

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 218

[Docket No. 190220145–9145–01]

RIN 0648–BI85

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to the 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: Proposed rule; request for comment.

SUMMARY: NMFS has received a request from the U.S. Navy (Navy) to extend the time period from November 2023 to November 2025 for Marine Mammal Protection Act (MMPA) regulations authorizing the take of marine mammals incidental to Navy training and testing activities conducted in the Atlantic Fleet Training and Testing (AFTT) Study Area. In August 2018, the MMPA was amended by the John S. McCain National Defense Authorization Act (NDAA) for Fiscal Year 2019 to allow for seven-year authorizations for military readiness activities, as compared to the previously allowed five years. The Navy's activities qualify as military readiness activities pursuant to the MMPA as amended by the NDAA for Fiscal Year 2004. In making the request to extend the time period covered by the MMPA AFTT regulations from five to seven years, the Navy proposes no changes to their specified activities, the geographical region in which those activities would be conducted, mitigation measures, monitoring, or reporting over the longer seven-year period. Pursuant to the MMPA, NMFS is requesting comments on the proposed seven-year rule and associated Letters of Authorization (LOAs) to cover the same activities covered by the existing 2018 AFTT regulations. NMFS will consider all public comments prior to issuing any final rule and making final decisions on the issuance of the requested LOAs, and agency responses will be summarized in the notice of the final decision.

DATES: Comments and information must be received no later than June 12, 2019.

ADDRESSES: You may submit comments on this document, identified by NOAA–NMFS–2019–0050, by any of the following methods:

- *Electronic submission:* Submit all electronic public comments via the federal e-Rulemaking Portal. Go to www.regulations.gov/#!/docketDetail;D=NOAA-NMFS-2019-0050, click the “Comment Now!” icon, complete the required fields, and enter or attach your comments.

- *Mail:* Submit written comments to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East West Highway, Silver Spring, MD 20910.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on www.regulations.gov without change. All personal identifying information (e.g., name, address), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter “N/A” in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, or Adobe PDF file formats only.

A copy of the Navy's applications, NMFS' proposed and final rules and subsequent LOAs for the existing regulations, and other supporting documents and documents cited herein may be obtained online at: www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities. In case of problems accessing these documents, please use the contact listed here (see **FOR FURTHER INFORMATION CONTACT**).

FOR FURTHER INFORMATION CONTACT: Wendy Piniak, Office of Protected Resources, NMFS, (301) 427–8401.

SUPPLEMENTARY INFORMATION:**Purpose of Regulatory Action**

These proposed regulations, issued under the authority of the MMPA (16 U.S.C. 1361 *et seq.*), would extend the framework for authorizing the take of marine mammals incidental to the Navy's training and testing activities (which qualify as military readiness activities) from the use of sonar and other transducers, in-water detonations, air guns, impact pile driving/vibratory extraction, and the movement of vessels throughout the AFTT Study Area, which includes areas of the western Atlantic Ocean along the East Coast of North America, portions of the Caribbean Sea, and the Gulf of Mexico.

NMFS received an application from the Navy requesting to extend NMFS' existing MMPA regulations (50 CFR part 218, subpart I; hereafter “2018 AFTT regulations”) that authorize the take of marine mammals incidental to Navy training and testing activities conducted in the AFTT Study Area to cover seven years of the Navy's activities, instead of five. Take is anticipated to occur by Level A harassment and Level B harassment as well as a very small number of serious injuries or mortalities incidental to the Navy's training and testing activities.

Background

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

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stocks and will not have an unmitigable adverse impact on the availability of the species or stocks for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other means of effecting the least practicable adverse impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stocks for taking for certain subsistence uses (referred to in this rule as “mitigation measures”); and requirements pertaining to the monitoring and reporting of such takings. The MMPA defines “take” to mean to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. The *Preliminary Analysis and Negligible Impact Determination* section below discusses the definition of “negligible impact.”

The NDAA for Fiscal Year 2004 (2004 NDAA) (Pub. L. 108–136) amended section 101(a)(5) of the MMPA to remove the “small numbers” and “specified geographical region” provisions indicated above 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). In addition, the 2004 NDAA amended the MMPA as it relates to military readiness activities 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.

More recently, section 316 of the NDAA for Fiscal Year 2019 (2019 NDAA) (Pub. L. 115–232), signed on August 13, 2018, amended the MMPA to allow incidental take rules for military readiness activities under section 101(a)(5)(A) to be issued for up to seven years. Prior to this amendment, all incidental take rules under section 101(a)(5)(A) were limited to five years.

Summary of Request

On November 14, 2018, NMFS issued a five-year final rule governing the taking of marine mammals incidental to Navy training and testing activities conducted in the AFTT Study Area (83 FR 57076; hereafter “2018 AFTT final rule”). Previously on August 13, 2018, and towards the end of the time period in which NMFS was processing the Navy’s request for the 2018 regulations, the 2019 NDAA amended the MMPA for military readiness activities to allow incidental take regulations to be issued for up to seven years instead of the previous five years. The Navy’s training and testing activities conducted in the AFTT Study Area qualify as military readiness activities pursuant to the MMPA, as amended by the 2004 NDAA. On November 16, 2018, the Navy submitted an application requesting that NMFS extend the 2018 AFTT regulations and associated LOAs such that they would cover take incidental to seven years of training and testing activities instead of five, extending the expiration date from November 13, 2023 to November 13, 2025. A revised application correcting the estimated takes due to ship shock trials (Table 5.1–2) was submitted to NMFS by the Navy on January 18, 2019.

In its 2019 application, the Navy proposes no changes to the nature of the specified activities covered by the 2018 AFTT final rule, the level of activity within and between years would be consistent with that previously analyzed in the 2018 AFTT final rule, and all activities would be conducted within the same boundaries of the AFTT Study Area identified in the 2018 AFTT final rule. Therefore, the training and testing activities (e.g., equipment and sources used, exercises conducted) and the mitigation, monitoring, and reporting measures are identical to those described and analyzed in the 2018 AFTT final rule. The only changes included in the Navy’s request are to conduct those same activities in the same region for an additional two years. In its request, the Navy included all information necessary to identify the type and amount of incidental take that may occur in the two additional years so NMFS could determine whether the analyses and conclusions regarding the impacts of the proposed activities on marine mammal species and stocks previously reached for five years of activities remain the same for seven years of identical activity.

The Navy’s mission is to organize, train, equip, and maintain combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. This mission is mandated by federal law (10 U.S.C. 8062), which ensures the readiness of the naval forces of the United States. The Navy executes this responsibility by establishing and executing training programs, including at-sea training and exercises, and ensuring naval forces have access to the ranges, operating areas (OPAREAs), and airspace needed to develop and maintain skills for conducting naval activities.

The Navy proposes to continue conducting training and testing activities within the AFTT Study Area. The Navy’s January 18, 2019, rulemaking and LOA extension application (hereafter “2019 Navy application”) reflects the same compilation of training and testing activities presented in the Navy’s June 16, 2017, initial rulemaking and LOA application (hereafter “2017 Navy application”) and the 2018 AFTT regulations that were subsequently promulgated, which can be found at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities>. These activities are deemed by the Navy necessary to accomplish military readiness requirements and are anticipated to continue into the reasonably foreseeable

future. The 2019 Navy application and this rule cover training and testing activities that would occur over seven years, including the five years already authorized under the 2018 AFTT regulations, with the regulations valid from the publication date of the final rule (if issued) through November 13, 2025.

Summary of the Proposed Regulations

NMFS is proposing to extend the incidental take regulations and associated LOAs through November 13, 2025 to cover the same Navy activities covered by the 2018 AFTT regulations. The 2018 AFTT final rule was only recently published and its analysis remains current and valid. In its 2019 application, the Navy proposes no changes to the nature (e.g., equipment and sources used, exercises conducted) or level of the specified activities within or between years or to the boundaries of the AFTT Study Area. The mitigation, monitoring, and reporting measures would be identical to those described and analyzed in the 2018 AFTT final rule. The proposed regulatory language included at the end of this proposed rule, which would be published at 50 CFR part 218, subpart I, also is the same as that under the AFTT 2018 regulations, except for a small number of minor, technical changes. No new information has been received from the Navy, or otherwise become available to NMFS, since publication of the 2018 AFTT final rule that significantly changes the analyses supporting the 2018 findings. Where there is any new information pertinent to the descriptions, analyses, or findings required to authorize incidental take for military readiness activities under MMPA section 101(a)(5)(A), that information is provided in the appropriate sections below.

Because the activities included in the 2019 Navy application have not changed and the analyses and findings included in the documents provided and produced in support of the recently published 2018 AFTT final rule remain current and applicable, this proposed rule relies heavily on and references to the applicable information and analyses in those documents. Below is a list of the regulatory documents referenced in this proposed rule. The list indicates the short name by which the document is referenced in this proposed rule, as well as the full titles of the cited documents. All of the documents can be found at: www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities and <http://www.aftteis.com/>.

- NMFS March 13, 2018, Atlantic Fleet Training and Testing (AFTT) proposed rule (83 FR 10954; hereafter “2018 AFTT proposed rule”);
- NMFS November 14, 2018, Atlantic Fleet Training and Testing (AFTT) final rule (83 FR 57076; hereafter “2018 AFTT final rule”);
- NMFS December 27, 2018, Hawaii-Southern California Training and Testing (HSTT) Study Area final rule (83 FR 66846; hereafter “2018 HSTT final rule”);
- Navy June 16, 2017, MMPA rulemaking and LOA application (hereafter “2017 Navy application”);
- Navy January 18, 2019, MMPA rulemaking and LOA extension application (hereafter “2019 Navy application”); and
- September 14, 2018, Atlantic Fleet Training and Testing (AFTT) Final Environmental Impact Statement/Overseas Environmental Impact Statement (FEIS/OEIS) (hereafter “2018 AFTT FEIS/OEIS”).

Description of the Specified Activity

The Navy requests authorization to take marine mammals incidental to conducting training and testing activities. The Navy has determined that acoustic and explosives stressors are most likely to result in impacts on marine mammals that could rise to the level of harassment. Detailed descriptions of these activities are provided in Chapter 2 of the 2018 AFTT FEIS/OEIS and in the 2017 and 2019 Navy applications.

Overview of Training and Testing Activities

The Navy routinely trains in the AFTT Study Area in preparation for national defense missions. Training and testing activities and components covered in the 2019 Navy application are described in detail in the *Overview of Training and Testing Activities* sections of the 2018 AFTT proposed rule and the 2018 AFTT final rule and Chapter 2 of the 2018 AFTT FEIS/OEIS (<http://www.aftteis.com/>). Each military training and testing activity described meets mandated Fleet requirements to deploy ready forces. The Navy proposes no changes to the specified activities described and analyzed in the 2018 AFTT final rule. The boundaries of the AFTT Study Area (see Figure 1.2–1 of the 2019 Navy application); the training and testing activities (e.g., equipment and sources used, exercises conducted); manner of or amount of vessel movement; and standard operating procedures presented in this proposed rule are identical to those described and analyzed in the 2018 AFTT final rule.

Dates and Duration

The specified activities would occur at any time during the seven-year period of validity of the regulations. The proposed number of training and testing activities are described in the *Detailed Description of the Specified Activities* section (Tables 1 through 4).

Specified Geographical Region

The Navy proposes no changes to the geographic extent of the AFTT Study Area as described in the 2018 AFTT final rule. The AFTT Study Area (see Figure 2–1 of the 2019 Navy application) includes areas of the western Atlantic Ocean along the east coast of North America, the Gulf of Mexico, and portions of the Caribbean Sea. The AFTT Study Area begins at the mean high tide line along the U.S. coast and extends east to the 45-degree west longitude line, north to the 65-degree north latitude line, and south to approximately the 20-degree north latitude line. The AFTT Study Area also includes Navy pierside locations, bays, harbors, and inland waterways, and civilian ports where training and testing occurs. The AFTT Study Area generally follows the Commander Task Force 80 area of operations, covering approximately 2.6 million nautical miles squared (nmi²) of ocean area, and includes designated Navy range complexes and associated operating areas (OPAREAs) and special use airspace. While the AFTT Study Area itself is very large, the vast majority of Navy training and testing occurs in designated range complexes and testing ranges.

A Navy range complex consists of geographic areas that encompass a water component (above and below the surface) and airspace, and may encompass a land component where training and testing of military platforms, tactics, munitions, explosives, and electronic warfare systems occur. Range complexes include established OPAREAs, which may be further divided to provide better control of the area for safety reasons. Additional detail on range complexes and testing ranges was provided in the *Duration and Location* section of the 2018 AFTT proposed rule; please see the 2018 AFTT proposed rule or the 2017 Navy application for more information.

Description of Acoustic and Explosive Stressors

The Navy uses a variety of sensors, platforms, weapons, and other devices, including ones used to ensure the safety of Sailors and Marines, to meet its

mission. Training and testing with these systems may introduce acoustic (sound) energy or shock waves from explosives into the environment. The specific components that could act as stressors by having direct or indirect impacts on the environment are described in detail in the *Description of Acoustic and Explosive Stressors* section of the 2018 AFTT final rule and Chapter 2 of the 2018 AFTT FEIS/OEIS. The Navy proposes no changes to the nature of the specified activities and, therefore, the acoustic and explosive stressors are identical to those described and analyzed in the 2018 AFTT final rule.

Other Stressor—Vessel Strike

Vessel strikes are not specific to any particular training or testing activity, but rather a limited, sporadic, and incidental result of Navy vessel movement within the AFTT Study Area. Navy vessels transit at speeds that are optimal for fuel conservation or to meet training and testing requirements. The average speed of large Navy ships ranges between 10 and 15 knots and submarines generally operate at speeds in the range of 8–13 knots, while a few specialized vessels can travel at faster speeds. By comparison, this is slower than most commercial vessels where full speed for a container ship is typically 24 knots (Bonney and Leach, 2010).

Should a vessel strike occur, it would likely result in incidental take from serious injury and/or mortality and, accordingly, for the purposes of the analysis we assume that any ship strike would result in serious injury or mortality. The Navy proposes no changes to the nature of the specified activities, the training and testing activities, the manner of or amount of vessel movement, and standard operating procedures. Therefore, the description of vessel strikes as a stressor is the same as those presented in the *Other Stressor—Vessel Strike* sections of the 2018 AFTT proposed rule and 2018 AFTT final rule.

Detailed Description of the Specified Activities

The Navy’s proposed activities are presented and analyzed as a representative year of training to account for the natural fluctuation of training cycles and deployment schedules in any seven-year period. In the 2018 AFTT final rule, NMFS analyzed activities based on the Navy conducting three years of a representative level of activity and two years of a maximum level of activity. For the purposes of this rulemaking, the Navy proposes that the additional two

years of training and testing would consist of one additional year of maximum training tempo and one representative year of training tempo consistent with the pattern set forth in the 2018 AFTT final rule, the 2018 AFTT FEIS/OEIS, and the 2017 Navy application.

Proposed Training Activities

The number of proposed training activities that could occur annually and the duration of those activities remains identical to those presented in Table 4 of the 2018 AFTT final rule, and are not repeated here. The number of proposed training activities that could occur over the seven-year period are presented in Table 1. The table is organized

according to primary mission areas and includes the activity name, associated stressors applicable to these proposed regulations, sound source bin, number of proposed activities, and locations of those activities in the AFTT Study Area. For further information regarding the primary platform used (*e.g.*, ship or aircraft type) see Appendix A (Navy Activity Descriptions) of the 2018 AFTT FEIS/OEIS.

TABLE 1—PROPOSED TRAINING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location ² |
|---|--|---|---|--|--|
| Major Training Exercise—Large Integrated Anti-Submarine Warfare | | | | | |
| Acoustic | Composite Training Unit Exercise. | Aircraft carrier and its associated aircraft integrate with surface and submarine units in a challenging multi-threat operational environment in order to certify them for deployment. | ASW1, ASW2, ASW3, ASW4, ASW5, HF1, LF6, MF1, MF3, MF4, MF5, MF11, MF12. | 17 | VACAPES RC; Navy Cherry Point RC; JAX RC. |
| Major Training Exercises—Medium Integrated Anti-Submarine Warfare | | | | | |
| Acoustic | Fleet Exercises/ Sustainment Exercise. | Aircraft carrier and its associated aircraft integrates with surface and submarine units in a challenging multi-threat operational environment in order to maintain their ability to deploy. | ASW1, ASW2, ASW3, ASW4, HF1, LF6, MF1, MF3, MF4, MF5, MF11, MF12. | 28 14 | JAX RC. VACAPES RC. |
| Integrated/Coordinated Training—Small Integrated Anti-Submarine Warfare Training | | | | | |
| Acoustic | Naval Undersea Warfare Training Assessment Course. | Multiple ships, aircraft, and submarines integrate the use of their sensors to search for, detect, classify, localize, and track a threat submarine in order to launch an exercise torpedo. | ASW1, ASW3, ASW4, HF1, LF6, MF1, MF3, MF4, MF5, MF12. | 42 21 21 | JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Integrated/Coordinated Training—Medium Coordinated Anti-Submarine Warfare Training | | | | | |
| Acoustic | Anti-Submarine Warfare Tactical Development Exercise. | Surface ships, aircraft, and submarines coordinate to search for, detect, and track submarines. | ASW1, ASW3, ASW4, HF1, LF6, MF1, MF3, MF4, MF5, MF11, MF12. | 14 7 7 | JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Integrated/Coordinated Training—Small Coordinated Anti-Submarine Warfare Training | | | | | |
| Acoustic | Group Sail | Surface ships and helicopters search for, detect, and track threat submarines. | ASW2, ASW3, ASW4, HF1, MF1, MF3, MF4, MF5, MF11, MF12. | 28 28 35 | JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Amphibious Warfare | | | | | |
| Explosive | Naval Surface Fire Support Exercise—At Sea. | Surface ship crews use large-caliber guns to support forces ashore; however, the land target is simulated at sea. Rounds are scored by passive acoustic buoys located at or near the target area. | E5 | 28 84 14 266 | GOMEX RC. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Anti-Submarine Warfare | | | | | |
| Acoustic | Anti-submarine Warfare Torpedo Exercise—Helicopter. | Helicopter aircrews search for, track, and detect submarines. Recoverable air launched torpedoes are employed against submarine targets. | MF4, MF5, TORP1 ... | 98 28 | JAX RC. VACAPES RC. |
| Acoustic | Anti-submarine Warfare Torpedo Exercise—Maritime Patrol Aircraft. | Maritime patrol aircraft aircrews search for, track, and detect submarines. Recoverable air launched torpedoes are employed against submarine targets. | MF5, TORP1 | 98 28 | JAX RC. VACAPES RC. |
| Acoustic | Anti-Submarine Warfare Torpedo Exercise—Ship. | Surface ship crews search for, track, and detect submarines. Exercise torpedoes are used. | ASW3, MF1, TORP1 | 112 35 | JAX RC. VACAPES RC. |
| Acoustic | Anti-Submarine Warfare Torpedo Exercise—Submarine. | Submarine crews search for, track, and detect submarines. Exercise torpedoes are used. | ASW4, HF1, MF3, TORP2. | 84 42 14 | JAX RC. Northeast RC. VACAPES RC. |
| Acoustic | Anti-Submarine Warfare Tracking Exercise—Helicopter. | Helicopter aircrews search for, track, and detect submarines | MF4, MF5 | 168 2,590 84 56 | Other AFTT Areas. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Acoustic | Anti-Submarine Warfare Tracking Exercise—Maritime Patrol Aircraft. | Maritime patrol aircraft aircrews search for, track, and detect submarines. | ASW5, ASW2, MF5 .. | 630 1,232 3,675 322 | Northeast RC. VACAPES RC. JAX RC. Navy Cherry Point RC. |

TABLE 1—PROPOSED TRAINING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA—Continued

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location ² |
|------------------------------|---|---|------------------------------|--|--|
| Acoustic | Anti-Submarine Warfare Tracking Exercise—Ship. | Surface ship crews search for, track, and detect submarines | ASW1, ASW3, MF1, MF11, MF12. | *35 *770 *35 *3,080 *385 *1,540 | Northeast RC. Other AFTT Areas. GOMEX RC. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Acoustic | Anti-Submarine Warfare Tracking Exercise—Submarine. | Submarine crews search for, track, and detect submarines | ASW4, HF1, MF3 | 308 91 7 126 42 | Other AFTT Areas. JAX RC. Navy Cherry Point RC. Northeast RC. VACAPES RC. |
| Expeditionary Warfare | | | | | |
| Explosive | Maritime Security Operations—Anti-Swimmer Grenades. | Small boat crews engage in force protection activities by using anti-swimmer grenades to defend against hostile divers. | E2 | 14 14 14 28 35 | GOMEX RC. JAX RC. Navy Cherry Point RC. Northeast RC. VACAPES RC. |
| Mine Warfare | | | | | |
| Acoustic | Airborne Mine Countermeasure—Mine Detection. | Helicopter aircrews detect mines using towed or laser mine detection systems. | HF4 | 462 2,219 2,597 1,708 10,780 | GOMEX RC. JAX RC. Navy Cherry Point RC. NSWC Panama City. VACAPES RC. |
| Acoustic, Explosive | Civilian Port Defense—Homeland Security Anti-Terrorism/Force Protection Exercise. | Maritime security personnel train to protect civilian ports against enemy efforts to interfere with access to those ports. | HF4, SAS2, E2, E4 ... | 4 | Beaumont, TX; Boston, MA; Corpus Christi, TX; Delaware Bay, DE; Earle, NJ; GOMEX RC; Hampton Roads, VA; JAX RC; Kings Bay, GA; NS Mayport; Morehead City, NC; Port Canaveral, FL; Savannah, GA; Tampa Bay, FL; VACAPES RC; Wilmington, NC. |
| Acoustic | Coordinated Unit Level Helicopter Airborne Mine Countermeasure Exercise. | A detachment of helicopter aircrews train as a unit in the use of airborne mine countermeasures, such as towed mine detection and neutralization systems. | HF4 | 14 14 14 14 | GOMEX RC. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Acoustic, Explosive | Mine Countermeasures—Mine Neutralization—Remotely Operated Vehicle. | Ship, small boat, and helicopter crews locate and disable mines using remotely operated underwater vehicles. | HF4, E4 | 924 497 497 4,410 | GOMEX RC. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Acoustic | Mine Countermeasures—Ship Sonar. | Ship crews detect and avoid mines while navigating restricted areas or channels using active sonar. | HF4 | 154 371 371 | GOMEX RC. JAX RC. VACAPES RC. |
| Explosive | Mine Neutralization—Explosive Ordnance Disposal. | Personnel disable threat mines using explosive charges | E4, E5, E6, E7 | 42 112 140 119 112 3,668 | Lower Chesapeake Bay. GOMEX RC. JAX RC. Key West RC. Navy Cherry Point RC. VACAPES RC. |
| Surface Warfare | | | | | |
| Explosive | Bombing Exercise Air-to-Surface. | Fixed-wing aircrews deliver bombs against surface targets | E9, E10, E12 | 469 3,038 756 2,303 | GOMEX RC. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Explosive | Gunnery Exercise Surface-to-Surface Boat Medium-Caliber. | Small boat crews fire medium-caliber guns at surface targets | E1 | 42 182 896 14 1,820 | GOMEX RC. JAX RC. Navy Cherry Point RC. Northeast RC. VACAPES RC. |
| Explosive | Gunnery Exercise Surface-to-Surface Ship Large-Caliber. | Surface ship crews fire large-caliber guns at surface targets | E3, E5 | 70 63 357 245 525 | Other AFTT Areas. GOMEX RC. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Explosive | Gunnery Exercise Surface-to-Surface Ship Medium-Caliber. | Surface ship crews fire medium-caliber guns at surface targets | E1 | 287 231 1,127 504 2,247 | Other AFTT Areas. GOMEX RC. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Explosive | Integrated Live Fire Exercise. | Naval forces defend against a swarm of surface threats (ships or small boats) with bombs, missiles, rockets, and small-, medium-, and large-caliber guns. | E1, E3, E6, E10 | 14 14 | VACAPES RC. JAX RC. |

TABLE 1—PROPOSED TRAINING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA—Continued

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location ² |
|----------------------------------|---|--|---------------------------------------|--|--|
| Explosive | Missile Exercise Air-to-Surface. | Fixed-wing and helicopter aircrews fire air-to-surface missiles at surface targets. | E6, E8, E10 | 714 364 616 | JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Explosive | Missile Exercise Air-to-Surface—Rocket. | Helicopter aircrews fire both precision-guided and unguided rockets at surface targets. | E3 | 70 714 70 644 | GOMEX RC. JAX RC. Navy Cherry Point RC. VACAPES RC. |
| Explosive | Missile Exercise Surface-to-Surface. | Surface ship crews defend against surface threats (ships or small boats) and engage them with missiles. | E6, E10 | 112 84 | JAX RC. VACAPES RC. |
| Acoustic, Explosive | Sinking Exercise | Aircraft, ship, and submarine crews deliberately sink a seaborne target, usually a decommissioned ship (made environmentally safe for sinking according to U.S. Environmental Protection Agency standards), with a variety of munitions. | TORP2, E5, E8, E9, E10, E11. | 7 | SINKEX Box. |
| Other Training Activities | | | | | |
| Acoustic | Elevated Causeway System. | A temporary pier is constructed off the beach. Supporting pilings are driven into the sand and then later removed. | Impact hammer or vibratory extractor. | 7 7 | Lower Chesapeake Bay. Navy Cherry Point RC. |
| Acoustic | Submarine Navigation | Submarine crews operate sonar for navigation and object detection while transiting into and out of port during reduced visibility. | HF1, MF3 | 1,183 21 21 588 161 | NSB New London. NSB Kings Bay. NS Mayport. NS Norfolk. Port Canaveral, FL. |
| Acoustic | Submarine Sonar Maintenance. | Maintenance of submarine sonar systems is conducted pierside or at sea. | MF3 | 84 462 63 14 238 602 14 88 326 | Other AFTT Areas. NSB New London. JAX RC. NSB Kings Bay. NS Norfolk. Northeast RC. Port Canaveral, FL. Navy Cherry Point RC. VACAPES RC. |
| Acoustic | Submarine Under Ice Certification. | Submarine crews train to operate under ice. Ice conditions are simulated during training and certification events. | HF1 | 21 21 63 63 | JAX RC. Navy Cherry Point RC. Northeast RC. VACAPES RC. |
| Acoustic | Surface Ship Object Detection. | Surface ship crews operate sonar for navigation and object detection while transiting in and out of port during reduced visibility. | HF8, MF1K | 532 1,134 | NS Mayport. NS Norfolk. |
| Acoustic | Surface Ship Sonar Maintenance. | Maintenance of surface ship sonar systems is conducted pierside or at sea. | HF8, MF1 | 350 350 840 1,645 840 | JAX RC. NS Mayport. Navy Cherry Point RC. NS Norfolk. VACAPES RC. |

¹ The number of proposed training activities that could occur annually and the duration of those activities remains identical to those presented in Table 4 of the 2018 AFTT final rule.

² Locations given are areas where activities typically occur. However, activities could be conducted in other locations within the Study Area. Where multiple locations are provided within a single cell, the number of activities could occur in any of the locations, not in each of the locations.

* For Anti-Submarine Warfare Tracking Exercise—Ship, 50 percent of requirements are met through synthetic training or other training exercises.

Notes: GOMEX: Gulf of Mexico; JAX: Jacksonville; NS: Naval Station; NSB: Naval Submarine Base; NSWC: Naval Surface Warfare Center; RC: Range Complex; VACAPES: Virginia Capes.

Proposed Testing Activities

The number of proposed testing activities that could occur annually and the duration of those activities are identical to those presented in Tables 5 through 7 of the 2018 AFTT final rule, and are not repeated here. Similar to the 2017 Navy application, the Navy's proposed testing activities here are based on the level of testing activities

anticipated to be conducted into the reasonably foreseeable future, with adjustments that account for changes in the types and tempo (increases or decreases) of testing activities to meet current and future military readiness requirements. The number of proposed testing activities that could occur for the seven-year period are presented in Tables 2 through 4. The number of ship shock trials for the seven-year period

would remain the same as the number authorized under the 2018 AFTT final rule.

Naval Air Systems Command

The proposed Naval Air Systems Command testing activities that could occur over the seven-year period within the AFTT Study Area are presented in Table 2.

TABLE 2—PROPOSED NAVAL AIR SYSTEMS COMMAND TESTING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location ² |
|-------------------------------|--------------------------------------|--|------------------|--|------------------------|
| Anti-Submarine Warfare | | | | | |
| Acoustic | Anti-Submarine Warfare Torpedo Test. | This event is similar to the training event torpedo exercise. Test evaluates anti-submarine warfare systems onboard rotary-wing (e.g., helicopter) and fixed-wing aircraft and the ability to search for, detect, classify, localize, track, and attack a submarine or similar target. | MF5, TORP1 | 209 523 | JAX RC. VACAPES RC. |

TABLE 2—PROPOSED NAVAL AIR SYSTEMS COMMAND TESTING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA—Continued

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location ² |
|---------------------------------|--|--|--|--|---|
| Acoustic, Explosive | Anti-Submarine Warfare 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 system perform to specifications. | MF4, MF5, E3 | 34 36 64 442 1,368 | GOMEX RC. JAX RC. Key West RC. Northeast RC. VACAPES RC. |
| Acoustic, Explosive | Anti-Submarine Warfare Tracking Test—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, ASW5, E1, E3, MF5, MF6. | 85 133 76 101 279 175 | GOMEX RC. JAX RC. Key West RC. Navy Cherry Point RC. Northeast RC. VACAPES RC. |
| Acoustic | Kilo Dip | Functional check of a helicopter deployed dipping sonar system prior to conducting a testing or training event using the dipping sonar system. | MF4 | 22 12 12 12 200 | GOMEX RC. JAX RC. Key West RC. Northeast RC. VACAPES RC. |
| Acoustic, Explosive | Sonobuoy Lot Acceptance Test. | Sonobuoys are deployed from surface vessels and aircraft to verify the integrity and performance of a production lot or group of sonobuoys in advance of delivery to the fleet for operational use. | ASW2, ASW5, HF5, HF6, LF4, MF5, MF6, E1, E3, E4. | 1,120 | Key West RC. |
| Mine Warfare | | | | | |
| Acoustic | Airborne Dipping Sonar Minehunting Test. | A mine-hunting dipping sonar system that is deployed from a helicopter and uses high-frequency sonar for the detection and classification of bottom and moored mines. | HF4 | 144 66 | NSWC Panama City. VACAPES RC. |
| Explosive | Airborne Mine Neutralization System Test. | A test of the airborne mine neutralization system evaluates the system's ability to detect and destroy mines from an airborne mine countermeasures capable helicopter. The airborne mine neutralization system uses up to four unmanned underwater vehicles equipped with high-frequency sonar, video cameras, and explosive and non-explosive neutralizers. | E4 | 154 215 | NSWC Panama City. VACAPES RC. |
| Acoustic | Airborne Sonobuoy Minehunting Test. | A mine-hunting system made up of a field of sonobuoys deployed by a helicopter. A field of sonobuoys, using high-frequency sonar, is used to detect and classify bottom and moored mines. | HF6 | 364 168 | NSWC Panama City. VACAPES RC. |
| Surface Warfare | | | | | |
| Explosive | Air-to-Surface Bombing Test. | This event is similar to the training event bombing exercise air-to-surface. Fixed-wing aircraft test the delivery of bombs against surface maritime targets with the goal of evaluating the bomb, the bomb carry and delivery system, and any associated systems that may have been newly developed or enhanced. | E9 | 140 | VACAPES RC. |
| Explosive | Air-to-Surface Gunnery Test. | This event is similar to the training event gunnery exercise air-to-surface. Fixed-wing and rotary-wing aircrews evaluate new or enhanced aircraft guns against surface maritime targets to test that the guns, gun ammunition, or associated systems meet required specifications or to train aircrews in the operation of a new or enhanced weapon system. | E1 | 295 890 | JAX RC. VACAPES RC. |
| Explosive | 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 weapon system or as part of another system's integration test. | E6, E9, E10 | 30 234 928 | GOMEX RC. JAX RC. VACAPES RC. |
| Explosive | Rocket Test | Rocket tests evaluate the integration, accuracy, performance, and safe separation of guided and unguided 2.75-inch rockets fired from a hovering or forward-flying helicopter. | E3 | 121 233 | JAX RC. VACAPES RC. |
| Other Testing Activities | | | | | |
| Acoustic | Undersea Range System Test. | Following installation of a Navy underwater warfare training and testing range, tests of the nodes (components of the range) will be conducted to include node surveys and testing of node transmission functionality. | MF9, BB4 | 66 | JAX RC. |

¹ The number of proposed testing activities that could occur annually and the duration of those activities are identical to those presented in Table 5 of the 2018 AFTT final rule.

² Locations given are areas where activities typically occur. However, activities could be conducted in other locations within the Study Area.

Notes: GOMEX: Gulf of Mexico; JAX: Jacksonville; NSWC: Naval Surface Warfare Center; RC: Range Complex; VACAPES: Virginia Capes.

Naval Sea Systems Command

The proposed Naval Sea Systems Command testing activities that could

occur over the seven-year period within the AFTT Study Area are presented in Table 3.

TABLE 3—PROPOSED NAVAL SEA SYSTEMS COMMAND TESTING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA.

