this is the only fin whale stock present within the Study Area.

New England waters are considered a major feeding ground for fin whales, and there is evidence the females continually return to this area (Waring *et al.,* 2010). The Navy has designated PAAs in the Northeast that include some of these important feeding areas and would avoid conducting major training exercises involving active sonar in Northeast PAAs. In addition, the Navy's measures to protect North Atlantic right whales in the Northeast feeding grounds overlap some of the feeding areas for other large whales in the NE., including fin whales, and the mitigation measures in place in these areas for the North Atlantic right whale also provide protection to fin whales. Fin whales in the North Atlantic belong to the western North Atlantic stock. The best abundance estimate for the western North Atlantic stock of fin whales is 3,985.

Blue Whale

Blue whales may be exposed to sonar or other active acoustic stressors associated with training and testing activities throughout the year. The acoustic analysis predicts that blue whales could be exposed to sound associated with training activities that may result in 97 TTS and 50 takes by behavioral harassment per year. The majority of these impacts are predicted in the VACAPES, Navy Cherry Point, and JAX Range Complexes, with a relatively small percent of impacts predicted in the GOMEX and Northeast Range Complexes. The acoustic analysis predicts that 10 TTS and 6 takes by behavioral harassment may result from annual testing activities that use sonar and other active acoustic sources per year as a result of annually recurring testing activities. Blue whales may be exposed to sound or energy from explosions associated with training and testing activities throughout the year; however, the acoustic analysis predicts that no individuals would be impacted. All predicted impacts would be to the Western North Atlantic stock because this is the only blue whale stock present within the Study Area.

No areas of specific importance for reproduction or feeding for blue whales have been identified in the AFTT Study Area. Blue whales in the western North

Atlantic are classified as a single stock. The photo identification catalogue count of 440 recognizable individuals from the Gulf of St. Lawrence is considered a minimum population estimate for the western North Atlantic stock.

Minke Whale

The acoustic analysis predicts that minke whales could be exposed to sound associated with training activites that may result in 10 PTS, 40,866 TTS, and 19,497 behavioral reactions per year. The majority of these impacts are predicted in the VACAPES, Navy Cherry Point, and JAX Range Complexes, with a relatively small percent of effects predicted in the Northeast and GOMEX Range Complexes. The acoustic analysis predicts that minke whales could be exposed to sound that may result in 1 PTS, 3,571 TTS, and 3,100 takes by behavioral harassment per year as a result of annually recurring testing activities. Minke whales may be exposed to sound or energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts that minke whales could be exposed to sound annually from training activities that may result in 9 behavioral responses, 30 TTS, 4 PTS, 1 GI tract injury, and 1 slight lung injury (see Table 6–26 for predicted numbers of effects). As with mysticetes overall, effects are primarily predicted within the VACAPES Range Complex, followed by JAX, and Navy Cherry Point Range Complexes. Minke whales could be exposed to sound and energy from annual testing activities involving explosives that may result in 4 behavioral responses, 11 TTS, and 2 PTS, in addition to 41 TTS, 11 slight lung injury, and 3 mortalities due to exposure to explosive sound and energy from ship shock trials over a 5-year period. Based on conservativeness of the onset mortality criteria and impulse modeling and past observations of no marine mammal mortalities associated with ship shock trials, the predicted minke whale mortalities for CVN Ship Shock Trial are considered overestimates and highly unlikely to occur. All predicted effects on minke whales would be to the Canadian East Coast stock because this is the only stock present within the Study Area.

Research and observations show that if mysticetes are exposed to sonar or other active acoustic sources they may react in a number of ways depending on the characteristics of the sound source, their experience with the sound source, and whether they are migrating or on seasonal grounds (i.e., breeding or feeding). Reactions may include alerting, breaking off feeding dives and surfacing, diving or swimming away, or no response at all. Additionally, migrating animals may ignore a sound source, or divert around the source if it is in their path. In the ocean, the use of sonar and other active acoustic sources is transient and is unlikely to repeatedly expose the same population of animals over a short period. Around heavily trafficked Navy ports and on fixed ranges, the possibility is greater for animals that are resident during all or part of the year to be exposed multiple times to sonar and other active acoustic sources. A few behavioral reactions per year, even from a single individual, are unlikely to produce long-term consequences for that individual or the population. Furthermore, the implementation of mitigation measures and sightability of minke whales (due to their large size) would further reduce the potential impacts.

Mysticetes exposed to the sound from explosions may react in a number of ways, which may include alerting; startling; breaking off feeding dives and surfacing; diving or swimming away; or showing no response at all. Occasional behavioral reactions to intermittent explosions are unlikely to cause long-term consequences for individual mysticetes or populations. Furthermore, the implementation of mitigation measures and sightability of minke whales (due to their large size) would further reduce the potential impacts in addition to reducing the potential for injury.

Known feeding areas for minke whales have been identified in the Northeast. From 1998 to 2009, 21 minke whales were observed feeding in the Great South Channel and adjacent New England waters by the Northeast Fisheries Science Center right whale aerial survey team (personal communication, A. Henry, NEFSC) during all survey months. These surveys operate from March through July and in October with the goal to locate and identify North Atlantic right whales. In these surveys, minke whale sightings and behavior are recorded opportunistically. Twenty-one observations of surface feeding or apparent surface feeding of minke whales were recorded from March through September during the CeTAP (1982) surveys. Feeding or apparent feeding observations were concentrated within the 100 meter isobath, in the Great South Channel, along Cape Anne and Jeffreys Ledges. Although the majority of surface feeding sightings reported are in waters shallower than 200 meters, sub-surface feeding has been observed in the deeper waters of the Gulf of Maine. Murphy (1995) report 27 confirmed sightings of feeding minke whales from 1979 to 1992 in Cape Cod Bay, Massachusetts Bay, and Stellwagen Bank. These sightings were recorded during dedicated marine mammals research cruises and from whalewatching vessels. Unpublished sighting data of feeding minke whales is forthcoming from the Provincetown Center for Coastal Studies and will be incorporated to further delineate feeding areas. Until that time, we conservatively delineate the Gulf of Maine, Georges Bank, and the Great South Channel as minke whale feeding areas from March through October.

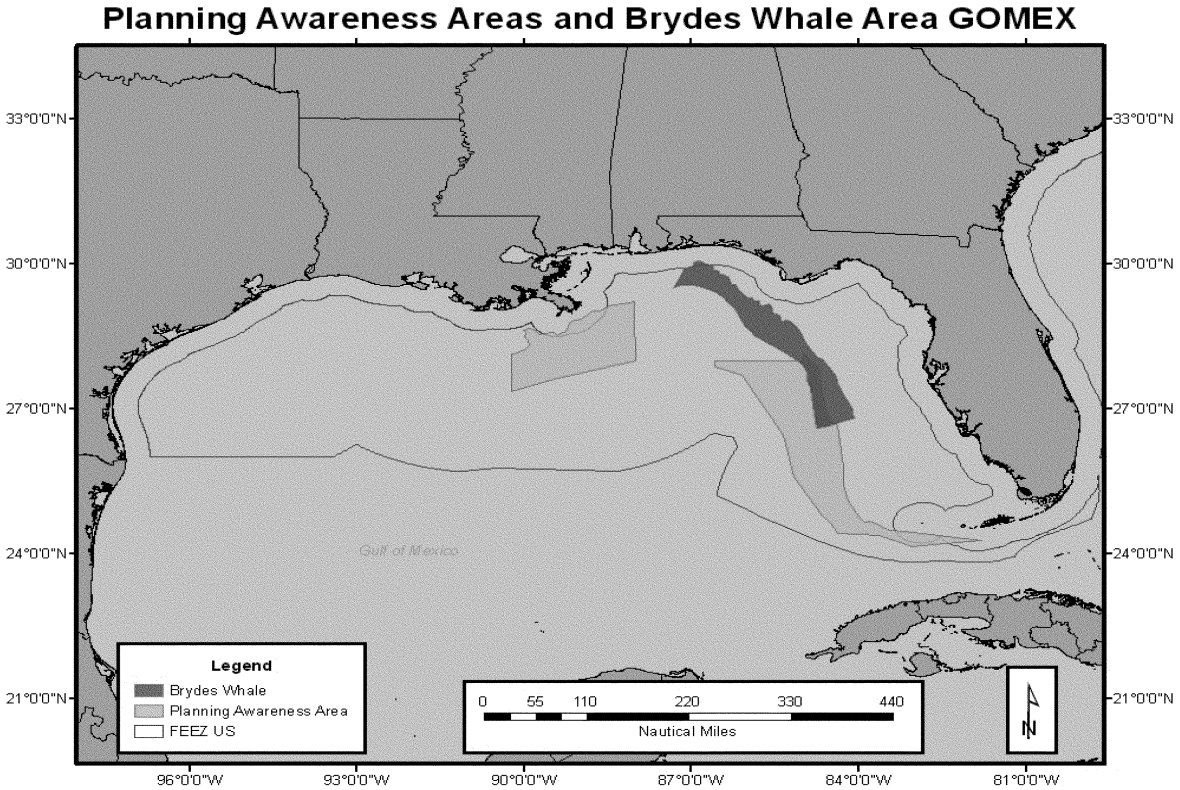
The Navy has evaluated the types and levels of training and testing activities that could occur in the minke whale feeding areas and concluded that only minimal training or testing activities will occur in this area; however, if training or testing requirements change, the Navy will need to retain the ability to conduct activities in this area if emergent requirements dictate that this area is needed to meet specific training or testing requirements. In addition, the Navy's measures to protect North Atlantic right whales in the Northeast calving grounds overlap some of the important feeding areas for other large whales in the NE., including minke whales, and the mitigation measures in place in these areas for the North Atlantic right whale also provide protection to minke whales.

Bryde's Whale

The acoustic analysis predicts that Bryde's whales could be exposed to sound associated with training activities that may result in 629 TTS and 326 takes by behavioral harassment. The majority of these impacts are predicted in the VACAPES, Navy Cherry Point, and JAX Range Complexes, with a relatively small percent of effects predicted in the Northeast Range Complex. A distinct population of Bryde's whales resides year round within a specific portion of the northern Gulf of Mexico (Figure 1). Most sightings of Bryde's whales in the Gulf of Mexico are from ship-based and aerial marine mammal line-transect abundance surveys conducted by NMFS (Waring *et al.,* 2009, see data in OBIS–SEAMAP). These surveys were conducted at various times throughout all seasons and covered waters from the 20 m isobaths to the seaward extent of the Exclusive Economic Zone (EEZ) (Fulling *et al.,* 2003; Mullin and Fulling, 2004). Although survey effort covers all of the oceanic waters of the Gulf of

Mexico, Bryde's whales have only been observed between the 100 and 300 m isobaths in the eastern Gulf of Mexico, from south of Pensacola, FL to northwest of Tampa Bay (personal communication, Lance Garrison, SEFSC), which may be evidence of a small resident population inhabiting the area. The Navy has evaluated the types and levels of training and testing activities that could occur in the possible Bryde's whale BIA in eastern GOMEX. The Navy has determined that very few training or testing activities are likely to occur in the southern half of this BIA. Additionally, Navy has agreed to expand the eastern GOMEX PAA to encompass the Bryde's whale area represented in the possible BIA.

Figure 1. The Navy's southernmost Planning Awareness Area in the Gulf of Mexico has been expanded to encompass an area occupied year round by a small resident population of Bryde's whales.



Bryde's whales could be exposed to sound that may result in 39 TTS and 21 takes by behavioral harassment per year as a result of annually recurring testing activities. Bryde's whales may be exposed to sound or energy from explosions associated with training and testing activities throughout the year; however, the acoustic analysis predicts that no individuals would be impacted. All predicted effects on Bryde's whales would be to the Gulf of Mexico Oceanic stock because this is the only stock present within the Study Area.

Sperm Whale

Sperm whales may be exposed to sonar or other active acoustic stressors associated with training and testing activities throughout the year. The acoustic analysis predicts that sperm whales could be exposed to sound associated with training activities that may result in 435 TTS and 14,311 takes by behavioral harassment annually from annually recurring training activities; and a maximum of one behavioral reactions from each biennial training activity civilian port defense. Sperm whales could be exposed to sound from annually recurring testing activities that may result in 584 TTS and 1,101 takes by behavioral harassment per year. Sperm whales may be exposed to sound and energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts one TTS and one take by behavioral harassment for sperm whales per year from explosions associated with training activities, one sperm whale take by behavioral harassment per year due to annually recurring testing activities, and up to 20 TTS and 6 slight lung injuries for sperm whales over a 5-year period as a result of ship shock trials in the VACAPES or JAX Range Complex. Predicted effects on sperm whales within the Gulf of Mexico are presumed to primarily impact the Gulf of Mexico Oceanic stock, whereas the majority of impacts predicted offshore of the east coast would impact the North Atlantic stock.

Research and observations show that if sperm whales are exposed to sonar or other active acoustic sources they may react in a number of ways depending on their experience with the sound source and what activity they are engaged in at the time of the acoustic exposure. Sperm whales have shown resilience to acoustic and human disturbance, although they may react to sound sources and activities within a few kilometers. Sperm whales that are exposed to activities that involve the use of sonar and other active acoustic sources may alert, ignore the stimulus, avoid the area by swimming away or diving, or display aggressive behavior. Some (but not all) sperm whale vocalizations might overlap with the MFAS/HFAS frequency range, which

could potentially temporarily decrease an animal's sensitivity to the calls of conspecifics or returning echolocation signals. However, as noted previously, NMFS does not anticipate TTS of a long duration or severe degree to occur as a result of exposure to sonar and other active acoustic sources. The majority of Level B takes are expected to be in the form of mild responses. The implementation of mitigation measures and the large size of sperm whales (i.e., increased sightability) are expected to prevent any significant behavioral reactions. Therefore, long-term consequences for individuals or populations would not be expected.

The region of the Mississippi River Delta (Desoto Canyon) has been recognized for high densities of sperm whales and may represent an important calving and nursing or feeding area for these animals. Sperm whales typically exhibit a strong affinity for deep waters beyond the continental shelf, though in the area of the Mississippi Delta they also occur on the outer continental shelf break. However, there is a PAA designated immediately seaward of the continental shelf associated with the Mississippi Delta, in which the Navy plans to conduct no more than one major exercise and which they plan to take into consideration in the planning of unit-level exercises. Therefore, NMFS does not expect that impacts will be focused, extensive, or severe in the sperm whale calving area.

Sperm whales within the Study Area belong to one of three stocks: North Atlantic; Gulf of Mexico Oceanic; or Puerto Rico and U.S. Virgin Islands. The best abundance estimate for sperm whales in the western North Atlantic is 4,804. The best abundance estimate for sperm whales in the northern Gulf of Mexico is 1,665.

Pygmy and Dwarf Sperm Whales

Pygmy and dwarf sperm whales may be exposed to sonar or other active acoustic stressors associated with training and testing activities throughout the year. The acoustic analysis predicts that pygmy and dwarf sperm whales could be exposed to sound that may result in 13 PTS, 4,914 TTS, and 169 takes by behavioral harassment from annually recurring training activities; and a maximum of 1 TTS from the biennial training activity civilian port defense. The majority of predicted impacts on these species are within the JAX and GOMEX Range Complexes. Pygmy and dwarf sperm whales could be exposed to sound that may result in 5 PTS, 1,061 TTS and 29 takes by behavioral harassment per year from annually recurring activities. Pygmy and dwarf sperm whales may be exposed to sound and energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts that pygmy and dwarf sperm whales could be exposed to sound from annual training activities involving explosions that may result in 1 take by behavioral harassment, 5 TTS, and 2 PTS (see Table 6–26 in the LOA application for predicted numbers of effects). The majority of these exposures occur within the VACAPES and GOMEX Range Complexes. Pygmy or dwarf sperm whales could be exposed to energy or sound from underwater explosions that may result in 1 take by behavioral harassment, 2 TTS, and 1 PTS per year as a result of annually recurring testing activities. These impacts could happen anywhere throughout the Study Area where testing activities involving explosives occur. Additionally, the acoustic analysis predicts 6 TTS, 1 PTS, and 3 slight lung injury to a *Kogia* species over a 5-year period due to ship shock trials either in the VACAPES or JAX Range Complex. Predicted effects on pygmy and dwarf sperm whales within the Gulf of Mexico are presumed to primarily impact the Gulf of Mexico stocks, whereas the majority of effects predicted offshore of the east coast would impact the Western North Atlantic stocks.

Research and observations on *Kogia* species are limited. However, these species tend to avoid human activity and presumably anthropogenic sounds. Pygmy and dwarf sperm whales may startle and leave the immediate area of the anti-submarine warfare training exercise. Significant behavioral reactions seem more likely than with most other odontocetes, however it is unlikely that animals would receive multiple exposures over a short time period allowing animals time to recover lost resources (e.g., food) or opportunities (e.g., mating). Therefore, long-term consequences for individual *Kogia* or their respective populations are not expected.

No areas of specific importance for reproduction or feeding for *Kogia* species have been identified in the AFTT Study Area. *Kogia* species are separated into two stocks within the Study Area: the Western North Atlantic and Gulf of Mexico Oceanic. The best estimate for both species in the U.S. Atlantic is 395 individuals. The best estimate for both species in the northern Gulf of Mexico is 453.

Beaked Whales

Beaked whales (six species total) may be exposed to sonar or other active acoustic stressors associated with training and testing activities throughout the year. Table 21 presents the total takes over the 5-year rule of beaked whales from training and testing activities.

TABLE 21—TOTAL TAKES OVER 5-YEAR PERIOD FROM TRAINING AND TESTING ACTIVITIES

Species	Level B harassment	Level A harassment	Mortality
Blainville's beaked whale	164,454	3	10
Cuvier's beaked whale	204,945	1	
Gervais' beaked whale	164,659	4	
Northern bottlenose whale	152,195	6	
Sowerby's beaked whale	63,156	0	
True's beaked whale	99,122	1	

The majority of these impacts happen within the Northeast Range Complexes, with lesser effects in the VACAPES, Navy Cherry Point, JAX, Key West and GOMEX Range Complexes. Beaked whales may be exposed to sound and energy from explosions associated with training and testing activities throughout the year; however, acoustic modeling predicts that no beaked whales would be impacted from annually recurring training and testing activities. The acoustic analysis predicts 7 TTS and 15 slight lung injuries to beaked whale species over a 5-year period due to ship shock trials. Predicted effects on beaked whales within the Gulf of Mexico are presumed to primarily impact the Gulf of Mexico stocks, whereas the majority of effects predicted offshore of the east coast

would impact the Western North Atlantic stocks.

The Navy designated several planning awareness areas based on locations of high productivity that have been correlated with high concentrations of marine mammals and areas with steep bathymetric contours that are frequented by deep diving marine mammals such as beaked whales. For activities involving active sonar, the Navy would avoid planning major exercises in the planning awareness areas where feasible. In addition, to the extent operationally feasible, the Navy would not conduct more than one of the four major training exercises or similar scale events per year in the Gulf of Mexico planning awareness area. The best abundance estimate for the undifferentiated complex of beaked whales (*Ziphius* and *Mesoplodon* species) in the northwest Atlantic is 3,513. The best abundance estimate available for Cuvier's beaked whales in the northern Gulf of Mexico is 65. The best abundance estimate available for Mesoplodon species is a combined estimate for Blainville's beaked whale and Gervais' beaked whale in the oceanic waters of the Gulf of Mexico is 57. The current abundance estimate for the northern bottlenose whale in the eastern North Atlantic is 40,000, but population estimates for this species along the eastern U.S. coast are unknown.

Research and observations show that if beaked whales are exposed to sonar or other active acoustic sources they may startle, break off feeding dives, and avoid the area of the sound source to levels of 157 dB (McCarthy *et al.,* 2011). However, in research done at the Navy's instrumented tracking range in the Bahamas, animals leave the immediate area of the anti-submarine warfare training exercise, but return within a few days after the event ends. At the Bahamas range, populations of beaked whales appear to be stable. The analysis also indicates that no exposures to sound levels likely to result in Level A harassment would occur. However, while the Navy's model did not quantitatively predict any mortalities of beaked whales, the Navy requests a limited number of takes by mortality given the sensitivities these species may have to anthropogenic activities. Almost 40 years of conducting similar exercises in the AFTT Study Area without observed incident indicates that injury or motality are not expected to occur as a result of Navy activities.

Some beaked whale vocalizations might overlap with the MFAS/HFAS frequency range (2–20 kHz), which could potentially temporarily decrease an animal's sensitivity to the calls of conspecifics or returning echolocation signals. However, NMFS does not anticipate TTS of a long duration or severe degree to occur as a result of exposure to sonar and other active acoustic sources. No beaked whales are predicted to be exposed to sound levels associated with PTS or injury.

As discussed previously, scientific uncertainty exists regarding the potential contributing causes of beaked whale strandings and the exact behavioral or physiological mechanisms that can potentially lead to the ultimate physical effects (stranding and/or death) that have been documented in a few cases. Although NMFS does not expect injury or mortality of any of these species to occur as a result of the training exercises involving the use of sonar and other active acoustic sources, there remains the potential for the operation of sonar and other active acoustic sources to contribute to the mortality of beaked whales. Consequently, NMFS proposes to authorize mortality and we consider the 10 potential mortalities from across the seven species potentially effected over the course of 5 years in our negligible impact determination (NMFS only intends to authorize a total of 10 beaked whale mortality takes, but since they could be of any of the species, we consider the effects of 10 mortalities of any of the six species).