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location ² |
|-------------------------------|---|---|--|---|--|
| Anti-Submarine Warfare | | | | | |
| Acoustic | Anti-Submarine Warfare Mission Package Testing. | Ships and their supporting platforms (<i>e.g.</i> , helicopters, unmanned aerial systems) detect, localize, and attack submarines. | ASW1, ASW2, ASW3, ASW5, MF1, MF4, MF5, MF12, TORP1. | 294 28 28 182 | JAX RC. Newport, RI. NUWC Newport. VACAPES RC. |
| Acoustic | At-Sea Sonar Testing | At-sea testing to ensure systems are fully functional in an open ocean environment. | ASW3, ASW4, HF1, LF5, M3, MF1, MF1K, MF3, MF5, MF9, MF11, TORP2. | 14 7 14 28 14 56 84 | JAX RC; Navy Cherry Point RC; Northeast RC; VACAPES RC. JAX RC; Navy Cherry Point RC; VACAPES RC. offshore Fort Pierce, FL; GOMEX RC; JAX RC; SFOMF; Northeast RC; VACAPES RC. JAX RC. Navy Cherry Point RC. NUWC Newport. VACAPES RC. |
| Acoustic | Pierside Sonar Testing. | Pierside testing to ensure systems are fully functional in a controlled pierside environment prior to at-sea test activities. | ASW3, HF1, HF3, HF8, M3, MF1, MF1K, MF3, MF9, MF10. | 7 77 35 28 56 91 14 21 14 | NSB New London; NS Norfolk; Port Canaveral, FL Bath, ME. NSB New London. NSB Kings Bay. Newport, RI. NS Norfolk. Pascagoula, MS. Port Canaveral, FL. PNS. |
| Acoustic | Submarine Sonar Testing/Maintenance. | Pierside testing of submarine systems occurs periodically following major maintenance periods and for routine maintenance. | HF1, HF3, M3, MF3 .. | 112 168 | Norfolk, VA. PNS. |
| Acoustic | Surface Ship Sonar Testing/Maintenance. | Pierside and at-sea testing of ship systems occur periodically following major maintenance periods and for routine maintenance. | ASW3, MF1, MF1K, MF9, MF10. | 7 7 21 21 | JAX RC. NS Mayport. NS Norfolk. VACAPES RC. |
| Acoustic, Explosive | Torpedo (Explosive) Testing. | Air, surface, or submarine crews employ explosive and non-explosive torpedoes against artificial targets. | ASW3, HF1, HF5, HF6, MF1, MF3, MF4, MF5, MF6, TORP1, TORP2, E8, E11. | 28 14 | GOMEX RC; offshore Fort Pierce, FL; Key West RC; Navy Cherry Point RC; Northeast RC; VACAPES RC. GOMEX RC; JAX RC; Northeast RC; VACAPES RC. |
| Acoustic | Torpedo (Non-Explosive) Testing. | Air, surface, or submarine crews employ non-explosive torpedoes against submarines or surface vessels. When performed on a testing range, these torpedoes may be launched from a range craft or fixed structures and may use artificial targets. | ASW3, ASW4, HF1, HF6, MF1, MF3, MF4, MF5, MF6, TORP1, TORP2, TORP 3. | 49 77 | GOMEX RC. offshore Fort Pierce, FL. |
| | | | | 12 49 54 210 77 | JAX, RC. Navy Cherry Point RC. Northeast RC. NUWC Newport. VACAPES RC. |
| Acoustic | Countermeasure Testing. | Countermeasure testing involves the testing of systems that will detect, localize, track, and attack incoming weapons including marine vessel targets. Testing includes surface ship torpedo defense systems and marine vessel stopping payloads. | ASW3, HF5, TORP1, TORP2. | 35 | GOMEX RC; JAX RC; NUWC Newport; VACAPES RC; Key West RC. |
| | | | | 20 | GOMEX RC; JAX RC; Northeast RC; VACAPES RC. |
| Mine Warfare | | | | | |
| Acoustic, Explosive | Mine Countermeasure and Neutralization Testing. | Air, surface, and subsurface vessels neutralize threat mines and mine-like objects. | E4, E11 | 91 42 | NSWC Panama City. VACAPES RC. |
| Acoustic, Explosive | Mine Countermeasure Mission Package Testing. | Vessels and associated aircraft conduct mine countermeasure operations. | HF4, SAS2, E4 | 133 70 77 14 35 | GOMEX RC. JAX RC. NSWC Panama City. SFOMF. VACAPES RC. |
| Acoustic | Mine Detection and Classification Testing. | Air, surface, and subsurface vessels and systems detect, classify, and avoid mines and mine-like objects. Vessels also assess their potential susceptibility to mines and mine-like objects. | HF1, HF4, HF8, MF1, MF1K, MF9. | 42 70 | GOMEX RC. Navy Cherry Point RC. |
| | | | | 359 66 28 | NSWC Panama City. Riviera Beach, FL. SFOMF. |

TABLE 3—PROPOSED NAVAL SEA SYSTEMS COMMAND TESTING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA.—Continued

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location ² |
|---------------------------------|--|---|---|---|--|
| | | | | 21 | VACAPES RC. |
| Surface Warfare | | | | | |
| Explosive | Gun Testing—Large Caliber. | Crews defend against targets with large-caliber guns | E3, E5 | 84 | GOMEX RC. JAX RC. Key West RC. Navy Cherry Point RC. Northeast RC. VACAPES RC. 7 GOMEX RC; 7 JAX RC; 7 Key West RC; 7 Navy Cherry Point RC; 7 Northeast RC; 231 NSWC Panama City. 35 VACAPES RC. |
| Explosive | Gun Testing—Medium-Caliber. | Airborne and surface crews defend against targets with medium-caliber guns. | E1 | 84 | GOMEX RC; JAX RC; Key West RC; Navy Cherry Point RC; Northeast RC; VACAPES RC. |
| Explosive | Missile and Rocket Testing. | Missile and rocket testing includes various missiles or rockets fired from submarines and surface combatants. Testing of the launching system and ship defense is performed. | E6, E10 | 714 34 91 | NSWC Panama City. VACAPES RC. GOMEX RC; JAX RC; Key West RC; Navy Cherry Point RC; Northeast RC; VACAPES RC. |
| | | | | 7 14 35 154 | GOMEX RC. JAX RC. Northeast RC. VACAPES RC. |
| Unmanned Systems | | | | | |
| Acoustic, Explosive | Unmanned Underwater Vehicle Testing. | Testing involves the development or upgrade of unmanned underwater vehicles. This may include testing of mine detection capabilities, evaluating the basic functions of individual platforms, or complex events with multiple vehicles. | ASW4, FLS2, HF1, HF4, HF5, HF6, HF7, LF5, MF9, MF10, SAS1, SA2, SAS3, VHF1, E8. | 112 | GOMEX RC; JAX RC; NUWC Newport. |
| | | | | 287 175 1,018 2,158 63 294 | GOMEX RC. JAX RC. NSWC Panama City. NUWC Newport. Riviera Beach, FL. SFOMF. |
| Vessel Evaluation | | | | | |
| Explosive | Large Ship Shock Trial. | Underwater detonations are used to test new ships or major upgrades. | E17 | 1 | GOMEX RC; JAX RC; VACAPES RC. |
| Explosive | Surface Warfare Testing. | Tests capability of shipboard sensors to detect, track, and engage surface targets. Testing may include ships defending against surface targets using explosive and non-explosive rounds, gun system structural test firing and demonstration of the response to Call for Fire against land-based targets (simulated by sea-based locations). | E1, E5, E8 | 14 91 7 70 63 | GOMEX RC. JAX RC. Key West RC. Northeast RC. VACAPES RC. |
| Acoustic | Undersea Warfare Testing. | Ships demonstrate capability of countermeasure systems and underwater surveillance, weapons engagement, and communications systems. This tests ships' ability to detect, track, and engage underwater targets. | ASW3, ASW4, HF4, HF8, MF1, MF1K, MF4, MF5, MF9, MF10, TORP1, TORP2. | 14 | JAX RC; VACAPES RC. |
| | | | | 6 14 42 14 | JAX RC; Navy Cherry Point RC; SFOMF; VACAPES RC. GOMEX RC. JAX RC. VACAPES RC. |
| Explosive | Small Ship Shock Trial. | Underwater detonations are used to test new ships or major upgrades. | E16 | 3 | JAX RC; VACAPES RC. |
| Acoustic | Submarine Sea Trials—Weapons System Testing. | Submarine weapons and sonar systems are tested at-sea to meet integrated combat system certification requirements. | HF1, M3, MF3, MF9, MF10, TORP2. | 14 | Offshore Fort Pierce, FL; GOMEX RC; JAX RC; SFOMF; Northeast RC; VACAPES RC. |
| | | | | 28 28 28 | JAX RC. Northeast RC. VACAPES RC. |
| Other Testing Activities | | | | | |
| Acoustic | Insertion/Extraction ... | Testing of submersibles capable of inserting and extracting personnel and payloads into denied areas from strategic distances. | MF3, MF9 | 28 1,848 | Key West RC. NSWC Panama City. |
| Acoustic | Acoustic Component Testing. | Various surface vessels, moored equipment, and materials are tested to evaluate performance in the marine environment. | FLS2, HF5, HF7, LF5, MF9, SAS2. | 231 | SFOMF. |

TABLE 3—PROPOSED NAVAL SEA SYSTEMS COMMAND TESTING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA.—Continued

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location ² |
|-------------------|------------------------------------|--|--|--|--|
| Acoustic | Semi-Stationary Equipment Testing. | Semi-stationary equipment (e.g., hydrophones) is deployed to determine functionality. | AG, ASW3, ASW4, HF5, HF6, LF4, LF5, MF9, MF10, SD1, SD2. | 28 77 1,330 | Newport, RI. NSWC Panama City. NUWC Newport. |
| Acoustic | Towed Equipment Testing. | Surface vessels or unmanned surface vehicles deploy and tow equipment to determine functionality of towed systems. | HF6, LF4, MF9 | 252 | NUWC Newport. |
| Acoustic | Signature Analysis Operations. | Surface ship and submarine testing of electromagnetic, acoustic, optical, and radar signature measurements. | ASW2, HF1, LF4, LF5, LF6, M3, MF9, MF10. | 7 413 | JAX RC. SFOMF. |

¹ The number of proposed testing activities that could occur annually and the duration of those activities are identical to those presented in Table 6 of the 2018 AFTT final rule.

² Locations given are areas where activities typically occur. However, activities could be conducted in other locations within the Study Area. Where multiple locations are provided within a single cell, the number of activities could occur in any of the locations, not in each of the locations.

Notes: JEB LC-FS: Joint Expeditionary Base Little Creek-Fort Story; NS: Naval Station; NSB: Naval Submarine Base; NSWC: Naval Surface Warfare Center; NUWC: Naval Undersea Warfare Center; PNS: Portsmouth Naval Shipyard; SFOMF: South Florida Ocean Measurement Facility Testing Range.

Office of Naval Research

The proposed Office of Naval Research testing activities that could

occur over the seven-year period within the AFTT Study Area are presented in Table 4.

TABLE 4—PROPOSED OFFICE OF NAVAL RESEARCH TESTING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE AFTT STUDY AREA

| Stressor category | Activity name | Activity description | Source bin | 7-Year number of activities ¹ | Location |
|--|--|---|--|--|--|
| Acoustic and Oceanographic Science and Technology | | | | | |
| Acoustic, Explosive | Acoustic and Oceanographic Research. | Research using active transmissions from sources deployed from ships and unmanned underwater vehicles. Research sources can be used as proxies for current and future Navy systems. | AG, ASW2, BB4, BB5, BB6, BB7, LF3, LF4, LF5, MF8, MF9, MF14, E1. | 30 60 16 14 | GOMEX RC. Northeast RC. VACAPES RC. Other AFTT Areas. |
| Acoustic | Emerging Mine Counter-measure Technology Research. | Test involves the use of broadband acoustic sources on unmanned underwater vehicles. | BB1, BB2, SAS4 | 7 14 7 | JAX RC. Northeast RC. VACAPES RC. |

¹ The number of proposed testing activities that could occur annually and the duration of those activities are identical to those presented in Table 7 of the 2018 AFTT final rule.

Notes: GOMEX: Gulf of Mexico; JAX: Jacksonville, Florida; RC: Range Complex; VACAPES: Virginia Capes.

Summary of Acoustic and Explosive Sources Analyzed for Training and Testing

Tables 5 through 8 show the acoustic source classes and numbers, explosive source bins and numbers, airgun sources, and pile driving and removal activities associated with the Navy's proposed training and testing activities over a seven-year period in the AFTT Study Area that were analyzed in the 2019 Navy application and for this

proposed rule. The annual numbers for acoustic source classes, explosive source bins, and airgun sources, as well as the annual pile driving and removal activities associated with Navy training and testing activities in the AFTT Study Area are identical to those presented in Tables 8 through 11 of the 2018 AFTT final rule, and are not repeated here. Consistent with the periodicity in the 2018 AFTT final rule, the Navy proposes the addition of two pile

driving/extraction activities for each of the two additional years.

Table 5 describes the acoustic source classes (i.e., low-frequency (LF), mid-frequency (MF), and high-frequency (HF)) that could occur over seven years under the proposed training and testing activities. Acoustic source bin use in the proposed activities would vary annually. The seven-year totals for the proposed training and testing activities take into account that annual variability.

TABLE 5—ACOUSTIC SOURCE CLASSES ANALYZED AND NUMBER USED FOR SEVEN-YEAR PERIOD FOR TRAINING AND TESTING ACTIVITIES IN THE AFTT STUDY AREA

| Source class category | Bin | Description | Unit ¹ | 7-Year total ² | |
|---|------|--|-------------------|---------------------------|---------|
| | | | | Training | Testing |
| <i>Low-Frequency (LF):</i> Sources that produce signals less than 1 kHz. | LF3 | LF sources greater than 200 dB | H | 0 | 9,156 |
| | LF4 | LF sources equal to 180 dB and up to 200 dB. | H | 0 | 6,797 |
| | | | C | 0 | 140 |
| | LF5 | LF sources less than 180 dB | H | 60 | 12,264 |
| | LF6 | LF sources greater than 200 dB with long pulse lengths. | H | 1,104 | 280 |
| <i>Mid-Frequency (MF):</i> Tactical and non-tactical sources that produce signals between 1–10 kHz. | MF1 | Hull-mounted surface ship sonars (e.g., AN/SQS–53C and AN/SQS–61). | H | 36,833 | 23,358 |
| | MF1K | Kingfisher mode associated with MF1 sonars. | H | 819 | 1,064 |

TABLE 5—ACOUSTIC SOURCE CLASSES ANALYZED AND NUMBER USED FOR SEVEN-YEAR PERIOD FOR TRAINING AND TESTING ACTIVITIES IN THE AFTT STUDY AREA—Continued

| Source class category | Bin | Description | Unit ¹ | 7-Year total ² | |
|--|-------|--|-------------------|---------------------------|---------|
| | | | | Training | Testing |
| | MF3 | Hull-mounted submarine sonars (<i>e.g.</i> , AN/BQQ-10). | H | 14,604 | 8,799 |
| | MF4 | Helicopter-deployed dipping sonars (<i>e.g.</i> , AN/AQS-22 and AN/AQS-13). | H | 4,196 | 3,797 |
| | MF5 | Active acoustic sonobuoys (<i>e.g.</i> , DICASS). | C | 47,340 | 38,663 |
| | MF6 | Active underwater sound signal devices (<i>e.g.</i> , MK84). | C | 0 | 8,986 |
| | MF8 | Active sources (greater than 200 dB) not otherwise binned. | H | 0 | 2,436 |
| <i>High-Frequency (HF):</i> Tactical and non-tactical sources that produce signals between 10–100 kHz. | MF9 | Active sources (equal to 180 dB and up to 200 dB) not otherwise binned. | H | 0 | 52,128 |
| | MF10 | Active sources (greater than 160 dB, but less than 180 dB) not otherwise binned. | H | 6,088 | 39,830 |
| | MF11 | Hull-mounted surface ship sonars with an active duty cycle greater than 80%. | H | 6,495 | 9,968 |
| | MF12 | Towed array surface ship sonars with an active duty cycle greater than 80%. | H | 2,658 | 9,716 |
| | MF14 | Oceanographic MF sonar | H | 0 | 10,080 |
| | HF1 | Hull-mounted submarine sonars (<i>e.g.</i> , AN/BQQ-10). | H | 13,504 | 2,772 |
| | HF3 | Other hull-mounted submarine sonars (classified). | H | 34,275 | 215 |
| | HF4 | Mine detection, classification, and neutralization sonar (<i>e.g.</i> , AN/SQS-20). | H | 41,717 | 179,516 |
| | HF5 | Active sources (greater than 200 dB) not otherwise binned. | H | 0 | 13,624 |
| | HF6 | Active sources (equal to 180 dB and up to 200 dB) not otherwise binned. | C | 0 | 280 |
| | HF7 | Active sources (greater than 160 dB, but less than 180 dB) not otherwise binned. | H | 0 | 15,254 |
| | HF8 | Active sources (greater than 160 dB, but less than 180 dB) not otherwise binned. | H | 0 | 8,568 |
| | HF8 | Hull-mounted surface ship sonars (<i>e.g.</i> , AN/SQS-61). | H | 140 | 14,587 |
| <i>Very High-Frequency Sonars (VHF):</i> Non-tactical sources that produce signals between 100–200 kHz. | VHF1 | VHF sources greater than 200 dB | H | 0 | 84 |
| <i>Anti-Submarine Warfare (ASW):</i> Tactical sources (<i>e.g.</i> , active sonobuoys and acoustic counter-measures systems) used during ASW training and testing activities. | ASW1 | MF systems operating above 200 dB | H | 4,251 | 5,740 |
| | ASW2 | MF Multistatic Active Coherent sonobuoy (<i>e.g.</i> , AN/SSQ-125). | C | 10,572 | 35,842 |
| <i>Torpedoes (TORP):</i> Source classes associated with the active acoustic signals produced by torpedoes. | ASW3 | MF towed active acoustic counter-measure systems (<i>e.g.</i> , AN/SLQ-25). | H | 34,275 | 21,737 |
| | ASW4 | MF expendable active acoustic device countermeasures (<i>e.g.</i> , MK 3). | C | 2,994 | 24,043 |
| | ASW5 | MF sonobuoys with high duty cycles | H | 4,244 | 4,316 |
| | TORP1 | Lightweight torpedo (<i>e.g.</i> , MK 46, MK 54, or Anti-Torpedo Torpedo). | C | 399 | 6,122 |
| | TORP2 | Heavyweight torpedo (<i>e.g.</i> , MK 48) | C | 560 | 2,600 |
| <i>Forward Looking Sonar (FLS):</i> Forward or upward looking object avoidance sonars used for ship navigation and safety. | TORP3 | Heavyweight torpedo (<i>e.g.</i> , MK 48) | C | 0 | 640 |
| | FLS2 | HF sources with short pulse lengths, narrow beam widths, and focused beam patterns. | H | 0 | 8,568 |
| | FLS2 | HF sources with short pulse lengths, narrow beam widths, and focused beam patterns. | H | 0 | 8,568 |
| <i>Acoustic Modems (M):</i> Systems used to transmit data through the water. | M3 | MF acoustic modems (greater than 190 dB). | H | 0 | 4,436 |

TABLE 5—ACOUSTIC SOURCE CLASSES ANALYZED AND NUMBER USED FOR SEVEN-YEAR PERIOD FOR TRAINING AND TESTING ACTIVITIES IN THE AFTT STUDY AREA—Continued

| Source class category | Bin | Description | Unit ¹ | 7-Year total ² | |
|---|---------|---|-------------------|---------------------------|---------|
| | | | | Training | Testing |
| <i>Swimmer Detection Sonars (SD)</i> : Systems used to detect divers and submerged swimmers. | SD1–SD2 | HF and VHF sources with short pulse lengths, used for the detection of swimmers and other objects for the purpose of port security. | H | 0 | 1,232 |
| <i>Synthetic Aperture Sonars (SAS)</i> : Sonars in which active acoustic signals are post-processed to form high-resolution images of the seafloor. | SAS1 | MF SAS systems | H | 0 | 6,720 |
| | SAS2 | HF SAS systems | H | 33,600 | 24,584 |
| | SAS3 | VHF SAS systems | H | 0 | 6,720 |
| | SAS4 | MF to HF broadband mine countermeasure sonar. | H | 0 | 6,720 |
| <i>Broadband Sound Sources (BB)</i> : Sonar systems with large frequency spectra, used for various purposes. | BB1 | MF to HF mine countermeasure sonar ... | H | 0 | 6,720 |
| | BB2 | HF to VHF mine countermeasure sonar | H | 0 | 6,720 |
| | BB4 | LF to MF oceanographic source | H | 0 | 10,884 |
| | BB5 | LF to MF oceanographic source | H | 0 | 4,704 |
| | BB6 | HF oceanographic source | H | 0 | 4,704 |
| | BB7 | LF oceanographic source | C | 0 | 840 |

¹ H = hours; C = count (e.g., number of individual pings or individual sonobuoys).

² The annual numbers for acoustic source classes associated with Navy training and testing activities in the AFTT Study Area are identical to those presented in Table 8 in the 2018 AFTT final rule.

Note: dB = decibel.

Table 6 describes the number of air gun shots that could occur over seven years under the proposed training and testing activities.

TABLE 6—TRAINING AND TESTING AIR GUN SOURCES QUANTITATIVELY ANALYZED IN THE AFTT STUDY AREA

| Source class category | Bin | Unit ¹ | 7-Year total ² | |
|--|-----|-------------------|---------------------------|---------|
| | | | Training | Testing |
| <i>Air Guns (AG)</i> : Small underwater air guns | AG | C | 0 | 4,228 |

¹ C = count. One count (C) of AG is equivalent to 100 air gun firings.

² The annual numbers for airgun sources associated with Navy training and testing activities in the AFTT Study Area are identical to those presented in Table 9 in the 2018 AFTT final rule.

Table 7 summarizes the impact pile driving and vibratory pile removal activities that would occur during a 24-hour period. Annually, for impact pile driving, the Navy would drive 119 piles, two times a year for a total of 238 piles. Over the seven-year period of the rule, the Navy would drive a total of 1,666 piles by impact pile driving. Annually, for vibratory pile removal, the Navy would remove 119 piles, two times a year for a total of 238 piles. Over the seven-year period of the rule, the Navy would remove a total of 1,666 piles by vibratory pile removal.

TABLE 7—SUMMARY OF PILE DRIVING AND REMOVAL ACTIVITIES PER 24-HOUR PERIOD IN THE AFTT STUDY AREA

| Method | Piles per 24-hour period | Time per pile (minutes) | Total estimated time of noise per 24-hour period (minutes) |
|--------------------------------|--------------------------|-------------------------|--|
| Pile Driving (Impact) | 6 | 15 | 90 |
| Pile Removal (Vibratory) | 12 | 6 | 72 |

Table 8 describes the number of in-water explosives that could be used in any year under the proposed training and testing activities. Under the proposed activities bin use would vary annually, and the seven-year totals for the proposed training and testing activities take into account that annual variability.

TABLE 8—EXPLOSIVE SOURCE BINS ANALYZED AND NUMBER USED FOR SEVEN-YEAR PERIOD FOR TRAINING AND TESTING ACTIVITIES WITHIN THE AFTT STUDY AREA

| Bin | Net explosive weight ¹ (lb.) | Example explosive source | 7-Year total ² | |
|------------------------|--|--|---------------------------|---------|
| | | | Training | Testing |
| E1 | 0.1–0.25 | Medium-caliber projectile | 53,900 | 160,880 |
| E2 | >0.25–0.5 | Medium-caliber projectile | 1,486 | 0 |
| E3 | >0.5–2.5 | Large-caliber projectile | 32,144 | 20,162 |
| E4 | >2.5–5 | Mine neutralization charge | 913 | 5,330 |
| E5 | >5–10 | 5-inch projectile | 10,052 | 9,275 |
| E6 | >10–20 | Hellfire missile | 4,214 | 276 |
| E7 | >20–60 | Demo block/shaped charge | 28 | 0 |
| E8 | >60–100 | Light-weight torpedo | 154 | 231 |
| E9 | >100–250 | 500 lb. bomb | 462 | 28 |
| E10 | >250–500 | Harpoon missile | 630 | 566 |
| E11 | >500–650 | 650 lb. mine | 7 | 70 |
| E12 | >650–1,000 | 2,000 lb. bomb | 126 | 0 |
| E16 ² | >7,250–14,500 | Littoral Combat Ship full ship shock trial | 0 | 12 |
| E17 ² | >14,500–58,000 | Aircraft carrier full ship shock trial | 0 | 4 |

¹ Net Explosive Weight refers to the equivalent amount of Trinitrotoluene (TNT) the actual weight of a munition may be larger due to other components.

² The annual numbers for explosive source bins associated with Navy training and testing activities in the AFTT Study Area are identical to those presented in Table 11 in the 2018 AFTT final rule.

Note: Shock trials consist of four explosions each. In any given year there could be 0–3 small ship shock trials (E16) and 0–1 large ship shock trials (E17). Over a 7-year period, there could be three small ship shock trials (E16) and one large ship shock trial (E17) which is the same amount of ship shock trial events that could occur over the original five-year period. Therefore, there is no increase in ship shock trial events under the proposed rule.

Vessel Movement

Vessel movements associated with the proposed activities include both surface and sub-surface operations. Vessels used as part of the proposed activities include ships, submarines, unmanned vessels, and boats ranging in size from small, 22 feet (ft.) (7 meters (m)) rigid hull inflatable boats to aircraft carriers with lengths up to 1,092 ft. (333 m). Large Navy ships greater than 60 ft (18 m) generally operate at speeds in the range of 10 to 15 kn for fuel conservation. Submarines generally operate at speeds in the range of 8 to 13 kn in transits and less than those speeds for certain tactical maneuvers. Small craft, less than 60 ft (18 m) in length, have much more variable speeds (dependent on the mission). For small craft types, sizes and speeds vary during training and testing. Speeds generally range from 10 to 14 kn. While these speeds for large and small crafts are representative of most events, some vessels need to temporarily operate outside of these parameters. A full description of Navy vessels that are used during training and testing activities can be found in the 2017 Navy application and Chapter 2 of the 2018 AFTT FEIS/OEIS.

The Navy proposes no changes to the manner in which Navy vessels would be used during training and testing activities, the speeds at which they operate, the number of vessels that would be used during various activities, or the locations in which Navy vessel movement would be concentrated

within the AFTT Study Area from those analyzed in the 2018 AFTT final rule. The only change related to the Navy's request regarding Navy vessel movement is the vessel use associated with the additional two years of Navy activities.

Standard Operating Procedures

For training and testing to be effective, personnel must be able to safely use their sensors and weapon systems as they are intended to be used in a real-world situation and to their optimum capabilities. While standard operating procedures are designed for the safety of personnel and equipment and to ensure the success of training and testing activities, their implementation often yields additional benefits on environmental, socioeconomic, public health and safety, and cultural resources. Because standard operating procedures are essential to safety and mission success, the Navy considers them to be part of the proposed activities and has included them in the environmental analysis. Details on standard operating procedures were provided in the 2018 AFTT proposed rule; please see the 2018 AFTT proposed rule, the 2017 Navy application, and Chapter 2 of the 2018 AFTT FEIS/OEIS for more information. The Navy proposes no changes to the Standard Operating Procedures from those included in the 2018 AFTT final rule.

Description of Marine Mammals and Their Habitat in the Area of the Specified Activities

Marine mammal species and their associated stocks that have the potential to occur in the AFTT Study Area are presented in Table 9 along with the best/minimum abundance estimate and associated coefficient of variation value. Some marine mammal species, such as manatees, are not managed by NMFS, but by the U.S. Fish and Wildlife Service and therefore not discussed below. Consistent with the 2018 AFTT final rule, the Navy still anticipates the take of individuals of 39 marine mammal species by Level A harassment and B harassment incidental to training and testing activities from the use of sonar and other transducers, in-water detonations, air guns, and impact pile driving/vibratory extraction activities. The Navy requested authorization for nine serious injuries or mortalities combined from four marine mammal stocks during ship shock trials, and four takes of large whales by serious injury or mortality from vessel strikes over the seven-year period.

We presented a detailed discussion of marine mammals and their occurrence in the AFTT Study Area, inclusive of important marine mammal habitat (*e.g.*, critical habitat), biologically important areas (BIAs), national marine sanctuaries (NMSs), and unusual mortality events (UMEs) in the 2018 AFTT proposed rule and 2018 AFTT final rule; please see these rules and the 2017 and 2019 Navy applications for

additional information. There have been no changes to important marine mammal habitat, BIAs, NMSs, or Endangered Species Act (ESA) designated critical habitat since the issuance of the 2018 AFTT final rule; therefore the information that supports our determinations here can be found in the 2018 AFTT proposed and final rules. NMFS has reviewed the most recent Stock Assessment Reports (SARs), which have not been revised since the publication of the 2018 AFTT final rule; information on relevant UMEs; and other scientific literature, and determined that none of these nor any other new information changes our determination of which species or stocks have the potential to be affected by the Navy's activities or the pertinent information in the *Description of the Marine Mammals in the Area of Specified Activities* section in the 2018 AFTT proposed and final rules. Therefore the information presented in those sections of the 2018 proposed and final rules remains current and valid.

As described in the 2018 AFTT final rule, the species carried forward for analysis are those likely to be found in the AFTT Study Area based on the most recent data available, and do not include stocks or species that may have once inhabited or transited the area but have not been sighted in recent years and therefore are extremely unlikely to occur in the AFTT Study Area (e.g., species which were extirpated because of factors such as nineteenth and twentieth century commercial exploitation).

The species not carried forward for analysis (addressed in more detail in the *Description of Marine Mammals and Their Habitat in the Area of the Specified Activities* section of the 2018 AFTT rule) include the bowhead whale, beluga whale, and narwhal as these would be considered extralimital and are not part of the AFTT seasonal species assemblage. Additionally, for multiple bottlenose dolphin stocks, there was no potential for overlap with any stressors from Navy activities;

therefore, there would be no adverse effects (or takes), and those stocks were not considered further. Specifically, with the exception of the Mississippi Sound, Lake Borgne, Bay Boudreau stock of bottlenose dolphins (which is addressed in the *Analysis and Negligible Impact Determination* section of the 2018 AFTT final rule), there is no potential for overlap of any Navy stressor with any other Northern Gulf of Mexico Bay, Sound, and Estuary stocks. Also, the following bottlenose dolphin stocks for the Atlantic do not have any potential for overlap with Navy activity stressors (or take), and therefore are not considered further: Northern South Carolina Estuarine System, Charleston Estuarine System, Northern Georgia/Southern South Carolina Estuarine System, Central Georgia Estuarine System, Southern Georgia Estuarine System, Biscayne Bay, and Florida Bay stocks. For the same reason, bottlenose dolphins off the coasts of Puerto Rico and the U.S. Virgin Islands were also not considered further.