Dolphins and Small Whales

Delphinids (dolphins and small whales) may be exposed to sonar or other active acoustic stressors associated with training and testing activities throughout the year. Table 22 presents the acoustic analysis predictions of exposes for 17 species of delphinids (Atlantic spotted dolphin, Atlantic white-sided dolphin, bottlenose dolphin, clymene dolphin, common dolphin, false killer whale, Fraser's dolphin, killer whale, melon-headed whale, pantropical spotted dolphin, pilot whale, pygmy killer whale, Risso's dolphin, rough-toothed dolphin, spinner dolphin, striped dolphin, and white-beaked dolphin)

TABLE 22—TOTAL TAKES OVER 5-YEAR PERIOD FROM TRAINING AND TESTING ACTIVITIES

Species	Level B harassment	Level A harassment	Mortality
Atlantic spotted dolphin	992,197	2,024	* 165
Atlantic white-sided dolphin	206,233	181	
Bottlenose dolphin	1,569,801	230	
Clymene dolphin	108,107	92	
Common dolphin	2,560,515	2,454	
False killer whale	4,062	0	
Fraser's dolphin	11,816	0	
Killer whale	77,426	2	
Melon-headed whale	111,330	30	
Pantropical spotted dolphin	393,219	97	
Pilot whale	580,854	178	
Pygmy killer whale	8,038	3	
Risso's dolphin	1,306,300	104	
Rough-toothed dolphin	5,911	0	
Spinner dolphin	115,276	34	
Striped dolphin	1,219,363	2,786	
White-beaked dolphin	16,397	3	

* (Appliable to any small odontocete species).

The high take numbers are due in part to an increase in explosive detonations. However, many of these species generally travel in large pods and should be visible from a distance in order to implement mitigation measures

and reduce potential impacts. In addition, the majority of takes are anticipated to be by behavioral harassment in the form of mild responses. Behavioral responses can range from alerting, to changing their behavior or vocalizations, to avoiding the sound source by swimming away or diving. Delphinids may be exposed to sound and energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts that delphinids could be exposed to sound that may result in mortality, injury, temporary hearing loss and behavioral responses.

These predicted impacts would occur primarily in the VACAPES Range Complex, as well as the Naval Surface Warfare Center, Panama City Division Testing Range, but a few impacts could occur throughout the Study Area. While the Navy does not anticipate delphinid mortalities from underwater detonations during mine neutralization activities involving time-delay diver placed charges, there is a possibility of a marine mammal approaching too close to an underwater detonation when there is insufficient time to delay or stop without jeopardizing human safety.

Based on conservativeness of the onset mortality criteria and impulse modeling, past observations of no marine mammal mortalities associated with ship shock trials, and implementation of mitigation, the mortality results predicted by the acoustic analysis are over-estimated are not expected to occur. Therefore, the Navy conservatively estimates that 10 small odontocetes mortalities could occur during the CVN Ship Shock Trial and 5 small odontocetes mortalities could occur due to each DDG or LCS Ship Shock Trial. Most delphinid species are separated into two stocks within the Study Area: the Western North Atlantic and Gulf of Mexico. Predicted effects on delphinids within the Gulf of Mexico are presumed to primarily impact the Gulf of Mexico stocks, whereas the majority of effects predicted offshore of the east coast would impact the Western North Atlantic stocks. Bottlenose dolphins are divided into one Oceanic and many Coastal stocks along the east coast. The majority of exposures to bottlenose dolphins are likely to be caused by ship shock trials and these impacts would occur to the Oceanic stock only. Nearshore and in-port events could expose some animals in Coastal stocks. On the East Coast, the following coastal stocks have potential to overlap with explosive activity locations:

—Northern North Carolina Estuarine System
—Western North Atlantic Southern Migratory
—Southern North Carolina Estuarine System
—Western North Atlantic South Carolina/Georgia Coastal
—Western North Atlantic Northern Florida Coastal

Within the Gulf of Mexico, the following coastal stocks have potential to overlap with explosive activity locations:

—Gulf of Mexico Northern Coastal
—Gulf of Mexico Western Coastal
—Northern Gulf of Mexico Bay, Sound, and Estuary Stocks
—Block 52 Nueces Bay, Corpus Christi Bay
—Block 54 Matagorda Bay, Tres Palacios Bay, Lavaca Bay
—Block 09 Choctawhatchee Bay
—Block 10 St. Andrew Bay
—Block 11 St. Joseph Bay

Table 3–1 in the Navy's LOA application provides the abundance estimates for the different dolphin stocks. No areas of specific importance for reproduction or feeding for dolphins have been identified in the AFTT Study Area.

Harbor Porpoises

Harbor porpoises may be exposed to sonar or other active acoustic stressors associated with training and testing activities throughout the year. The acoustic analysis predicts that harbor porpoises could be exposed to sound that may result in 62 PTS, 20,161 TTS, and 120,895 takes by behavioral harassment from annually recurring training activities; and a maximum of 432 TTS and 725 takes by behavioral harassment from the biennial training activity civilian port defense. Annual testing activities could expose harbor porpoises to level of sonar and other active acoustic source sound resulting in 99 PTS, 78,250 TTS, and 1,964,774 takes by behavioral harassment per year. The high take numbers are due in part to an increase in explosive detonations. In addition, the majority of takes are anticipated to be by behavioral harassment in the form of mild responses. Behavioral responses can range from alerting, to changing their behavior or vocalizations, to avoiding the sound source by swimming away or diving. Predicted impacts on these species are within the VACAPES and Northeast Range Complexes primarily within inland waters and along the Northeast U.S. Continental Shelf Large Marine Ecosystem. The behavioral response function is not used to estimate behavioral responses by harbor porpoises; rather, a single threshold is used. Because of this very low behavioral threshold (120 dB re 1 μPa) for harbor porpoises, animals at distances exceeding 200 km in some cases are predicted to have a behavioral reaction in this acoustic analysis. Although this species is known to be more sensitive to these sources at lower received levels, it is not known whether animals would actually react to sound sources at these ranges, regardless of the received sound level. Harbor porpoises may be exposed to sound and energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts that harbor porpoises could be exposed to sound that may result in 94 behavioral responses, 497 TTS, 177 PTS, 1 gastrointestinal tract injury, 21 slight lung injuries, and 2 mortalities annually; and 7 TTS and 1 PTS biannually for civilian port defense activities (see Table 6–26 and Table 6–28 in the LOA application for predicted numbers of effects). The acoustic analysis predicts that harbor porpoises could be exposed to sound that may result in 484 behavioral responses, 348 TTS, 110 PTS, 7 slight lung injuries, and 1 mortality per year due to annually recurring testing activities. The acoustic analysis predicts no impacts on harbor porpoises as a result of ship shock trials. Predicted impacts on this species are mostly in the VACAPES Range Complex, with a few impacts in the Northeast Range Complex, generally within the Northeast U.S. Continental Shelf Large Marine Ecosystem.

Research and observations of harbor porpoises show that this species is wary of human activity and will avoid anthropogenic sound sources in many situations at levels down to 120 dB. This level was determined by observing harbor porpoise reactions to acoustic deterrent and harassment devices used to drive away animals from around fishing nets and aquaculture facilities. Avoidance distances were on the order of a kilometer or more, but it is unknown if animals would react similarly if the sound source was located at a greater distance of tens or hundreds of kilometers. Since a large proportion of testing activities happen within harbor porpoise habitat in the northeast, predicted effects on this species are greater relative to other marine mammals. Nevertheless, it is not known whether or not animals would actually react to sound sources at these ranges, regardless of the received sound level. Harbor porpoises may startle and leave the immediate area of the testing

event, but may return after the activity has ceased. Therefore, these animals could avoid more significant impacts, such as hearing loss, injury, or mortality. Significant behavioral reactions seem more likely than with most other odontocetes, especially at closer ranges (within a few kilometers). Since these species are typically found in nearshore and inshore habitats, resident animals that are present throughout the year near Navy ports of fixed ranges in the northeast could receive multiple exposures over a short period of time year round. Animals that do not exhibit a significant behavioral reaction would likely recover from any incurred costs, which reduce the likelihood of long-term consequences, such as reduced fitness, for the individual or population.

All harbor porpoises within the Study Area belong to the Gulf of Maine/Bay of Fundy Stock and therefore, all predicted impacts would be to this stock. The best abundance estimate for the Gulf of Maine/Bay of Fundy stock is 89,054 individuals.

A small resident population of harbor porpoises exists in the Northeast. Sightings have been documented mostly by NMFS ship and aerial marine mammal surveys, strandings, and animals taken incidental to fishing operations and reported by National Marine Fisheries Service observers in the Sea Sampling Program. From July to September, harbor porpoises in U.S. waters (Gulf of Maine/Bay of Fundy) are generally concentrated in waters less than 150-m deep in the southern Bay of Fundy and northern Gulf of Maine (Gaskin, 1977; Kraus *et al.,* 1983; Palka, 1995). Lower densities have been observed in the upper Bay of Fundy and northern edge of Georges Bank during this time frame (Palka, 2000).

From October through December and April through June, harbor porpoises are broadly dispersed from Maine to New Jersey with the majority of the population located on the continental shelf (Waring *et al.,* 2010), although harbor porpoises have been tracked in waters greater than 1800-m deep (Westgate *et al.,* 1998).

From January through March, intermediate densities of harbor porpoises are found in waters off New Jersey to North Carolina, and lower densities of harbor porpoises are found in waters off New York (Waring *et al.,* 2010). No migratory corridor between the Bay of Fundy and North Carolina is known.

The Navy has evaluated the types and levels of training and testing activities that could occur in area where these harbor porpoises are resident and concluded that only minimal training or testing activities will occur in this area; however, if training or testing requirements change, the Navy will need to retain the ability to conduct activities in this area if emergent requirements dictate that this area is needed to meet specific training or testing requirements.

Pinnipeds

Predicted effects on pinnipeds from annual training activities from sonar and other active acoustic sources indicate that three species (gray, harbor, and hooded seals) could be exposed to sound that may result in 77 behavioral reactions per year from annually recurring training activities and a maximum of 94 behavioral reactions per event for the biennial training activity, civilian port defense. Predicted effects on pinnipeds from annual testing activities from sonar and other active acoustic sources indicate that exposure to sound may result in 73 PTS, 7,494 TTS, and 6,489 behavioral reactions per year. These predicted impacts would occur almost entirely within the Northeast Range Complexes. Pinnipeds may be exposed to sound and energy from explosions associated with training and testing activities throughout the year. The acoustic analysis predicts 2 TTS and 1 take by behavioral harassment per year from explosions associated with annually recurring training activities and 15 takes by behavioral harassment, 15 TTS, and 2 PTS per year from explosions associated with annually recurring testing activities. The model predicts no impacts to pinnipeds from exposure to explosive energy and sound associated with ship shock trials. The predicted impacts would occur in the Northeast Range Complexes within the Northeast U.S. Continental Shelf Large Marine Ecosystem.

Research and observations show that pinnipeds in the water are tolerant of anthropogenic noise and activity. If seals are exposed to sonar or other active acoustic sources and explosives they may not react at all until the sound source is approaching within a few hundred meters and then may alert, ignore the stimulus, change their behaviors, or avoid the immediate area by swimming away or diving. Significant behavioral reactions would not be expected in most cases and long-term consequences for individual seals or populations are unlikely. Overall, predicted effects are low and the implementation of mitigation measures would further reduce potential impacts. Therefore, occasional behavioral reactions to intermittent anthropogenic noise are unlikely to cause long-term consequences for individual animals or populations.

No areas of specific importance for reproduction or feeding for pinnipeds have been identified in the AFTT Study Area. The acoustic analysis predicts that no pinnipeds will be exposed to sound levels or explosive detonations likely to result in mortality. Best estimates for the hooded and harp seals are 592,100 and 6.9 million, respectively. The best estimate for the western north Atlantic stock of harbor seals is 99,340. There is no best estimate available for gray seal, but a survey of the Canadian population ranged between 208,720 and 223,220. The North Atlantic Marine Mammal Commission Scientific Committee derived a rough estimate of the abundance of ringed seals in the northern extreme of the AFTT Study Area of approximately 1.3 million. There are no estimates available for bearded seals in the western Atlantic, the best available global population is 450,000 to 500,000, half of which inhabit the Bering and Chukchi Seas.

Final Determination

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat and dependent upon the implementation of the mitigation and monitoring measures, NMFS finds that the total taking from Navy training and testing exercises in the AFTT Study Area will have a negligible impact on the affected species or stocks. NMFS has finalized regulations for these exercises that prescribe the means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat and set forth requirements pertaining to the monitoring and reporting of that taking.

Subsistence Harvest of Marine Mammals

NMFS has determined that the issuance of 5-year regulations and subsequent LOAs for Navy training and testing exercises in the AFTT Study Area would not have an unmitigable adverse impact on the availability of the affected species or stocks for subsistence use, since there are no such uses in the specified area.

ESA

There are seven marine mammal species under NMFS jurisdiction included in the Navy's incidental take request that are listed as endangered or threatened under the ESA with confirmed or possible occurrence in the Study Area: blue whale, humpback whale, fin whale, sei whale, sperm

whale, North Atlantic right whale, and ringed seal. The Navy consulted with NMFS pursuant to section 7 of the ESA, and NMFS also consulted internally on the issuance of LOAs under section 101(a)(5)(A) of the MMPA for AFTT activities. NMFS issued a Biological Opinion concluding that the issuance of the rule and two LOAs are likely to adversely affect but are not likely to jeopardize the continued existence of the threatened and endangered species under NMFS' jurisdiction and are not likely to result in the destruction or adverse modification of critical habitat that has been designated for endangered or threatened species in the AFTT Study Area. The Biological Opinion for this action is available on NMFS' Web site (*http://www.nmfs.noaa.gov/pr/permits/incidental.html#applications*).

National Marine Sanctuaries Act (NMSA)

Federal agency actions that are likely to injure sanctuary resources are subject to consultation with the Office of National Marine Sanctuaries (ONMS) under section 304(d) of the National Marine Sanctuaries Act. The Navy analyzed potential impacts to sanctuary resources and provided the analysis in the Navy's FEIS to ONMS. In response, ONMS determined that the use of active mid-frequency sonar is likely to injure sanctuary resources, and recommended that: (1) The Navy should continue the spatial mitigation measure to restrict all active sonar use inside and within a 2.7 mile buffer around Stellwagen Bank, Monitor, Gray's Reef, Florida Keys and Flower Garden Banks national marine sanctuaries and that Navy not employ sonar or other active acoustic sources within Gray's Reef national marine sanctuary; and (2) the Navy should conduct observation and monitoring on the effects of electromagnetic devices on sanctuary resources and share that data with ONMS as appropriate. In response, the Navy indicated it is proposing limited activities in the sanctuaries and will implement considerable mitigations, and is not proposing to use active sonar in Stellwagen Bank national marine sanctuary. Further, based on the analysis in the FEIS and historic lack of impacts, the Navy believes its proposed activities are unlikely to injure sanctuary resources. Therefore, the Navy declined to implement the first recommendation. The Navy agreed to implement the second recommendation to the maximum extent allowed by the classification of the responsive material. Because the Navy did not agree to implement the ONMS recommendation, it would be responsible for mitigation and restoration or replacement of any sanctuary resource that was injured as a result.

National Environmental Policy Act (NEPA)

NMFS participated as a cooperating agency on the AFTT FEIS/OEIS, which was published on August 30, 2013 (78 FR 53754) and is available on Navy's Web site: *http://aftteis.com/Home.aspx.* NMFS determined that the AFTT FEIS/OEIS is adequate and appropriate to meet our responsibilities under NEPA for the issuance of regulations and LOAs and adopted the Navy's AFTT FEIS/OEIS.

Classification

The Office of Management and Budget has determined that this final rule is not significant for purposes of Executive Order 12866.

Pursuant to the Regulatory Flexibility Act (RFA), 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 rule, if adopted, would not have a significant economic impact on a substantial number of small entities. The RFA 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. 605(b), that the action will not have a significant economic impact on a substantial number of small entities. The Navy is the sole entity that would be affected by this rulemaking, and the Navy is not a small governmental jurisdiction, small organization, or small business, as defined by the RFA. Any requirements imposed by an LOA issued pursuant to these regulations, and any monitoring or reporting requirements imposed by these regulations, would be applicable only to the Navy. NMFS does not expect the issuance of these regulations or the associated LOAs to result in any impacts to small entities pursuant to the RFA. Because this action, if adopted, would directly affect the Navy and not a small entity, the Chief Counsel for Regulation concluded that the action would not result in a significant economic impact on a substantial number of small entities. No comments were received regarding the economic impact of this final rule. As a result, a final regulatory flexibility analysis was not prepared.

The Assistant Administrator for Fisheries has determined that there is good cause under the Administrative Procedure Act (5 U.S.C. 553(d)(3)) to waive the 30-day delay in the effective date of the measures contained in the final rule. The Navy is the only entity subject to the regulations and it has informed NMFS that it requests that this final rule take effect on November 14, 2013. Any delay of enacting the final rule would result in either: (1) A suspension of planned naval training, which would disrupt vital training essential to national security; or (2) the Navy's procedural non-compliance with the MMPA (should the Navy conducting training without an LOA), thereby resulting in the potential for unauthorized takes of marine mammals. Moreover, the Navy is ready to implement the rule immediately. For these reasons, the Assistant Administrator finds good cause to waive the 30-day delay in the effective date.

List of Subjects in 50 CFR Parts 216 and 218

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

Dated: November 14, 2013.

Alan D. Risenhoover,

Director, Office of Sustainable Fisheries, performing the functions and duties of the Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For reasons set forth in the preamble, 50 CFR parts 216 and 218 are 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.*

Subpart V—[Removed and Reserved]

■ 2. Remove and reserve, subpart V, consisting of §§ 216.240 through 216.249.

PART 218—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

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

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

Subpart A—[Removed and Reserved]

■ 2. Remove and reserve subpart A, consisting of §§ 218.1 through 218.9

Subpart B—[Removed and Reserved]

■ 3. Remove and reserve subpart B, consisting of §§ 218.10 through 218.18

Subpart C—[Removed and Reserved]

■ 4. Remove and reserve subpart C, consisting of §§ 218.20 through 218.28

Subpart D—[Removed and Reserved]

■ 5. Remove and reserve subpart D, consisting of §§ 218.30 through 218.38

Subpart S—[Removed and Reserved]

■ 6. Remove and reserve subpart S, consisting of §§ 218.180 through 218.188

■ 7. Subpart I is added to part 218 to read as follows:

Subpart I—Taking and Importing Marine Mammals; U.S. Navy's Atlantic Fleet Training and Testing (AFTT)

Sec.
218.80 Specified activity and specified geographical region.
218.81 Effective dates and definitions.
218.82 Permissible methods of taking.
218.83 Prohibitions.
218.84 Mitigation.
218.85 Requirements for monitoring and reporting.
218.86 Applications for Letters of Authorization.
218.87 Letters of Authorization.
218.88 Renewals and Modifications of Letters of Authorization and Adaptive Management.

Subpart I—Taking and Importing Marine Mammals; U.S. Navy's Atlantic Fleet Training and Testing (AFTT)

§ 218.80 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 AFTT Study Area, which is comprised of established operating and warning areas across the North Atlantic Ocean and the Gulf of Mexico (see Figure 1–1 in the Navy's application). In addition, the Study Area also includes U.S. Navy pierside locations where sonar maintenance and testing occurs within the Study Area, and areas on the high seas that are not part of the range complexes, where training and testing may occur during vessel transit.

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

(1) Active Acoustic Sources Used During Annual Training:

(i) Mid-frequency (MF) Source Classes:
- (A) MF1—an average of 9,844 hours per year.
- (B) MF1K—an average of 163 hours per year.
- (C) MF2—an average of 3,150 hours per year.
- (D) MF2K—an average of 61 hours per year.
- (E) MF3—an average of 2,058 hours per year.
- (F) MF4—an average of 927 hours per year.
- (G) MF5—an average of 14,556 sonobuoys per year.
- (H) MF11—an average of 800 hours per year.
- (I) MF12—an average of 687 hours per year.

(ii) High-frequency (HF) and Very High-frequency (VHF) Source Classes:
- (A) HF1—an average of 1,676 hours per year.
- (B) HF4—an average of 8,464 hours per year.

(iii) Anti-Submarine Warfare (ASW) Source Classes:
- (A) ASW1—an average of 128 hours per year.
- (B) ASW2—an average of 2,620 sonobuoys per year.
- (C) ASW3—an average of 13,586 hours per year.
- (D) ASW4—an average of 1,365 devices per year.

(iv) Torpedoes (TORP) Source Classes:
- (A) TORP1—an average of 54 torpedoes per year.
- (B) TORP2—an average of 80 torpedoes year.

(2) Active Acoustic Sources Used During Annual Testing:

(i) LF:
- (A) LF4—an average of 254 hours per year.
- (B) LF5—an average of 370 hours per year.

(ii) MF:
- (A) MF1—an average of 220 hours per year.
- (B) MF1K—an average of 19 hours per year.
- (C) MF2—an average of 36 hours per year.
- (D) MF3—an average of 434 hours per year.
- (E) MF4—an average of 776 hours per year.
- (F) MF5—an average of 4,184 sonobuoys per year.
- (G) MF6—an average of 303 items per year.
- (H) MF8—an average of 90 hours per year.
- (I) MF9—an average of 13,034 hours per year.
- (J) MF10—an average of 1,067 hours per year.
- (K) MF12—an average of 144 hours per year.