TABLE 9—MARINE MAMMALS PRESENT IN THE AFTT STUDY AREA

| Common name | Scientific name ¹ | Stock ² | ESA/MMPA status ³ | Stock abundance ⁴ best/minimum population | Occurrence in AFTT Study Area ⁵ | | |
|--|--|---|----------------------------------|---|---|--|---------------|
| | | | | | Open ocean | Large marine ecosystems | Inland waters |
| Order Cetacea—Suborder Mysticeti (baleen whales) | | | | | | | |
| Family Balaenidae (right whales): Bowhead whale ... | <i>Balaena mysticetus</i> ... | Eastern Canada-West Greenland. | Endangered, strategic, depleted. | 7,660 (4,500–11,100) ⁶ | Labrador Current | Newfoundland-Labrador Shelf, West Greenland Shelf, Northeast U.S. Continental Shelf. | NA. |
| | <i>Eubalaena glacialis</i> ... | Western | Endangered, strategic, depleted. | 451 (0)/445 | Gulf Stream, Labrador Current, North Atlantic Gyre. | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf, Gulf of Mexico (extralimital). | NA. |
| Family Balaenopteridae (rorquals): Blue whale | <i>Balaenoptera musculus</i> . | Western North Atlantic (Gulf of St. Lawrence). | Endangered, strategic, depleted. | Unknown/440 ¹¹ | Gulf Stream, North Atlantic Gyre, Labrador Current. | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf, Caribbean Sea, and Gulf of Mexico (strandings only). | NA. |
| | <i>Balaenoptera brydeni</i> . | Northern Gulf of Mexico. | Endangered, strategic | 33 (1.07)/16 | Gulf Stream, North Atlantic Gyre. | Gulf of Mexico | NA. |
| Bryde's whale | <i>Balaenoptera brydeni</i> . | Western North Atlantic. | Endangered, strategic, depleted. | 1,618 (0.33)/1,234 | Gulf Stream, North Atlantic Gyre, Labrador Current. | Caribbean Sea, Gulf of Mexico, Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | NA. |
| Fin whale | <i>Balaenoptera physalus</i> . | West Greenland | Endangered, strategic, depleted. | 4,468 (1,343–14,871) ⁹ | Labrador Current | West Greenland Shelf | NA. |
| Humpback whale | <i>Megaptera novaeangliae</i> . | Gulf of St. Lawrence | Endangered, strategic, depleted. | 328 (306–350) ¹⁰ | | Newfoundland-Labrador Shelf, Scotian Shelf. | NA. |
| Minke whale | <i>Balaenoptera acutorostrata</i> . | Gulf of Maine | NA | 896 (0)/896 | Gulf Stream, North Atlantic Gyre, Labrador Current. | Gulf of Mexico, Caribbean Sea, Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | NA. |
| Sei whale | <i>Balaenoptera borealis</i> | Canadian Eastern Coastal. | NA | 2,591 (0.81)/1,425 | Gulf Stream, North Atlantic Gyre, Labrador Current. | Caribbean Sea, Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | NA. |
| | <i>Balaenoptera borealis</i> | West Greenland ⁷ | NA | 16,609 (7,172–38,461)/NA ⁷ | Labrador Current | West Greenland Shelf | NA. |
| | | Nova Scotia | Endangered, strategic, depleted. | 357 (0.52)/236 | Gulf Stream, North Atlantic Gyre. | Gulf of Mexico, Caribbean Sea, Southeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | NA. |
| | | Labrador Sea | Endangered, strategic, depleted. | Unknown ⁸ | Labrador Current | Newfoundland-Labrador Shelf, West Greenland Shelf. | NA. |
| Suborder Odontoceti (toothed whales) | | | | | | | |
| Family Physeteridae (sperm whale): Sperm whale | <i>Physeter macrocephalus</i> . | North Atlantic | Endangered, strategic, depleted. | 2,288 (0.28)/1,815 | Gulf Stream, North Atlantic Gyre, Labrador Current. | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf, Caribbean Sea. | NA. |
| | | Northern Gulf of Mexico, Puerto Rico and U.S. Virgin Islands. | Endangered, strategic, depleted. | 763 (0.38)/560 | NA | Gulf of Mexico | NA. |
| | | | Endangered, strategic, depleted. | Unknown | North Atlantic Gyre .. | Caribbean Sea | NA. |
| Family Kogiidae (sperm whales) | | | | | | | |
| Pygmy and dwarf sperm whales. | <i>Kogia breviceps</i> and <i>Kogia sima</i> . | Western North Atlantic. | NA | 3,785 (0.47)/2,598 ¹² | Gulf Stream, North Atlantic Gyre. | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf, Caribbean Sea. | NA. |
| | | Northern Gulf of Mexico. | NA | 186 (1.04)/90 ¹² | NA | Gulf of Mexico, Caribbean Sea | NA. |

| Family Monodontidae (beluga whale and narwhal) | | | | | | |
|---|--|--|---------------------------|---|---|--|
| Beluga whale | <i>Delphinapterus leucas.</i> | Eastern High Arctic/ Baffin Bay ¹³ , West Greenland ¹⁴ NA ¹⁵ | NA | 21,213 (10,985–32,619) ¹³ 10,595 (4,904–24,650) ¹⁴ NA ¹⁵ | Labrador Current | West Greenland Shelf NA. West Greenland Shelf NA. Newfoundland-Labrador Shelf, West Green- land Shelf..... NA. |
| Narwhal | <i>Monodon monoceros</i> | | NA | | NA | NA. NA. NA. |
| Family Ziphiidae (beaked whales) | | | | | | |
| Blainville's beaked whale. | <i>Mesoplodon densirostris.</i> | Western North Atlan- tic ¹⁶ . | NA | 7,092 (0.54)/4,632 ¹⁷ | Gulf Stream, North Atlantic Gyre, Lab- rador Current..... NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf..... Gulf of Mexico, Caribbean Sea NA. |
| Cuvier's beaked whale. | <i>Ziphius cavirostris</i> | Northern Gulf of Mex- ico. Western North Atlan- tic ¹⁶ . | NA | 149 (0.91)/77 ¹⁸ | NA | NA. NA. |
| | | Western North Atlan- tic ¹⁶ . | NA | 6,532 (0.32)/5,021 | Gulf Stream, North Atlantic Gyre..... NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf..... Gulf of Mexico, Caribbean Sea NA. |
| | | Northern Gulf of Mex- ico ¹⁶ . Puerto Rico and U.S. Virgin Islands. | Strategic | 74 (1.04)/36 | NA | Caribbean Sea NA. |
| Gervais' beaked whale. | <i>Mesoplodon europaeus.</i> | Western North Atlan- tic ¹⁶ . | NA | Unknown | NA | Southeast U.S. Continental Shelf, Northeast United States Continental Shelf..... Gulf of Mexico, Caribbean Sea NA. |
| | | Western North Atlan- tic ¹⁶ . | NA | 7,092 (0.54)/4,632 ¹⁷ | Gulf Stream, North Atlantic Gyre..... NA | NA. |
| Northern bottlenose whale. | <i>Hyperoodon ampullatus.</i> | Western North Atlan- tic ¹⁶ . | NA | 149 (0.91)/77 ¹⁸ | Gulf Stream, North Atlantic Gyre..... NA | NA. |
| | | Western North Atlan- tic. | NA | Unknown | Atlantic Gyre, Lab- rador Current..... NA | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf..... NA. |
| Sowerby's beaked whale. | <i>Mesoplodon bidens</i> ... | Western North Atlan- tic ¹⁶ . | NA | 7,092 (0.54)/4,632 ¹⁷ | Gulf Stream, North Atlantic Gyre..... NA | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf..... NA. |
| True's beaked whale. | <i>Mesoplodon mirus</i> | Western North Atlan- tic ¹⁶ . | NA | 7,092 (0.54)/4,632 ¹⁷ | Gulf Stream, North Atlantic Gyre..... NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf..... NA. |
| Family Delphinidae (dolphins) | | | | | | |
| Atlantic spotted dolphin. | <i>Stenella frontalis</i> | Western North Atlan- tic ¹⁶ . | NA | 44,715 (0.43)/31,610 | Gulf Stream | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf..... NA. Gulf of Mexico, Caribbean Sea NA. |
| | | Northern Gulf of Mex- ico. | NA | Unknown | NA | NA. NA. |
| Atlantic white- sided dolphin. Clymene dolphin | <i>Lagenorhynchus acutus.</i> <i>Stenella clymene</i> | Puerto Rico and U.S. Virgin Islands. Western North Atlan- tic. | Strategic | Unknown | NA | Caribbean Sea NA. |
| | | Western North Atlan- tic ¹⁶ . | NA | 48,819 (0.61)/30,403 | Gulf Steam, Labrador Current..... NA | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf..... NA. |
| | | Western North Atlan- tic ¹⁶ . | NA | Unknown | Gulf Stream | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf..... NA. |
| | | Northern Gulf of Mex- ico ¹⁶ . | NA | 129 (1.0)/64 | NA | Gulf of Mexico, Caribbean Sea NA. |
| Common bottlenose dol- phin Common bottlenose dol- phin. | <i>Tursiops truncatus</i> | Western North Atlan- tic Offshore ¹⁹ . | Strategic, depleted | 77,532 (0.40)/56,053 | Gulf Stream, North Atlantic Gyre..... NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf..... NA. |
| | | Western North Atlan- tic ¹⁶ . | NA | 6,639 (0.41)/4,759 | NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf..... Long Island Sound, Sandy Hook Bay, Lower Chesapeake Bay, James River, Elizabeth River..... NA. |
| | | Western North Atlan- tic Northern Migra- tory Coastal ²⁰ . | Strategic, depleted | 3,751 (0.06)/2,353 | NA | Southeast U.S. Continental Shelf Lower Chesapeake Bay, James River, Eliza- beth River, Beaufort Inlet, Cape Fear River, Kings Bay, St. Johns River..... Kings Bay, St. Johns River..... NA. |
| | | Western North Atlan- tic Southern Migra- tory Coastal ²⁰ . | Strategic, depleted | 6,027 (0.34)/4,569 | NA | Southeast U.S. Continental Shelf Beaufort Inlet, Cape Fear River..... NA. |
| | | Western North Atlan- tic South Carolina/ Georgia Coastal ²⁰ . | Strategic, depleted | 823 (0.06)/782 | NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf..... Beaufort Inlet, Cape Fear River..... NA. |
| | | Northern North Caro- lina Estuarine Sys- tem ²⁰ . | Strategic | Unknown | NA | Southeast U.S. Continental Shelf Beaufort Inlet, Cape Fear River..... NA. |
| | | Southern North Caro- lina Estuarine Sys- tem ²⁰ . | Strategic | Unknown | NA | Southeast U.S. Continental Shelf Beaufort Inlet, Cape Fear River..... NA. |
| | | Northern South Caro- lina Estuarine Sys- tem ²⁰ . | Strategic | Unknown | NA | Southeast U.S. Continental Shelf Beaufort Inlet, Cape Fear River..... NA. |
| | | Charleston Estuarine System ²⁰ . | Strategic | Unknown | NA | Southeast U.S. Continental Shelf Beaufort Inlet, Cape Fear River..... NA. |

TABLE 9—MARINE MAMMALS PRESENT IN THE AFTT STUDY AREA—Continued

| Common name | Scientific name ¹ | Stock ² | ESA/MMMPA status ³ | Stock abundance ⁴ best/minimum population | Occurrence in AFTT Study Area ⁵ | | |
|-------------|------------------------------|---|-------------------------------|---|--|----------------------------------|------------------------------------|
| | | | | | Open ocean | Large marine ecosystems | Inland waters |
| | | Northern Georgia/Southern South Carolina Estuarine System ²⁰ | Strategic | Unknown | NA | Southeast U.S. Continental Shelf | NA. |
| | | Central Georgia Estuarine System ²⁰ | Strategic | 192 (0.04)/185 | NA | Southeast U.S. Continental Shelf | NA. |
| | | Southern Georgia Estuarine System ²⁰ | Strategic | 194 (0.05)/185 | NA | Southeast U.S. Continental Shelf | Kings Bay, St. Johns River. |
| | | Western North Atlantic Northern Florida Coastal ²⁰ | Strategic, depleted | 877 (0.49)/595 | NA | Southeast U.S. Continental Shelf | Kings Bay, St. Johns River. |
| | | Jacksonville Estuarine System ²⁰ | Strategic | Unknown | NA | Southeast U.S. Continental Shelf | Kings Bay, St. Johns River. |
| | | Western North Atlantic Central Florida Coastal ²⁰ | Strategic, depleted | 1,218 (0.35)/913 | NA | Southeast U.S. Continental Shelf | Port Canaveral. |
| | | Indian River Lagoon Estuarine System ²⁰ | Strategic | Unknown | NA | Southeast U.S. Continental Shelf | Port Canaveral. |
| | | Biscayne Bay ¹⁶ | Strategic | Unknown | NA | Southeast U.S. Continental Shelf | NA. |
| | | Florida Bay ¹⁶ | NA | Unknown | NA | Gulf of Mexico | NA. |
| | | Northern Gulf of Mexico Continental Shelf ²⁰ | NA | 51,192 (0.10)/46,926 | NA | Gulf of Mexico | NA. |
| | | Gulf of Mexico Eastern Coastal ²⁰ | NA | 12,388 (0.13)/11,110 | NA | Gulf of Mexico | NA. |
| | | Gulf of Mexico Northern Coastal ²⁰ | NA | 7,185 (0.21)/6,044 | NA | Gulf of Mexico | St. Andrew Bay, Pascagoula River. |
| | | Gulf of Mexico Western Coastal ²⁰ | NA | 20,161 (0.17)/17,491 | NA | Gulf of Mexico | Corpus Christi Bay, Galveston Bay. |
| | | Northern Gulf of Mexico Oceanic ²⁰ | NA | 5,806 (0.39)/4,230 | NA | Gulf of Mexico | NA. |
| | | Laguna Madre ²⁰ | Strategic | 80 (1.57)/Unknown | NA | Gulf of Mexico | NA. |
| | | Nueces Bay/Corpus Christi Bay ²⁰ | Strategic | 58 (0.61)/Unknown | NA | Gulf of Mexico | NA. |
| | | Copano Bay/Aransas Bay/San Antonio Bay/Redfish Bay/Espiritu Santo Bay ²⁰ | Strategic | 55 (0.82)/Unknown | NA | Gulf of Mexico | NA. |
| | | Matagorda Bay/Tres Palacios Bay/Lavaca Bay ²⁰ | Strategic | 61 (0.45)/Unknown | NA | Gulf of Mexico | NA. |
| | | West Bay ²⁰ | NA | 48 (0.03)/46 | NA | Gulf of Mexico | NA. |
| | | Galveston Bay/East Bay/Trinity Bay ²⁰ | Strategic | 152 (0.43)/Unknown | NA | Gulf of Mexico | NA. |
| | | Sabine Lake ²⁰ | Strategic | 0 | NA | Gulf of Mexico | NA. |
| | | Calcasieu Lake ²⁰ | Strategic | 0 | NA | Gulf of Mexico | NA. |
| | | Vermilion Bay/West Cote Blanche Bay/Atchafalaya Bay ²⁰ | Strategic | 0 | NA | Gulf of Mexico | NA. |
| | | Terrebonne Bay/Timbalier Bay ²⁰ | NA | 3,870 (0.15)/3,426 | NA | Gulf of Mexico | NA. |
| | | Barataria Bay Estuarine System ²⁰ | Strategic | 2,306 (0.09)/2,138 | NA | Gulf of Mexico | NA. |
| | | Mississippi River Delta ²⁰ | Strategic | 332 (0.93)/170 | NA | Gulf of Mexico | NA. |
| | | Mississippi Sound, Lake Borgne, Bay Boudreau ²⁰ | Strategic | 3,046 (0.06)/2,896 | NA | Gulf of Mexico | NA. |
| | | Mobile Bay/Bonsecour Bay ²⁰ | Strategic | 122 (0.34)/Unknown | NA | Gulf of Mexico | NA. |
| | | Perdido Bay ²⁰ | Strategic | 0 | NA | Gulf of Mexico | NA. |
| | | Pensacola Bay/East Bay ²⁰ | Strategic | 33 (0.80)/Unknown | NA | Gulf of Mexico | NA. |
| | | Choctawhatchee Bay ²⁰ | Strategic | 179 (0.04)/Unknown | NA | Gulf of Mexico | NA. |
| | | St. Andrew Bay ²⁰ | Strategic | 124 (0.57)/Unknown | NA | Gulf of Mexico | NA. |
| | | St. Joseph Bay ²⁰ | Strategic | 152 (0.08)/Unknown | NA | Gulf of Mexico | NA. |

| | | | | | | |
|-----------------------------------|---|-----------|----------------------|--|--|-----|
| | St. Vincent Sound/ Apalachicola Bay/ St. George Sound ²⁰ | Strategic | 439 (0.14)/Unknown | NA | Gulf of Mexico | NA. |
| | Apalachee Bay ²⁰ | Strategic | 491 (0.39)/Unknown | NA | Gulf of Mexico | NA. |
| | Waccasassa Bay/ Withlacoochee Bay/ Crystal Bay ²⁰ | Strategic | Unknown | NA | Gulf of Mexico | NA. |
| | St. Joseph Sound/ Clearwater Har- bor ²⁰ | Strategic | Unknown | NA | Gulf of Mexico | NA. |
| | Tampa Bay ²⁰ | Strategic | Unknown | NA | Gulf of Mexico | NA. |
| | Sarasota Bay/Little Sarasota Bay ²⁰ | Strategic | 158 (0.27)/126 | NA | Gulf of Mexico | NA. |
| | Pine Island Sound/ Charlotte Harbor/ Gasparilla Sound/ Lemon Bay ²⁰ | Strategic | 826 (0.09)/Unknown | NA | Gulf of Mexico | NA. |
| | Caloosahatchee River ²⁰ | Strategic | 0 | NA | Gulf of Mexico | NA. |
| | Estero Bay ²⁰ | Strategic | Unknown | NA | Gulf of Mexico | NA. |
| | Chokoloskee Bay/Ten Thousand Islands/ Gulfvan Bay ²⁰ | Strategic | Unknown | NA | Gulf of Mexico | NA. |
| | Whitewater Bay ²⁰ | Strategic | Unknown | NA | Gulf of Mexico | NA. |
| | Florida Keys (Bahia Honda to Key West) ²⁰ | Strategic | Unknown | NA | Gulf of Mexico | NA. |
| | Puerto Rico and U.S. Virgin Islands. | Strategic | Unknown | NA | Caribbean Sea | NA. |
| | Western North Atlan- tic ²² | Strategic | 442 (1.06)/212 | NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf. | NA. |
| | Northern Gulf of Mex- ico ¹⁶ | NA | Unknown | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Western North Atlan- tic ²³ | NA | Unknown | Gulf Stream | Northeast U.S. Continental Shelf, Southeast U.S. Continental Shelf. | NA. |
| | Northern Gulf of Mex- ico ¹⁶ | NA | Unknown | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Western North Atlan- tic ²² | NA | Unknown | Gulf Stream, North Atlantic Gyre, Lab- rador Current | Southeast U.S. Continental Shelf, Northeast United States Continental Shelf, Scotian Shelf, Newfoundland—Labrador Shelf. | NA. |
| | Northern Gulf of Mex- ico ¹⁶ | NA | 28 (1.02)/14 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Western North Atlan- tic ¹⁶ | NA | 5,636 (0.63)/3,464 | Gulf Stream | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland—Labrador Shelf. | NA. |
| | Western North Atlan- tic ²³ | NA | Unknown | Gulf Stream, North Atlantic Gyre. | Southeast U.S. Continental Shelf | NA. |
| | Northern Gulf of Mex- ico ¹⁶ | NA | 2,235 (0.75)/1,274 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Western North Atlan- tic ¹⁶ | NA | 3,333 (0.91)/1,733 | Gulf Stream | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf. | NA. |
| | Northern Gulf of Mex- ico ²² | NA | 50,880 (0.27)/40,699 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Western North Atlan- tic ¹⁶ | NA | Unknown | Gulf Stream, North Atlantic Gyre. | Southeast U.S. Continental Shelf | NA. |
| | Northern Gulf of Mex- ico ¹⁶ | NA | 152 (1.02)/75 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Western North Atlan- tic ¹⁶ | NA | 18,250 (0.46)/12,619 | Gulf Stream, North Atlantic Gyre. | Southeast U.S. Continental Shelf, Northeast United States Continental Shelf, Scotian Shelf, Newfoundland—Labrador Shelf. | NA. |
| | Northern Gulf of Mex- ico ¹⁶ | NA | 2,442 (0.57)/1,563 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Western North Atlan- tic ¹⁶ | NA | 136 (1.00)/67 | Gulf Stream, North Atlantic Gyre. | Caribbean Sea Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf. | NA. |
| | Northern Gulf of Mex- ico ¹⁶ | NA | 624 (0.99)/311 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Western North Atlan- tic ¹⁶ | NA | 28,924 (0.24)/23,637 | NA | Northeast Continental Shelf, Southeast U.S. Continental Shelf. | NA. |
| | Northern Gulf of Mex- ico ²² | NA | 2,415 (0.66)/1,456 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | Puerto Rico and U.S. Virgin Islands. | Strategic | Unknown | NA | Caribbean Sea | NA. |
| | Western North Atlan- tic ¹⁶ | NA | Unknown | Gulf Stream, North Atlantic Gyre. | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf. | NA. |
| False killer whale | <i>Pseudorca crassidens</i> | | | | | |
| Fraser's dolphin | <i>Lagenodelphis hosei</i> | | | | | |
| Killer Whale | <i>Orcinus orca</i> | | | | | |
| Long-finned pilot whale. | <i>Globicephala melas</i> | | | | | |
| Melon-headed Whale. | <i>Peponocephala electra</i> | | | | | |
| Pantropical spot- ted-dolphin. | <i>Stenella attenuata</i> | | | | | |
| Pygmy Killer Whales. | <i>Feresa attenuata</i> | | | | | |
| Risso's dolphin | <i>Grampus griseus</i> | | | | | |
| Rough-toothed dolphin. | <i>Steno bredanensis</i> | | | | | |
| Short-finned pilot whale. | <i>Globicephala macrorhynchus</i> | | | | | |
| Spinner dolphin | <i>Stenella longirostris</i> | | | | | |

TABLE 9—MARINE MAMMALS PRESENT IN THE AFTT STUDY AREA—Continued

| Common name | Scientific name ¹ | Stock ² | ESA/MMPA status ³ | Stock abundance ⁴ best/minimum population | Occurrence in AFTT Study Area ⁵ | | |
|--|-------------------------------------|--|------------------------------|---|--|---|---|
| | | | | | Open ocean | Large marine ecosystems | Inland waters |
| Striped dolphin ... | <i>Stenella coeruleoalba</i> | Northern Gulf of Mexico ¹⁶ | NA | 11,441 (0.83)/6,221 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| | | Puerto Rico and U.S. Virgin Islands. | Strategic | Unknown | NA | Caribbean Sea | NA. |
| | | Western North Atlantic ¹⁶ | NA | 54,807 (0.30)/42,804 | Gulf Stream | Northeast U.S. Continental Shelf, Scotian Shelf | NA. |
| | | Northern Gulf of Mexico ¹⁶ | NA | 1,849 (0.77)/1,041 | NA | Gulf of Mexico, Caribbean Sea | NA. |
| Short-beaked common dolphin. White-beaked dolphin. | <i>Delphinus delphis</i> | Western North Atlantic. | NA | 70,184 (0.28)/55,690 | Gulf Stream | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | NA. |
| | <i>Lagenorhynchus albirostris</i> . | Western North Atlantic ²³ . | NA | 2,003 (0.94)/1,023 | Labrador Current | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | NA. |
| Family <i>Phocoenidae</i> (porpoises): Harbor porpoise .. | <i>Phocoena phocoena</i> | Gulf of Maine/Bay of Fundy. | NA | 79,883 (0.32)/61,415 | NA | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | Narragansett Bay, Rhode Island Sound, Block Island Sound, Buzzards Bay, Vineyard Sound, Long Island Sound, Piscataqua River, Thames River, Kennebec River. |
| | | Gulf of St. Lawrence ²⁴ | NA | Unknown ²⁴ | Labrador Current | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf | NA. |
| | | Newfoundland ²⁵ | NA | Unknown ²⁵ | Labrador Current | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | NA. |
| | | Greenland ²⁶ | NA | Unknown ²⁶ | Labrador Current | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf, West Greenland Shelf. | NA. |
| | | Order Carnivora—Suborder Pinnipedia | | | | | |
| Family <i>Phocidae</i> (true seals): Gray seal | <i>Halichoerus grypus</i> ... | Western North Atlantic. | NA | 27,131 (0.19)/23,158 | NA | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | Narragansett Bay, Rhode Island Sound, Block Island Sound, Buzzards Bay, Vineyard Sound, Long Island Sound, Piscataqua River, Thames River, Kennebeck River. |
| Harbor seal | <i>Phoca vitulina</i> | Western North Atlantic. | NA | 75,834 (0.15)/66,884 | NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | Chesapeake Bay, Narragansett Bay, Rhode Island Sound, Block Island Sound, Buzzards Bay, Vineyard Sound, Long Island Sound, Piscataqua River, Thames River, Kennebeck River. |
| Harp seal | <i>Pagophilus groenlandicus</i> . | Western North Atlantic. | NA | Unknown | NA | Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf. | NA. |
| Hooded seal | <i>Cystophora cristata</i> ... | Western North Atlantic. | NA | Unknown | NA | Southeast U.S. Continental Shelf, Northeast U.S. Continental Shelf, Scotian Shelf, Newfoundland-Labrador Shelf, West Greenland Shelf. | Narragansett Bay, Rhode Island Sound, Block Island Sound, Buzzards Bay, Vineyard Sound, Long Island Sound, Piscataqua River, Thames River, Kennebec River. |

Notes: CV: Coefficient of variation; ESA: Endangered Species Act; MMPA: Marine Mammal Protection Act; NA: Not applicable.

- ¹ Taxonomy follows Committee on Taxonomy, 2016).
- ² Stock designations for the U.S. EEZ and abundance estimates are from Atlantic and Gulf of Mexico SARs prepared by NMFS (Hayes et al., 2017) and the draft 2018 SARs, unless specifically noted.
- ³ Stock designations for the U.S. EEZ and abundance estimates are from Atlantic and Gulf of Mexico SARs prepared by NMFS (Hayes et al., 2017) and the draft 2018 SARs, unless specifically noted.
- ⁴ Populations or stocks defined by the MMPA as "strategic" for one of the following reasons: (1) The level of direct human-caused mortality exceeds the potential biological removal level; (2) based on the best available scientific information, numbers are declining and species are likely to be listed as threatened or endangered under the ESA; (3) species are listed as threatened or endangered under the ESA; (4) species are designated as depleted under the MMPA.
- ⁵ Stock abundance, CV, and minimum population are numbers provided by the Stock Assessment Reports (SARs; Hayes et al., 2017). The stock abundance is an estimate of the number of animals within the stock. The CV is a statistical metric used as an indicator of the uncertainty in the abundance estimate. The minimum population estimate is either a direct count (e.g., pinnipeds on land) or the lower 20th percentile of a statistical abundance estimate.
- ⁶ Occurrence in the AFTT Study Area includes open ocean areas—Labrador Current, North Atlantic Gyre, Gulf Stream, and coastal/shelf waters of seven large marine ecosystems—West Greenland Shelf, Newfoundland-Labrador Shelf, Scotian Shelf, and Northeast U.S. Continental Shelf.
- ⁷ Occurrence in the AFTT Study Area includes open ocean areas—Labrador Current, North Atlantic Gyre, Gulf Stream, and coastal/shelf waters of seven large marine ecosystems—West Greenland Shelf, Newfoundland-Labrador Shelf, Scotian Shelf, and Northeast U.S. Continental Shelf.
- ⁸ Occurrence in the AFTT Study Area includes open ocean areas—Labrador Current, North Atlantic Gyre, Gulf Stream, and coastal/shelf waters of seven large marine ecosystems—West Greenland Shelf, Newfoundland-Labrador Shelf, Scotian Shelf, and Northeast U.S. Continental Shelf.
- ⁹ Occurrence in the AFTT Study Area includes open ocean areas—Labrador Current, North Atlantic Gyre, Gulf Stream, and coastal/shelf waters of seven large marine ecosystems—West Greenland Shelf, Newfoundland-Labrador Shelf, Scotian Shelf, and Northeast U.S. Continental Shelf.
- ¹⁰ Occurrence in the AFTT Study Area includes open ocean areas—Labrador Current, North Atlantic Gyre, Gulf Stream, and coastal/shelf waters of seven large marine ecosystems—West Greenland Shelf, Newfoundland-Labrador Shelf, Scotian Shelf, and Northeast U.S. Continental Shelf.
- ¹¹ Photo identification catalogue count of 440 recognizable blue whale individuals from the Gulf of St. Lawrence is considered a minimum population estimate for the western North Atlantic stock (Waring et al., 2014).
- ¹² Estimates include both the pygmy and dwarf sperm whales.
- ¹³ Beluga whales in the Atlantic are not managed by NMFS and have no associated Stock Assessment Report. Abundance and 95 percent confidence interval for the Eastern High Arctic/Baffin Bay stock were presented in (Innes et al., 2002).
- ¹⁴ Beluga whales in the Atlantic are not managed by NMFS and have no associated Stock Assessment Report. Abundance and 95 percent confidence interval for the West Greenland stock were presented in (Heide-Jørgensen et al., 2009).

- ¹⁵ NA = Not applicable. Narwhals in the Atlantic are not managed by NMFS and have no associated Stock Assessment Report.
- ¹⁶ Estimates for these western North Atlantic stocks are from Waring *et al.* (2014) and the northern Gulf of Mexico stock are from (Waring *et al.*, 2013) as applicable.
- ¹⁷ Estimate includes Gervais' and Blairville's beaked whales.
- ¹⁸ Estimate may include sightings of the coastal form.
- ¹⁹ Estimates for these Gulf of Mexico stocks are from SARs.
- ²⁰ NMFS is in the process of writing individual stock assessment reports for each of the 32 bay, sound, and estuary stocks.
- ²¹ Estimates for these stocks are from Waring *et al.*, (2015).
- ²² Estimates for these western North Atlantic stocks are from (Waring *et al.*, 2007).
- ²³ Harbor porpoise in the Gulf of St. Lawrence are not managed by NMFS and have no associated Stock Assessment Report.
- ²⁴ Harbor porpoise in Newfoundland are not managed by NMFS and have no associated Stock Assessment Report.
- ²⁵ Harbor porpoise in Greenland are not managed by NMFS and have no associated Stock Assessment Report.

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

We provided a full discussion of the potential effects of the specified activities on marine mammals and their habitat in our 2018 AFTT proposed rule and 2018 AFTT final rule. In the *Potential Effects of Specified Activities on Marine Mammals and Their Habitat* section of the 2018 AFTT proposed and final rules, NMFS provided a description of the ways marine mammals may be affected by the same activities that the Navy will be conducting during the seven-year period analyzed in this rule in the form of serious injury or mortality, physical trauma, sensory impairment (permanent and temporary threshold shifts and acoustic masking), physiological responses (particularly stress responses), behavioral disturbance, or habitat effects. Therefore, we do not repeat the information here, all of which remains current and applicable, but refer the reader to those rules and the 2018 AFTT FEIS/OEIS (Chapter 3, Section 3.7 *Marine Mammals*, <http://www.afteis.com/>), which NMFS participated in the development of via our cooperating agency status and adopted to meet our NEPA requirements.

In addition, NMFS has reviewed information in relevant SARs (which have not been revised since the publication of the 2018 AFTT final rule) any new information on active UMEs and from the scientific literature. Summaries of current UMEs and new scientific literature since publication of the 2018 AFTT final rule are presented below.

Unusual Mortality Events

A UME is defined under section 410(6) of the MMPA as a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response. The five active UMEs with ongoing investigations in the AFTT Study Area that inform our analysis are discussed below. The impacts to Barataria Bay bottlenose dolphins from the closed Northern Gulf of Mexico UME (discussed in the 2018 AFTT proposed rule) associated with the Deep Water Horizon oil spill in the Gulf of Mexico are thought to be persistent and continue to inform population analyses. The other more recent UMEs closed several years ago, and little is known about how the effects of those events might be appropriately applied to an impact assessment several years later.

North Atlantic Right Whale (NARW) UME

NOAA declared an UME for NARWs from January 1, 2017, to the present. The current total number of mortalities included in the event is 20 whales, including 12 NARW carcasses from Canada in 2017 and eight carcasses in the United States (5 in 2017; 3 in 2018). There have been no carcasses reported in 2019. In 2017, 17 right whale mortalities were documented, and in 2018, an additional three whales were found dead. Of the 12 NARW carcasses found in Canadian waters in 2017, six were necropsied and died as a direct result of human activities (either confirmed, probable, or suspect), from either rope entanglements (2) or vessel strikes (4) (Daoust *et al.*, 2017). Of the eight carcasses found in U.S. waters in 2017–2018, the cause of death was determined in six whales, with deaths attributable to either rope entanglement (5) or vessel strikes (1). Eight carcasses were not able to be examined. Daoust *et al.* (2018) also concluded there were no oil and gas seismic surveys authorized in the months prior to or during the period over which these mortalities occurred, as well as no blasting or major marine development projects. Navy was consulted as to sonar use and they confirmed none was used in the vicinity of any of the strandings.

As part of the UME investigation process for NARW, NOAA assembled an independent team of scientists (Investigative Team) that coordinates with the Working Group on Marine Mammal Unusual Mortality Events to review the data collected, sample future whales that strand, and determine the next steps for the investigation. For more information on this UME, please refer to <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2019-north-atlantic-right-whale-unusual-mortality-event#causes-of-the-north-atlantic-right-whale-ume>.

While data are not yet available to statistically estimate the population's trend beyond 2015, three lines of evidence indicate the population is still in decline. First, calving rates in 2016, 2017, and 2018 were low. Only five new calves were documented in 2017 (Pettis *et al.*, 2017a), well below the number needed to compensate for expected mortalities (Pace *et al.*, 2017), and no new calves were reported for 2018. Long-term photographic identification data indicate new calves rarely go undetected, so these years likely represent a continuation of the low calving rates that began in 2012 (Kraus *et al.*, 2007; Pace *et al.*, 2017). So far in 2019, seven calves have been

documented. Second, as noted above, the preliminary abundance estimate for 2016 is 451 individuals, down approximately 1.5 percent from 458 in 2015. Third, since June 2017, at least 20 NARWs have died in what has been declared an UME as discussed above, and at least one calf died in April 2017 (Meyer-Gutbrod *et al.*, 2018; NMFS, 2017).

Humpback Whale UME Along the Atlantic Coast

NOAA declared an UME for humpback whales from January 1, 2016, to the present, along the Atlantic coast from Maine through Florida. As of April 1, 2019, 92 humpback strandings have occurred (26, 34, 25, and 9 whales in 2016, 2017, 2018 and 2019 respectively). As of April 2019, partial or full necropsy examinations have been conducted on 43 cases, or approximately half of the 92 strandings (at that time). Of the 43 whales examined, approximately 20 had evidence of blunt force trauma or pre-mortem propeller wounds indicative of vessel strike and approximately 6 had evidence of entanglements. NOAA, in coordination with our stranding network partners, continues to investigate the recent mortalities and environmental conditions, and conduct population monitoring to better understand the recent humpback whale mortalities. At this time, vessel parameters (including size) are not known for each vessel-whale collision that led to the death of a whale. Therefore, NOAA considers all sizes of vessels to be a potential risk for whale species in highly trafficked areas. The Navy has investigated potential strikes and confirmed that it had none. Please refer to <https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2019-humpback-whale-unusual-mortality-event-along-atlantic-coast> for more information on this UME.

Minke Whale UME Along the Atlantic Coast

NOAA declared an UME for minke whales from January 1, 2017, to the present, along the Atlantic coast from Maine through Florida. As of April 1, 2019, 59 strandings have occurred (27, 20, and 2 whales in 2017, 2018 and 2019, respectively). As of April 1, 2019, full or partial necropsy examinations have been conducted on 33 whales. Preliminary findings on several of the whales have shown evidence of human interactions, primarily fisheries interactions, or infectious disease. These findings are not consistent across all of the whales examined, and final diagnostic results are still pending for

many of the cases. Please refer to <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2019-minke-whale-unusual-mortality-event-along-atlantic-coast> for more information on this UME.

Northeast Pinniped UME Along the Atlantic Coast

NOAA declared an UME on August 30, 2018, to the present due to increased numbers of harbor seal and gray seal strandings along the U.S. coasts of Maine, New Hampshire, and Massachusetts during July and August of 2018. Strandings have remained elevated in these three states and expanded south to Virginia with cases on-going. Recently, harp and hooded seals have begun stranding as they migrate from Canada into U.S. waters and have been included in the investigation. From July 1, 2018, to March 28, 2019, more than 2,062 seals have stranded with 95 percent of the seals stranding in Maine, New Hampshire, and Massachusetts. Full or partial necropsy examinations have been conducted on many of the seals and samples have been collected for testing. Based on testing conducted so far, the main pathogen found in the seals is phocine distemper virus. Please refer to <https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-life-distress/2018-2019-pinniped-unusual-mortality-event-along> for more information on this UME.

Southwest Florida Bottlenose Dolphin UME Along the Gulf of Mexico

NOAA declared a UME in 2018 to the present due to elevated bottlenose dolphin mortalities occurring along the Southwest coast of Florida including Collier, Lee, Charlotte, Sarasota, Manatee, Hillsborough, and Pinellas counties. From July 1, 2018, to March 27, 2019, 159 dolphins have been confirmed stranded in this event. Our stranding network partners have conducted full or partial necropsy examinations on several dolphins, with positive results for the red tide toxin (brevetoxin) indicating this UME is related to the severe bloom of a red tide that has been ongoing since November 2017. Please refer to <https://www.fisheries.noaa.gov/southeast/marine-life-distress/2018-2019-bottlenose-dolphin-unusual-mortality-event-southwest> for more information on this UME.

New Pertinent Science Since Publication of the 2018 AFTT Final Rule

Southall *et al.* (2019a) evaluated Southall *et al.* (2007) and used updated scientific information to propose revised

noise exposure criteria to predict onset of auditory effects in marine mammals (*i.e.*, PTS and TTS onset). Southall *et al.* (2019) note that the quantitative processes described and the resulting exposure criteria (*i.e.*, thresholds and auditory weighting functions) are largely identical to those in Finneran (2016) and NMFS (2016 and 2018). However they differ in that the Southall *et al.* (2019a) exposure criteria are more broadly applicable as they include all marine mammal species (rather than those only under NMFS jurisdiction) for all noise exposures (both in air and underwater for amphibious species), and that while the hearing group compositions are identical they renamed the hearing groups.

Recent studies on the behavioral responses of cetaceans to sonar examine and continue to demonstrate the importance of not only sound source parameters, but exposure context (*e.g.*, behavioral state, presence of other animals and social relationships, prey abundance, distance to source, presence of vessels, environmental parameters, etc.) in determining or predicting a behavioral response. Kastelein *et al.* (2018) examined the role of sound pressure level (SPL) and duty cycle on the behavior of two captive harbor porpoises when exposed to simulated Navy mid-frequency sonar (53C, 3.5 to 4.1 kHz). Neither harbor porpoise responded to the low duty cycle (2.7 percent) at any of the five SPLs presented, even at the maximum received SPL (143 dB re: 1 μ Pa). At the higher duty cycle (96 percent), one porpoise responded by increasing his respiration rate at a received SPL of greater than or equal to 119 dB re: 1 μ Pa, and moved away from the transducer at a received SPL of 143 dB re: 1 μ Pa. Kastelein *et al.* (2018) observed that at the same received SPL and duty cycle, harbor porpoises respond less to 53C sonar sounds than 1–2 kHz, 6–7 kHz, and 25 kHz sonar signals observed in previous studies, but noted that when examining behavioral responses it is important to take into account the spectrum and temporal structure of the signal, the duty cycle, and the psychological interpretation by the animal. Wensveen *et al.* (2019) examined the role of sound source (simulated sonar pulses) distance and received level in northern bottlenose whales in an environment without frequent sonar activity using multi-scaled controlled exposure experiments. They observed behavioral avoidance of the sound source over a wide range of distances (0.8–28 km) and estimated avoidance thresholds ranging from

received SPLs of 117–126 dB re: 1 μ Pa. The behavioral response characteristics and avoidance thresholds were comparable to those previously observed in beaked whale studies; however, they did not observe an effect of distance on behavioral response and found that onset and intensity of behavioral response were better predicted by received SPL. When conducting controlled exposure experiments on blue whales Southall *et al.* (2019b) observed that after exposure to simulated and operational mid-frequency active sonar, more than 50 percent of blue whales in deep-diving states responded to the sonar, while no behavioral response was observed in shallow-feeding blue whales. The behavioral responses they observed were generally brief, of low to moderate severity, and highly dependent on exposure context (behavioral state, source-to-whale horizontal range, and prey availability). Blue whale response did not follow a simple exposure-response model based on received sound exposure level. In a review of the potential impacts of sonar on beaked whales, Bernaldo de Quirós *et al.* (2019) suggested that the effect of mid-frequency active sonar on beaked whales varies among individuals or populations, and that predisposing conditions such as previous exposure to sonar and individual health risk factors may contribute to individual outcomes (such as decompression sickness).

Having considered this information, we have preliminarily determined that there is no new information that substantively affects our analysis of impacts on marine mammals and their habitat that appeared in the 2018 AFTT final rule, all of which remains applicable and valid for our assessment of the effects of the Navy's activities during the seven-year period of this rule.

Estimated Take of Marine Mammals

This section indicates the number of takes that NMFS is proposing to authorize, which are based on the amount of take that NMFS anticipates could occur or is likely to occur, depending on the type of take and the methods used to estimate it, as described below. NMFS coordinated closely with the Navy in the development of their incidental take application, and preliminarily agrees that the methods the Navy has put forth described herein and in the 2018 AFTT proposed and final rules to estimate take (including the model, thresholds, and density estimates), and the resulting numbers are based on the best available science and appropriate for

authorization. The number and type of incidental takes that could occur or are likely to occur annually remain identical to those authorized in the 2018 AFTT regulations.

Takes are predominantly in the form of harassment, but a small number of serious injuries or mortalities are also possible. For military readiness activities, the MMPA defines “harassment” as (i) Any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) Any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered (Level B harassment).

Proposed authorized takes would primarily be in the form of Level B harassment, as use of the acoustic and explosive sources (*i.e.*, sonar, air guns, pile driving, explosives) is more likely to result in behavioral disruption (rising to the level of a take as described above) or temporary threshold shift (TTS) for marine mammals than other forms of take. There is also the potential for Level A harassment, however, in the form of auditory injury and/or tissue damage (the latter from explosives only) to result from exposure to the sound sources utilized in training and testing activities. Lastly, a limited number of serious injuries or mortalities could occur for four species of mid-frequency cetaceans during ship shock trials and no more than four serious injuries or mortalities total (over the seven-year period) of mysticetes (except for blue whales, Bryde’s whales, and North Atlantic right whales) and North Atlantic sperm whales could occur through vessel collisions. Although we analyze the impacts of these potential serious injuries or mortalities that are proposed to be authorized, the required mitigation and monitoring measures are expected to minimize the likelihood that ship strike or these high level explosive exposures (and the associated serious injury or mortality) actually occur.

Generally speaking, for acoustic impacts we estimate the amount and type of harassment by considering: (1) Acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be taken by Level B harassment (in this case, as defined in the military readiness definition of Level B harassment included above) or incur some degree of

temporary or permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day or event; (3) the density or occurrence of marine mammals within these ensonified areas; and (4) the number of days of activities or events.

Acoustic Thresholds

Using the best available science, NMFS, in coordination with the Navy, has established acoustic thresholds that identify the most appropriate received level of underwater sound above which marine mammals exposed to these sound sources could be reasonably expected to experience a disruption in behavior patterns to a point where they are abandoned or significantly altered, or to incur TTS (equated to Level B harassment) or permanent threshold shift (PTS) of some degree (equated to Level A harassment). Thresholds have also been developed to identify the pressure levels above which animals may incur non-auditory injury from exposure to pressure waves from explosive detonation.

Despite the quickly evolving science, there are still challenges in quantifying expected behavioral responses that qualify as Level B harassment, especially where the goal is to use one or two predictable indicators (*e.g.*, received level and distance) to predict responses that are also driven by additional factors that cannot be easily incorporated into the thresholds (*e.g.*, context). So, while the new behavioral Level B harassment thresholds have been refined here to better consider the best available science (*e.g.*, incorporating both received level and distance), they also still, accordingly, have some built-in conservative factors to address the challenge noted. For example, while duration of observed responses in the data are now considered in the thresholds, some of the responses that are informing take thresholds are of a very short duration, such that it is possible some of these responses might not always rise to the level of disrupting behavior patterns to a point where they are abandoned or significantly altered. We describe the application of this Level B harassment threshold as identifying the maximum number of instances in which marine mammals could be reasonably expected to experience a disruption in behavior patterns to a point where they are abandoned or significantly altered. In summary, we believe these behavioral Level B harassment thresholds are the most appropriate method for predicting behavioral Level B harassment given the

best available science and the associated uncertainty.

We described these acoustic thresholds, none of which have changed, in detail in the *Acoustic Thresholds* section and Tables 13 through 22 of the 2018 AFTT final rule; please see the 2018 AFTT final rule for detailed information.

Navy’s Acoustic Effects Model

The Navy proposes no changes to the Acoustic Effects Model as described in the 2018 AFTT final rule and there is no new information that would affect the applicability or validity of the Model. Please see the 2018 AFTT final rule for detailed information.

Range to Effects

The Navy proposes no changes from the 2018 AFTT final rule to the type and nature of the specified activities to be conducted during the seven-year period analyzed in this proposed rule, including equipment and sources used and exercises conducted. There is also no new information that would affect the applicability or validity of the ranges to effects previously analyzed for these activities. Therefore the ranges to effects in this proposed rule are identical to those described and analyzed in the 2018 AFTT final rule, including received sound levels that may cause onset of significant behavioral response and TTS and PTS in hearing for each source type or explosives that may cause non-auditory injury. Please see the *Range to Effects* section and Tables 23 through 38 of the 2018 AFTT final rule for detailed information.

Marine Mammal Density

The Navy proposes no changes to the methods used to estimate marine mammal density described in the 2018 AFTT final rule and there is no new information that would affect the applicability or validity of these methods. Please see the 2018 AFTT final rule for detailed information.

Take Requests

As in the 2018 AFTT final rule, in its 2019 application, the Navy determined that the three stressors below could result in the incidental taking of marine mammals. NMFS has reviewed the Navy’s data and analysis and determined that it is complete and accurate, and NMFS agrees that the following stressors have the potential to result in takes of marine mammals from the Navy’s planned activities:

- Acoustics (sonar and other transducers; air guns; pile driving/extraction);

- Explosives (explosive shock wave and sound, assumed to encompass the risk due to fragmentation); and
- Physical Disturbance and Strike (vessel strike).

NMFS reviewed and agrees with the Navy's conclusion that acoustic and explosive sources have the potential to result in incidental takes of marine mammals by harassment, serious injury, or mortality. NMFS carefully reviewed the Navy's analysis and conducted its own analysis of vessel strikes, determining that the likelihood of any particular species of large whale being struck is quite low. Nonetheless, NMFS agrees that vessel strikes have the potential to result in incidental take from serious injury or mortality for certain species of large whales and the Navy has specifically requested coverage for these species. Therefore, the likelihood of vessel strikes, and later the effects of the incidental take that is being proposed to be authorized, has been fully analyzed and is described below.

Regarding the quantification of expected takes from acoustic and explosive sources (by Level A and Level B harassment, as well as mortality resulting from exposure to explosives), the number of takes are based directly on the level of activities (days, hours, counts, etc., of different activities and events) in a given year. In the 2018 AFTT final rule, take estimates across the five-years were based on the Navy conducting three years of a representative level of activity and two years of maximum level of activity. Consistent with the pattern set forth in the 2017 application, the 2018 AFTT FEIS/OEIS, and the 2018 AFTT final rule, the Navy proposes to add one additional representative year and one additional maximum year to determine the predicted take numbers in this rule. Specifically, as in the 2018 AFTT final rule, here the Navy proposes to use the maximum annual level to calculate annual takes (which would remain identical to what was determined in the 2018 AFTT final rule), and the sum of all years (four representative and three maximum) to calculate the seven-year totals for this rule. The Navy is not proposing to conduct any additional ship shock activities, and therefore both the total number and annual number of ship shock takes estimated and requested for the seven-year period is the same as the number requested in the five-year period under the 2018 AFTT final rule.

The quantitative analysis process used for the 2018 AFTT FEIS/OEIS and the 2017 and 2019 Navy applications to estimate potential exposures to marine

mammals resulting from acoustic and explosive stressors is detailed in the technical report titled *Quantifying Acoustic Impacts on Marine Mammals and Sea Turtles: Methods and Analytical Approach for Phase III Training and Testing* (U.S. Department of the Navy, 2018). The Navy Acoustic Effects Model estimates acoustic and explosive effects without taking mitigation into account; therefore, the model overestimates predicted impacts on marine mammals within mitigation zones. To account for mitigation for marine species in the take estimates, the Navy conducts a quantitative assessment of mitigation. The Navy conservatively quantifies the manner in which procedural mitigation is expected to reduce model-estimated PTS to TTS for exposures to sonar and other transducers, and reduces model-estimated mortality to injury for exposures to explosives. For a complete explanation of the process for assessing the effects of mitigation, see the 2017 Navy application and the 2018 AFTT final rule. The extent to which the mitigation areas reduce impacts on the affected species and stocks is addressed separately in the *Preliminary Analysis and Negligible Impact Determination* section.

No changes have been made to the quantitative analysis process to estimate potential exposures to marine mammals resulting from acoustic and explosive stressors and calculate take estimates. In addition, there is no new information that would call into question the validity of the Navy's quantitative analysis process. Please see the documents described in the paragraph above, the 2018 AFTT proposed rule, and the 2018 AFTT final rule for detailed descriptions of these analyses. In summary, we believe the Navy's methods, including the method for incorporating mitigation and avoidance, are the most appropriate methods for predicting PTS, TTS, and behavioral disruption. But even with the consideration of mitigation and avoidance, given some of the more conservative components of the methodology (e.g., the thresholds do not consider ear recovery between pulses), we would describe the application of these methods as identifying the maximum number of instances in which marine mammals would be reasonably expected to be taken through PTS, TTS, or behavioral disruption.

Summary of Requested Take From Training and Testing Activities

Based on the methods discussed in the previous sections and the Navy's model and quantitative assessment of

mitigation, the Navy provided its take estimate and request for authorization of takes incidental to the use of acoustic and explosive sources for training and testing activities both annually (based on the maximum number of activities that could occur per 12-month period) and over the seven-year period covered by the 2019 Navy application. Annual takes (based on the maximum number of activities that could occur per 12-month period) are identical to those presented in Tables 39 through 41 in the *Take Requests* section of the 2018 AFTT final rule. The 2019 Navy application also includes the Navy's take estimate and request for vessel strikes due to vessel movement in the AFTT Study Area and individual small and large ship shock trials over a seven-year period. The Navy proposes no additional ship shock trials, so the estimated and requested takes from ship shock trials are the same as those authorized in the 2018 AFTT final rule. NMFS has reviewed the Navy's data, methodology, and analysis and determined that it is complete and accurate. NMFS agrees that the estimates for incidental takes by harassment from all sources as well as the incidental takes by serious injury or mortality from explosives requested for authorization are reasonably expected to occur. NMFS also agrees that the takes by serious injury or mortality as a result of vessel strikes could occur. The total amount of estimated incidental take over the seven years covered by the 2019 Navy application is less than the sum total of each year because although the annual estimates are based on the maximum number of activities per year and therefore the maximum estimated takes, the seven-year take estimates are based on the sum of three maximum years and four representative years.

Estimated Harassment Take From Training Activities

For training activities, Table 10 summarizes the Navy's take estimate and request and the maximum amount and type of Level A and Level B harassment for the seven-year period covered by the 2019 Navy application that NMFS concurs is reasonably expected to occur by species or stock. For the estimated amount and type of Level A harassment and Level B harassment annually, see Table 39 in the 2018 AFTT final rule. Note that take by Level B harassment includes both behavioral disruption and TTS. Navy Figures 6.4–10 through 6.5–39 in Section 6 of the 2017 Navy application illustrate the comparative amounts of TTS and behavioral disruption for each species annually, noting that if a modeled marine mammal was “taken”

through exposure to both TTS and behavioral disruption in the model, it was recorded as a TTS.

TABLE 10—SEVEN-YEAR TOTAL SPECIES- AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM ACOUSTIC AND EXPLOSIVE SOUND SOURCE EFFECTS FOR ALL TRAINING ACTIVITIES

| Species | Stock | 7-Year total ¹ | |
|--------------------------------------|--|---------------------------|---------|
| | | Level B | Level A |
| Suborder Mysticeti (baleen whales) | | | |
| Family Balaenidae (right whales): | | | |
| North Atlantic right whale * | Western North Atlantic | 1,644 | 0 |
| Family Balaenopteridae (roqualls): | | | |
| Blue whale * | Western North Atlantic (Gulf of St. Lawrence) | 171 | 0 |
| Bryde's whale | Northern Gulf of Mexico | 5 | 0 |
| | No Stock Designation | 1,351 | 0 |
| Minke whale | Canadian East Coast | 15,824 | 0 |
| Fin whale * | Western North Atlantic | 10,225 | 19 |
| Humpback whale | Gulf of Maine | 1,564 | 4 |
| Sei whale * | Nova Scotia | 1,964 | 0 |
| Suborder Odontoceti (toothed whales) | | | |
| Family Physeteridae (sperm whale): | | | |
| Sperm whale * | Gulf of Mexico Oceanic | 167 | 0 |
| | North Atlantic | 96,479 | 0 |
| Family Kogiidae (sperm whales): | | | |
| Dwarf sperm whale | Gulf of Mexico Oceanic | 103 | 0 |
| | Western North Atlantic | 56,060 | 68 |
| Pygmy sperm whale | Northern Gulf of Mexico | 103 | 0 |
| | Western North Atlantic | 56,060 | 68 |
| Family Ziphiidae (beaked whales): | | | |
| Blainville's beaked whale | Northern Gulf of Mexico | 244 | 0 |
| | Western North Atlantic | 85,661 | 0 |
| Cuvier's beaked whale | Northern Gulf of Mexico | 242 | 0 |
| | Western North Atlantic | 317,180 | 0 |
| Gervais' beaked whale | Northern Gulf of Mexico | 244 | 0 |
| | Western North Atlantic | 85,661 | 0 |
| Northern bottlenose whale | Western North Atlantic | 7,504 | 0 |
| Sowersby's beaked whale | Western North Atlantic | 85,661 | 0 |
| True's beaked whale | Western North Atlantic | 85,661 | 0 |
| Family Delphinidae (dolphins): | | | |
| Atlantic spotted dolphin | Northern Gulf of Mexico | 6,584 | 0 |
| | Western North Atlantic | 804,058 | 64 |
| Atlantic white-sided dolphin | Western North Atlantic | 99,615 | 3 |
| Bottlenose dolphin | Choctawhatchee Bay | 46 | 0 |
| | Gulf of Mexico Eastern Coastal | 166 | 0 |
| | Gulf of Mexico Northern Coastal | 1,524 | 0 |
| | Gulf of Mexico Western Coastal | 16,778 | 0 |
| | Indian River Lagoon Estuarine System | 1,980 | 0 |
| | Jacksonville Estuarine System | 589 | 0 |
| | Mississippi Sound, Lake Borgne, Bay Boudreau | 0 | 0 |
| | Northern Gulf of Mexico Continental Shelf | 10,918 | 13 |
| | Northern Gulf of Mexico Oceanic | 1,356 | 0 |
| | Northern North Carolina Estuarine System | 16,089 | 0 |
| | Southern North Carolina Estuarine System | 0 | 0 |
| | Western North Atlantic Northern Florida Coastal | 6,060 | 0 |
| | Western North Atlantic Central Florida Coastal | 35,861 | 0 |
| | Western North Atlantic Northern Migratory Coastal | 175,237 | 30 |
| | Western North Atlantic Offshore | 2,062,942 | 269 |
| | Western North Atlantic South Carolina/Georgia Coastal. | 28,814 | 0 |
| | Western North Atlantic Southern Migratory Coastal | 81,155 | 14 |
| Clymene dolphin | Northern Gulf of Mexico | 694 | 0 |
| | Western North Atlantic | 463,220 | 19 |
| False killer whale | Northern Gulf of Mexico | 291 | 0 |
| | Western North Atlantic | 54,818 | 0 |
| Fraser's dolphin | Northern Gulf of Mexico | 418 | 0 |
| | Western North Atlantic | 26,155 | 0 |
| Killer whale | Northern Gulf of Mexico | 5 | 0 |
| | Western North Atlantic | 522 | 0 |
| Long-finned pilot whale | Western North Atlantic | 116,412 | 0 |
| Melon-headed whale | Northern Gulf of Mexico | 493 | 0 |
| | Western North Atlantic | 246,178 | 0 |

TABLE 10—SEVEN-YEAR TOTAL SPECIES- AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM ACOUSTIC AND EXPLOSIVE SOUND SOURCE EFFECTS FOR ALL TRAINING ACTIVITIES—Continued

| Species | Stock | 7-Year total ¹ | |
|--|----------------------------------|---------------------------|---------|
| | | Level B | Level A |
| Pantropical spotted dolphin | Northern Gulf of Mexico | 3,959 | 0 |
| | Western North Atlantic | 964,072 | 16 |
| Pygmy killer whale | Northern Gulf of Mexico | 118 | 0 |
| | Western North Atlantic | 43,009 | 0 |
| Risso's dolphin | Northern Gulf of Mexico | 276 | 0 |
| | Western North Atlantic | 140,368 | 0 |
| Rough-toothed dolphin | Northern Gulf of Mexico | 606 | 0 |
| | Western North Atlantic | 129,594 | 0 |
| Short-beaked common dolphin | Western North Atlantic | 1,467,625 | 87 |
| Short-finned pilot whale | Northern Gulf of Mexico | 251 | 0 |
| | Western North Atlantic | 210,736 | 0 |
| Spinner dolphin | Northern Gulf of Mexico | 1,593 | 0 |
| | Western North Atlantic | 487,644 | 9 |
| Striped dolphin | Northern Gulf of Mexico | 471 | 0 |
| | Western North Atlantic | 631,680 | 22 |
| White-beaked dolphin | Western North Atlantic | 269 | 0 |
| <i>Family Phocoenidae (porpoises):</i> | | | |
| Harbor porpoise | Gulf of Maine/Bay of Fundy | 206,071 | 1,121 |
| Suborder Pinnipedia | | | |
| <i>Family Phocidae (true seals):</i> | | | |
| Gray seal | Western North Atlantic | 10,038 | 0 |
| Harbor seal | Western North Atlantic | 16,277 | 0 |
| Harp seal | Western North Atlantic | 59,063 | 6 |
| Hooded seal | Western North Atlantic | 882 | 0 |

¹ The estimated amount and type of Level A harassment and Level B harassment annually are identical to those presented in Table 39 in the 2018 AFTT final rule.

* ESA-listed species (all stocks) within the AFTT Study Area.

† NSD: No stock designated.

Estimated Harassment Take From Testing Activities

For testing activities (excluding ship shock trials), Table 11 summarizes the Navy's take estimate and request and the maximum amount and type of Level A harassment and Level B harassment for the seven-year period covered by the

2019 Navy application that NMFS concurs is reasonably expected to occur by species or stock. For the estimated amount and type of Level A harassment and Level B harassment annually, see Table 40 in the 2018 AFTT final rule. Note that take by Level B harassment includes both behavioral disruption and TTS. Navy Figures 6.4–10 through 6.5–

39 in Section 6 of the 2017 Navy application illustrate the comparative amounts of TTS and behavioral disruption for each species annually, noting that if a “taken” animal was exposed to both TTS and behavioral disruption in the model, it was recorded as a TTS.

TABLE 11—SEVEN-YEAR TOTAL SPECIES AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM ACOUSTIC AND EXPLOSIVE SOUND SOURCE EFFECTS FOR ALL TESTING ACTIVITIES (EXCLUDING SHIP SHOCK TRIALS)

| Species | Stock | 7-Year total ¹ | |
|--------------------------------------|---|---------------------------|---------|
| | | Level B | Level A |
| Suborder Mysticeti (baleen whales) | | | |
| Family Balaenidae (right whales): | | | |
| North Atlantic right whale * | Western North Atlantic | 1,528 | 0 |
| Family Balaenopteridae (roquals): | | | |
| Blue whale * | Western North Atlantic (Gulf of St. Lawrence) | 127 | 0 |
| Bryde's whale | Northern Gulf of Mexico | 358 | 0 |
| | No Stock Designation | 856 | 0 |
| Minke whale | Canadian East Coast | 11,155 | 9 |
| Fin whale * | Western North Atlantic | 24,808 | 22 |
| Humpback whale | Gulf of Maine | 3,380 | 0 |
| Sei whale * | Nova Scotia | 3,262 | 0 |
| Suborder Odontoceti (toothed whales) | | | |
| Family Physeteridae (sperm whale): | | | |
| Sperm whale * | Gulf of Mexico Oceanic | 7,315 | 0 |

TABLE 11—SEVEN-YEAR TOTAL SPECIES AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM ACOUSTIC AND EXPLOSIVE SOUND SOURCE EFFECTS FOR ALL TESTING ACTIVITIES (EXCLUDING SHIP SHOCK TRIALS)—Continued

| Species | Stock | 7-Year total ¹ | |
|--|---|---------------------------|---------|
| | | Level B | Level A |
| | North Atlantic | 71,820 | 0 |
| <i>Family Kogiidae (sperm whales):</i> | | | |
| Dwarf sperm whale | Gulf of Mexico Oceanic | 4,787 | 38 |
| | Western North Atlantic | 29,368 | 91 |
| Pygmy sperm whale | Northern Gulf of Mexico | 4,787 | 38 |
| | Western North Atlantic | 29,368 | 91 |
| <i>Family Ziphiidae (beaked whales):</i> | | | |
| Blainville's beaked whale | Northern Gulf of Mexico | 9,368 | 0 |
| | Western North Atlantic | 68,738 | 0 |
| Cuvier's beaked whale | Northern Gulf of Mexico | 9,757 | 0 |
| | Western North Atlantic | 252,367 | 0 |
| Gervais' beaked whale | Northern Gulf of Mexico | 9,368 | 0 |
| | Western North Atlantic | 68,738 | 0 |
| Northern bottlenose whale | Western North Atlantic | 6,231 | 0 |
| Sowersby's beaked whale | Western North Atlantic | 68,903 | 0 |
| True's beaked whale | Western North Atlantic | 68,903 | 0 |
| <i>Family Delphinidae (dolphins):</i> | | | |
| Atlantic spotted dolphin | Northern Gulf of Mexico | 473,262 | 18 |
| | Western North Atlantic | 708,931 | 72 |
| Atlantic white-sided dolphin | Western North Atlantic | 210,578 | 8 |
| Bottlenose dolphin | Choctawhatchee Bay | 6,297 | 0 |
| | Gulf of Mexico Eastern Coastal | 0 | 0 |
| | Gulf of Mexico Northern Coastal | 108,154 | 7 |
| | Gulf of Mexico Western Coastal | 25,200 | 0 |
| | Indian River Lagoon Estuarine System | 21 | 0 |
| | Jacksonville Estuarine System | 20 | 0 |
| | Mississippi Sound, Lake Borgne, Bay Boudreau | 5 | 0 |
| | Northern Gulf of Mexico Continental Shelf | 841,076 | 56 |
| | Northern Gulf of Mexico Oceanic | 95,044 | 8 |
| | Northern North Carolina Estuarine System | 746 | 0 |
| | Southern North Carolina Estuarine System | 0 | 0 |
| | Western North Atlantic Northern Florida Coastal | 2,263 | 0 |
| | Western North Atlantic Central Florida Coastal | 15,409 | 0 |
| | Western North Atlantic Northern Migratory Coastal | 79,042 | 20 |
| | Western North Atlantic Offshore | 794,581 | 161 |
| | Western North Atlantic South Carolina/Georgia Coastal | 11,232 | 0 |
| | Western North Atlantic Southern Migratory Coastal | 29,176 | 0 |
| Clymene dolphin | Northern Gulf of Mexico | 27,841 | 0 |
| | Western North Atlantic | 234,001 | 12 |
| False killer whale | Northern Gulf of Mexico | 12,788 | 0 |
| | Western North Atlantic | 24,580 | 0 |
| Fraser's dolphin | Northern Gulf of Mexico | 7,452 | 0 |
| | Western North Atlantic | 8,270 | 0 |
| Killer whale | Northern Gulf of Mexico | 212 | 0 |
| | Western North Atlantic | 264 | 0 |
| Long-finned pilot whale | Western North Atlantic | 131,095 | 11 |
| Melon-headed whale | Northern Gulf of Mexico | 20,324 | 0 |
| | Western North Atlantic | 109,192 | 6 |
| Pantropical spotted dolphin | Northern Gulf of Mexico | 169,678 | 6 |
| | Western North Atlantic | 495,207 | 26 |
| Pygmy killer whale | Northern Gulf of Mexico | 4,771 | 0 |
| | Western North Atlantic | 18,609 | 0 |
| Risso's dolphin | Northern Gulf of Mexico | 10,929 | 0 |
| | Western North Atlantic | 132,141 | 9 |
| Rough-toothed dolphin | Northern Gulf of Mexico | 26,033 | 0 |
| | Western North Atlantic | 58,008 | 0 |
| Short-beaked common dolphin | Western North Atlantic | 2,351,361 | 101 |
| Short-finned pilot whale | Northern Gulf of Mexico | 12,041 | 0 |
| | Western North Atlantic | 111,326 | 10 |
| Spinner dolphin | Northern Gulf of Mexico | 51,039 | 0 |
| | Western North Atlantic | 218,786 | 10 |
| Striped dolphin | Northern Gulf of Mexico | 16,344 | 0 |
| | Western North Atlantic | 652,197 | 32 |
| White-beaked dolphin | Western North Atlantic | 300 | 0 |
| <i>Family Phocoenidae (porpoises):</i> | | | |
| Harbor porpoise | Gulf of Maine/Bay of Fundy | 811,201 | 1,405 |

TABLE 11—SEVEN-YEAR TOTAL SPECIES AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM ACOUSTIC AND EXPLOSIVE SOUND SOURCE EFFECTS FOR ALL TESTING ACTIVITIES (EXCLUDING SHIP SHOCK TRIALS)—Continued

| Species | Stock | 7-Year total ¹ | |
|--------------------------------------|------------------------------|---------------------------|---------|
| | | Level B | Level A |
| <i>Suborder Pinnipedia</i> | | | |
| <i>Family Phocidae (true seals):</i> | | | |
| Gray seal | Western North Atlantic | 6,130 | 14 |
| Harbor seal | Western North Atlantic | 9,941 | 23 |
| Harp seal | Western North Atlantic | 53,646 | 17 |
| Hooded seal | Western North Atlantic | 5,335 | 0 |

¹ The estimated amount and type of Level A harassment and Level B harassment annually are identical to those presented in Table 40 in the 2018 AFTT final rule.

* ESA-listed species (all stocks) within the AFTT Study Area.

† NSD: No stock designated.

Estimated Take From Ship Shock

For ship shock trials, Table 12 summarizes the Navy's take estimate and request and the maximum amount and type of Level A and Level B harassment and serious injury/mortality for the seven-year period covered by the

Navy application that NMFS concurs is reasonably expected to occur by species or stock per small and large ship shock events. For the estimated amount and type of Level A harassment, Level B harassment, and serious injury/mortality annually, see Table 41 in the

2018 AFTT final rule. The Navy proposed no additional ship shock trials over the additional two years covered by the 2019 Navy application, so the estimated and requested takes are the same as those authorized in the 2018 AFTT final rule.

TABLE 12—SEVEN-YEAR TOTAL SPECIES AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM SHIP SHOCK TRIALS

| Species | 7-Year total ¹ | | |
|---|---------------------------|---------|-----------|
| | Level B | Level A | Mortality |
| Suborder Mysticeti (baleen whales) | | | |
| <i>Family Balaenidae (right whales):</i> | | | |
| North Atlantic right whale* | 5 | 0 | 0 |
| <i>Family Balaenopteridae (rorquals):</i> | | | |
| Blue whale* | 1 | 0 | 0 |
| Bryde's whale | 15 | 1 | 0 |
| Minke whale | 96 | 6 | 0 |
| Fin whale* | 627 | 36 | 0 |
| Humpback whale | 44 | 2 | 0 |
| Sei whale* | 63 | 7 | 0 |
| Suborder Odontoceti (toothed whales) | | | |
| <i>Family Physeteridae (sperm whale):</i> | | | |
| Sperm whale* | 6 | 7 | 0 |
| <i>Family Kogiidae (sperm whales):</i> | | | |
| Dwarf sperm whale | 229 | 154 | 0 |
| Pygmy sperm whale | 229 | 154 | 0 |
| <i>Family Ziphiidae (beaked whales):</i> | | | |
| Blainville's beaked whale | 4 | 1 | 0 |
| Cuvier's beaked whale | 8 | 6 | 0 |
| Gervais' beaked whale | 4 | 1 | 0 |
| Northern bottlenose whale | 0 | 0 | 0 |
| Sowersby's beaked whale | 4 | 1 | 0 |
| True's beaked whale | 4 | 1 | 0 |
| <i>Family Delphinidae (dolphins):</i> | | | |
| Atlantic spotted dolphin | 26 | 24 | 0 |
| Atlantic white-sided dolphin | 6 | 12 | 1 |
| Bottlenose dolphin | 55 | 54 | 0 |
| Clymene dolphin | 15 | 23 | 0 |
| False killer whale | 2 | 1 | 0 |
| Fraser's dolphin | 2 | 3 | 0 |
| Killer whale | 0 | 0 | 0 |
| Long-finned pilot whale | 11 | 12 | 0 |
| Melon-headed whale | 8 | 7 | 0 |
| Pantropical spotted dolphin | 31 | 29 | 1 |
| Pygmy killer whale | 1 | 1 | 0 |

TABLE 12—SEVEN-YEAR TOTAL SPECIES AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM SHIP SHOCK TRIALS—Continued

| Species | 7-Year total ¹ | | |
|-----------------------------------|---------------------------|---------|-----------|
| | Level B | Level A | Mortality |
| Risso's dolphin | 6 | 4 | 0 |
| Rough-toothed dolphin | 6 | 2 | 0 |
| Short-beaked common dolphin | 187 | 260 | 6 |
| Short-finned pilot whale | 10 | 11 | 0 |
| Spinner dolphin | 46 | 48 | 1 |
| Striped dolphin | 22 | 36 | 0 |
| White-beaked dolphin | 0 | 0 | 0 |
| Family Phocoenidae (porpoises): | | | |
| Harbor porpoise | 249 | 204 | 0 |
| Suborder Pinnipedia | | | |
| Family Phocidae (true seals): | | | |
| Gray seal | 0 | 0 | 0 |
| Harbor seal | 0 | 0 | 0 |
| Harp seal | 0 | 0 | 0 |
| Hooded seal | 0 | 0 | 0 |

¹ The estimated amount and type of Level A harassment and Level B harassment and serious injury/mortality annually are identical to those presented in Table 41 in the 2018 AFTT final rule.

* ESA-listed species (all stocks) within the AFTT Study Area.

† NSD: No stock designated.

Estimated Take From Vessel Strikes

Vessel strikes from commercial, recreational, and military vessels are known to affect large whales and have resulted in serious injury and occasional fatalities to cetaceans (Berman-Kowalewski *et al.*, 2010; Calambokidis, 2012; Douglas *et al.*, 2008; Laggner 2009; Lammers *et al.*, 2003). Records of collisions date back to the early 17th century, and the worldwide number of collisions appears to have increased steadily during recent decades (Laist *et al.*, 2001; Ritter, 2012).

Numerous studies of interactions between surface vessels and marine mammals have demonstrated that free-ranging marine mammals often, but not always (*e.g.*, McKenna *et al.*, 2015), engage in avoidance behavior when surface vessels move toward them. It is not clear whether these responses are caused by the physical presence of a surface vessel, the underwater noise generated by the vessel, or an interaction between the two (Amaral and Carlson, 2005; Au and Green, 2000; Bain *et al.*, 2006; Bauer 1986; Bejder *et al.*, 1999; Bejder and Lusseau, 2008; Bejder *et al.*, 2009; Bryant *et al.*, 1984; Corkeron, 1995; Erbe, 2002; Félix, 2001; Goodwin and Cotton, 2004; Lemon *et al.*, 2006; Lusseau, 2003; Lusseau, 2006; Magalhaes *et al.*, 2002; Nowacek *et al.*, 2001; Richter *et al.*, 2003; Scheidat *et al.*, 2004; Simmonds, 2005; Watkins, 1986; Williams *et al.*, 2002; Wursig *et al.*, 1998). Several authors suggest that the noise generated during motion is probably an important factor (Blane and

Jaakson, 1994; Evans *et al.*, 1992; Evans *et al.*, 1994). Water disturbance may also be a factor. These studies suggest that the behavioral responses of marine mammals to surface vessels are similar to their behavioral responses to predators. Avoidance behavior is expected to be even stronger in the subset of instances that the Navy is conducting training or testing activities using active sonar or explosives.