(iii) HF and VHF:
- (A) HF1—an average of 1,243 hours per year.
- (B) HF3—an average of 384 hours per year.
- (C) HF4—an average of 5,572 hours per year.
- (D) HF5—an average of 1,206 hours per year.
- (E) HF6—an average of 1,974 hours per year.
- (F) HF7—an average of 366 hours per year.

(iv) ASW:
- (A) ASW1—an average of 96 hours per year.
- (B) ASW2—an average of 2,743 sonobuoys per year.
- (C) ASW2—an average of 274 hours per year.
- (D) ASW3—an average of 948 hours per year.
- (E) ASW4—an average of 483 devices per year.

(v) TORP:
- (A) TORP1—an average of 581 torpedoes per year.
- (B) TORP2—an average of 521 torpedoes per year.

(vi) Acoustic Modems (M):
- (A) M3—an average of 461 hours per year.
- (B) [Reserved]

(vii) Swimmer Detection Sonar (SD):
- (A) SD1 and SD2—an average of 230 hours per year.
- (B) [Reserved]

(viii) Forward Looking Sonar (FLS):
- (A) FLS2 and FLS3—an average of 365 hours per year.
- (B) [Reserved]

(ix) Synthetic Aperture Sonar (SAS):
- (A) SAS1—an average of 6 hours per year.
- (B) SAS2—an average of 3,424 hours per year.

(3) Explosive Sources Used During Annual Training:

(i) Explosive Classes:
- (A) E1 (0.1 to 0.25 lb NEW)—an average of 124,552 detonations per year.
- (B) E2 (0.26 to 0.5 lb NEW)—an average of 856 detonations per year.
- (C) E3 (>0.5 to 2.5 lb NEW)—an average of 3,132 detonations per year.
- (D) E4 (>2.5 to 5 lb NEW)—an average of 2,190 detonations per year.
- (E) E5 (>5 to 10 lb NEW)—an average of 14,370 detonations per year.
- (F) E6 (>10 to 20 lb NEW)—an average

of 500 detonations per year.
(G) E7 (>20 to 60 lb NEW)—an average of 322 detonations per year.
(H) E8 (>60 to 100 lb NEW)—an average of 77 detonations per year.
(I) E9 (>100 to 250 lb NEW)—an average of 2 detonations per year.
(J) E10 (>250 to 500 lb NEW)—an average of 8 detonations per year.
(K) E11 (>500 to 650 lb NEW)—an average of 1 detonations per year.
(L) E12 (>650 to 1,000 lb NEW)—an average of 133 detonations per year.
(ii) [Reserved]
(4) Explosive Sources Used During Annual Testing:
(i) Explosive Classes:
(A) E1 (0.1 to 0.25 lb NEW)—an average of 25,501 detonations per year.
(B) E2 (0.26 to 0.5 lb NEW)—an average of 0 detonations per year.
(C) E3 (>0.5 to 2.5 lb NEW)—an average of 2,912 detonations per year.
(D) E4 (>2.5 to 5 lb NEW)—an average of 1,432 detonations per year.
(E) E5 (>5 to 10 lb NEW)—an average of 495 detonations per year.
(F) E6 (>10 to 20 lb NEW)—an average of 54 detonations per year.
(G) E7 >20 to 60 lb NEW)—an average of 0 detonations per year.
(H) E8 (>60 to 100 lb NEW)—an average of 11 detonations per year.
(I) E9 (>100 to 250 lb NEW)—an average of 0 detonations per year.
(J) E10 (>250 to 500 lb NEW)—an average of 10 detonations per year.
(K) E11 (>500 to 650 lb NEW)—an average of 27 detonations per year.
(L) E12 (>650 to 1,000 lb NEW)—an average of 0 detonations per year.
(M) E13 (>1,000 to 1,740 lb NEW)—an average of 0 detonations per year.
(N) E14 (>1,714 to 3,625 lb NEW)—an average of 4 detonations per year.
(ii) [Reserved]
(5) Active Acoustic Source Used During Non-Annual Training:
(i) HF4—an average of 192 hours.
(ii) [Reserved]
(6) Active Acoustic Sources Used During Non-Annual Testing:
(i) LF5—an average of 240 hours.
(ii) MF9—an average of 480 hours.
(iii) HF5—an average of 240 hours.
(iv) HF6—an average of 720 hours.
(v) HF7—an average of 240 hours.
(vi) FLS2 and FLS3—an average of 240 hours.
(vii) SAS2—an average of 720 hours.
(7) Explosive Sources Used During Non-Annual Training:
(i) E2 (0.26 to 0.5 lbs NEW)—an average of 2.
(ii) E4 (2.6 to 5 lbs NEW)—an average of 2.
(8) Explosive Sources Used During Non-Annual Testing:
(i) E1 (0.1 to 0.25 lbs NEW)—an average of 600.
(ii) E16 (7,251 to 14,500 lbs NEW)—an average of 12.
(iii) E17 (14,501 to 58,000 lbs NEW)—an average of 4.

§ 218.81 Effective dates and definitions.

(a) Regulations are effective December 3, 2013 and applicable to the Navy November 14, 2013 through November 13, 2018.

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

(1) *Uncommon Stranding Event (USE)*—A stranding event that takes place within an OPAREA where a major training event (MTE) occurs 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 § 218.81(b)(1)(ii) found dead or live on shore within a 2-day period and occurring within 30 miles of one another.

(ii) A single individual or mother/calf pair of any of the following marine mammals of concern: beaked whale of any species, *Kogia* spp., Risso's dolphin, melon-headed whale, pilot whale, North Atlantic right whale, humpback whale, sperm whale, blue whale, fin whale, or sei whale.

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

(2) *Shutdown*—The cessation of MFAS/HFAS operation or detonation of explosives within 14 nautical miles of any live, in the water, animal involved in a USE.

§ 218.82 Permissible methods of taking.

(a) Under Letters of Authorization (LOAs) issued pursuant to § 218.87, the Holder of the Letter of Authorization may incidentally, but not intentionally, take marine mammals within the area described in § 218.80, provided the activity is in compliance with all terms, conditions, and requirements of these regulations and the appropriate LOA.

(b) The incidental take of marine mammals under the activities identified in § 218.80(c) is limited to the following species, by the identified method of take:

(1) Harassment (Level A and Level B) for all Training and Testing Activities:
(i) Mysticetes:
(A) Blue whale (*Balaenoptera musculus*)—817.
(B) Bryde's whale (*Balaenoptera edeni*)—5,079.
(C) Fin whale (*Balaenoptera physalus*)—25,239.
(D) North Atlantic right whale (*Eubalaena glacialis*)—955.
(E) Humpback whale (*Megaptera novaeangliae*)—9,196.
(F) Minke whale (*Balaenoptera acutorostrata*)—336,623.
(G) Sei whale (*Balaenoptera borealis*)—54,766.
(ii) Odontocetes:
(A) Atlantic spotted dolphin (*Stenella frontalis*)—994,221.
(B) Atlantic white-sided dolphin (Lagenorhynchus acutus)—206,144.
(C) Blainville's beaked whale (*Mesoplodon densirostris*)—164,454.
(D) Bottlenose dolphin (*Tursiops truncatus*)—1,570,031.
(E) Clymene dolphin (Stenella clymene)—108,199.
(F) Common dolphin (Delphinus spp.)—2,562,969.
(G) Cuvier's beaked whale (*Ziphius cavirostris*)—204,945.
(H) False killer whale (*Pseudorca crassidens*)—4,062.
(I) Fraser's dolphin (*Lagenodelphis hosei*)—11,816.
(J) Gervais' beaked whale (Mesoplodon europaeus)—164,663.
(K) Harbor porpoise (*Phocoena phocoena*)—11,072,415.
(L) Killer whale (*Orcinus orca*)—77,448.
(M) *Kogia* spp.—31,095.
(N) Melon-headed whale (*Peponocephala electra*)—111,360.
(O) Northern bottlenose whale (Hyperoodon ampullatus)—152,201.
(P) Pantropical spotted dolphin (*Stenella attenuata*)—393,316.
(Q) Pilot whale (*Globicephala spp.*)—581,032.
(R) Pygmy killer whale (*Feresa attenuata*)—8,041.
(S) Risso's dolphin (*Grampus griseus*)—1,306,404.
(T) Rough-toothed dolphin (*Steno bredanensis*)—5,911.
(U) Sowerby's beaked whale (*Mesoplodon bidens*)—63,156.
(V) Sperm whale (*Physeter macrocephalus*)—82,282.
(W) Spinner dolphin (*Stenella longirostris*)—115,310.
(X) Striped dolphin (*Stenella coerulealba*)—1,222,149.
(Y) True's beaked whale (*Mesoplodon mirus*)—99,123.
(Z) White-beaked dolphin (Lagenorhynchus albirostris)—16,400.
(iii) Pinnipeds:
(A) Gray seal (*Halichoerus grypus*)—14,511.
(B) Harbor seal (*Phoca vitulina*)—39,519.
(C) Harp seal (*Pagophilus*

groenlanica)—16,319.

(D) Hooded seal (*Cystophora cristata*)—1,472.

(E) Ringed seal (*Pusa hispida*)—1,795.

(F) Bearded seal (*Erignathus barbatus*)—161.

(2) Mortality (or lesser Level A injury) for all Training and Testing Activities:

(i) No more than 140 mortalities applicable to any small odontocete species from an impulse source.

(ii) No more than 10 beaked whale mortalities (2 per year).

(iii) No more than 11 large whale mortalities from vessel strike.

(iv) No more than 25 mortalities (no more than 20 in any given year) applicable to any small odontocete species from Ship Shock trials.

§ 218.83 Prohibitions.

Notwithstanding takings contemplated in § 218.82 and authorized by an LOA issued under §§ 216.106 of this chapter and 218.87, no person in connection with the activities described in § 218.80 may:

(a) Take any marine mammal not specified in § 218.82(c);

(b) Take any marine mammal specified in § 218.82(c) other than by incidental take as specified in § 218.82(c);

(c) Take a marine mammal specified in § 218.82(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 an LOA issued under §§ 216.106 of this chapter and 218.87.

§ 218.84 Mitigation.

(a) When conducting training and testing activities, as identified in § 218.80, the mitigation measures contained in the LOA issued under §§ 216.106 and 218.87 must be implemented. These mitigation measures include, but are not limited to:

(1) *Lookouts.* The following are protective measures concerning the use of lookouts.

(i) Lookouts positioned on ships will be dedicated solely to diligent observation of the air and surface of the water. Their observation objectives will include, but are not limited to, detecting the presence of biological resources and recreational or fishing boats, observing mitigation zones, and monitoring for vessel and personnel safety concerns.

(ii) Lookouts positioned in aircraft or on small boats will, to the maximum extent practicable and consistent with aircraft and boat safety and training and testing requirements, comply with the observation objectives described in § 218.84 (a)(1)(i).

(iii) Lookout measures for non-impulsive sound:

(A) With the exception of ships less than 65 ft (20 m) in length and ships that are minimally manned, ships using low-frequency or hull-mounted mid-frequency active sonar sources associated with anti-submarine warfare and mine warfare activities at sea will have two Lookouts at the forward position of the ship. For the purposes of this rule, low-frequency active sonar does not include surveillance towed array sensor system low-frequency active sonar.

(B) While using low-frequency or hull-mounted mid-frequency active sonar sources associated with anti-submarine warfare and mine warfare activities at sea, vessels less than 65 ft (20 m) in length and ships that are minimally manned will have one Lookout at the forward position of the vessel due to space and manning restrictions.

(C) Ships conducting active sonar activities while moored or at anchor (including pierside testing or maintenance) will maintain one Lookout.

(D) Surface ships or aircraft conducting high-frequency or non-hull-mounted mid-frequency active sonar activities associated with anti-submarine warfare and mine warfare activities at sea will have one Lookout.

(E) Surface ships or aircraft conducting high-frequency active sonar activities associated with anti-submarine warfare and mine warfare activities at sea will have one Lookout.

(iv) Lookout measures for explosives and impulsive sound:

(A) Aircraft conducting activities with IEER sonobuoys and explosive sonobuoys with 0.6 to 2.5 lbs net explosive weight will have one Lookout.

(B) Surface vessels conducting anti-swimmer grenade activities will have one Lookout.

(C) During general mine countermeasure and neutralization activities using up to a 500-lb net explosive weight detonation (bin E10 and below), vessels greater than 200 ft will have two Lookouts, while vessels less than 200 ft or aircraft will have one Lookout.

(D) General mine countermeasure and neutralization activities using a 501 to 650-lb net explosive weight detonation (bin E11), will have two Lookouts. One Lookout will be positioned in an aircraft and one in a support vessel.

(E) Mine neutralization activities involving diver-placed charges using up to 100-lb net explosive weight detonation (E8) conducted with a positive control device will have a total of two Lookouts. One Lookout will be positioned in each of the two support vessels, or one in a support vessel and one in a helicopter. All divers placing the charges on mines will support the Lookouts while performing their regular duties. The divers placing the charges on mines will report all marine mammal sightings to their dive support vessel or Range Safety Officer.

(F) When mine neutralization activities using diver-placed charges with up to a 20-lb net explosive weight detonation (bin E6) are conducted with a time-delay firing device, four Lookouts will be used. Two Lookouts will be positioned in each of two small rigid hull inflatable boats. In addition, when aircraft are used, the pilot or member of the aircrew will serve as an additional Lookout. The divers placing the charges on mines will report all marine mammal sightings to their dive support vessel or Range Safety Officer.

(G) Surface vessels conducting line charge testing will have one Lookout.

(H) Surface vessels or aircraft conducting small- and medium-caliber gunnery exercises against a surface target will have one Lookout.

(I) Surface vessels conducting large-caliber gunnery exercises against a surface target will have one Lookout.

(J) Aircraft conducting missile exercises (including rockets) against surface targets will have one Lookout.

(K) Aircraft conducting bombing exercises will have one Lookout.

(L) During explosive torpedo testing, one Lookout will be used and positioned in an aircraft.

(M) During sinking exercises, two Lookouts will be used. One Lookout will be positioned in an aircraft and one on a surface vessel.

(N) Prior to commencing, during, and after completion of ship shock trials using up to 10,000 lb. HBX charges, the Navy will have at least 10 Lookouts or trained marine species observers (or a combination thereof) positioned either in an aircraft or on multiple vessels (i.e., a Marine Animal Response Team boat and the test ship). If aircraft are used, there will be Lookouts or trained marine species observers positioned in an aircraft and positioned on multiple vessels. If vessels are the only platform, a sufficient number of additional Lookouts or trained marine species observers will be used to provide visual observation of the mitigation zone comparable to that achieved by aerial surveys.''

(O) Prior to commencing, during, and after completion of ship shock trials

using up to 40,000 lb. HBX charges, the Navy will have at least 10 Lookouts or trained marine species observers (or a combination thereof) positioned in an aircraft and on multiple vessels (i.e., a Marine Animal Response Team boat and the test ship).

(P) Each surface vessel supporting at-sea explosive testing will have at least one lookout.

(Q) Surface vessels conducting explosive and non-explosive large-caliber gunnery exercises will have one lookout. This may be the same lookout used during large-caliber gunnery exercises with a surface target as described in § 218.84(a)(1)(iv)(I) and (a)(1)(v)(C).

(v) Lookout measures for physical strike and disturbance:

(A) While underway, surface ships will have at least one lookout.

(B) During activities using towed in-water devices that are towed from a manned platform, one lookout will be used.

(C) Activities involving non-explosive practice munitions (e.g., small-, medium-, and large-caliber gunnery exercises) using a surface target will have one lookout.

(D) During activities involving non-explosive bombing exercises, one lookout will be used.

(E) During activities involving non-explosive missile exercises (including rockets) using a surface target, one lookout will be used.

(2) *Mitigation Zones.* The following are protective measures concerning the implementation of mitigation zones.

(i) Mitigation zones will be measured as the radius from a source and represent a distance to be monitored.

(ii) Visual detections of marine mammals within a mitigation zone will be communicated immediately to a watch station for information dissemination and appropriate action.

(iii) Mitigation zones for non-impulsive sound:

(A) When marine mammals are visually detected, the Navy shall ensure that low-frequency and hull-mounted mid-frequency active sonar transmission levels are limited to at least 6 dB below normal operating levels, for sources that can be powered down, if any detected marine mammals are within 1,000 yd (914 m) of the sonar dome (the bow).

(B) The Navy shall ensure that low-frequency and hull-mounted mid-frequency active sonar transmissions are limited to at least 10 dB below the equipment's normal operating levels, for sources that can be powered down, if any detected marine mammals are within 500 yd (457 m) of the sonar dome.

(C) The Navy shall ensure that low-frequency and hull-mounted mid-frequency active sonar transmissions are ceased, for sources that can be turned off during the activity, if any visually detected marine mammals are within 200 yd (183 m) of the sonar dome. Transmissions will not resume until one of the following conditions is met: the animal is observed exiting the mitigation zone, the animal is thought to have exited the mitigation zone based on a determination of its course and speed and the relative motion between the animal and the source, the mitigation zone has been clear from any additional sightings for a period of 30 min., the ship has transited more than 2,000 yd (1.8 km) beyond the location of the last sighting, or the ship concludes that dolphins are deliberately closing in on the ship to ride the ship's bow wave (and there are no other marine mammal sightings within the mitigation zone). Active transmission may resume when dolphins are bow riding because they are out of the main transmission axis of the active sonar while in the shallow-wave area of the bow.

(D) The Navy shall ensure that low-frequency and hull-mounted mid-frequency active sonar transmissions are ceased, for sources that cannot be powered down during the activity, if any visually detected marine mammals are within 200 yd (183 m) of the source. Transmissions will not resume until one of the following conditions is met: the animal is observed exiting the mitigation zone, the animal is thought to have exited the mitigation zone based on a determination of its course and speed and the relative motion between the animal and the source, the mitigation zone has been clear from any additional sightings for a period of 30 min., the ship has transited more than 400 yd (366 m) beyond the location of the last sighting.

(E) When marine mammals are visually detected, the Navy shall ensure that high-frequency and non-hull-mounted mid-frequency active sonar transmission levels are ceased if any visually detected marine mammals are within 200 yd (183 m) of the source. Transmissions will not resume until one of the following conditions is met: the animal is observed exiting the mitigation zone, the animal is thought to have exited the mitigation zone based on a determination of its course and speed and the relative motion between the animal and the source, the mitigation zone has been clear from any additional sightings for a period of 10 min. for an aircraft-deployed source, the mitigation zone has been clear from any additional sightings for a period of 30 min. for a vessel-deployed source, the vessel or aircraft has repositioned itself more than 400 yd. (366 m) away from the location of the last sighting, or the vessel concludes that dolphins are deliberately closing in to ride the vessel's bow wave (and there are no other marine mammal sightings within the mitigation zone).

(iv) Mitigation zones for explosive and impulsive sound:

(A) A mitigation zone with a radius of 600 yd (549 m) shall be established for IEER sonobuoys (bin E4).

(B) A mitigation zone with a radius of 350 yd (320 m) shall be established for explosive sonobuoys using 0.6 to 2.5 lb net explosive weight (bin E3).

(C) A mitigation zone with a radius of 200 yd (183 m) shall be established for anti-swimmer grenades (up to bin E2).

(D) A mitigation zone ranging from 600 yd (549 m) to 2,100 yd (1.9 km), dependent on charge size, shall be established for general mine countermeasure and neutralization activities using positive control firing devices. Mitigation zone distances are specified for charge size in Table 11–2 of the Navy's application.

(E) A mitigation zone ranging from 350 yd (320 m) to 850 yd (777 m), dependent on charge size, shall be established for mine countermeasure and neutralization activities using diver placed positive control firing devices. Mitigation zone distances are specified for charge size in Table 11–2 of the Navy's application.

(F) A mitigation zone with a radius of 1,000 yd (914 m) shall be established for mine neutralization diver placed mines using time-delay firing devices (up to bin E6).

(G) A mitigation zone with a radius of 900 yd (823 m) shall be established for ordnance testing (line charge testing) (bin E4).

(H) A mitigation zone with a radius of 200 yd (183 m) shall be established for small- and medium-caliber gunnery exercises with a surface target (up to bin E2).

(I) A mitigation zone with a radius of 600 yd (549 m) shall be established for large-caliber gunnery exercises with a surface target (bin E5).

(J) A mitigation zone with a radius of 900 yd (823 m) shall be established for missile exercises (including rockets) with up to 250 lb net explosive weight and a surface target (up to bin E9).

(K) A mitigation zone with a radius of 2,000 yd (1.8 km) shall be established for missile exercises with 251 to 500 lb net explosive weight and a surface target (E10).

(L) A mitigation zone with a radius of 2,500 yd (2.3 km) shall be established for bombing exercises (up to bin E12).

(M) A mitigation zone with a radius of 2,100 yd (1.9 km) shall be established for torpedo (explosive) testing (up to bin E11).

(N) A mitigation zone with a radius of 2.5 nautical miles shall be established for sinking exercises (up to bin E12).

(O) A mitigation zone with a radius of 1,600 yd (1.4 km) shall be established for at-sea explosive testing (up to bin E5).