The marine mammals most vulnerable to vessel strikes are those that spend extended periods of time at the surface in order to restore oxygen levels within their tissues after deep dives (*e.g.*, the sperm whale). In addition, some baleen whales, such as the NARW seem generally unresponsive to vessel sound, making them more susceptible to vessel collisions (Nowacek *et al.*, 2004). These species are primarily large, slower moving whales.

Some researchers have suggested the relative risk of a vessel strike can be assessed as a function of animal density and the magnitude of vessel traffic (*e.g.*, Fonnesebeck *et al.*, 2008; Vanderlaan *et al.*, 2008). Differences among vessel types also influence the probability of a vessel strike. The ability of any ship to detect a marine mammal and avoid a collision depends on a variety of factors, including environmental conditions, ship design, size, speed, and personnel, as well as the behavior of the animal. Vessel speed, size, and mass are all important factors in determining if injury or death of a marine mammal is likely due to a vessel strike. For large vessels, speed and angle of approach

can influence the severity of a strike. For example, Vanderlaan and Taggart (2007) found that between vessel speeds of 8.6 and 15 knots, the probability that a vessel strike is lethal increases from 0.21 to 0.79. Large whales also do not have to be at the water's surface to be struck. Silber *et al.* (2010) found when a whale is below the surface (about one to two times the vessel draft), there is likely to be a pronounced propeller suction effect. This suction effect may draw the whale into the hull of the ship, increasing the probability of propeller strikes.

There are some key differences between the operation of military and non-military vessels, which make the likelihood of a military vessel striking a whale lower than some other vessels (*e.g.*, commercial merchant vessels). Key differences include:

- Many military ships have their bridges positioned closer to the bow, offering better visibility ahead of the ship (compared to a commercial merchant vessel).
- There are often aircraft associated with the training or testing activity (which can serve as Lookouts), which can more readily detect cetaceans in the vicinity of a vessel or ahead of a vessel's present course before crew on the vessel would be able to detect them.
- Military ships are generally more maneuverable than commercial merchant vessels, and if cetaceans are spotted in the path of the ship, could be capable of changing course more quickly.

- The crew size on military vessels is generally larger than merchant ships, allowing for stationing more trained Lookouts on the bridge. At all times when vessels are underway, trained Lookouts and bridge navigation teams are used to detect objects on the surface of the water ahead of the ship, including cetaceans. Additional Lookouts, beyond those already stationed on the bridge and on navigation teams, are positioned as Lookouts during some activities.

- When submerged, submarines are generally slow moving (to avoid detection) and therefore marine mammals at depth with a submarine are likely able to avoid collision with the submarine. When a submarine is transiting on the surface, there are Lookouts serving the same function as they do on surface ships.

Vessel strike to marine mammals is not associated with any specific training or testing activity but is rather an extremely limited and sporadic, but possible, accidental result of Navy vessel movement within the AFTT Study Area or while in transit.

There have been three recorded Navy vessel strikes (one in 2011 and two in 2012) of large whales in the AFTT Study Area from 2009 through 2018 (ten years), the period in which the Navy began implementing effective mitigation measures to reduce the likelihood of vessel strikes. Two of the vessel strikes occurred in the Virginia Capes Range Complex and one occurred in the lower Chesapeake Bay. One of the whales in 2012 had features suggesting it was most likely a humpback whale. Note that while the Navy is generally unable to identify the species of whale is it unlikely the unidentified whales were NARW as the strikes occurred in areas where, or times of year when, NARW are not known to be present. In order to account for the accidental nature of vessel strikes to large whales in general, and the potential risk from any vessel movement within the AFTT Study Area within the seven-year period, the Navy requested incidental takes based on probabilities derived from a Poisson distribution using ship strike data between 2009 and 2018 in the AFTT Study Area (the time period from when current mitigation measures were instituted until the Navy conducted the analysis for the 2019 Navy application, with no new ship strikes occurring since this analysis), as well as historical at-sea days in the AFTT Study Area from 2009–2018 and estimated potential at-sea days for the period from 2018 to 2025 covered by the requested regulations. This distribution predicted the probabilities of a specific number of strikes ($n=0, 1, 2$, etc.) over the period

from 2018 to 2025. The analysis is described in detail in Chapter 6 of the Navy's 2017 and 2019 applications (and further refined in the Navy's revised ship strike analysis posted on NMFS' website <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities>).

For the same reasons listed above describing why a Navy vessel strike is comparatively unlikely, it is highly unlikely that a Navy vessel would strike a whale, dolphin, porpoise, or pinniped without detecting it and, accordingly, NMFS is confident that the Navy's reported strikes are accurate and appropriate for use in the analysis. Specifically, Navy ships have multiple Lookouts, including on the forward part of the ship that can visually detect a hit animal, in the unlikely event ship personnel do not feel the strike (which has occasionally occurred). Navy's strict internal procedures and mitigation requirements include reporting of any vessel strikes of marine mammals, and the Navy's discipline, extensive training (not only for detecting marine mammals, but for detecting and reporting any potential navigational obstruction), and strict chain of command give NMFS a high level of confidence that all strikes actually get reported.

The Navy used the three whale strikes since 2009 in their calculations to determine the number of strikes likely to result from their activities (although worldwide strike information, from all Navy activities and other strikes, was used to inform the species that may be struck). The Navy evaluated data beginning in 2009, as that was the start of the Navy's Marine Species Awareness Training and adoption of additional mitigation measures to address ship strike, which will remain in place along with additional mitigation measures during the seven years of this rule.

The updated probability analysis in the 2019 Navy application concluded that there was a 12 percent chance that zero whales would be struck by Navy vessels over the next seven years in the AFTT Study Area, indicating an 88 percent chance that at least one whale would be struck over the next seven years. The analysis also concludes that there is a 10 percent chance of striking four whales over the seven-year period. Based on the revised analysis, the Navy requests coverage for one additional large whale mortality not previously included in the 2018 AFTT final rule bringing the total from three vessel strikes over five years to four vessel strikes over seven years. NMFS agrees that there is some probability that the

Navy could strike, and take by serious injury or mortality, up to four large whales incidental to training and testing activities within the AFTT Study Area over the course of the seven years covered by this proposed rule.

Small delphinids, porpoises, and pinnipeds are not expected to be struck by Navy vessels. In addition to the reasons listed above that make it unlikely that the Navy will hit a large whale (more maneuverable ships, larger crew, etc.), the following are additional reasons that vessel strike of dolphins, small whales, porpoises, and pinnipeds is very unlikely. Dating back more than 20 years and for as long as it has kept records, the Navy has no records of individuals of these groups being struck by a vessel as a result of Navy activities and, further, their smaller size and maneuverability make a strike unlikely. Also, NMFS has never received any reports from other authorized activities indicating that these species have been struck by vessels. Worldwide ship strike records show little evidence of strikes of these groups from the shipping sector and larger vessels, and the majority of the Navy's activities involving faster-moving vessels (that could be considered more likely to hit a marine mammal) are located in offshore areas where smaller delphinid, porpoise, and pinniped densities are lower. Based on this information, NMFS concurs with the Navy's assessment and recognizes the potential for incidental take by vessel strike of large whales only (*i.e.*, no dolphins, small whales, porpoises, or pinnipeds) over the course of the seven-year period analyzed here from training and testing activities.

Taking into account the available information regarding how many of any given stock could be struck and therefore should be proposed for authorization for take NMFS considered two factors in addition to those considered in the Navy's request: (1) The relative likelihood of hitting one stock versus another based on available strike data from all vessel types as denoted in the SARs and (2) whether the Navy has ever definitively struck an individual from a particular stock and, if so, how many times. To address number (1) above, NMFS compiled information from NMFS' SARs on detected annual rates of large whale serious injury and mortality from vessel collisions (Table 13). The annual rates of large whale serious injury and mortality from vessel collisions from the SARs help inform the relative susceptibility of large whale species to vessel strike in the Atlantic Ocean and the Gulf of Mexico. We summed the annual rates of mortality and serious

injury from vessel collisions as reported in the SARs, then divided each species' annual rate by this sum to get the relative likelihood. To estimate the percent likelihood of striking a particular species of large whale, we multiplied the relative likelihood of striking each species by the total probability of striking a whale (*i.e.*, 88 percent, as described by the Navy's probability analysis). We also calculated the percent likelihood of striking a particular species of large whale twice by squaring the value estimated for the probability of striking a particular species of whale once (*i.e.*, to calculate the probability of an event occurring

twice, multiply the probability of the first event by the second). We note that these probabilities vary from year to year as the average annual mortality for a given five-year window changes (and we include the annual averages from 2017 and 2018 draft SARs in Table 13 to illustrate); however, over the years and through changing SARs, stocks tend to consistently maintain a relatively higher or relatively lower likelihood of being struck. The analysis indicates that there is a very low percent chance of striking any particular species or stock more than once except for humpback whales, as shown in Table 13. The probabilities calculated as described

above are then considered in combination with the information indicating the species that the Navy has definitively hit in the AFTT Study Area since 1995 (since they started tracking consistently). Accordingly, stocks that have no record of ever having been struck by any vessel are considered unlikely to be struck by the Navy in the seven-year period of the rule. Stocks that have never been struck by the Navy, have rarely been struck by other vessels, and have a low percent likelihood based on the SAR calculation and a low relative abundance are also considered unlikely to be struck by the Navy during the seven-year rule.

TABLE 13—ANNUAL RATES OF MORTALITY AND SERIOUS INJURY (M/SI) FROM VESSEL COLLISIONS COMPILED FROM NMFS DRAFT 2018 STOCK ASSESSMENT REPORTS (SARs) AND ESTIMATED PERCENT CHANCE OF STRIKING EACH LARGE WHALE SPECIES IN THE AFTT STUDY AREA OVER A SEVEN-YEAR PERIOD

| Species (stock) ¹ | Annual rate of M/SI from vessel collision (2017 SARs) | Annual rate of M/SI from vessel collision (2018 draft SARs) | Percent chance of ONE strike | Percent chance of TWO strikes | Annual proposed take | Potential take proposed over 7 years |
|---|---|---|------------------------------|-------------------------------|----------------------|--------------------------------------|
| Fin whale (Western North Atlantic) | 1.6 | 1.4 | 19.51 | 3.81 | 0.14 | 1 |
| Sei whale (Nova Scotia) | 0.8 | 0.8 | 11.15 | 1.24 | 0.14 | 1 |
| Minke whale (Canadian East Coast) | 1.4 | 1 | 13.94 | 1.94 | 0.14 | 1 |
| Humpback whale (Gulf of Maine) | 1.8 | 2.7 | 37.63 | 14.16 | 0.29 | 2 |
| Sperm (North Atlantic) | 0.2 | 0.2 | 2.79 | 0.08 | 0.14 | ² 1 |
| Bryde's whale (Northern Gulf of Mexico) | 0.2 | 0.2 | 2.79 | 0.08 | 0 | ³ 0 |
| Sperm (Gulf of Mexico) | 0 | 0 | 0.00 | 0.00 | 0 | 0 |
| Blue whale (Western North Atlantic) | 0 | 0 | 0.00 | 0.00 | 0 | 0 |

¹ North Atlantic right whales are not included in this analysis as NARWs are not anticipated to be struck due to the additional extensive mitigation the Navy implements to minimize the risk of striking this particular species. In addition, the Navy has not struck this species since prior to 2009 when the Navy's current vessel movement mitigation, reporting, and monitoring requirements have been in place.

² The analysis indicates only a very small likelihood (less than 3 percent) that a North Atlantic sperm whale would be struck over the seven years, however, the Navy has struck a sperm whale previously in the Atlantic, which may indicate a higher possibility that it could occur and suggests that authorizing one mortality over the seven years would be appropriate.

³ Due to their low population abundance within the Study Area and lack of previous vessel strikes by the Navy, along with the Navy's enhanced mitigation measures in the Bryde's Whale Mitigation Area, Bryde's whales are not anticipated to be struck therefore and have zero mortality/serious injury takes.

For the reasons discussed in detail in the 2018 AFTT final rule and discussed further below, due to enhanced mitigation measures, NARWs are not anticipated to be struck by Navy vessels and are anticipated to have zero mortality/serious injury takes over the seven years of the rule. In addition, based on the quantitative method described above, blue whales and Gulf of Mexico sperm whales have a zero percent chance of being struck. After considering this result, along with additional factors discussed below, the Navy found that any vessel strike of these two stocks is highly unlikely. After fully considering all relevant information, NMFS agreed with this conclusion. Finally, the quantitative analysis outlined above indicates only a very small likelihood the Navy would strike a Bryde's whale (3 percent). Due to their low population abundance and lack of previous vessel strikes by the

Navy, Bryde's whales are also unlikely to be struck and we have proposed to authorize zero mortality/serious injury takes. Alternately, the quantitative analysis discussed above also indicates only a very small likelihood that the Navy would strike a North Atlantic sperm whale over the seven years covered by the 2019 Navy application (less than 3 percent), however, the Navy has struck a sperm whale previously in the Atlantic (2005), which points to a higher possibility that it could occur and suggests that authorizing a single mortality/serious injury would be appropriate. Additional discussion relevant to our determinations for North Atlantic blue whales, Gulf of Mexico sperm whale, NARW, and Bryde's whale is included below.

In addition to the zero probability predicted by the quantitative model, there are no recent confirmed records of vessel collision to blue whales in the

U.S. waters, although there is one older historical record pointing to a ship strike that likely occurred beyond the U.S. Atlantic EEZ (outside of where most Navy activities occur, so less relevant) and one 1998 record of a dead 20 m (66 ft) male blue whale brought into Rhode Island waters on the bow of a tanker. The cause of death was determined to be ship strike; however, some of the injuries were difficult to explain from the necropsy. As noted previously, the Navy has been conducting Marine Species Awareness Training and implementing additional mitigation measures to protect against vessel strikes since 2009. Therefore, given the absence of any strikes in the recent past since the Navy has implemented its current mitigation measures, the very low abundance of North Atlantic blue whales throughout the AFTT Study Area ($N_{min} = 440$ for the Western North Atlantic stock,

Waring *et al.*, 2010), and the very low number of blue whales ever known to be struck in the area by any type of vessel (and none struck by Navy vessels), we believe the likelihood of the Navy hitting a blue whale is discountable.

In addition to the zero probability of hitting a sperm whale in the Gulf of Mexico predicted by the quantitative model, there have been no vessel strikes of sperm whales by any entity since 2009 in the Gulf of Mexico per the SAR (2009–2013) and no Navy strikes of any large whales since 1995 (based on our records, which include Navy's records) in the Gulf of Mexico. Further, the Navy has comparatively fewer steaming days in the Gulf of Mexico and there is a fairly low abundance of sperm whales occurring there. As noted previously, the Navy has been conducting Marine Species Awareness Training and implementing additional mitigation measures to protect against vessel strikes since 2009. Therefore, NMFS believes that the likelihood of the Navy hitting a Gulf of Mexico sperm whale is discountable.

Although the quantitative analysis would indicate that NARWs do have a low probability of being struck one time within the seven-year period when vessel strikes across all activity types (including non-Navy) are considered (annual mortality and serious injury, hereafter abbreviated as M/SI) from vessel strikes is calculated as 0.41 in the 2018 SAR), when the enhanced mitigation measures (discussed below) that the Navy has been implementing and would continue to implement for NARWs are considered in combination with this low probability, a vessel strike is highly unlikely. Therefore, lethal take of NARWs was not requested by the Navy and is not proposed to be authorized by NMFS. We further note that while there have been two strikes of unidentified whales by the Navy since 2009, it is unlikely they were NARW as the strikes occurred in areas where, or times of year when, NARW are not known to be present.

Regarding the Bryde's whale, due to the fact that the Navy has not struck a Bryde's whale (as no Navy strikes have occurred in the Gulf of Mexico), the very low abundance numbers ($N_{best} = 33$ individuals, Hayes *et al.*, 2018), and the limited Navy ship traffic that overlaps with Bryde's whale habitat, neither the Navy nor NMFS anticipate any vessel-strike takes, and none were requested or are proposed for authorization. The Navy is now also limiting activities (*i.e.*, 200 hr cap on hull-mounted MFAS) and will not use explosives (except during mine warfare activities) in the Bryde's Whale

Mitigation Area. For a complete discussion and analysis of these mitigation areas, see the *Mitigation Measures* section in the 2018 AFTT final rule along with a summary in the *Mitigation Measures* section of this proposed rule; see also Chapter 5 (Mitigation) of the 2018 AFTT FEIS/OEIS.

In addition to procedural mitigation, the Navy would continue to implement measures in mitigation areas used by NARW for foraging, calving, and migration. For a complete discussion and analysis of these mitigation areas, see the *Mitigation Measures* section in the 2018 AFTT final rule along with a summary in the *Mitigation Measures* section of this proposed rule; see also Chapter 5 (Mitigation) of the 2018 AFTT FEIS/OEIS. These measures, which go above and beyond those focused on other species (*e.g.*, funding of and communication with sightings systems, implementation of speed reductions during applicable circumstances in certain areas) have succeeded in the Navy avoiding strike of a NARW during training and testing activities in the past and essentially eliminate the potential for vessel strikes to occur during the seven-year period of this rule. In particular, the mitigation pertaining to vessels, including the continued participation in and sponsoring of the Early Warning System, would help Navy vessels avoid NARW during transits and training and testing activities. The Early Warning System is a comprehensive information exchange network dedicated to reducing the risk of vessel strikes to NARW off the southeast United States from all mariners (*i.e.*, Navy and non-Navy vessels). Navy participants include the Fleet Area Control and Surveillance Facility, Jacksonville; Commander, Naval Submarine Forces, Norfolk, Virginia; and Naval Submarine Support Command. The Navy, U.S. Coast Guard, U.S. Army Corps of Engineers, and NMFS collaboratively sponsor daily aerial surveys from December 1 through March 31 (weather permitting) to observe for NARW from the shoreline out to approximately 30–35 nmi offshore. Aerial surveyors relay sightings information to all mariners transiting within the NARW calving habitat (*e.g.*, commercial vessels, recreational boaters, and Navy ships).

In the Northeast NARW Mitigation Area, before all vessel transits, the Navy conducts a web query or email inquiry of NOAA's NARW Sighting Advisory System to obtain the latest NARW sightings information. Navy vessels currently use and would continue to use the obtained sightings information to

reduce potential interactions with NARW during transits and prevent ship strikes. In this mitigation area, vessels would continue to implement speed reductions after they observe a NARW; if they are within 5 nmi of the location of a sighting reported to the NARW Sighting Advisory System within the past week; and when operating at night or during periods of reduced visibility. During transits and normal firing involving non-explosive torpedos activities, the Navy ships would continue to maintain a speed of no more than 10 kn. During submarine target firing, ships would maintain speeds of no more than 18 kn. During vessel target firing, vessel speeds would exceed 18 kn for only brief periods of time (*e.g.*, 10–15 min).

In the Southeast NARW Mitigation Area, before transiting or conducting training or testing activities within the mitigation area, the Navy would continue to initiate communication with the Fleet Area Control and Surveillance Facility, Jacksonville to obtain Early Warning System NARW whale sightings data. The Fleet Area Control and Surveillance Facility, Jacksonville would continue to advise vessels of all reported whale sightings in the vicinity to help vessels and aircraft reduce potential interactions with NARWs and prevent ship strikes. Commander Submarine Force U.S. Atlantic Fleet would coordinate any submarine activities that may require approval from the Fleet Area Control and Surveillance Facility, Jacksonville. Vessels would continue to use the sightings information to reduce potential interactions with NARW during transits and prevent ship strikes. Vessels would also implement speed reductions after they observe a NARW, if they are within 5 nmi of a sighting reported within the past 12 hours (hrs), or when operating in the mitigation area at night or during periods of poor visibility. To the maximum extent practicable, vessels would continue to minimize north-south transits in the mitigation area. Finally, the Navy would continue to broadcast awareness notification messages with NARW Dynamic Management Area information (*e.g.*, location and dates) to applicable Navy vessels operating in the vicinity of the Dynamic Management Area. The information would continue to alert assets to the possible presence of a NARW to maintain safety of navigation and further reduce the potential for a vessel strike. Navy platforms would use the information to assist their visual observation of applicable mitigation zones during training and testing

activities and to aid in the implementation of procedural mitigation, including but not limited to, mitigation for vessel movement.

Implementation of these measures is expected to significantly reduce the possibility of striking NARWs during the seven-year period of the rule. Ship strikes are a fluke encounter for which the probability will never be zero for any vessel. The probability for any particular ship to strike a marine mammal is primarily a product of the ability of the ship to detect a marine mammal and the ability to effectively act to avoid it. Navy combat ships are inherently among the best at both of these because compared to large commercial vessels, they have trained Lookouts which have received specialized Marine Mammal Observer (MMO) training, and they are the most maneuverable ships, which means that they are more likely to sight a marine mammal and more likely to be able to maneuver to avoid it in the available time—both of which decrease the probability of striking a marine mammal below what it would have been in the absence of those abilities. In the case of the NARW, the extensive communication/detection network described above, which is in use in the areas of highest NARW occurrence and where they may be more susceptible to strike, further increases the likelihood of detecting a NARW and thereby avoiding it, which further reduces the probability of NARW strike. Further, detection of NARW in some areas/times is associated with reduced speed requirements, which in some cases may reduce the strike probability further by slightly increasing the time within which an operator has to maneuver away from a whale. Because of these additional mitigation measures combined with the already low probability that a NARW will be struck, it is extremely unlikely the Navy would strike a NARW, and mortality/serious injury of a NARW from vessel strike is neither anticipated nor proposed to be authorized.

In conclusion, although it is generally unlikely that any whales will be struck in a year, based on the information and analysis above, NMFS anticipates that no more than four whales have the potential to be taken by serious injury or mortality over the seven-year period of the rule. Of those four whales over the seven years, no more than two would be humpback whales (Gulf of Maine stock) and no more than one would come from any of the four following stocks: Fin whale (Western North Atlantic stock), minke (Canadian East Coast stock), sperm whale (North Atlantic stock), and sei whale (Nova

Scotia stock). Accordingly in the *Preliminary Analysis and Negligible Impact Determination* section, NMFS has evaluated under the negligible impact standard the serious injury or mortality of 0.14 whales annually from each of these species or stocks (*i.e.*, 1 take over the 7 years divided by 7 to get the annual number), except for the humpback whale (North Atlantic stock) for which we used 0.29 (*i.e.*, 2 takes over the 7 years divided by 7 to get the annual number) along with other expected harassment incidental take.

Proposed Mitigation Measures

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, and on the availability of such species or stock for subsistence uses (“least practicable adverse impact”). NMFS does not have a regulatory definition for least practicable adverse impact. The 2004 NDAA amended the MMPA as it relates to military readiness activities and the incidental take authorization process such that a determination of “least practicable adverse impact” shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the “military readiness activity.” For the full discussion of how NMFS interprets least practicable adverse impact, including how it relates to the negligible-impact standard, see the *Mitigation Measures* section in the 2018 AFTT final rule.

Section 101(a)(5)(A)(i)(II) requires NMFS to issue, in conjunction with its authorization, binding—and enforceable—restrictions (in the form of regulations) setting forth how the activity must be conducted, thus ensuring the activity has the “least practicable adverse impact” on the affected species or stocks. In situations where mitigation is specifically needed to reach a negligible impact determination, section 101(a)(5)(A)(i)(II) also provides a mechanism for ensuring compliance with the “negligible impact” requirement. Finally, we reiterate that the least practicable adverse impact standard also requires consideration of measures for marine mammal habitat, with particular attention to rookeries, mating grounds, and other areas of similar significance, and for subsistence impacts, whereas the negligible impact standard is concerned solely with conclusions

about the impact of an activity on annual rates of recruitment and survival.¹ In evaluating what mitigation measures are appropriate, NMFS considers the potential impacts of the Specified Activities, the availability of measures to minimize those potential impacts, and the practicability of implementing those measures, as we describe below.

Implementation of Least Practicable Adverse Impact Standard

Our evaluation of potential mitigation measures includes consideration of two primary factors:

(1) The manner in which, and the degree to which, implementation of the potential measure(s) is expected to reduce adverse impacts to marine mammal species or stocks, their habitat, and their availability for subsistence uses (where relevant). This analysis considers such things as the nature of the potential adverse impact (such as likelihood, scope, and range), the likelihood that the measure will be effective if implemented, and the likelihood of successful implementation; and

(2) The practicability of the measures for applicant implementation. Practicability of implementation may consider such things as cost, impact on activities, and, in the case of a military readiness activity, specifically considers personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. 16 U.S.C. 1371(a)(5)(A)(iii).

While the language of the least practicable adverse impact standard calls for minimizing impacts to affected species or stocks, we recognize that the reduction of impacts to those species or stocks accrues through the application of mitigation measures that limit impacts to individual animals. Accordingly, NMFS’ analysis focuses on measures that are designed to avoid or minimize impacts on individual marine mammals that are likely to increase the probability or severity of population-level effects.

While direct evidence of impacts to species or stocks from a specified activity is rarely available, and additional study is still needed to understand how specific disturbance events affect the fitness of individuals of certain species, there have been improvements in understanding the process by which disturbance effects are translated to the population. With

¹ Outside of the military readiness context, mitigation may also be appropriate to ensure compliance with the “small numbers” language in MMPA sections 101(a)(5)(A) and (D).

recent scientific advancements (both marine mammal energetic research and the development of energetic frameworks), the relative likelihood or degree of impacts on species or stocks may often be inferred given a detailed understanding of the activity, the environment, and the affected species or stocks—and the best available science has been used here. This same information is used in the development of mitigation measures and helps us understand how mitigation measures contribute to lessening effects (or the risk thereof) to species or stocks. We also acknowledge that there is always the potential that new information, or a new recommendation could become available in the future and necessitate reevaluation of mitigation measures (which may be addressed through adaptive management) to see if further reductions of population impacts are possible and practicable.

In the evaluation of specific measures, the details of the specified activity will necessarily inform each of the two primary factors discussed above (expected reduction of impacts and practicability), and are carefully considered to determine the types of mitigation that are appropriate under the least practicable adverse impact standard. Analysis of how a potential mitigation measure may reduce adverse impacts on a marine mammal stock or species, consideration of personnel safety, practicality of implementation, and consideration of the impact on effectiveness of military readiness activities are not issues that can be meaningfully evaluated through a yes/no lens. The manner in which, and the degree to which, implementation of a measure is expected to reduce impacts, as well as its practicability in terms of these considerations, can vary widely. For example, a time/area restriction could be of very high value for decreasing population-level impacts (e.g., avoiding disturbance of feeding females in an area of established biological importance) or it could be of lower value (e.g., decreased disturbance in an area of high productivity but of less firmly established biological importance). Regarding practicability, a measure might involve restrictions in an

area or time that impede the Navy's ability to certify a strike group (higher impact on mission effectiveness), or it could mean delaying a small in-port training event by 30 minutes to avoid exposure of a marine mammal to injurious levels of sound (lower impact). A responsible evaluation of "least practicable adverse impact" will consider the factors along these realistic scales. Accordingly, the greater the likelihood that a measure will contribute to reducing the probability or severity of adverse impacts to the species or stock or their habitat, the greater the weight that measure is given when considered in combination with practicability to determine the appropriateness of the mitigation measure, and vice versa. In the evaluation of specific measures, the details of the specified activity will necessarily inform each of the two primary factors discussed above (expected reduction of impacts and practicability), and will be carefully considered to determine the types of mitigation that are appropriate under the least practicable adverse impact standard. For more detail on how we apply these factors, see the discussion in the *Mitigation Measures* section of the 2018 AFTT final rule.

NMFS fully reviewed the Navy's specified activities and the mitigation measures for the 2018 AFTT rulemaking and determined that the mitigation measures would result in the least practicable adverse impact on marine mammals. There is no change in either the activities or the mitigation measures for this rule. See the 2019 Navy application and the 2018 AFTT final rule for detailed information on the Navy's mitigation measures. NMFS worked with the Navy in the development of the Navy's initially proposed measures, which were informed by years of implementation and monitoring. A complete discussion of the Navy's evaluation process used to develop, assess, and select mitigation measures, which was informed by input from NMFS, can be found in Chapter 5 (Mitigation) of the 2018 AFTT FEIS/OEIS. The process described in Chapter 5 (Mitigation) of the 2018 AFTT FEIS/OEIS robustly supported NMFS'

independent evaluation of whether the mitigation measures would meet the least practicable adverse impact standard. The Navy has implemented the mitigation measures under the 2018 AFTT regulations and would be required to continue implementation of the mitigation measures identified in this rule for the full seven years it covers to avoid or reduce potential impacts from acoustic, explosive, and physical disturbance and ship strike stressors.

In its 2019 application, the Navy proposes no changes to the mitigation measures in the 2018 AFTT final rule and there is no new information that affects NMFS' assessment of the applicability or effectiveness of those measures over the new seven-year period. See the 2018 AFTT proposed rule and the 2018 AFTT final rule for our full assessment of these measures. In summary, the Navy has agreed to procedural mitigation measures that will reduce the probability and/or severity of impacts expected to result from acute exposure to acoustic sources or explosives, ship strike, and impacts to marine mammal habitat. Specifically, the Navy will use a combination of delayed starts, powerdowns, and shutdowns to minimize or avoid serious injury or mortality, minimize the likelihood or severity of PTS or other injury, and reduce instances of TTS or more severe behavioral disruption caused by acoustic sources or explosives. The Navy also will implement multiple time/area restrictions (several of which were added in the 2018 AFTT final rule since the previous AFTT MMPA incidental take rule) that would reduce take of marine mammals in areas or at times where they are known to engage in important behaviors, such as feeding or calving, where the disruption of those behaviors would have a higher probability of resulting in impacts on reproduction or survival of individuals that could lead to population-level impacts. Summaries of the Navy's procedural mitigation measures and mitigation areas for the AFTT Study Area are provided in Tables 14 and 15.

TABLE 14—SUMMARY OF PROCEDURAL MITIGATION

| Stressor or activity | Mitigation zones sizes and other requirements |
|---|--|
| Environmental Awareness and Education | ○ Afloat Environmental Compliance Training program for applicable personnel. |
| Active Sonar | Depending on sonar source: |
| | ○ 1,000 yd. power down, 500 yd. power down, and 200 yd. shut down. |
| | ○ 200 yd. shut down. |
| | ○ 150 yd. |
| Air Guns | ○ 100 yd. |
| Pile Driving | ○ 30° on either side of the firing line out to 70 yd. |
| Weapons Firing Noise | |

TABLE 14—SUMMARY OF PROCEDURAL MITIGATION—Continued

| Stressor or activity | Mitigation zones sizes and other requirements |
|--|---|
| Explosive Sonobuoys | ○ 600 yd. |
| Explosive Torpedoes | ○ 2,100 yd. |
| Explosive Medium-Caliber and Large-Caliber Projectiles.. | ○ 1,000 yd. (large-caliber projectiles). |
| | ○ 600 yd. (medium-caliber projectiles during surface-to-surface activities). |
| | ○ 200 yd. (medium-caliber projectiles during air-to-surface activities). |
| Explosive Missiles and Rockets | ○ 2,000 yd. (21–500 lb. net explosive weight). |
| | ○ 900 yd. (0.6–20 lb. net explosive weight). |
| Explosive Bombs | ○ 2,500 yd. |
| Sinking Exercises | ○ 2.5 NM. |
| Explosive Mine Countermeasure and Neutralization Activities. | ○ 2,100 yd. (6–650 lb. net explosive weight). |
| Explosive Mine Neutralization Activities Involving Navy Divers. | ○ 600 yd. (0.1–5 lb. net explosive weight). |
| | ○ 1,000 yd. (21–60 lb. net explosive weight for positive control charges and charges using time-delay fuses). |
| | ○ 500 yd. (0.1–20 lb. net explosive weight for positive control charges). |
| Maritime Security Operations—Anti-Swimmer Grenades. | ○ 200 yd. |
| Line Charge Testing | ○ 900 yd. |
| Ship Shock Trials | ○ 3.5 NM. |
| Vessel Movement | ○ 500 yd. (whales). |
| | ○ 200 yd. (other marine mammals). |
| | ○ North Atlantic right whale Dynamic Management Area notification messages. |
| Towed In-Water Devices | ○ 250 yd. |
| Small-, Medium-, and Large-Caliber Non-Explosive Practice Munitions. | ○ 200 yd. |
| Non-Explosive Missiles and Rockets | ○ 900 yd. |
| Non-Explosive Bombs and Mine Shapes | ○ 1,000 yd. |

Notes: lb: pounds; nmi: nautical miles; yd: yards.

TABLE 15—SUMMARY OF MITIGATION AREAS FOR MARINE MAMMALS

Summary of mitigation area requirements

Northeast North Atlantic Right Whale Mitigation Area:

- The Navy will report the total hours and counts of active sonar and in-water explosives used in the mitigation area in its annual training and testing activity reports.
- The Navy will minimize use of active sonar to the maximum extent practicable and will not use explosives that detonate in the water.
- The Navy will conduct non-explosive torpedo testing during daylight hours in Beaufort sea state 3 or less using three Lookouts (one on a vessel, two in an aircraft during aerial surveys) and an additional Lookout on the submarine when surfaced; during transits, ships will maintain a speed of no more than 10 knots; during firing, ships will maintain a speed of no more than 18 knots except brief periods of time during vessel target firing.
- Vessels will obtain the latest North Atlantic right whale sightings data and implement speed reductions after they observe a North Atlantic right whale, if within 5 NM of a sighting reported within the past week, and when operating at night or during periods of reduced visibility.

Gulf of Maine Planning Awareness Mitigation Area:

- The Navy will report the total hours and counts of active sonar and in-water explosives used in the mitigation area in its annual training and testing activity reports.
- The Navy will not conduct major training exercises and will not conduct >200 hours of hull-mounted mid-frequency active sonar per year.

Northeast Planning Awareness Mitigation Areas and Mid-Atlantic Planning Awareness Mitigation Areas:

- Navy will avoid conducting major training exercises to the maximum extent practicable.
- The Navy will not conduct more than four major training exercises per year.

Southeast North Atlantic Right Whale Mitigation Area (November 15–April 15):

- The Navy will report the total hours and counts of active sonar and in-water explosives used in the mitigation area in its annual training and testing activity reports.
- The Navy will not use active sonar except as necessary for navigation training, object detection training, and dipping sonar.
- The Navy will not expend explosive or non-explosive ordnance.
- Vessels will obtain the latest North Atlantic right whale sightings data; will implement speed reductions after they observe a North Atlantic right whale, if within 5 NM of a sighting reported within the past 12 hours, and when operating at night or during periods of reduced visibility; and will minimize north-south transits to the maximum extent practicable.