(P) A mitigation zone with a radius of 3.5 nautical miles shall be established for a shock trial.

(Q) A mitigation zone with a radius of 70 yd (64 m), within 30 degrees on either side of the gun target line on the firing side of the ship, shall be established for all explosive and non-explosive large-caliber gunnery exercises.

(v) Mitigation zones for vessels and in-water devices:

(A) A mitigation zone of 500 yd (457 m) for observed whales and 200 yd (183 m) for all other marine mammals (except bow riding dolphins) shall be established for all vessel movement, providing it is safe to do so.

(B) A mitigation zone of 250 yd (229 m) for any observed marine mammal shall be established for all towed in-water devices that are towed from a manned platform, providing it is safe to do so.

(vi) Mitigation zones for non-explosive practice munitions:

(A) A mitigation zone of 200 yd (183 m) shall be established for small, medium, and large caliber gunnery exercises using a surface target.

(B) A mitigation zone of 1,000 yd (914 m) shall be established for bombing exercises.

(C) A mitigation zone of 900 yd (823 m) shall be established for missile exercises (including rockets) using a surface target.

(3) Protective Measures Specific to North Atlantic Right Whales:

(i) North Atlantic Right Whale Calving Habitat off the Southeast United States.

(A) The Southeast Right Whale Mitigation Area is defined by a 5 nm (9.3 km) buffer around the coastal waters between 31–15 N. lat. and 30–15 N. lat. extending from the coast out 15 nm (27.8 km), and the coastal waters between 30–15 N. lat. to 28–00 N. lat. from the coast out to 5 nm (9.3 km).

(B) Between November 15 and April 15, the following activities are prohibited within the Southeast Right Whale Mitigation Area:

(*1*) Low-frequency and hull-mounted mid-frequency active sonar (except in § 218.84(a)(3)(i)(C).

(*2*) High-frequency and non-hull mounted mid-frequency active sonar (except helicopter dipping).

(*3*) Missile activities (explosive and non-explosive).

(*4*) Bombing exercises (explosive and non-explosive).

(*5*) Underwater detonations.

(*6*) Improved extended echo ranging sonobuoy exercises.

(*7*) Torpedo exercises (explosive).

(*8*) Small-, medium-, and large-caliber gunnery exercises.

(C) Between November 15 and April 15, use of the following systems is to be minimized to the maximum extent practicable within the Southeast Right Whale Mitigation Area:

(*1*) Helicopter dipping using active sonar.

(*2*) Low-frequency and hull-mounted mid-frequency active sonar used for navigation training.

(*3*) Low-frequency and hull-mounted mid-frequency active sonar used for object detection exercises.

(D) Prior to transiting or training or testing in the Southeast Right Whale Mitigation Area, ships shall contact Fleet Area Control and Surveillance Facility, Jacksonville, to obtain the latest whale sightings and other information needed to make informed decisions regarding safe speed and path of intended movement. Submarines shall contact Commander, Submarine Force United States Atlantic Fleet for similar information.

(E) The following specific mitigation measures apply to activities occurring within the Southeast Right Whale Mitigation Area:

(*1*) When transiting within the Southeast Right Whale Mitigation Area, vessels shall exercise extreme caution and proceed at a slow safe speed. The speed shall be the slowest safe speed that is consistent with mission, training, and operations.

(*2*) Speed reductions (adjustments) are required when a North Atlantic right whale is sighted by a vessel, when the vessel is within 9 km (5 nm) of a sighting reported within the past 12 hours, or when operating at night or during periods of poor visibility.

(*3*) Vessels shall avoid head-on approaches to North Atlantic right whales(s) and shall maneuver to maintain at least 457 m (500 yd) of separation from any observed whale if deemed safe to do so. These requirements do not apply if a vessel's safety is threatened, such as when a change of course would create an imminent and serious threat to a person, vessel, or aircraft, and to the extent vessels are restricted in their ability to maneuver.

(*4*) Vessels shall minimize to the extent practicable north-south transits through the Southeast Right Whale Mitigation Area. If transit in a north-south direction is required during training or testing activities, the Navy shall implement the measures described in § 218.84(a)(3)(i)(E)(*1*) through (*3*).

(*5*) Ship, surfaced subs, and aircraft shall report any North Atlantic right whale sightings to Fleet Area Control and Surveillance Facility, Jacksonville, by the most convenient and fastest means. The sighting report shall include the time, latitude/longitude, direction of movement and number and description of whale (i.e., adult/calf).

(ii) North Atlantic Right Whale Foraging Habitat off the Northeast United States:

(A) The Northeast Right Whale Mitigation Area consists of two areas: the Great South Channel and Cape Cod Bay. The Great South Channel is defined by the following coordinates: 41–40 N. Lat., 69–45 W. Long.; 41–00 N. Lat., 69–05 W. Long.; 41–38 N. Lat., 68–13 W. Long.; and 42–10 N. Lat., 68–31 W. Long. Cape Cod Bay is defined by the following coordinates: 42–04.8 N. Lat., 70–10 W. Long.; 42–10 N. Lat., 70–15 W. Long.; 42–12 N. Lat., 70–30 W. Long.; 41–46.8 N. Lat., 70–30 W. Long.; and on the south and east by the interior shoreline of Cape Cod.

(B) Year-round, the following activities are prohibited within the Northeast Right Whale Mitigation Area:

(*1*) Improved extended echo ranging sonobuoy exercises in or within 5.6 km (3 nm) of the mitigation area.

(*2*) Bombing exercises (explosive and non-explosive).

(*3*) Underwater detonations.

(*4*) Torpedo exercises (explosive).

(C) Year-round, use of the following systems is to be minimized to the maximum extent practicable within the Northeast Right Whale Mitigation Area:

(*1*) Low-frequency and hull-mounted mid-frequency active sonar.

(*2*) High-frequency and non-hull mounted mid-frequency active sonar, including helicopter dipping.

(D) Prior to transiting or training in the Northeast Right Whale Mitigation Area, ships and submarines shall contact the Northeast Right Whale Sighting Advisory System to obtain the latest whale sightings and other information needed to make informed decisions regarding safe speed and path of intended movement.

(E) The following specific mitigation measures apply to activities occurring within the Northeast Right Whale Mitigation Area:

(*1*) When transiting within the Northeast Right Whale Mitigation Area,

vessels shall exercise extreme caution and proceed at a slow safe speed. The speed shall be the slowest safe speed that is consistent with mission, training, and operations.

(*2*) Speed reductions (adjustments) are required when a North Atlantic right whale is sighted by a vessel, when the vessel is within 9 km (5 nm) of a sighting reported within the past week, or when operating at night or during periods of poor visibility.

(*3*) When conducting TORPEXs, the following additional speed restrictions shall be required: during transit, surface vessels and submarines shall maintain a speed of no more than 19 km/hour (10 knots); during torpedo firing exercises, vessel speeds should, where feasible, not exceed 10 knots; when a submarine is used as a target, vessel speeds should, where feasible, not exceed 18 knots; when surface vessels are used as targets, vessels may exceed 18 knots for a short period of time (e.g., 10–15 minutes).

(*4*) Vessels shall avoid head-on approaches to North Atlantic right whales(s) and shall maneuver to maintain at least 457 m (500 yd) of separation from any observed whale if deemed safe to do so. These requirements do not apply if a vessel's safety is threatened, such as when a change of course would create an imminent and serious threat to a person, vessel, or aircraft, and to the extent vessels are restricted in their ability to maneuver.

(*5*) Non-explosive torpedo testing shall be conducted during daylight hours only in Beaufort sea states of 3 or less to increase the probability of marine mammal detection.

(*6*) Non-explosive torpedo testing activities shall not commence if concentrations of floating vegetation (*Sargassum* or kelp patties) are observed in the vicinity.

(*7*) Non-explosive torpedo testing activities shall cease if a marine mammal is visually detected within the immediate vicinity of the activity. The tests may recommence when any one of the following conditions are met: the animal is observed exiting the immediate vicinity of the activity; the animal is thought to have exited the immediate vicinity based on a determination of its course and speed and the relative motion between the animal and the source; or the immediate vicinity of the activity has been clear from any additional sightings for a period of 30 minutes.

(iii) North Atlantic Right Whale Mid-Atlantic Migration Corridor:

(A) The Mid-Atlantic Right Whale Mitigation Area consists of the following areas:

(*1*) Block Island Sound: the area bounded by 40–51–53.7 N. Lat., 70–36–44.9 W. Long.; 41–20–14.1 N. Lat., 70–49–44.1 W. Long; 41–4–16.7 N. Lat., 71–51–21 W. Long.; 41–35–56.5 N. Lat., 71–38–25.1 W. Long; then back to first set of coordinates.

(*2*) New York and New Jersey: within a 37 km (20 nm) radius of the following (as measured seaward from the COLREGS lines) 40–29–42.2 N. Lat., 73–55–57.6 W. Long.

(*3*) Delaware Bay: within a 37 km (20 nm) radius of the following (as measured seaward from the COLREGS lines) 38–52–27.4 N. Lat., 75–01–32.1 W. Long.

(*4*) Chesapeake Bay: within a 37 km (20 nm) radius of the following (as measured seaward from the COLREGS lines) 37–00–36.9 N. Lat., 75–57–50.5 W. Long.

(*5*) Morehead City, North Carolina: within a 37 km (20 nm) radius of the following (as measured seaward from the COLREGS lines) 34–41–32 N. Lat., 76–40–08.3 W. Long.

(*6*) Wilmington, North Carolina, through South Carolina, and to Brunswick, Georgia: within a continuous area 37 km (20 nm) from shore and west back to shore bounded by 34–10–30 N. Lat., 77–49–12 W. Long.; 33–56–42 N. Lat., 77–31–30 W. Long.; 33–36–30 N. Lat., 77–47–06 W. Long.; 33–28–24 N. Lat., 78–32–30 W. Long.; 32–59–06 N. Lat., 78–50–18 W. Long.; 31–50 N. Lat., 80–33–12 W. Long.; 31–27 N. Lat., 80–51–36 W. Long.

(B) Between November 1 and April 30, when transiting within the Mid-Atlantic Right Whale Mitigation Area, vessels shall exercise extreme caution and proceed at a slow safe speed. The speed shall be the slowest safe speed that is consistent with mission, training, and operations.

(iv) Planning Awareness Areas:

(A) The Navy shall avoid planning major training exercises involving the use of active sonar in the specified planning awareness areas (PAAs—see Figure 5.3–1 in the AFTT FEIS/OEIS) where feasible. Should national security require the conduct of more than four major exercises (C2X, JTFEX, or similar scale event) in these areas (meaning all or a portion of the exercise) per year, or more than one within the Gulf of Mexico areas per year, the Navy shall provide NMFS with prior notification and include the information in any associated after-action or monitoring reports.

(4) Stranding Response Plan:

(i) The Navy shall abide by the current Stranding Response Plan for Major Navy Training Exercises in the Study Area, to include the following measures:

(A) Shutdown Procedures—When an Uncommon Stranding Event (USE—defined in § 218.71 (b)(1)) occurs during a Major Training Exercise (MTE) in the AFTT Study Area, the Navy shall implement the procedures described. in paragraphs (a)(4)(i)(A)(*1*) through (*4*) of this section.

(*1*) The Navy shall implement a shutdown (as defined § 218.81(b)(2)) when advised by a NMFS Office of Protected Resources Headquarters Senior Official designated in the AFTT Study Area 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 the 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, NFMS 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 mid-frequency active sonar training activities or explosive detonations, though farther than 14 nautical miles 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 AFTT Study Area Communication Protocol) regarding the location, number and types of acoustic/explosive sources, direction and speed of units using mid-frequency active sonar, and marine mammal sightings information associated with training activities occurring within 80 nautical miles (148 km) and 72 hours prior to the USE event. Information not initially available regarding the 80-nautical miles (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.

(ii) [Reserved]

§ 218.85 Requirements for monitoring and reporting.

(a) As outlined in the AFTT Study Area 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 § 218.80 is thought to have resulted in the mortality or injury of any marine mammals, or in any take of marine mammals not identified in § 218.81.

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

(c) 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 a Navy training or testing activity utilizing mid- or high-frequency active sonar or underwater explosive detonations. The Navy shall provide NMFS with species identification 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.

(d) Annual AFTT Monitoring Plan Report—The Navy shall submit an annual report of the AFTT Monitoring Plan on April 1 of each year describing the implementation and results from the previous calendar year. Data collection methods will be standardized across range complexes and study areas to allow for comparison in different geographic locations. Although additional information will be gathered, the protected species observers collecting marine mammal data pursuant to the AFTT Monitoring Plan shall, at a minimum, provide the same marine mammal observation data required in § 218.85. As an alternative, the Navy may submit a multi-Range Complex annual Monitoring Plan report to fulfill this requirement. Such a report would describe progress of knowledge made with respect to monitoring plan study questions across all Navy ranges associated with the ICMP. Similar study questions shall be treated together so that progress on each topic shall be summarized across all Navy ranges. The report need not include analyses and content that do not provide direct assessment of cumulative progress on the monitoring plan study questions.

(e) Vessel Strike—In the event that a Navy vessel strikes a whale, the Navy shall do the following:

(1) Immediately report to NMFS (pursuant to the established Communication Protocol) the:

(i) Species identification if known;

(ii) Location (latitude/longitude) of the animal (or location of the strike if the animal has disappeared);

(iii) Whether the animal is alive or dead (or unknown); and

(iv) The time of the strike.

(2) As soon as feasible, the Navy shall report to or provide to NMFS, the:

(i) Size, length, and description (critical if species is not known) of animal;

(ii) An estimate of the injury status (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared, etc.);

(iii) Description of the behavior of the whale during event, immediately after the strike, and following the strike (until the report is made or the animal is no long sighted);

(iv) Vessel class/type and operation status;

(v) Vessel length

(vi) Vessel speed and heading; and

(vii) To the best extent possible, obtain

(3) Within 2 weeks of the strike, provide NMFS:

(i) A detailed description of the specific actions of the vessel in the 30-minute timeframe immediately preceding the strike, during the event, and immediately after the strike (e.g., the speed and changes in speed, the direction and changes in the direction, other maneuvers, sonar use, etc., if not classified); and

(ii) A narrative description of marine mammal sightings during the event and immediately after, and any information as to sightings prior to the strike, if available; and

(iii) Use established Navy shipboard procedures to make a camera available to attempt to capture photographs following a ship strike.

(f) Annual AFTT Exercise and Testing Report—The Navy shall submit ''quick-look'' reports detailing the status of authorized sound sources within 21 days after the end of the annual authorization cycle. The Navy shall submit detailed reports 3 months after the anniversary of the date of issuance of the LOA. The annual reports shall contain information on Major Training Exercises (MTE), Sinking Exercise (SINKEX) events, and a summary of sound sources used, as described in paragraphs (f)(2)(i)(A) through (C) of this section. The analysis in the reports will be based on the accumulation of data from the current year's report and data collected from previous reports. These reports shall contain information identified in paragraphs (e)(1) through (5) of this section.

(1) Major Training Exercises/SINKEX—

(i) This section shall contain the reporting requirements for Coordinated and Strike Group exercises and SINKEX. Coordinated and Strike Group Major Training Exercises:

(A) Sustainment Exercise (SUSTAINEX).

(B) Integrated ASW Course (IAC).

(C) Joint Task Force Exercises (JTFEX).

(D) Composite Training Unit Exercises (COMPTUEX).

(ii) Exercise information for each MTE:

(A) Exercise designator.

(B) Date that exercise began and ended.

(C) Location (operating area).

(D) Number of items or hours (per the LOA) of each sound source bin (impulsive and non-impulsive) used in the exercise.

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

(F) Individual marine mammal sighting info for each sighting for each MTE:

(*1*) Date/time/location of sighting.

(*2*) Species (if not possible, indication of whale/dolphin/pinniped).

(*3*) Number of individuals.

(*4*) Initial detection sensor.

(*5*) Indication of specific type of platform the observation was made from (including, for example, what type of surface vessel or testing platform).

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

(*7*) Sea state.

(*8*) Visibility.

(*9*) Sound source in use at the time of sighting.

(*10*) Indication of whether animal is <200 yd, 200–500 yd, 500–1,000 yd, 1,000–2,000 yd, or >2,000 yd from sound source.

(*11*) Mitigation implementation—whether operation of sonar sensor was delayed, or sonar was powered or shut down, and how long the delay was; or whether navigation was changed or delayed.

(*12*) If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal's motion relative to ship (opening, closing, parallel).

(*13*) Observed behavior—watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s) (such as closing to bow ride, paralleling course/speed, floating on surface and not swimming, etc.), and if any calves present.

(G) An evaluation (based on data gathered during all of the MTEs) of the effectiveness of mitigation measures designed to minimize the received level to which marine mammals may be exposed. This evaluation shall identify the specific observations that support any conclusions the Navy reaches about the effectiveness of the mitigation.

(iii) Exercise information for each SINKEX:

(A) List of the vessels and aircraft involved in the SINKEX.

(B) Location (operating area).

(C) Chronological list of events with times, including time of sunrise and sunset, start and stop time of all marine species surveys that occur before, during, and after the SINKEX, and ordnance used.

(D) Visibility and/or weather conditions, wind speed, cloud cover, etc. throughout exercise if it changes.

(E) Aircraft used in the surveys, flight altitude, and flight speed and the area covered by each of the surveys, given in coordinates, map, or square miles.

(F) Passive acoustic monitoring details (number of sonobuoys, detections of biologic activity, etc.).

(G) Individual marine mammal sighting info for each sighting that required mitigation to be implemented:

(*1*) Date/time/location of sighting.

(*2*) Species (if not possible, indication of whale/dolphin/pinniped).

(*3*) Number of individuals.

(*4*) Initial detection sensor.

(*5*) Indication of specific type of platform the observation was made from (including, for example what type of surface vessel or platform).

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

(*7*) Sea state.

(*8*) Visibility.

(*9*) Indication of whether animal is <200 yd, 200–500 yd, 500–1,000 yd, 1,000–2,000 yd, or >2,000 yd from the target.

(*10*) Mitigation implementation—whether the SINKEX was stopped or delayed and length of delay.

(*11*) 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.), and if any calves present.

(H) List of the ordnance used throughout the SINKEX and net explosive weight (NEW) of each weapon and the combined ordnance NEW.

(2) Summary of Sources Used.

(i) This section shall include the following information summarized from the authorized sound sources used in all training and testing events:

(A) Total annual hours or quantity (per the LOA) of each bin of sonar or other non-impulsive source.

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

(C) Improved Extended Echo-Ranging System (IEER)/sonobuoy summary, including:

(*1*) Total expended/detonated rounds (buoys).

(*2*) Total number of self-scuttled IEER rounds.

(3) Sonar Exercise Notification—The Navy shall submit to NMFS (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 indicating:

(i) Location of the exercise.

(ii) Beginning and end dates of the exercise.

(iii) Type of exercise.

(4) Geographic Information Presentation—The reports shall present an annual (and seasonal, where practical) depiction of training exercises and testing bin usage geographically across the Study Area.

(g) 5-yr Close-out Exercise and Testing Report—This report will be included as part of the 2019 annual exercise or testing report. This report will provide the annual totals for each sound source bin with a comparison to the annual allowance and the 5-year total for each sound source bin with a comparison to the 5-year allowance. Additionally, if there were any changes to the sound source allowance, this report will include a discussion of why the change was made and include the analysis to support how the change did or did not result in a change in the FEIS and final rule determinations. The report will be submitted April 1 following the expiration of the rule. NMFS will submit comments on the draft close-out report, if any, within 3 months of receipt. The report will be considered final after the Navy has addressed NMFS' comments, or 3 months after the submittal of the draft if NMFS does not provide comments.

(h) Ship Shock Trial Report—The reporting requirements will be developed in conjunction with the individual test-specific mitigation plan for each ship shock trial. This will allow both the Navy and NMFS to take into account specific information regarding location, assets, species, and seasonality.

§ 218.86 Applications for Letters of Authorization.

To incidentally take marine mammals pursuant to the regulations in this subpart, the U.S. citizen (as defined by § 216.106) conducting the activity identified in § 218.80(c) (the U.S. Navy) must apply for and obtain either an initial LOA in accordance with § 218.87 or a renewal under § 218.88.

§ 218.87 Letters of Authorization.

(a) An LOA, unless suspended or revoked, will be valid for a period of time not to exceed the period of validity of this subpart.

(b) Each LOA will set forth:

(1) Permissible methods of incidental taking;

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

(3) Requirements for mitigation, monitoring and reporting.

(c) Issuance and renewal of the LOA 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).

§ 218.88 Renewals and Modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 of this chapter and 218.87 for the activity identified in § 218.80(c) will be

renewed or modified upon request of the applicant, provided that:

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

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

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

(c) A LOA issued under § 216.106 and § 218.87 of this chapter for the activity identified in § 218.80(c) of this chapter may be modified by NMFS under the following circumstances:

(1) Adaptive Management—NMFS may modify (including augment) the existing mitigation, monitoring, or reporting measures (after consulting with Navy regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring set forth in the preamble for these regulations.

(i) Possible sources of data that could contribute to the decision to modify the mitigation, monitoring, or reporting measures in an LOA:

(A) Results from Navy's monitoring from the previous year(s).

(B) Results from other marine mammal and/or sound research or studies.

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

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

(2) *Emergencies.* If NMFS determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in § 218.82(c) this chapter, an LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within 30 days of the action.

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