Jacksonville Operating Area (November 15–April 15):

- Navy units conducting training or testing activities in the Jacksonville Operating Area will obtain and use Early Warning System North Atlantic right whale sightings data as they plan specific details of events to minimize potential interactions with North Atlantic right whales to the maximum extent practicable. The Navy will use the reported sightings information to assist visual observations of applicable mitigation zones and to aid in the implementation of procedural mitigation.

Southeast North Atlantic Right Whale Critical Habitat Special Reporting Area (November 15–April 15):

- The Navy will report the total hours and counts of active sonar and in-water explosives used in the mitigation area in its annual training and testing activity reports.

Navy Cherry Point Range Complex Nearshore Mitigation Area (March–September):

- The Navy will not conduct explosive mine neutralization activities involving Navy divers in the mitigation area.
- To the maximum extent practicable, the Navy will not use explosive sonobuoys, explosive torpedoes, explosive medium-caliber and large-caliber projectiles, explosive missiles and rockets, explosive bombs, explosive mines during mine countermeasure and neutralization activities, and anti-swimmer grenades in the mitigation area.

Bryde's Whale Mitigation Area:

TABLE 15—SUMMARY OF MITIGATION AREAS FOR MARINE MAMMALS—Continued

Summary of mitigation area requirements

- The Navy will report the total hours and counts of active sonar and in-water explosives used in the mitigation area in its annual training and testing activity reports.
- The Navy will not conduct >200 hours of hull-mounted mid-frequency active sonar per year and will not use explosives (except during explosive mine warfare activities).

Gulf of Mexico Planning Awareness Mitigation Areas

Notes: min.: minutes; nmi: nautical miles.

Mitigation Conclusions

NMFS has carefully evaluated the Navy's proposed mitigation measures—many of which were developed with NMFS' input during the previous phases of Navy training and testing authorizations and none of which have changed since our evaluation during the 2018 AFTT rulemaking—and considered a broad range of other measures (*i.e.*, the measures considered but eliminated in the Navy's 2018 FEIS/OEIS, which reflect many of the comments that have arisen via NMFS or public input in past years) 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 mitigation measures is expected to reduce the likelihood and/or magnitude of adverse impacts to marine mammal species and stocks and their habitat; the proven or likely efficacy of the measures; and the practicability of the measures for applicant implementation, including consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. There is no new information that affects our analysis from the 2018 AFTT rulemaking, all of which remains applicable and valid for our assessment of the appropriateness of the mitigation measures during the seven-year period of this rule.

Based on our evaluation of the Navy's proposed measures (which are being implemented under the 2018 AFTT regulations), as well as other measures considered by the Navy and NMFS, NMFS has preliminarily determined that the Navy's proposed mitigation measures (which are identical to those in the 2018 AFTT final rule) are appropriate 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, and considering specifically personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. Additionally, as described in more detail below, the 2018 AFTT final rule includes an adaptive management provision, which the Navy proposes to extend, which ensures that mitigation is regularly assessed and provides a mechanism to improve the mitigation, based on the factors above, through modification as appropriate.

The proposed rule comment period provides the public an opportunity to submit recommendations, views, and/or concerns regarding the Navy's activities and the proposed mitigation measures. While NMFS has preliminarily determined that the Navy's proposed mitigation measures would effect the least practicable adverse impact on the affected species or stocks and their habitat, NMFS will consider all public comments to help inform our final decision. Consequently, the proposed mitigation measures may be refined, modified, removed, or added to prior to the issuance of the final rule based on public comments received, and where appropriate, further analysis of any additional mitigation measures.

Proposed Monitoring

Section 101(a)(5)(A) of the MMPA states that in order to authorize incidental take 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 incidental take authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present.

In its 2019 application, the Navy proposes no changes to the monitoring described in the 2018 AFTT final rule. They would continue implementation of the robust Integrated Comprehensive

Monitoring Program and Strategic Planning Process described in the 2018 AFTT final rule. The Navy's monitoring strategy, currently required by the 2018 AFTT regulations, is well-designed to work across Navy ranges to help better understand the impacts of the Navy's activities on marine mammals and their habitat by focusing on learning more about marine mammal occurrence in different areas and exposure to Navy stressors, marine mammal responses to different sound sources, and the consequences of those exposures and responses on marine mammal populations. Similarly, the proposed seven-year regulations would include identical adaptive management provisions and reporting requirements as the 2018 AFTT regulations. There is no new information that would indicate that the monitoring measures put in place under the 2018 AFTT final rule would not remain applicable and appropriate for the seven-year period of this proposed rule. See the *Monitoring* section of the 2018 AFTT final rule for more details on the monitoring that would be required under this rule. In addition, please see the 2019 Navy application, which references Chapter 13 of the 2017 Navy application for full details on the monitoring and reporting proposed by the Navy.

Adaptive Management

The 2018 AFTT regulations governing the take of marine mammals incidental to Navy training and testing activities in the AFTT Study Area contain an adaptive management component. Our understanding of the effects of Navy training and testing activities (*e.g.*, acoustic and explosive stressors) on marine mammals continues to evolve, which makes the inclusion of an adaptive management component both valuable and necessary within the context of seven-year regulations. The 2019 Navy application proposes no changes to the adaptive management component included in the 2018 AFTT final rule.

The reporting requirements associated with this rule are designed to provide NMFS with monitoring data from the previous year to allow NMFS to

consider whether any changes to existing mitigation and monitoring requirements 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 more effectively accomplishing the goals of the mitigation and monitoring and if the measures are practicable. If the modifications to the mitigation, monitoring, or reporting measures are substantial, NMFS will publish a notice of the planned LOA in the **Federal Register** and solicit public comment.

The following are some of the possible sources of applicable data to be considered through the adaptive management process: (1) Results from monitoring and exercises reports, as required by MMPA authorizations; (2) compiled results of Navy funded research and development 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. The results from monitoring reports and other studies may be viewed at <https://www.navy-marinespeciesmonitoring.us/>.

Reporting

In order to issue incidental take authorization 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. 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.navy-marinespeciesmonitoring.us>. The 2019 Navy application proposes no changes to the reporting requirements identified in the 2018 AFTT final rule. Reporting requirements would remain identical to those described in the 2018 AFTT final rule, and there is no new information that would indicate that the reporting requirements put in place under the 2018 AFTT final rule would not remain applicable and appropriate

for the seven-year period of this proposed rule. See the *Reporting* section of the 2018 AFTT final rule for more details on the reporting that would be required under this rule.

Preliminary Analysis and Negligible Impact Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through mortality, serious injury, and Level A or Level B harassment (as presented in Tables 10–13), NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, other ongoing sources of human-caused mortality, ambient noise levels, and specific consideration of take by Level A harassment or M/SI previously authorized for other NMFS activities).

In the *Estimated Take of Marine Mammals* sections of this proposed rule and the 2018 AFTT final rule (where the activities, species and stocks, potential effects, and mitigation measures are the same as for this rule), we identified the subset of potential effects that would be expected to rise to the level of takes both annually and over the seven-year period covered by this rule, and then identified the number of each of those mortality takes that we believe could occur or the maximum number of harassment takes that are reasonably expected to occur based on the methods described. The impact that any given

take will have is dependent on many case-specific factors that need to be considered in the negligible impact analysis (*e.g.*, the context of behavioral exposures such as duration or intensity of a disturbance, the health of impacted animals, the status of a species that incurs fitness-level impacts to individuals, etc.). For this proposed rule we evaluated the likely impacts of the enumerated maximum number of harassment takes that are proposed for authorization and reasonably expected to occur, in the context of the specific circumstances surrounding these predicted takes. We also assessed M/SI takes that have the potential to occur, as well as considering the traits and statuses of the affected species and stocks. Last, we collectively evaluated this information, as well as other more taxa-specific information and mitigation measure effectiveness, in group-specific assessments that support our negligible impact conclusions for each stock.

The Navy proposes no changes to the nature or level of the specified activities or the boundaries of the AFTT Study Area, and therefore the training and testing activities (*e.g.*, equipment and sources used, exercises conducted) are the same as those analyzed in the 2018 AFTT final rule. In addition, the mitigation, monitoring, and reporting measures are identical to those described and analyzed in the 2018 AFTT final rule. As described above, there is no new information available since the publication of the 2018 AFTT final rule regarding the impacts of the specified activities on marine mammals, the status and distribution of any of the affected marine mammal species or stocks, or the effectiveness of the mitigation and monitoring measures that would change our analyses.

Harassment

As described in the *Estimated Takes of Marine Mammals* section, the annual number of takes proposed for authorization and reasonably expected to occur by Level A harassment and Level B harassment (based on the maximum number of activities per 12-month period) are identical to those presented in Tables 39 through 41 in the *Take Requests* section of the 2018 AFTT final rule. As such the negligible impact analyses and determinations of the effects of the estimated Level A harassment and Level B harassment takes on annual rates of recruitment or survival for each species and stock are identical to that presented in the 2018 AFTT final rule. The only difference is that the annual levels of take and the associated effects on reproduction or survival would occur for the seven-year

period of the proposed rule instead of the five-year period of the 2018 AFTT final rule, which would make no difference in effects on annual rates of recruitment or survival. For detailed discussion of the impacts that affected individuals may experience given the specific characteristics of the specified activities and required mitigation (e.g., from behavioral harassment, masking, and temporary or permanent threshold shift), along with the effects of the expected Level A harassment and Level B harassment take on reproduction and survival, see the applicable subsections in the *Analysis and Negligible Impact Determination* section of the 2018 AFTT final rule (83 FR 57211–57217).

Serious Injury or Mortality

In its 2019 application, the Navy proposes no additional ship shock trials

during the seven-year period of the proposed rule to those covered by the existing 2018 AFTT regulations, so the expected and requested total takes by M/SI due to explosives over seven years are the same as those authorized in the existing 2018 AFTT regulations. There is no new information that affects the methodology or results of the ship-shock analysis presented in the 2018 AFTT final rule. But as these same activities would occur over seven years rather than five years, the estimated annual take is calculated as the number of total takes divided by seven. For each of the dolphin species or stocks listed in Table 16 there would be an annual take of 0.14 dolphins (i.e., for those species or stocks where one take could occur divided by seven years to get the annual number of M/SIs) or 0.86 dolphins in

the case of short-beaked common dolphin (i.e., where six takes could occur divided by seven years to get the annual number of M/SIs). This is a decrease from the annual take of 0.2 dolphins (for the three species where one lethal take could occur) and annual take of 1.2 short-beaked dolphins (where six lethal takes could occur) over the five-year period of the 2018 AFTT regulations, as shown in Table 70 in the 2018 AFTT final rule. As the proposed annual number is less than that analyzed and authorized in the 2018 AFTT final rule and no other relevant information about the status, abundance, or effects of mortality on each species or stock has changed, the analysis of the effects of take from ship shock trials mirrors that presented in the 2018 AFTT final rule.

TABLE 16—SUMMARY INFORMATION RELATED TO AFTT SERIOUS INJURY OR MORTALITY FROM EXPLOSIVE (Ship Shock Trials), 2018–2025]

| Species (stock) | Stock abundance (Nbest) * | Annual estimated take by serious injury or mortality (M/SI) ¹ | Total annual M/SI * ² | Fisheries interactions (Y/N); annual rate of M/SI from fisheries interactions * | PBR * | NEFSC authorized take (annual) | Residual PBR—PBR minus annual M/SI and NEFSC authorized take ³ | Stock trend * ⁴ | UME (Y/N); number and year |
|---|---------------------------|--|----------------------------------|---|-------|--------------------------------|---|----------------------------|----------------------------|
| Atlantic white-sided dolphin (Western N. Atlantic). | 48,819 | 0.14 | 30 | 30 | 304 | 0.6 | 273.4 | ? | N. |
| Pantropical spotted dolphin (Northern GOMEX). | 50,880 | 0.14 | 4.4 | 4.4 | 407 | 0 | 402.6 | ? | Y; 3 in 2010–2014. |
| Short-beaked common dolphin (Western N. Atlantic). | 70,184 | 0.86 | 406 | 406 | 557 | 2 | 149 | ? | N. |
| Spinner dolphin (Northern GOMEX) ... | 11,441 | 0.14 | 0 | 0 | 62 | 0 | 62 | ? | Y; 7 in 2010–2014. |

* Presented in the draft 2018 SARs.

¹ This column represents the annual take by M/SI during ship shock trials and was calculated by the number of mortalities planned for authorization divided by seven years (the length of the rule and LOAs).

² This column represents the total number of incidents of M/SI that could potentially accrue to the specified species or stock. This number comes from the SAR, but deducts the takes accrued from either Navy or NEFSC takes as noted in the SARs to ensure they are not double-counted against PBR. However, for these species, there were no were no takes from either Navy or NEFSC as noted in the SARs to deduct that would be considered double-counting.

³ This value represents the calculated PBR less the average annual estimate of ongoing anthropogenic mortalities (i.e., total annual human-caused M/SI, which is presented in the draft 2018 SARs) and authorized take for NEFSC.

⁴ See relevant SARs for more information regarding stock status and trends.

The other facet of the analysis for which there is a quantitative change from the 2018 AFTT final rule is the number of potential mortalities due to ship strike proposed to be authorized over the seven-year period. First, based on the information and methods discussed in the *Estimated Take of Marine Mammals* section (which are identical to those used in the 2018 AFTT final rule), NMFS has predicted that mortal takes of four large whales over the course of the seven-year rule could occur (as compared to three large whales over five years in the 2018 AFTT final rule). Second, while no more than one whale over the seven years of any species of fin whale, sei whale, minke whale, or sperm whale (North Atlantic stock) would occur (which is the same as in the five-year 2018 AFTT final rule), as described above in the *Estimated Take of Marine Mammals* section, the number of potential mortality takes of humpback whales has

increased from one to two. This means an annual average of 0.29 humpback whales and an annual average of 0.14 whales from each of the other four species or stocks as described in Table 17 (i.e., one, or two, take(s) over seven years divided by seven to get the annual number) are expected to potentially occur and are proposed for authorization. As this annual number is less than that analyzed and authorized in the 2018 AFTT final rule for fin whale, sei whale, minke whale, and sperm whale (North Atlantic stock), which was an annual average of 0.2 whales for the same four species and stocks, and no other relevant information about the status, abundance, or effects of mortality on each species or stock has changed, the analysis of the effects of vessel strike mirrors that presented in the 2018 AFTT final rule. For humpback whales, the annual number for potential mortality takes is slightly higher than in the 2018

AFTT final rule, but the number still falls below the insignificance threshold of 10 percent of residual Potential Biological Removal (PBR), which indicates an insignificant incremental increase in ongoing anthropogenic mortality that alone will not adversely affect annual rates of recruitment or survival. The analysis of the effects of this potential mortality on humpback whales, considered in combination with other estimated harassment takes, on annual rates of recruitment and survival appears in the *Group and Species-Specific Analyses* section for Mysticetes below.

See the *Serious Injury and Mortality* subsection in the *Analysis and Negligible Impact Determination* section of the 2018 AFTT final rule (83 FR 57217–57223) for detailed discussions of the impacts of M/SI, including a description of how the agency uses the PBR metric and other factors to inform our analysis, and an analysis of the

impacts on each species and stock for which mortality is proposed for authorization including the relationship of potential mortality for each species to the insignificance threshold and

residual PBR. Because the annual number of potential mortality takes for humpback whales remains below the insignificance threshold, the discussion for humpback whales (83 FR 57221–

57222) remains fully applicable. For discussion specifically on the role of the calculated PBR in evaluating the effects of M/SI, see both the 2018 AFTT final rule and the 2018 HSTT final rule.

TABLE 17—SUMMARY INFORMATION RELATED TO AFTT SHIP STRIKE, 2018–2025

| Species (stock) | Stock abundance (Nbest) * | Annual estimated take by serious injury or mortality (M/SI) † | Total annual M/SI * 2 | Fisheries interactions (Y/N); annual rate of M/SI from fisheries interactions * | Vessel collisions (Y/N); annual rate of M/SI from vessel collision * | PBR * | NEFSC authorized take (annual) | Residual PBR—PBR minus annual M/SI and NEFSC authorized take 3 | Stock trend * 4 | UME (Y/N); number and year 5 |
|-------------------------------------|---------------------------|---|-----------------------|---|--|-------|--------------------------------|--|-----------------|--|
| Fin whale (Western North Atlantic). | 1,618 | 0.14 | 2.5 | Y; 1.1 | Y; 1.4 | 2.5 | 0 | 0 | ? | N. |
| Sei whale (Nova Scotia) | 357 | 0.14 | 0.8 | N; 0 | † Y; 0.8 | 0.5 | 0 | –0.3 | ? | N. |
| Minke Whale (Canadian East Coast). | 2,591 | 0.14 | 7.5 | Y; 6.5 | † Y; 1 | 14 | 1 | 5.5 | ? | Y; 2 in 2019 as of 4/1/2019 (27 in 2017 and 20 in 2018). |
| Humpback whale (Gulf of Maine). | 896 | 0.29 | 9.8 | Y; 7.1 | Y; 2.7 | 14.6 | 0 | 4.8 | ↗ | Y; 9 in 2019 as of 4/1/2019 (26 in 2016, 34 in 2017 and 25 in 2018). |
| Sperm whale (North Atlantic). | 2,288 | 0.14 | 0.8 | Y; 0.6 | Y; 0.2 | 3.6 | 0 | 2.8 | ? | ? |

* Presented in the draft 2018 SARS.

† Value presented incorrectly in the 2018 AFTT final rule and corrected here.

1 This column represents the annual take by M/SI by vessel collision and was calculated by the number of mortalities planned for authorization divided by seven years (the length of the rule and LOAs).

2 This column represents the total number of incidents of M/SI that could potentially accrue to the specified species or stock. This number comes from the SAR, but deducts the takes accrued from either Navy strikes or NEFSC takes as noted in the SARs to ensure they are not double-counted against PBR. However, for these species, there were no takes from either Navy or NEFSC as noted in the SARs to deduct that would be considered double-counting.

3 This value represents the calculated PBR less the average annual estimate of ongoing anthropogenic mortalities (i.e., total annual human-caused M/SI, which is presented in the draft 2018 SARs) and authorized take for NEFSC.

4 See relevant SARs for more information regarding stock status and trends.

5 This column presents UME information updated since the 2018 AFTT final rule, as discussed in the earlier section *Potential Effects of Specified Activities on Marine Mammals and their Habitat*.

Group and Species-Specific Analyses

In addition to broader analyses of the impacts of the Navy's activities on mysticetes, odontocetes, and pinnipeds, the 2018 AFTT final rule contained detailed analyses of the effects of the Navy's activities in the AFTT Study Area on each affected species and stock. All of that information and analyses remain applicable and valid for our analyses of the effects of the same Navy activities on the same species and stocks for the seven-year period of this proposed rule. See the *Group and Species-Specific Analyses* subsection in the *Analysis and Negligible Impact Determination* section of the 2018 AFTT final rule (83 FR 57223–57247). In addition, no new information has been received since the publication of the 2018 AFTT final rule that significantly changes the analyses on the effects of the Navy's activities on each species and stock presented in the 2018 AFTT final rule.

In the discussions below, the estimated Level B harassment takes represent instances of take, not the number of individuals taken (the much lower and less frequent Level A harassment takes are far more likely to be associated with separate individuals), and in many cases some individuals are expected to be taken more than one time, while in other cases a portion of individuals will not be taken at all. Below, we compare the total take

numbers (including PTS, TTS, and behavioral disruption for stocks to their associated abundance estimates to evaluate the magnitude of impacts across the stock and to individuals. Specifically, when an abundance percentage comparison is below 100, it means that that percentage or less of the individuals in the stock will be affected (i.e., some individuals will not be taken at all), that the average for those taken is one day per year, and that we would not expect any individuals to be taken more than a few times in a year. When it is more than 100 percent, it means there will definitely be some number of repeated takes of individuals. For example, if the percentage is 300, the average would be each individual is taken on three days in a year if all were taken, but it is more likely that some number of individuals will be taken more than three times and some number of individuals fewer or not at all. While it is not possible to know the maximum number of days across which individuals of a stock might be taken, in acknowledgement of the fact that it is more than the average, for the purposes of this analysis, we assume a number approaching twice the average. For example, if the percentage of take compared to the abundance is 800, we estimate that some individuals might be taken as many as 16 times. Those comparisons are included in the sections below. For some stocks these

numbers have been adjusted slightly (with these adjustments being in the single digits) so as to more consistently apply this approach, but these minor changes did not change the analysis or findings.

To assist in understanding what this analysis means, we clarify a few issues related to estimated takes and the analysis here. An individual that incurs a PTS or TTS take may sometimes, for example, also be behaviorally disturbed at the same time. As described in the *Harassment* subsection of the *Negligible Impact Analysis* section of the 2018 AFTT final rule, the degree of PTS, and the degree and duration of TTS, expected to be incurred from the Navy's activities are not expected to impact marine mammals such that their reproduction or survival could be affected. Similarly, data do not suggest that a single instance in which an animal accrues PTS or TTS and is also behaviorally harassed would result in impacts to reproduction or survival. Alternately, we recognize that if an individual is behaviorally harassed repeatedly for a longer duration and on consecutive days, effects could accrue to the point that reproductive success is jeopardized (as discussed below in the stock-specific summaries). Accordingly, in analyzing the number of takes and the likelihood of repeated and sequential takes (which could result in reproductive impacts), we consider the

total takes, not just the behavioral Level B harassment takes, so that individuals potentially exposed to both threshold shift and behavioral disruption are appropriately considered. We note that the same reasoning applies with the potential addition of behavioral disruption (harassment) to tissue damage from explosives, the difference being that we do already consider the likelihood of reproductive impacts whenever tissue damage occurs. Further, the number of Level A harassment takes by either PTS or tissue damage are so low compared to abundance numbers that it is considered highly unlikely that any individual would be taken at those levels more than once.

Having considered all of the information and analyses previously presented in the 2018 AFTT final rule, including the information presented in the *Overview*, the *Deepwater Horizon (DWH) Oil Spill* discussion, and the

Group and Species-Specific Analyses discussions organized by the different groups and species, below we present tables showing instances of total take as a percentage of stock abundance for each group, updated with the new vessel strike and ship shock calculations for some species. We then summarize the information for each species or stock, considering the analysis from the 2018 AFTT final rule and any new analysis. The analyses below in some cases address species collectively if they occupy the same functional hearing group (*i.e.*, low, mid, and high-frequency cetaceans and pinnipeds in water), share similar life history strategies, and/or are known to behaviorally respond similarly to acoustic stressors. Because some of these groups or species share characteristics that inform the impact analysis similarly, it would be duplicative to repeat the same analysis

for each species or stock. In addition, animals belonging to each stock within a species typically have the same hearing capabilities and behaviorally respond in the same manner as animals in other stocks within the species.

Mysticetes

In Table 18 below for mysticetes, we indicate the total annual mortality, Level A and Level B harassment, and a number indicating the instances of total take as a percentage of abundance. Table 18 is unchanged from Table 72 in the 2018 AFTT final rule, except for updated information on mortality, as discussed above. For additional information and analysis supporting the negligible-impact analysis, see the *Mysticetes* discussion in the *Group and Species-Specific Analyses* section of the 2018 AFTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

Table 18. Annual estimated takes by Level B harassment, Level A harassment, and mortality for mysticetes in the AFTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

| Species | Stock | Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance) | | | | | Total takes | | Abundance | | Instances of total take as percentage of abundance | |
|------------------------------------|---|---|---|--------------------|------------------|-----------|-------------|------------------------------|-----------|------------------------------|--|------------------------------|
| | | Level B Harassment | | Level A Harassment | | Mortality | | | | | | |
| | | Behavioral Disturbance | TTS (may also include disturbance) | PTS | Tissue Damage | | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ |
| Suborder Mysticeti (baleen whales) | | | | | | | | | | | | |
| Family Balaenidae (right whales) | | | | | | | | | | | | |
| North Atlantic right whale* | Western North Atlantic | 203 | 268 | 0 | 0 | 0 | 471 | 471 | 343 | 343 | 137 | 137 |
| Family Balaenopteridae (rorquals) | | | | | | | | | | | | |
| Blue whale* | Western North Atlantic (Gulf of St. Lawrence) | 12 | 35 | 0 | 0 | 0 | 44 | 47 | 9 | 104 | 489 | 45 |
| Bryde's whale | Northern Gulf of Mexico | 24 | 31 | 1 | 0 | 0 | 56 | 56 | 50 | 50 | 112 | 112 |
| | NSD | 77 | 260 | 0 | 0 | 0 | 313 | 337 | 50 | 563 | 626 | 60 |
| Minke whale | Canadian East Coast | 796 | 3,284 | 5 | 0 | 0.14 | 3,913 | 4,085 | 730 | 7,686 | 536 | 53 |
| Fin whale* | Western North Atlantic | 1,716 | 3,671 | 33 | 0 | 0.14 | 5,368 | 5,420 | 1,660 | 14,769 | 323 | 37 |
| Humpback whale | Gulf of Maine | 248 | 498 | 3 | 0 | 0.29 | 698 | 749 | 496 | 4,580 | 141 | 16 |
| Sei whale* | Nova Scotia | 245 | 556 | 4 | 0 | 0.14 | 779 | 805 | 246 | 11,737 | 317 | 7 |

Note: In the table we compare estimated takes to abundance estimates generated from the same underlying density estimate (as described in the *Estimated Take of Marine Mammals* section of the 2018 AFTT final rule), versus abundance estimates directly from NMFS' SARs, which are not based on the same data and would not be appropriate for this purpose. Note that comparisons are made both within the U.S. EEZ only (where density estimates have lesser uncertainty) and across the whole Study Area (which offers a more comprehensive comparison for many stocks).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing plus harassment take from one large ship shock trial.

The annual mortality of 0.14 is the result of no more than one mortality over the course of seven years from vessel strikes as described above in the *Estimated Take of Marine Mammals* section. The annual mortality of 0.29 is the result of no more than two mortalities over the course of seven years from vessel strikes as described above in the same section.

Below we compile and summarize the information that supports our determination that the Navy's activities would not adversely affect any species or stocks through effects on annual rates

of recruitment or survival for any of the affected mysticete species and stocks.

North Atlantic Right Whale (Western Stock)

As described in the 2018 AFTT final rule, the status of NARW is precarious

and they are listed as endangered under the ESA. There is an active UME associated with the recent unusually high number of deaths, some of which have been attributed to entanglement or vessel strike, although no vessel strikes

have been attributed to the Navy and no new NARW deaths have been documented since the 2018 AFTT final rule was published. The number of births in recent years has been unusually low and recent studies have reported individuals showing poor health or high stress levels. Accordingly, as described above and in the 2018 AFTT final rule, the Navy is implementing and would continue to implement a suite of mitigation measures that not only avoid the likelihood of ship strikes, but also minimize the severity of behavioral disruption by minimizing impacts in areas that are important for feeding and calving, thus ensuring that the relatively small number of Level B harassment takes that do occur are not expected to affect reproductive success or survivorship via detrimental impacts to energy intake or cow/calf interactions. Specifically, no mortality or Level A harassment is anticipated or proposed for authorization. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances compared to the abundance (137 percent) combined with the fact that the AFTT Study Area overlaps most if not all of the range, suggests that many to most of the individuals in the stock will likely be taken, but only on one or two days per year, with no reason to think the days would likely be sequential. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure is expected to be between minutes and hours (*i.e.*, relatively short), the received sound levels are largely below 172 dB with some lesser portion up to 178 dB (*i.e.*, of a moderate or lower level, less likely to evoke a severe response), and because of the mitigation measures the exposures will not occur in areas or at times where impacts would be likely to affect feeding and energetics or important cow/calf interactions that could lead to reduced reproductive success or survival. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level and of short duration and the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival.

Altogether, any individual NARW is likely to be disturbed at a low-moderate level on no more than a couple of likely non-sequential days per year (and not in biologically important areas). Even given the fact that some of the affected individuals may have compromised

health, there is nothing to suggest that such a low magnitude and severity of effects would result in impacts on reproduction or survival of any individual, much less annual rates of recruitment or survival for the stock. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on NARW.

Blue Whale (Western North Atlantic Stock)

This is a wide-ranging stock that is best considered as "an occasional visitor" to the U.S. EEZ, which may represent the southern limit of its feeding range (Hayes *et al.*, 2018), though no specific feeding areas have been identified. For this reason, the abundances calculated by the Navy based on survey data in the U.S. EEZ are very low (9 and 104, in the U.S. EEZ and throughout the range respectively) and while NMFS' SAR does not predict an abundance, it does report an Nmin (minimum abundance) of 440. There is no currently reported trend for the population and there are no specific issues with the status of the stock that cause particular concern (*e.g.*, no UMEs), although the species is listed as endangered under the ESA. We note, however, that this species was originally listed under the ESA as a result of the impacts from commercial whaling, which is no longer affecting the species. No mortality or Level A harassment is anticipated or proposed for authorization for blue whales. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), given the number of total takes (47), the large range and wide-ranging nature of blue whales, and the minimum abundance identified in the SAR, there is no reason to think that any single animal will be taken by Level B harassment more than one time (though perhaps a few could be) and less than 10 percent of the population is likely to be impacted. Regarding the severity of those individual Level B harassment behavioral takes, as explained in the 2018 AFTT final rule, the duration of any exposure is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels are largely below 172 dB with a portion up to 178 dB (*i.e.*, of a moderate or lower level, less likely to evoke a severe response). Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level and of short duration and the associated lost opportunities and

capabilities not at a level that would impact reproduction or survival.

Altogether, less than 10 percent of the stock is likely to be impacted and any individual blue whale is likely to be disturbed at a low-moderate level on no more than a day or two days per year and not in any known biologically important areas. This low magnitude and severity of effects is unlikely to result in impacts on the reproduction or survival of any individual, much less annual rates of recruitment or survival for the stock. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on blue whales.

Bryde's Whale (Northern Gulf of Mexico Stock)

The Northern Gulf of Mexico Bryde's whale is a small resident population and is listed as endangered under the ESA. Although there is no current UME, the small size of the population and its constricted range, combined with the lingering effects of exposure to oil from the DWH oil spill (which include adverse health effects on individuals, as well as population effects) are cause for considerable caution. Accordingly, as described above, the Navy is implementing and would continue to implement considerable time/area mitigation to minimize impacts within their limited range, including not planning major training exercises, which include the most powerful sound sources operating in a more concentrated area, limiting the hours of other sonar use, and not using explosives, with the exception of mine warfare activities, which has both reduced the amount of take and reduced the likely severity of impacts. No mortality or Level A harassment by tissue damage injury is anticipated or proposed for authorization, and only one Level A harassment by PTS take is estimated and proposed for authorization.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances compared to the abundance (112 percent, Table 18) combined with the fact that the AFTT Study Area overlaps all of the small range, suggests that most to all of the individuals in the stock will likely be taken, but only on one or two days per year, with no reason to think the days would likely be sequential. Regarding the severity of those individual Level B harassment behavioral takes, as explained in the 2018 AFTT final rule, the duration of any exposure is expected to be between

minutes and hours (*i.e.*, relatively short); the received sound levels are largely below 172 dB with a portion up to 178 dB (*i.e.*, of a moderate or lower level, less likely to evoke a severe response); and because of the mitigation the exposures will be of a less impactful nature. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level and of short duration and the associated lost opportunities and capabilities not at a level that would impact reproduction or survival. For similar reasons the one estimated Level A harassment take by PTS for this stock is unlikely to have any effect on the reproduction or survival of that individual, even if it were to be experienced by an individual that also experiences one or more Level B harassment takes.

Altogether, any individual Bryde's whale is likely to be disturbed at a low-moderate level on no more than one or two days per year. Even given the fact that some of the affected individuals may have compromised health, there is nothing to suggest that such a low magnitude and severity of effects would result in impacts on the reproduction or survival of any individual, much less annual rates of recruitment or survival for the stock. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on the Gulf of Mexico stock of Bryde's whales.

Bryde's Whale (No Stock Designated—NSD)

These Bryde's whales span the mid- and southern Atlantic and have not been designated as a stock under the MMPA. There is no currently reported trend for the population and there are no specific issues with the status of the stock that cause particular concern (*e.g.*, UMEs). No mortality or Level A harassment is anticipated or proposed for authorization. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ, respectively, is 626 percent and 60 percent (Table 18), though the percentages would be far lower if compared against the abundance of the entire range of this species in the Atlantic. This information suggests that only a portion of the stock is likely impacted (significantly less than 60 percent given the large range), but that there is likely some repeat exposure (5 to 12 days within a year) of some subset

of individuals within the U.S. EEZ if some animals spend extended time within the U.S. EEZ. Regarding the severity of those individual Level B harassment behavioral takes, as explained in the 2018 AFTT final rule, the duration of any exposure is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels are largely below 172 dB with a portion up to 178 dB (*i.e.*, of a moderate or lower level, less likely to evoke a severe response). Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level and of short duration and the associated lost opportunities and capabilities not at a level that would impact reproduction or survival.

Altogether, only a portion of the population is impacted and any individual Bryde's whale is likely to be disturbed at a low to moderate level, with likely many animals exposed only once or twice and a subset potentially disturbed across 5 to 12 likely non-sequential days not in any known biologically important areas. This low magnitude and severity of effects is not expected to result in impacts on annual rates of recruitment or survival for the stock. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on the NSD stock of Bryde's whales.

Minke Whale (Canadian East Coast Stock)

This stock of minke whales spans the East Coast and far into Northern Canada waters. Minke whales in the Atlantic are currently experiencing a UME wherein there have been unexpectedly elevated deaths along the Atlantic Coast, some of which have been preliminarily attributed to human interaction (primarily fisheries interactions) or infectious disease. Two whales have stranded in 2019 (20 whales stranded in 2018 and 27 whales stranded in 2017). Because the most recent population estimate is based only on surveys in U.S. waters and slightly into Canada, and did not cover the habitat of the entire Canadian East Coast stock, the abundance is underestimated in the SAR and is likely significantly greater than what is reflected in the current SAR. NMFS proposes to authorize one mortality in seven years, and the resulting 0.14 annual mortality which falls below 10 percent of residual PBR (0.55), remains under the insignificance threshold, and would be considerably even lower if compared against a more appropriate PBR.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ, respectively, is 536 percent and 53 percent (Table 18). This information suggests that something less than half of the individuals are likely impacted, but that there is likely some repeat exposure (5 to 10 days within a year) of some subset of individuals within the U.S. EEZ if some animals spend extended time within the U.S. EEZ. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels largely below 172 dB, with a portion up to 178 dB (*i.e.*, of a moderate or lower level, less likely to evoke a severe response). Also, the Navy currently implements and would continue to implement time/area mitigation in the Northeast that minimizes major training exercises and total sonar hours in an area that significantly overlaps an important feeding area for minke whales. This mitigation will reduce the severity of impacts to minke whales by reducing interference in feeding that could result in lost feeding opportunities or necessitate additional energy expenditure to find other good foraging opportunities. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level and of short duration and the associated lost opportunities and capabilities not at a level that would impact reproduction or survival. For similar reasons the five estimated Level A harassment takes by PTS for this stock are unlikely to have an effect on the reproduction or survival of any individual, even if PTS were to be experienced by an individual that also experiences one or more Level B harassment takes.

Altogether, only a portion of the stock would be impacted and any individual minke whale is likely to be disturbed at a low to moderate level, with likely many animals exposed only once or twice and a subset potentially disturbed across 5 to 10 likely non-sequential days, minimized in biologically important areas. Even given the potential for compromised health of some individuals, this low magnitude and severity of effects is not expected to result in impacts on the reproduction or survival of individuals, nor are these harassment takes combined with the

potential mortality expected to adversely affect this stock through impacts on annual rates of recruitment or survival for the stock. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on minke whales.

Fin Whale (Western North Atlantic Stock)

This stock spans the East Coast north into the Newfoundland waters of Canada. There is no currently reported trend for the population and there are no specific issues with the status of the stock that cause particular concern (*e.g.*, no UMEs), although the species is listed as endangered under the ESA. NMFS proposes to authorize one mortality over the seven years of the rule, or 0.14 annually. With the addition of this 0.14 annual mortality, residual PBR is exceeded, which means the total human-caused mortality would exceed residual PBR by 0.14. However, as explained in the 2018 AFTT final rule, this does not mean that the stock is not at or increasing toward its optimum sustainable population level (OSP) or that one lethal take by the Navy over the seven years covered by this rule would adversely affect the stock through effects on annual rates of reproduction or survival. Consideration of all applicable information indicates that the proposed authorized mortality would not result in more than a negligible impact on this stock.

The abundance of fin whales is likely significantly greater than what is reflected in the current SAR because, as noted in the SAR, the most recent population estimate is based only on surveys in U.S. waters and slightly into Canada which does not include the habitat of the entire stock as it extends over a very large additional area into Nova Scotian and Newfoundland waters. Accordingly, if the PBR in the SAR reflected the actual abundance across the entire range of the stock, residual PBR would be notably higher. Additionally, the current abundance estimate does not account for availability bias due to submerged animals (*i.e.*, estimates are not corrected to account for the fact that given X number of animals seen at the surface, we can appropriately assume that Y number were submerged and not counted). Without a correction for this bias, the abundance estimate is likely further biased low. Because of these limitations, the current calculated PBR is not a reliable indicator of how removal of animals will affect the

stock's ability to reach or maintain OSP. We note that, generally speaking, while the abundance may be underestimated in this manner for some stocks due to the lack of surveys in areas outside of the U.S. EEZ, it is also possible that the human-caused mortality could be underestimated in the un-surveyed area. However, in the case of fin whales, most mortality is caused by entanglement in gear that is deployed relatively close to shore and, therefore, unrecorded mortality offshore would realistically be proportionally less as compared to the unsurveyed abundance and therefore the premise that PBR is likely underestimated still holds. Given the small amount by which residual PBR is exceeded and more significant degree (proportionally) to which abundance is likely underestimated, it is reasonable to conclude that if a more realistic PBR were used, the anticipated total human-caused mortality would be notably under it.

We also note that 0.14 mortalities/serious injuries means one mortality/serious injury in one of the seven years and zero mortalities/serious injuries in six of the seven years. Therefore residual PBR would not be exceeded in 86 percent of the years covered by this rule. In situations where mortality/serious injury is fractional, consideration must be given to the lessened impacts due to the absence of mortality in six of the seven years. Further, as described in the 2018 AFTT final rule, the Atlantic Large Whale Take Reduction Plan directs multiple efforts and requirements towards reducing mortality from commercial fishing (via gear modifications, area closures, and other mechanisms) and NOAA Office of Law Enforcement has reported high compliance rates. Nonetheless, the exceedance of residual PBR calls for close attention to the remainder of impacts on fin whales from this activity to ensure that the total authorized impacts would be negligible.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ, respectively, is 323 percent and 37 percent (Table 18). This information suggests that something less than a third of the individuals are likely impacted, but that there is likely some repeat exposure (2–6 days within a year) of some subset of individuals within the U.S. EEZ if some animals spend extended time within the U.S. EEZ. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of

any exposure is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels largely below 172 dB (*i.e.*, of a moderate or lower level, less likely to evoke a severe response). Also, the Navy currently implements, and would continue to implement time/area mitigation in the Northeast that minimizes major training exercises and total sonar hours in an area that significantly overlaps an important BIA feeding area for fin whales. This mitigation will reduce the severity of impacts to fin whales by reducing interference in feeding that could result in lost feeding opportunities or necessitate additional energy expenditure to find other good opportunities. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with fin whale communication or other important low-frequency cues, and the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival. For these same reasons (low level and frequency band), while a small permanent loss of hearing sensitivity may include some degree of energetic costs for compensating or may mean some small loss of opportunities or detection capabilities, at the expected scale the 33 estimated Level A harassment takes by PTS for fin whales would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individuals, even if PTS were experienced by an individual that also experiences one or more Level B harassment takes.

Altogether, only a portion of the stock would be impacted and any individual fin whale is likely to be disturbed at a low to moderate level, with likely many animals exposed only once or twice and a subset potentially disturbed across approximately six likely non-sequential days, minimized in biologically important areas. This low magnitude and severity of effects is not expected to result in impacts on reproduction or survival of individuals, nor are these harassment takes combined with the single potential mortality expected to adversely affect this stock through impacts on annual rates of recruitment or survival for the stock. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on fin whales.

Humpback Whale (Gulf of Maine Stock)

This feeding group stock of humpback whales is one of several associated with the larger, and increasing, West Indies DPS. The Gulf of Maine stock is reported in the SAR as increasing in abundance. Nonetheless, humpback whales in the Atlantic are currently experiencing a UME in which a portion of the whales have shown evidence of entanglement or vessel strike. There have been nine strandings so far in 2019 (2018 had 25 total strandings and 2017 had 24 total strandings). NMFS proposes authorizing two mortalities over the seven-year period (versus the one mortality over the five-year period of the 2018 AFTT Final Rule), as described in the *Estimated Take of Marine Mammals* section above. Though an increase from the 2018 AFTT final rule, this amount of mortality (0.29 per year) still falls below the insignificance threshold of 10 percent of residual PBR (0.48) for the Gulf of Maine stock based on a stock abundance of 896 from the 2018 draft SAR. Also, importantly, deaths of humpback whales along the Atlantic coast (whether by ship strike or other source) must be considered within the context of the larger West Indies DPS, as animals along the coast could come from the Gulf of Maine stock or any of three or more other associated feeding groups. Specifically, the West Indies DPS numbers in excess of 10,000 whales and has an increasing growth trend of 3.1 percent (Bettridge *et al.*, 2015), with an associated PBR, if calculated, much larger than that presented for the Gulf of Maine stock. Further, as described in the 2018 AFTT final rule, the Atlantic Large Whale Take Reduction Plan directs multiple efforts and requirements towards reducing mortality from commercial fishing (via gear modifications, area closures, and other mechanisms) and NOAA Office of Law Enforcement has reported high compliance rates. Therefore, even though the potential for M/SI from the Navy's activities has increased since the 2018 AFTT final rule, there is no information to indicate that the loss of two whales over seven years, even if it were to occur, would adversely affect the stock through effects on annual rates of recruitment or survival. See the *Humpback Whale* section in the 2018 AFTT final rule for additional supporting information.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances (of any humpbacks) compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ, respectively, is 141 percent and 16

percent (Table 18). This suggests that only a small portion of the humpback whales in the AFTT Study Area would be likely impacted, with perhaps some individuals taken on a few days of the year. It would be impossible to determine exactly what portion of the takes are from the Gulf of Maine stock. However, based on information in the 2018 AFTT final rule, which indicated about one third of the humpback whales traversing the Atlantic Coast likely come from the Gulf of Maine stock, we estimate that approximately 250 of the 749 total humpback whale takes might be from the Gulf of Maine stock. Two hundred and fifty represents about 28 percent of the minimum population estimate for the Gulf of Maine humpback whale abundance in NMFS' draft 2018 SAR, equating to an expectation that few animals would be exposed more than one time. The remaining approximately 499 Level B harassment takes would affect individuals from the much larger West Indies DPS, with a relatively small percentage of individuals affected as the estimated abundance is greater than 10,000. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels largely below 172 dB with a portion above 178 dB (*i.e.*, of a moderate or lower level, less likely to evoke a severe response). Also, the Navy currently implements and would continue to implement time/area mitigation in the Northeast that minimizes major training exercises and total sonar hours in an area that significantly overlaps with an important feeding area for humpbacks. This mitigation will reduce the severity of impacts to humpbacks by reducing interference in feeding that could result in lost feeding opportunities or necessitate additional energy expenditure to find other good opportunities. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level and of short duration and the associated lost opportunities and capabilities not at a level that would impact reproduction or survival. For similar reasons the three estimated Level A harassment takes by PTS for this stock are unlikely to have any effect on the reproduction or survival of any individual, even if PTS were to be experienced by an individual that also experiences one or more Level B harassment takes.

Altogether, only a portion of the stock or DPS is impacted and any individual humpback whale would likely be disturbed at a low-moderate level, with most animals exposed only once or twice, and minimized in biologically important areas. This low magnitude and severity of effects is not expected to result in impacts on the reproduction or survival of any individuals, nor are these harassment takes combined with the proposed authorized mortalities expected to adversely affect this stock through impacts on annual rates of recruitment or survival for the stock. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on humpback whales.

Sei Whale (Nova Scotia Stock)

This stock spans the northern East Coast and up to southern Newfoundland. There is no currently reported trend for the population and there are no specific issues with the status of the stock that cause particular concern (*e.g.*, no UMEs), although the species is listed as endangered under the ESA. NMFS would authorize one mortality over the seven years of the rule, or 0.14 annually. With the addition of this 0.14 annual mortality, residual PBR is exceeded, which means the total human-caused mortality would exceed residual PBR by 0.44. However, as explained in the 2018 AFTT final rule, this does not mean that the stock is not at or increasing toward its OSP or that one lethal take by the Navy over the seven years covered by this rule would adversely affect the stock through effects on annual rates of reproduction or survival. Consideration of all applicable information indicates that the proposed authorized mortality would not result in more than a negligible impact on this stock.

As noted in the SAR, the abundance of sei whales is likely significantly greater than what is reflected in the current SAR because the population estimate is based only on surveys in U.S. waters and slightly into Canada, which does not cover the habitat of the entire stock, as it extends over a large additional area around to the south of Newfoundland. Accordingly, if a PBR were calculated based on an appropriately enlarged abundance, it would be higher. Additionally, the current abundance estimate does not account for availability bias due to submerged animals (*i.e.*, estimates are not corrected to account for the fact that given X number of animals seen at the surface, we can appropriately assume that

Y number were submerged and not counted). Without a correction for this bias, the abundance estimate is likely biased low. Because of these limitations, the current calculated PBR is not a reliable indicator of how removal of animals will affect the stock's ability to reach or maintain OSP. We note that, generally speaking, while the abundance may be underestimated in this manner for some stocks due to the lack of surveys in areas outside of the U.S. EEZ, it is also possible that the human-caused mortality could be underestimated in the un-surveyed area. However, in the case of sei whales, most mortality is caused by ship strike and the density of ship traffic is higher the closer you are to shore (making strikes more likely closer to shore) and, therefore, unrecorded mortality offshore would realistically be proportionally less as compared to the unsurveyed abundance and therefore the premise that PBR is likely underestimated still holds.

Given the small amount by which residual PBR is exceeded and more significant degree (proportionally) to which abundance is likely underestimated, it is reasonable to think that if a more realistic PBR were used, the anticipated total human-caused mortality would be notably under residual PBR. We also note that 0.14 mortalities/serious injuries means one mortality/serious injury in one of the seven years and zero mortalities/serious injuries in six of the seven years. Further, as described in the 2018 AFTT final rule the Atlantic Large Whale Take Reduction Plan directs multiple efforts and requirements towards reducing mortality from commercial fishing (via gear modifications, area closures, and other mechanisms) and NOAA Office of Law Enforcement has reported high compliance rates.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ, respectively, is 317 percent and 7 percent (Table 18). This information suggests that only a very small portion of individuals in the stock would be likely impacted, but that there would likely be some repeat exposure (several days within a year) of some subset of individuals within the U.S. EEZ if some animals spend extended time within the U.S. EEZ. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels largely below 172 dB with a portion up to 178 dB (*i.e.*, of a moderate or lower level, less likely to evoke a severe response). Also, the Navy implements time/area mitigation in the Northeast that minimizes major training exercises and total sonar hours in an area that significantly overlaps an important BIA feeding area for sei whales, which will reduce the severity of impacts to sei whales by reducing interference in feeding that could result in lost feeding opportunities or necessitate additional energy expenditure to find other good opportunities. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level and of short duration and the associated lost opportunities and capabilities not at a level that would impact reproduction or survival. For similar reasons the four estimated Level A harassment takes by PTS for this stock are unlikely to have any effect on the reproduction or survival of any individual, even if PTS were to be experienced by an individual that also

experiences one or more Level B harassment takes.

Altogether, only a small portion of the stock would be impacted and any individual sei whale would likely be disturbed at a low-moderate level, with likely many animals exposed only once or twice and a subset potentially disturbed across a few days, minimized in biologically important areas. This low magnitude and severity of harassment effects is not expected to result in impacts on individual reproduction or survival, nor are these harassment takes combined with the single potential mortality expected to adversely affect this stock through impacts on annual rates of recruitment or survival. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on sei whales.

Odontocetes

Sperm Whales, Dwarf Sperm Whales, and Pygmy Sperm Whales

In Table 19 below for sperm whale, dwarf sperm whales, and pygmy sperm whales, we indicate the total annual mortality, Level A and Level B harassment, and a number indicating the instances of total take as a percentage of abundance. Table 19 is unchanged from Table 73 in the 2018 AFTT final rule, except for updated information on mortality, as discussed above. For additional information and analysis supporting the negligible-impact analysis, see the *Odontocetes* discussion as well as the *Sperm Whales, Dwarf Sperm Whales, and Pygmy Sperm Whales* discussion in the *Group and Species-Specific Analyses* section of the 2018 AFTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

Table 19. Annual estimated takes by Level B harassment, Level A harassment, and mortality for sperm whales, dwarf sperm whales, and pygmy sperm whales in the AFTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

| Species | Stock | Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance) | | | | | Total takes | | Abundance | | Instances of total take as percentage of abundance | |
|--------------------------------------|-------------------------|---|---------------------------------------|--------------------|---------------|-----------|-------------|------------------------|-----------|------------------------|--|------------------------|
| | | Level B Harassment | | Level A Harassment | | Mortality | | | | | | |
| | | Behavioral Disturbance | TTS (may also include disturbance) | PTS | Tissue Damage | | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ |
| Suborder Odontoceti (toothed whales) | | | | | | | | | | | | |
| Family Physeteridae (sperm whale) | | | | | | | | | | | | |
| Sperm whale* | Gulf of Mexico Oceanic | 1,107 | 25 | 0 | 0 | 0 | 1132 | 1132 | 2,114 | 2,114 | 54 | 54 |
| | North Atlantic | 24,703 | 662 | 3 | 1 | 0.14 | 21489 | 25369 | 3,950 | 61,700 | 544 | 41 |
| Family Kogiidae (sperm whales) | | | | | | | | | | | | |
| Dwarf sperm whale | Gulf of Mexico Oceanic | 339 | 453 | 70 | 0 | 0 | 862 | 862 | 1,107 | 1,107 | 78 | 78 |
| | Western North Atlantic | 3,900 | 9,102 | 94 | 0 | 0 | 12852 | 13096 | 611 | 3,641 | 2105 | 360 |
| Pygmy sperm whale | Northern Gulf of Mexico | 339 | 453 | 70 | 0 | 0 | 862 | 862 | 1,107 | 1,107 | 78 | 78 |
| | Western North Atlantic | 3,900 | 9,102 | 94 | 0 | 0 | 12852 | 13096 | 611 | 3,641 | 2105 | 360 |

Note: In this table we compare estimated takes to abundance estimates generated from the same underlying density estimate (as described in the *Estimated Take of Marine Mammals* section in the 2018 AFTT final rule), versus abundance estimates directly from NMFS' SARs, which are not based on the same data and would not be appropriate for this purpose. Note that comparisons are made both within the U.S. EEZ only (where density estimates have lesser uncertainty) and across the whole Study Area (which offers a more comprehensive comparison for many stocks).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing plus harassment take from one large ship shock trial.

The annual mortality of 0.14 is the result of no more than one mortality over the course of seven years from vessel strikes as described above in the *Estimated Take of Marine Mammals* section. .

Below we compile and summarize the information that supports our determination that the Navy's activities would not adversely affect any species or stocks through effects on annual rates of recruitment or survival for any of the affected species and stocks addressed in this section.

Sperm Whale (North Atlantic Stock)

This stock spans the East Coast out into oceanic waters well beyond the U.S. EEZ. There is no currently reported trend for the stock and, although the species is listed as endangered under the ESA, there are no specific issues with the status of the stock that cause particular concern (e.g., no UMEs). NMFS proposes to authorize one mortality over the seven years covered by this rule, and the resulting 0.14 annual mortality which falls below 10 percent of residual PBR (0.28), remains below the PBR insignificance threshold. As discussed in the 2018 AFTT final rule, there are no known factors, information, or unusual circumstances that indicate that this potential M/SI below the insignificance threshold could have adverse effects on the stock through effects on annual rates of recruitment or survival. One Level A harassment take by tissue damage is also estimated and proposed for

authorization which, as discussed in the 2018 AFTT final rule, could range in impact from minor to something just less than M/SI that could seriously impact fitness. However, given the Navy's mitigation and the sperm whale's large size, which improves detection by Lookouts, exposure at the closer to the source and more severe end of the spectrum is less likely, and we cautiously assume some moderate impact for this single take that could lower one individual's fitness within the year such that a female (assuming a 50 percent chance of the one take being a female) might forego reproduction for one year. As discussed in the 2018 AFTT final rule, foregone reproduction has less of an impact on population rates than death (especially for one year) and one instance would not be expected to impact annual rates of recruitment or survival, even if it were a female.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ, respectively, is 544 percent and 41 percent (Table 19). This information, combined with the known range of the stock, suggests that something less than one half of the individuals in the stock

would likely be impacted, but that there would likely be some repeat exposure (2–11 days within a year) of some subset of individuals that remain within the U.S. EEZ for an extended time. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to be between minutes and hours (i.e., relatively short) and the received sound levels largely between 160 and 172 dB (i.e., of a lower, to occasionally moderate, level). Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level and of short duration and the associated lost opportunities and capabilities not at a level that would impact reproduction or survival. For similar reasons three estimated Level A harassment takes by PTS for this stock is unlikely to have any effect on the reproduction or survival of any individual, even if PTS were to be experienced by an individual that also experiences one or more Level B harassment takes.

Altogether, only a small portion of the stock would be impacted and any individual sperm whale would likely be disturbed at a low-moderate level, with the majority of animals likely disturbed

once or not at all, and a subset potentially disturbed across 2–11 likely non-sequential days. Even for an animal disturbed at the high end of this range (11 days over a year), given the low to moderate impact from each incident, and the fact that few days with take would likely be sequential, no impacts to individual fitness are expected. This low to occasionally moderate magnitude and severity of effects is not expected to result in impacts on reproduction or survival, and nor are these harassment takes combined with the single proposed authorized mortality and one possible instance of foregone reproduction expected to adversely affect the stock through annual rates of recruitment or survival. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on North Atlantic sperm whales.

Sperm Whale, Dwarf Sperm Whale, and Pygmy Sperm Whale (Gulf of Mexico Stocks)

These stocks suffer from lingering health issues from the DWH oil spill (6–7 percent of individuals of these stocks with adverse health effects), which means that some could be more susceptible to exposure to other stressors, and negative population effects (21–42 years until the DWH oil-injured population trajectory is projected to catch up with the baseline population trajectory (*i.e.*, in the absence of DWH, reported as years to recovery). Neither mortality nor tissue damage from explosives is anticipated or proposed to be authorized for any of these three stocks, and sperm whales are not expected to incur PTS. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance is 54–78 percent (Table 19), which suggests that for each of the three species/stocks either this percentage of the individuals in these stocks would all be taken by harassment on a single day, or a small subset may be taken on a few days and the remainder not taken at all. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels are largely between 160 and 172 dB (*i.e.*, of a lower level, less likely to evoke a severe response). Additionally, the Navy is currently implementing and would continue to implement

mitigation areas for sperm whales that are expected to reduce impacts in important feeding areas, further lessening the severity of impacts. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere significantly with conspecific communication, echolocation, or other important low-frequency cues. Also, there is no reason to believe that any individual would incur these TTS takes more than a few days in a year, and the associated lost opportunities and capabilities would not be expected to impact reproduction or survival. For these same reasons (low level and frequency band), while a small permanent loss of hearing sensitivity may include some degree of energetic costs for compensating or may mean some small loss of opportunities or detection capabilities, 70 estimated Level A harassment takes by PTS for each of the two Kogia stocks in the Gulf of Mexico would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individual, even if PTS were to be experienced by an animal that also experiences one or more Level B harassment takes.

Altogether, only a portion of these stocks would be impacted and any individual sperm, dwarf sperm, or pygmy sperm whale is likely to be disturbed at a low to occasionally moderate level and no more than a few days per year. Even given the fact that some of the affected individuals may have compromised health, there is nothing to suggest that such a low magnitude and severity of effects would result in impacts on the reproduction or survival of individuals, much less annual rates of recruitment or survival for any of the stocks. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on the Gulf of Mexico stocks of sperm whales, dwarf sperm whales, and pygmy sperm whales.

Pygmy and Dwarf Sperm Whales (Western North Atlantic Stocks)

These stocks span the deeper waters of the East Coast north to Canada and out into oceanic waters beyond the U.S. EEZ. There is no currently reported trend for these populations and there are no specific issues with the status of the stocks that cause particular concern. Neither mortality nor tissue damage from explosives is anticipated or

proposed to be authorized for these stocks. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ, respectively, is 2,105 percent and 360 percent (Table 19). This information, combined with the known range of the stock, suggests that while not all of the individuals in these stocks would most likely be taken (because they span well into oceanic waters) of those that are taken, most would be taken over several repeated days (though likely not sequential) and some subset that spends extended time within the U.S. EEZ would likely be taken over a larger amount of days (likely 15–42 days during a year), some of which could be sequential.

Regarding the severity of the individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to be between minutes and hours (and likely not more than 24 hours) and the received sound levels are largely between 160 and 172 dB (*i.e.*, of a lower level, less likely to evoke a severe response). Additionally, while interrupted feeding bouts are a known response and concern for odontocetes, we also know that there are often viable alternative habitat options in the relative vicinity. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration and mostly not in a frequency band that would be expected to interfere significantly with conspecific communication, echolocation, or other important low-frequency cues. Also, there is no reason to believe that any individual would incur these TTS takes more than a few days in a year, and the associated lost opportunities and capabilities would not be expected to impact reproduction or survival. For these same reasons (low level and frequency band), while a small permanent loss of hearing sensitivity may include some degree of energetic costs for compensating or may mean some small loss of opportunities or detection capabilities, at the expected scale the 94 estimated Level A harassment takes by PTS for each of the two Kogia stocks in the North Atlantic would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individual, even if PTS were to be experienced by an individual that also

experiences one or more Level B harassment takes.

Altogether, most of the stock would likely be taken (at a low to occasionally moderate level) over several days a year, and some smaller portion of the stock would likely be taken on a relatively moderate to high number of days across the year, some of which could be sequential days. Though the majority of impacts are expected to be of a lower to sometimes moderate severity, the larger number of takes (in total and for certain individuals) makes it more likely (probabilistically) that a small number of individuals could be interrupted during foraging in a manner and amount such that impacts to the energy budgets of females (from either losing feeding opportunities or expending considerable energy to find alternative feeding options) could cause them to forego reproduction for a year (energetic

impacts to males generally have little impact on population rates unless they cause death, and it takes extreme energy deficits beyond what would ever be likely to result from these activities to cause the death of an adult marine mammal). As noted previously and discussed more fully in the 2018 AFTT final rule, however, foregone reproduction (especially for one year) has far less of an impact on population rates than mortality, and a small number of instances of foregone reproduction would not be expected to adversely impact annual rates of recruitment or survival, especially given that PBR for both of these stocks is 21. For these reasons, in consideration of all of the effects of the Navy's activities combined, we have preliminarily determined that the proposed authorized take would have a negligible impact on the Western North Atlantic

stocks of pygmy and dwarf sperm whales.

Dolphins and Small Whales

In Table 20 below for dolphins and small whales, we indicate the total annual mortality, Level A and Level B harassment, and a number indicating the instances of total take as a percentage of abundance. Table 20 is unchanged from Table 74 in the 2018 AFTT final rule, except for updated information on mortality, as discussed above. For additional information and analysis supporting the negligible-impact analysis, see the *Odontocetes* discussion as well as the *Dolphins and Small Whales* discussion in the *Group and Species-Specific Analyses* section of the 2018 AFTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

Table 20. Annual estimated takes by Level B harassment, Level A harassment, and mortality for dolphins and small whales in the AFTT Study Area and number indicating the instances of total take as a percentage of stock abundance.+

| Species | Stock | Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance) | | | | | Total takes | | Abundance | | Instances of total take as percentage of abundance | | |
|-------------------------------|---|--|------------------------------------|--------------------|---------------|-----------|-------------|------------------------|-----------|------------------------|--|------------------------|--|
| | | Level B Harassment | | Level A Harassment | | Mortality | | | | | | | |
| | | Behavioral Disturbance | TTS (may also include disturbance) | PTS | Tissue Damage | | | | | | | | |
| | | | | | | | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ | |
| Family Delphinidae (dolphins) | | | | | | | | | | | | | |
| Atlantic spotted dolphin | Northern Gulf of Mexico | 69,225 | 3,610 | 3 | 0 | 0 | 72,838 | 72,838 | 47,676 | 47,676 | 153 | 153 | |
| | Western North Atlantic | 208,201 | 19,383 | 26 | 6 | 0 | 209,614 | 227,616 | 52,118 | 250,648 | 403 | 91 | |
| Atlantic white-sided dolphin | Western North Atlantic | 44,077 | 2,207 | 7 | 3 | 0.14 | 44,210 | 46,294 | 14,332 | 137,305 | 308 | 34 | |
| Bottlenose dolphin | Choctawhatchee Bay | 941 | 32 | 0 | 0 | 0 | 973 | 973 | 99 | 99 | 984 | 984 | |
| | Gulf of Mexico Eastern Coastal | 42 | 0 | 0 | 0 | 0 | 42 | 42 | 9,888 | 9,888 | 0 | 0 | |
| | Gulf of Mexico Northern Coastal | 15,644 | 834 | 2 | 0 | 0 | 16,480 | 16,480 | 8,476 | 8,476 | 194 | 194 | |
| | Gulf of Mexico Western Coastal | 7,191 | 635 | 0 | 0 | 0 | 7,826 | 7,826 | 33,903 | 33,903 | 23 | 23 | |
| | Indian River Lagoon Estuarine System | 255 | 31 | 0 | 0 | 0 | 286 | 286 | 36 | 36 | 790 | 790 | |
| | Jacksonville Estuarine System | 74 | 13 | 0 | 0 | 0 | 87 | 87 | 27 | 27 | 320 | 320 | |
| | Mississippi Sound, Lake Borgne, Bay Boudreau | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 198 | 198 | 1 | 1 | |
| | Northern Gulf of Mexico Continental Shelf | 121,223 | 6,287 | 15 | 1 | 0 | 127,526 | 127,526 | 72,043 | 72,043 | 177 | 177 | |
| | Northern Gulf of Mexico Oceanic | 13,947 | 706 | 8 | 2 | 0 | 14,663 | 14,663 | 18,364 | 18,364 | 80 | 80 | |
| | Northern North Carolina Estuarine System | 2,844 | 483 | 0 | 0 | 0 | 3,327 | 3,327 | 3,622 | 3,622 | 92 | 92 | |
| | Southern North Carolina Estuarine System | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Western North Atlantic Northern Florida Coastal | 1,145 | 90 | 0 | 0 | 0 | 1,235 | 1,235 | 906 | 906 | 136 | 136 | |
| | Western North Atlantic Central Florida Coastal | 7,100 | 513 | 0 | 0 | 0 | 7,613 | 7,613 | 4,528 | 4,528 | 168 | 168 | |
| | Western North Atlantic Northern Migratory Coastal | 33,993 | 3,051 | 7 | 0 | 0 | 37,051 | 37,051 | 9,962 | 9,962 | 372 | 372 | |
| | Western North Atlantic Offshore | 393,416 | 34,686 | 77 | 9 | 0 | 421,295 | 428,188 | 64,298 | 186,260 | 655 | 230 | |
| | Western North Atlantic South Carolina/Georgia Coastal | 5,544 | 416 | 0 | 0 | 0 | 5,960 | 5,960 | 3,622 | 3,622 | 165 | 165 | |
| | Western North Atlantic Southern Migratory Coastal | 15,411 | 1,305 | 2 | 0 | 0 | 16,718 | 16,718 | 7,245 | 7,245 | 231 | 231 | |
| Clymene dolphin | Northern Gulf of Mexico | 4,174 | 99 | 4 | 2 | 0 | 4,279 | 4,279 | 10,942 | 10,942 | 39 | 39 | |
| | Western North Atlantic | 97,952 | 7,816 | 10 | 3 | 0 | 92,364 | 105,781 | 15,370 | 171,202 | 601 | 62 | |
| False killer whale | Northern Gulf of Mexico | 1,902 | 72 | 1 | 0 | 0 | 1,975 | 1,975 | 3,136 | 3,136 | 63 | 63 | |
| | Western North Atlantic | 11,176 | 863 | 0 | 0 | 0 | 11,131 | 12,039 | 1,254 | 16,144 | 888 | 75 | |
| Fraser's dolphin | Northern Gulf of Mexico | 1,123 | 58 | 2 | 1 | 0 | 1,184 | 1,184 | 1,637 | 1,637 | 72 | 72 | |
| | Western North Atlantic | 4,931 | 291 | 0 | 0 | 0 | 3,914 | 5,222 | 411 | 17,568 | 952 | 30 | |
| Killer whale | Northern Gulf of Mexico | 33 | 0 | 0 | 0 | 0 | 33 | 33 | 176 | 176 | 19 | 19 | |
| | Western North Atlantic | 113 | 6 | 0 | 0 | 0 | 112 | 119 | 15 | 472 | 747 | 25 | |
| Long-finned pilot whale | Western North Atlantic | 35,690 | 1,656 | 7 | 1 | 0 | 33,769 | 37,554 | 3,863 | 447,431 | 874 | 8 | |
| | Northern Gulf of Mexico | 3,067 | 66 | 3 | 1 | 0 | 3,137 | 3,137 | 6,725 | 6,725 | 47 | 47 | |
| Melon-headed whale | Western North Atlantic | 50,058 | 3,792 | 3 | 0 | 0 | 49,707 | 53,853 | 5,821 | 69,526 | 854 | 77 | |
| | Northern Gulf of Mexico | 25,924 | 596 | 15 | 6 | 0.14 | 26,541 | 26,541 | 82,055 | 82,055 | 32 | 32 | |
| Pantropical spotted dolphin | Western North Atlantic | 207,279 | 15,304 | 8 | 1 | 0 | 196,098 | 222,592 | 30,088 | 275,964 | 652 | 81 | |
| | Northern Gulf of Mexico | 720 | 16 | 1 | 0 | 0 | 737 | 737 | 2,062 | 2,062 | 36 | 36 | |
| Pygmy killer whale | Western North Atlantic | 8,702 | 629 | 0 | 0 | 0 | 8,507 | 9,331 | 1,052 | 12,296 | 809 | 76 | |
| | Northern Gulf of Mexico | 1,647 | 43 | 1 | 0 | 0 | 1,691 | 1,691 | 3,096 | 3,096 | 55 | 55 | |
| Risso's dolphin | Western North Atlantic | 38,887 | 2,220 | 2 | 0 | 0 | 40,144 | 41,109 | 5,601 | 39,085 | 717 | 105 | |
| | Northern Gulf of Mexico | 3,849 | 177 | 1 | 1 | 0 | 4,026 | 4,028 | 4,824 | 4,824 | 83 | 83 | |
| Rough-toothed dolphin | Western North Atlantic | 25,857 | 2,476 | 0 | 0 | 0 | 26,450 | 28,333 | 2,793 | 34,768 | 947 | 81 | |
| Short-beaked common dolphin | Western North Atlantic | 540,662 | 30,561 | 101 | 36 | 0.86 | 571,100 | 571,361 | 73,481 | 520,317 | 777 | 110 | |
| Short-finned pilot whale | Northern Gulf of Mexico | 1,835 | 26 | 3 | 0 | 0 | 1,864 | 1,864 | 2,032 | 2,032 | 92 | 92 | |
| | Western North Atlantic | 45,724 | 2,639 | 5 | 1 | 0 | 34,760 | 48,369 | 6,578 | 450,146 | 528 | 11 | |
| Spinner dolphin | Northern Gulf of Mexico | 7,803 | 277 | 31 | 14 | 0.14 | 8,125 | 8,125 | 13,653 | 13,653 | 60 | 60 | |
| | Western North Atlantic | 98,665 | 8,382 | 5 | 1 | 0 | 98,817 | 107,053 | 11,280 | 135,573 | 876 | 79 | |
| Striped dolphin | Northern Gulf of Mexico | 2,449 | 69 | 2 | 1 | 0 | 2,521 | 2,521 | 4,871 | 4,871 | 52 | 52 | |
| | Western North Atlantic | 181,103 | 11,992 | 16 | 4 | 0 | 167,438 | 193,115 | 52,222 | 322,542 | 321 | 60 | |
| White-beaked dolphin | Western North Atlantic | 80 | 4 | 0 | 0 | 0 | 84 | 84 | 42 | 42 | 200 | 200 | |

Note: In the table we compare estimated takes to abundance estimates generated from the same underlying density estimate (as described in the *Estimated Take of Marine Mammals* section of the 2018 AFFT final rule), versus abundance estimates directly from NMFS' SARs, which are not based on the same data and would not be appropriate for this purpose. Note that comparisons are made both within the U.S. EEZ only (where density estimates have lesser uncertainty) and across the whole Study Area (which offers a more comprehensive comparison for many stocks).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing plus take from one large ship shock trial.

For mortality takes there was an annual average of 0.14 dolphins from each dolphin species/stock listed above (*i.e.*, for those species or stocks where one take could potentially occur divided by seven years to get the annual number of mortalities/serious injuries) or 0.86 dolphins in the case of short-beaked common dolphin (*i.e.*, where six takes could potentially occur divided by seven years to get the annual number of mortalities/serious injuries).

Below we compile and summarize the information that supports our determination that the Navy's activities would not adversely affect any species or stocks through effects on annual rates of recruitment or survival for any of the affected species or stocks addressed in this section.

Atlantic White-Sided Dolphin and Short-Beaked Common Dolphin (Western North Atlantic Stocks)

There is no currently reported trend for these stocks and there are no specific issues with the status of these stocks that cause particular concern (*e.g.*, no UMEs). We anticipate and therefore propose to authorize one and six mortalities over the course of seven years for these two stocks, which is 0.14 and 0.86 annual mortalities for each stock, respectively. Given the large residual PBR values for these stocks (248 and 148), this number of mortalities falls well under the insignificance threshold. There are no known factors, information, or unusual circumstances that indicate that this estimated M/SI below the insignificance threshold could have adverse effects on these stocks through effects on annual rates of recruitment or survival. Some Level A harassment take by tissue damage from explosives has also been estimated and proposed to be authorized for these stocks (3 and 36, respectively). As discussed previously and in the 2018 AFFT final rule, tissue damage effects could range in impact from minor to something just less than M/SI that could seriously impact fitness. However, given the Navy's mitigation, which makes exposure at the closer to the source and more severe end of the spectrum less likely, we cautiously assume some moderate impact for this category of take that could lower an individual's fitness within the year such that females (assuming a 50 percent chance that a take is a female) might forego reproduction for one year. As noted previously, foregone reproduction has less of an impact on population rates than death (especially for one year)

and the number of takes anticipated for each stock would not be expected to impact annual rates of recruitment or survival, even if all of the takes were females (which would be highly unlikely), especially given the high residual PBRs of these stocks. In other words, if the stocks can absorb the numbers of mortalities indicated through each stock's residual PBR without impacting ability to approach OSP, they could absorb the significantly lesser effects of a small number of one-year delay in calving.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ for these two stocks, respectively, is 308–777 percent and 34–110 percent (Table 20). This information suggests that some portion of these stocks would likely not be taken at all, but that there would likely be some repeat exposure (2–15 days within a year) of some subset of individuals. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFFT final rule, the duration of any exposure response is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels largely below 172 dB (*i.e.*, of a lower level, less likely to evoke a severe response). Additionally, while we do not have a specific reason to expect that these takes would occur sequentially on more than several days in a row or be more severe in nature, the probability of this occurring increases the higher the total take numbers. While interrupted feeding bouts are a known response and concern for odontocetes, we also know that there are often viable alternative habitat options in the relative vicinity. Given the higher number of takes and the associated abundances (especially for short-beaked common dolphin) we acknowledge the possibility that some smaller subset of individuals could experience behavioral disruption of a degree that impacts energetic budgets

such that reproduction could be delayed for a year. However, considering the potential reproductive effects from tissue damage and from these levels of take by behavioral Level B harassment, in combination with the estimated mortality, this degree of effect on the small subset of individuals that could be affected is still not expected to adversely affect the stocks through effects on annual rates of recruitment or survival.

Regarding the severity of TTS takes, as explained in the 2018 AFFT final rule, they are expected to be low-level, of short duration, and not in a frequency band that would be expected to significantly interfere with dolphin communication, or echolocation or other important low-frequency cues. Therefore, the associated lost opportunities and capabilities would not be expected to impact reproduction or survival of any individuals. For these same reasons (low level and the likely frequency band), while a small permanent loss of hearing sensitivity may include some degree of energetic costs for compensating or may mean some small loss of opportunities or detection capabilities, the estimated Level A harassment takes by PTS for the two dolphin stocks (7 and 101, respectively) would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individual, even if PTS were to be experienced by an animal that also experiences one or more Level B harassment takes.

Altogether, individual dolphins would likely be taken at a low level, with some animals likely taken once or not at all, many potentially disturbed at low levels across 2–15 predominantly non-sequential days, and a small number potentially experiencing a level of effects that could result in curtailed reproduction for one year. This magnitude and severity of effects, including consideration of the estimated mortality, is not expected to result in impacts on annual rates of recruitment

or survival for either of the stocks, especially given the status of the stocks. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on these two Western North Atlantic stocks of dolphins.

Pantropical Spotted Dolphin and Spinner Dolphin (Gulf of Mexico Stocks)

As described in the 2018 AFTT final rule, the Gulf of Mexico dolphin stocks indicated in Table 20 suffer from lingering health issues resulting from the DWH oil spill (7 and 17 percent of individuals of these stocks, respectively, have adverse health effects), which means that some of them could be more susceptible to exposure to other stressors, as well as negative population effects (predicting it will take up to 39 and 105 years, respectively, for stocks to return to population growth rates predicted in the absence of DWH effects). We propose to authorize one mortality over the course of seven years for each of these two stocks, respectively, which is 0.14 annual mortalities for each stock. Given the large residual PBR values for these stocks (402 and 62, respectively), this number of mortalities falls well under the insignificance threshold. As discussed in the 2018 AFTT final rule, there are no known factors, information, or unusual circumstances that indicate that this estimated M/SI below the insignificance threshold could have adverse effects on these stocks through effects on annual rates of recruitment or survival. Some Level A harassment take by tissue damage from explosives has also been estimated and proposed to be authorized for these stocks (6 and 14, respectively). As noted previously, tissue damage effects could range in impact from minor to something just less than M/SI that could seriously impact fitness. However, given the Navy's mitigation, which makes exposure at the closer to the source and more severe end of the spectrum less likely, we cautiously assume some moderate impact for this category of take that could lower an individual's fitness within the year such that females (assuming a 50 percent chance that a take is a female) might forego reproduction for one year. As noted previously, foregone reproduction has less of an impact on population rates than death (especially for one year) and the number of takes anticipated for each stock would not be expected to impact annual rates of recruitment or survival, even if all of the takes were females

(which would be highly unlikely), especially given the high residual PBRs of these stocks. In other words, if the stocks can absorb the numbers indicated through each stock's residual PBR without impacting ability to approach OSP, they can absorb the significantly lesser effect of a very small number of one-year delay in calving.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance is 32 percent and 60 percent, respectively, reflecting that only a subset of each stock would be taken by behavioral Level B harassment within a year. Of that subset, those taken would likely be taken one time, but if taken more than that, the 2 or 3 days would not likely be sequential (Table 20). Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels largely below 172 dB (*i.e.*, of a lower to occasionally moderate severity).

Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and not in a frequency band that would be expected to significantly interfere with dolphin communication, or echolocation or other important low-frequency cues. Therefore, the associated lost opportunities and capabilities are not expected to impact reproduction or survival. For these same reasons (low level and the likely frequency band), while a small permanent loss of hearing sensitivity may include some degree of energetic costs for compensating or may mean some small loss of opportunities or detection capabilities, the estimated Level A harassment takes by PTS for the dolphin stocks addressed here (15 and 31, respectively) would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individuals.

Altogether, any individual dolphin would likely be taken at a low to occasionally moderate level, with most animals likely not taken at all and with a subset of animals being taken up to a few non-sequential days. Even given the fact that some of the affected individuals may have compromised health, there is nothing to suggest that such a low magnitude and severity of effects, including the potential tissue damage, would result in impacts on annual rates of recruitment or survival

for either of these two stocks. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on the Gulf of Mexico stocks of pantropical spotted dolphins and spinner dolphins.

Western North Atlantic Dolphin Stocks (All Stocks in Table 20 Except Atlantic White-Sided Dolphin and Short-Beaked Common Dolphin)

There are no specific issues with the status of these stocks that cause particular concern (*e.g.*, no UMEs). No mortality is expected nor it proposed for authorization for these stocks. For some of these stocks, some tissue damage has been estimated and proposed to be authorized (1–9 depending on the stock). As discussed previously, tissue damage effects could range in impact from minor to something just less than M/SI that could seriously impact fitness. However, given the Navy's mitigation, which makes exposure at the closer to the source and more severe end of the spectrum less likely, we cautiously assume some moderate impact for all these takes that could lower an individual's fitness within the year such that a small number of females (assuming a 50 percent chance of being a female) might forego reproduction for one year. As noted previously, foregone reproduction has less of an impact on population rates than death (especially for one year) and one to a few instances would not be expected to impact annual rates of recruitment or survival, even if all of the takes were females (which would be highly unlikely), especially given the higher residual PBRs, which is known for the majority of stocks. For stocks with no calculated residual PBR or where abundance is unknown, the limited information available on population size indicates that the very low number of females who might forego reproduction would have no effect on annual rates of recruitment or survival.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance ranges up to 984 percent inside the U.S. EEZ (though some are significantly lower) and is generally much lower across the whole range of most stocks, reflecting that for many stocks only a subset of the stock will be impacted—although alternately for a few of the smaller bay stocks all individuals are expected to be taken across multiple days (Table 20). Generally, individuals of most stocks (especially bottlenose dolphins) might

be taken no more than several times each, while the other species in this group will only accrue takes to a portion of the stock, but individuals might be taken across 2–20 days within a year. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels largely below 172 dB (*i.e.*, of a lower level, less likely to evoke a severe response). While we do not have reason to expect that these takes would occur sequentially on more than several days in a row or be more severe in nature, the probability of this occurring increases the higher the total take numbers. Given higher percentages when compared to abundances, and especially where the absolute number of takes is higher (*e.g.*, spinner dolphin), we acknowledge the possibility that some smaller subset of individuals (especially in the larger stocks with higher total take numbers) could experience behavioral disruption of a degree that impacts energetic budgets such that reproduction could be delayed for a year. However, considering the very small number of potential reproductive effects from Level A harassment by tissue damage (1–9 depending on stock and assuming all individuals are female, which is very unlikely) in addition to the possible reproductive effect on a small subset of individuals from the takes by behavioral Level B harassment, this degree of effects on a small subset of individuals is still not expected to adversely affect annual rates of recruitment or survival. For the smaller Estuarine stocks with the potential repeated days of disturbance, we note that as described in the 2018 AFTT final rule, the activities that the Navy conducts in inland areas (not MTEs, etc.) are expected to generally result in lower severity responses, further decreasing the likelihood that they would cause effects on reproduction or survival, even if accrued over several sequential days.

Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and not in a frequency band that would be expected to significantly interfere with dolphin communication, or echolocation or other important low-frequency cues. Therefore, the associated lost opportunities and capabilities would not be expected to impact reproduction or survival. For these same reasons (low level and the likely frequency band), while a small permanent loss of hearing

sensitivity may include some degree of energetic costs for compensating or may mean some small loss of opportunities or detection capabilities, the estimated Level A harassment takes by PTS for the dolphin stocks addressed here (between 1 and 77) would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individual, even if PTS were to be experienced by an individual that also experiences one or more Level B harassment takes.

Altogether, any individual dolphin would likely be taken at a low to occasionally moderate level, with some animals likely taken once or not at all, a subset potentially disturbed across 2–20 predominantly non-sequential days, and a small number potentially experiencing a level of effects that could curtail reproduction for one year. The magnitude and severity of effects described is not expected to result in impacts on annual rates of recruitment or survival for any of the stocks. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on these Western North Atlantic stocks of dolphins.

Gulf of Mexico Dolphin Stocks (All of the Stocks Indicated in Table 20 Except Pantropical Spotted Dolphin and Spinner Dolphin)

As mentioned above and discussed in the 2018 AFTT final rule, the Gulf of Mexico stocks indicated in Table 20 suffer from lingering health issues resulting from the DWH oil spill (3–30 percent of individuals of these stocks have adverse health effects), which means that some of them could be more susceptible to exposure to other stressors, as well as negative population effects (predicting it will take up to 76 years, with that number varying across stocks, for stocks to return to population growth rates predicted in the absence of DWH effects). Of note, the Northern Coastal bottlenose dolphin adverse effect statistics are about twice as high as the others (*i.e.*, all other stocks are below 17 percent). No mortality has been estimated or proposed to be authorized for these stocks, however a few Level A harassment takes by tissue damage from explosives (zero for most, 1–2 for a few, and 6 for the Atlantic spotted dolphin stock) are estimated and proposed to be authorized. As noted previously, tissue damage effects could range in impact from minor to something just less than M/SI that could seriously impact fitness. However, given

the Navy's mitigation, which makes exposure at the closer to the source and more severe end of the spectrum less likely, we cautiously assume some moderate impact for these Level A harassment takes that could lower an individual's fitness within the year such that a female (assuming a 50 percent chance of being a female) might forego reproduction for one year. As noted previously, foregone reproduction has less of an impact on population rates than death (especially for one year) and a few instances, even up to six for the Atlantic spotted dolphin stock, would not be expected to impact annual rates of recruitment or survival, even if all of the takes were of females (which is highly unlikely).

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance ranges up to 177 percent, but is generally much lower for most stocks, reflecting that generally only a subset of each stock would be taken, with those in the subset taken only a few non-sequential days of the year (Table 20). Regarding the severity of those individual takes by Level B behavioral harassment, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels largely below 172 dB (*i.e.*, of a lower to occasionally moderate severity).

Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and not in a frequency band that would be expected to significantly interfere with dolphin communication, or echolocation or other important low-frequency cues. Therefore, the associated lost opportunities and capabilities would not be expected to impact reproduction or survival. For these same reasons (low level and the likely frequency band), while a small permanent loss of hearing sensitivity may include some degree of energetic costs for compensating or may mean some small loss of opportunities or detection capabilities, the estimated Level A harassment takes by PTS for the dolphin stocks addressed here (all 3 or below, with the exception of three stocks with much larger abundances with 4, 8, and 15 PTS takes) would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individual, even if PTS were to be experienced by an animal that also

experiences one or more Level B harassment takes.

Altogether, any individual dolphin would likely be taken at a low to occasionally moderate level, with many animals likely not taken at all and with a subset of animals being taken up to a few times. A very small number could potentially experience tissue damage that could curtail reproduction for one year. Even given the fact that some of the affected individuals may have compromised health, there is nothing to suggest that such a low magnitude and severity of effects would result in impacts on annual rates of recruitment or survival for any of the Gulf of Mexico stocks indicated in Table 20. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized

take would have a negligible impact on these Gulf of Mexico stocks of dolphins.

Harbor Porpoise

In Table 21 below for porpoises, we indicate the total annual mortality, Level A and Level B harassment, and a number indicating the instances of total take as a percentage of abundance. Table 21 is unchanged from Table 75 in the 2018 AFTT final rule. For additional information and analysis supporting the negligible-impact analysis, see the *Odontocetes* discussion as well as the *Harbor Porpoise* discussion in the *Group and Species-Specific Analyses* section of the 2018 AFTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

Table 21. Annual estimated takes by Level B harassment, Level A harassment, and mortality for porpoises in the AFTT Study Area and number

indicating the instances of total take as a percentage of stock abundance.

Note: In the table we compare estimated takes to abundance estimates generated from the same underlying density estimate (as described in the *Estimated Take of Marine Mammals* section of the 2018 AFTT final rule), versus abundance estimates directly from NMFS' SARs, which are not based on the same data and would not be appropriate for this purpose. Note that comparisons are made both within the U.S. EEZ only (where density estimates have lesser uncertainty) and across the whole Study Area (which offers a more comprehensive comparison for many stocks).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing plus harassment take from one large ship shock trial.

Table 21. Annual estimated takes by Level B harassment, Level A harassment, and mortality for porpoises in the AFTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

| Species | Stock | Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance) | | | | | Total takes | | Abundance | | Instances of total take as percentage of abundance | |
|--------------------------------|----------------------------|--|------------------------------------|--------------------|---------------|-----------|-------------|------------------------|-----------|------------------------|--|------------------------|
| | | Level B Harassment | | Level A Harassment | | Mortality | | | | | | |
| | | Behavioral Disturbance | TTS (may also include disturbance) | PTS | Tissue Damage | | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ |
| Family Phocoenidae (porpoises) | | | | | | | | | | | | |
| Harbor porpoise | Gulf of Maine/Bay of Fundy | 133,396 | 21,917 | 454 | 0 | 0 | 155,767 | 155,767 | 16,552 | 195,727 | 941 | 80 |

Note: In the table we compare estimated takes to abundance estimates generated from the same underlying density estimate (as described in the *Estimated Take of Marine Mammals* section of the 2018 AFTT final rule), versus abundance estimates directly from NMFS' SARs, which are not based on the same data and would not be appropriate for this purpose. Note that comparisons are made both within the U.S. EEZ only (where density estimates have lesser uncertainty) and across the whole Study Area (which offers a more comprehensive comparison for many stocks).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing plus harassment take from one large ship shock trial.

Below we compile and summarize the information that supports our determination that the Navy's activities would not adversely affect harbor porpoises through effects on annual rates of recruitment or survival.

The Gulf of Maine/Bay of Fundy stock of harbor porpoise is found predominantly in northern U.S. coastal waters (<150 m depth) and up into Canada's Bay of Fundy. No mortality or tissue damage by explosives are anticipated or proposed for authorization for this stock and there are no specific issues with the status of the stock that cause particular concern (e.g., no UMEs). Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances compared to the abundance within the U.S. EEZ and

both in and outside of the U.S. EEZ, respectively, is 941 percent and 80 percent (Table 21). This information, combined with the known range of the stock, suggests that only a portion of the individuals in the stock would likely be impacted (i.e., notably less than 80 percent given the likely repeats; in other words more than 20 percent would be taken zero times), but that there would likely be some amount of repeat exposures across days (perhaps 6–19 days within a year) for some subset of individuals that spend extended times within the U.S. EEZ. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to be from minutes to hours and not likely exceeding 24 hrs, and the

received sound levels of the MF1 bin are largely between 154 and 166 dB, which, for a harbor porpoise (which have a lower behavioral Level B harassment threshold) would mostly be considered a moderate level.

Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and not in a frequency band that would be expected to significantly interfere with harbor porpoise communication, or echolocation or other important low-frequency cues. Therefore, the associated lost opportunities and capabilities would not be expected to impact reproduction or survival. For these same reasons (low level and the likely frequency band), while a small permanent loss of hearing sensitivity

may include some degree of energetic costs for compensating or may mean some small loss of opportunities or detection capabilities, the estimated 454 Level A harassment takes by PTS for harbor porpoise would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival for most individuals, even if PTS were to be experienced by an individual that also experiences one or more Level B harassment takes. Because of the high number of PTS takes, we acknowledge that a few animals could potentially incur permanent hearing loss of a higher degree that could potentially interfere with their successful reproduction and growth. However, given the status of the stock (high abundance and residual PBR of 451), even if this occurred, it would not adversely impact rates of recruitment or survival.

Altogether, because harbor porpoises are particularly sensitive, it is likely that a fair number of the responses would be of a moderate nature. Additionally, as noted, some portion of the stock may be

taken repeatedly on up to 19 days within a year, with some of those being sequential. Given this and the larger number of total takes (both to the stock and to individuals), it is more likely (probabilistically) that some small number of individuals could be interrupted during foraging in a manner and amount such that impacts to the energy budgets of females (from either losing feeding opportunities or expending considerable energy to find alternative feeding options) could cause them to forego reproduction for a year (energetic impacts to males generally have limited impact on population rates unless they cause death, and it takes extreme energy deficits beyond what would ever be likely to result from these activities to cause the death of an adult marine mammal). As noted previously, however, foregone reproduction (especially for one year) has far less of an impact on population rates than mortality and a small number of instances would not be expected to adversely impact annual rates of recruitment or survival, especially given that the residual PBR of harbor

porpoises is 451. All indications are that the number of times in which reproduction would be likely to be foregone would not affect the stock's annual rates of recruitment or survival. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on harbor porpoises.

Beaked Whales

In Table 22 below for beaked whales, we indicate the total annual mortality, Level A and Level B harassment, and a number indicating the instances of total take as a percentage of abundance. Table 22 is unchanged from Table 76 in the 2018 AFTT final rule. For additional information and analysis supporting the negligible-impact analysis, see the *Odontocetes* discussion as well as the *Beaked Whales* discussion in the *Group and Species-Specific Analyses* section of the 2018 AFTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

Table 22. Annual estimated takes by Level B harassment, Level A harassment, and mortality for beaked whales in the AFTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

| Species | Stock | Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance) | | | | | Total takes | | Abundance | | Instances of total take as percentage of abundance | |
|---|-------------------------|--|------------------------------------|-----|---------------|-----------|-------------|------------------------|-----------|------------------------|--|------------------------|
| | | Level B Harassment | Level A Harassment | PTS | Tissue Damage | Mortality | | | | | | |
| | | Behavioral Disturbance | TTS (may also include disturbance) | | | | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ |
| <i>Suborder Odontoceti (toothed whales)</i> | | | | | | | | | | | | |
| <i>Family Ziphiidae (beaked whales)</i> | | | | | | | | | | | | |
| Blainville's beaked whale | Northern Gulf of Mexico | 1,420 | 8 | 0 | 0 | 0 | 1,428 | 1,428 | 966 | 966 | 148 | 148 |
| | Western North Atlantic | 22,902 | 197 | 1 | 0 | 0 | 19,959 | 23,100 | 1,274 | 14,277 | 1,567 | 162 |
| Cuvier's beaked whale | Northern Gulf of Mexico | 1,487 | 8 | 0 | 0 | 0 | 1,495 | 1,495 | 966 | 966 | 155 | 155 |
| | Western North Atlantic | 84,460 | 724 | 3 | 0 | 0 | 73,799 | 85,187 | 4,704 | 52,716 | 1,569 | 162 |
| Gervais' beaked whale | Northern Gulf of Mexico | 1,420 | 8 | 0 | 0 | 0 | 1,428 | 1,428 | 966 | 966 | 148 | 148 |
| | Western North Atlantic | 22,902 | 197 | 1 | 0 | 0 | 19,959 | 23,100 | 1,274 | 14,277 | 1,567 | 162 |
| Northern bottlenose whale | Western North Atlantic | 2,040 | 4 | 0 | 0 | 0 | 1,836 | 2,044 | 100 | 688 | 1,836 | 297 |
| Sowersby's beaked whale | Western North Atlantic | 22,930 | 197 | 1 | 0 | 0 | 19,987 | 23,128 | 1,274 | 14,277 | 1,569 | 162 |
| True's beaked whale | Western North Atlantic | 22,930 | 197 | 1 | 0 | 0 | 19,987 | 23,128 | 1,274 | 14,277 | 1,569 | 162 |

Note: In the table we compare estimated takes to abundance estimates generated from the same underlying density estimate (as described in the *Estimated Take of Marine Mammals* section of the 2018 AFTT final rule), versus abundance estimates directly from NMFS' SARs, which are not based on the same data and would not be appropriate for this purpose. Note that comparisons are made both within the U.S. EEZ only (where density estimates have lesser uncertainty) and across the whole Study Area (which offers a more comprehensive comparison for many stocks).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing plus harassment take from one large ship shock trial.

Below we compile and summarize the information that supports our determination that the Navy's activities would not adversely affect any species or stocks through effects on annual rates of recruitment or survival for any of the affected species or stocks addressed in this section.

Beaked Whales, Including Northern Bottlenose Whale (Western North Atlantic Stocks)

These stocks span the deeper waters of the East Coast of the U.S. north to Canada and out into oceanic waters beyond the U.S. EEZ. There is no currently reported trend for these populations and there are no specific issues with the status of the stocks that cause particular concern. Neither

mortality nor tissue damage from explosives is anticipated or proposed for authorization for these stocks. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance within the U.S. EEZ and both in and outside of the U.S. EEZ is 1,567–1,836 percent and 148–297 percent, respectively (Table 22). This information, combined with the known

range of the stocks, suggests that while not all of the individuals in these stocks would most likely be taken (because they span well into oceanic waters), of those that are, most would be taken over a few days (though likely not sequential) and some subset that spends extended time within the U.S. EEZ would likely be taken over a larger amount of days (maybe 15–37), some of which could be sequential. Regarding the severity of those individual takes by behavioral Level B harassment, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to generally be between minutes and hours and largely between 148 and 160 dB, though with beaked whales, which are considered somewhat more sensitive, this could mean that some individuals will leave preferred habitat for a day or two. However, while interrupted feeding bouts are a known response and concern for odontocetes, we also know that there are often viable alternative habitat options in the relative vicinity in the Western North Atlantic.

Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and not in a frequency band that would adversely affect communication, inhibit echolocation, or otherwise interfere with other low-frequency cues. Therefore any associated lost opportunities and capabilities would not impact reproduction or survival. For the same reasons (low level and frequency band) the one to three estimated Level A harassment takes by PTS for these stocks are unlikely to have any effect on the reproduction or survival of any individual, even if PTS were to be experienced by an individual that also experiences one or more Level B harassment takes.

Altogether, a small portion of the stock would likely be taken (at a relatively moderate level) on a relatively moderate to high number of days across the year, some of which could be sequential. Though the majority of impacts are expected to be of a sometimes low, but more likely, moderate magnitude and severity, the sensitivity of beaked whales and larger number of takes makes it more likely (probabilistically) that a small number of individuals could be interrupted during foraging in a manner and amount such that impacts to the energy budgets

of females (from either losing feeding opportunities or expending considerable energy to find alternative feeding options) could cause them to forego reproduction for a year (energetic impacts to males generally have limited impact on population rates unless they cause death, and it takes extreme energy deficits beyond what would ever be likely to result from these activities to cause the death of an adult marine mammal). As noted previously, however, foregone reproduction (especially for one year) has far less of an impact on population rates than mortality and a small number of instances would not be expected to adversely impact annual rates of recruitment or survival. Based on the abundance of these stocks in the area and the evidence of little, if any, known human-caused mortality, all indications are that the small number of times in which reproduction would be likely to be foregone would not affect the stocks' annual rates of recruitment or survival. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on the Western North Atlantic stocks of beaked whales.

Beaked Whales (Gulf of Mexico Stocks)

The animals in these stocks suffer from lingering health issues resulting from the DWH oil spill (four percent of individuals of these stocks have adverse health effects), which means that some of them could be more susceptible to exposure to other stressors, and negative population effects (10 years for their growth rate to recover to the rate predicted for the stocks if they had not incurred spill impacts). Neither mortality nor tissue damage from explosives is anticipated or proposed for authorization for these stocks. Level A harassment take from PTS is also unlikely to occur. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance is 148–155 percent (Table 22). This information indicates that either the individuals in these stocks would all be taken by harassment one or two days within a year, or that a subset would not be taken at all and a small subset may be taken several times. Regarding the

severity of those individual takes, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to generally be between minutes and hours and largely between 148 and 160 dB, though with beaked whales, which are considered somewhat more sensitive, this could mean that some individuals will leave preferred habitat for a day or two. However, while interrupted feeding bouts are a known response and concern for odontocetes, we also know that there are often viable alternative habitat options in the relative vicinity in the Gulf of Mexico. Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and not in a frequency band that would adversely affect communication, inhibit echolocation, or otherwise interfere with other low frequency cues. Therefore any associated lost opportunities and capabilities would not impact reproduction or survival.

Altogether, likely only a portion of these stocks would be impacted and any individual beaked whale likely would be disturbed at a moderate level for no more than a few days per year. Even given the fact that some of the affected individuals may have compromised health, there is nothing to suggest that this magnitude and severity of effects would result in impacts on annual rates of recruitment or survival for any of the stocks. For these reasons, we have preliminarily determined, in consideration of all of the effects of the Navy's activities combined, that the proposed authorized take would have a negligible impact on the Gulf of Mexico stocks of beaked whales included in Table 22.

Pinnipeds

In Table 23 below for pinnipeds, we indicate the total annual mortality, Level A and Level B harassment, and a number indicating the instances of total take as a percentage of abundance. Table 23 is unchanged from Table 77 in the 2018 AFTT final rule. For additional information and analysis supporting the negligible-impact analysis, see the *Pinnipeds* discussion in the *Group and Species-Specific Analyses* section of the 2018 AFTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

Table 23: Annual estimated takes by Level B harassment, Level A harassment, and mortality for pinnipeds in the AFTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

| Species | Stock | Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance) | | | | | Total takes | | Abundance | | Instances of total take as percentage of abundance | | |
|------------------------------|------------------------|--|------------------------------------|--------------------|---------------|-----------|-------------|------------------------|-----------|------------------------|--|------------------------|--|
| | | Level B Harassment | | Level A Harassment | | Mortality | | | | | | | |
| | | Behavioral Disturbance | TTS (may also include disturbance) | PTS | Tissue Damage | | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ | In EEZ | Inside and Outside EEZ | |
| Suborder Pinnipedia | | | | | | | | | | | | | |
| Family Phocidae (true seals) | | | | | | | | | | | | | |
| Gray seal | Western North Atlantic | 810 | 1,528 | 2 | 0 | 0 | 2,340 | 2,340 | 2,472 | 2,472 | 95 | 95 | |
| Harbor seal | Western North Atlantic | 1,312 | 2,477 | 4 | 0 | 0 | 3,793 | 3,793 | 11,122 | 11,122 | 34 | 34 | |
| Harp seal | Western North Atlantic | 6,339 | 9,955 | 3 | 0 | 0 | 16,297 | 16,297 | 7,242 | 7,242 | 225 | 225 | |
| Hooded seal | Western North Atlantic | 448 | 466 | 0 | 0 | 0 | 914 | 914 | 880 | 880 | 104 | 104 | |

Note: In the table we compare estimated takes to abundance estimates generated from the same underlying density estimate (as described in the *Estimated Take of Marine Mammals* section of the 2018 AFTT final rule), versus abundance estimates directly from NMFS' SARs, which are not based on the same data and would not be appropriate for this purpose. Note that comparisons are made both within the U.S. EEZ only (where density estimates have lesser uncertainty) and across the whole Study Area (which offers a more comprehensive comparison for many stocks).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing plus harassment take from one large ship shock trial.

Below we compile and summarize the information that supports our determination that the Navy's activities would not adversely affect any pinnipeds through effects on annual rates of recruitment or survival for any of the affected species or stocks addressed in this section.

The Western North Atlantic pinniped (harp seal, harbor seal, hooded seal, and gray seal) stocks are northern, but highly migratory species. While harp seals are limited to the northern portion of the U.S. EEZ, gray and harbor seals may be found as far south as the Chesapeake Bay in late fall and hooded seals migrate as far south as Puerto Rico. A UME has been designated for seals from Maine to Virginia and the main pathogen found in the seals that have been tested is phocine distemper virus. Neither mortality nor tissue damage from explosives is anticipated or proposed for authorization for any of these stocks. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of harassment compared to the abundance that is expected within the AFTT Study Area is 34–225 percent, which suggests that only a subset of the animals in the AFTT Study Area would be taken, but that a few might be taken on several days within the year (1–5 days), but not likely on sequential days. When the fact that some of these seals are residing in areas near Navy activities is considered, we can estimate that perhaps some of those individuals might be taken some higher number of days within the year (up to

approximately 10 days), but still with no reason to think that these takes would occur on sequential days, which means that we would not expect effects on reproduction or survival. Regarding the severity of those individual behavioral Level B harassment takes, as explained in the 2018 AFTT final rule, the duration of any exposure response is expected to be between minutes and hours (*i.e.*, relatively short) and the received sound levels are largely below 172 dB, with some up to 178 dB (*i.e.*, of a lower to moderate level, less likely to evoke a severe response) and therefore there is no indication that the expected takes by behavioral Level B harassment would have any effect on annual rates of recruitment or survival.

Regarding the severity of TTS takes, as explained in the 2018 AFTT final rule, they are expected to be low-level, of short duration, and not in a frequency band that would adversely affect communication or otherwise interfere with other low-frequency cues. Therefore any associated lost opportunities and capabilities would not impact reproduction or survival. For the same reasons (low level and frequency band) the two to four estimated Level A harassment takes by PTS for these stocks are unlikely to have any effect on the reproduction or survival of any individual, even if PTS were to be experienced by an animal that also experiences one or more Level B harassment takes.

Even given the fact that some of the affected harbor seal individuals may have compromised health due to the

UME, there is nothing to suggest that such a low magnitude and severity of effects would result in impacts on annual rates of recruitment or survival, especially given that the stock abundance in the SAR is 75,839 with a residual PBR of 1,651. Similarly, given the low magnitude and severity of effects, there is no indication that these activities would affect reproduction or survival of harp or hooded seals, much less adversely affect rates of recruitment or survival, especially given that harp seal abundance is estimated at 6.9 million and hooded seal residual PBR is 13,950. Gray seals are experiencing a UME as well as an exceedance of more than 4,299 M/SI above PBR. The NMFS SAR notes that the U.S. portion of average annual human-caused M/SI in U.S. waters does not exceed the portion of PBR in U.S. waters, and that while the status of the gray seal population relative to OSP in U.S. Atlantic EEZ waters is unknown the stock abundance appears to be increasing in U.S. and Canadian waters (Hayes *et al.*, 2018). Also, given the low magnitude (take compared to abundance is 95 percent, meaning the subset of individuals taken may be taken a few times on non-sequential days) and low to occasionally moderate severity of impacts, no impacts to individual reproduction or survival are expected and therefore no effects on annual rates of recruitment or survival would occur. For these reasons, in consideration of all of the effects of the Navy's activities combined, we have preliminarily determined that the proposed authorized take would have a

negligible impact on the Western North Atlantic stocks of gray seals, harbor seals, hooded seals, and harp seals.

Determination

The 2018 AFTT final rule included a detailed discussion of all of the anticipated impacts on the affected species and stocks from serious injury and mortality, Level A harassment, and Level B harassment; impacts on habitat; and how the Navy's mitigation and monitoring measures reduced the number and/or severity of adverse effects. We evaluated how these impacts and mitigation measures are expected to combine, annually, to affect individuals of each stock. Those effects were then evaluated in the context of whether they are reasonably likely to impact reproductive success or survivorship of individuals and then, if so, further analyzed to determine whether there would be effects on annual rates of recruitment or survival that would adversely affect the species or stock.

As described above, the basis for the negligible impact determination is the assessment of effects on annual rates of recruitment and survival. Accordingly, the analysis included in the 2018 AFTT final rule used annual activity levels, the best available science, and approved methods to predict the annual impacts to marine mammals, which were then analyzed in the context of whether each species or stock would incur more than a negligible impact based on anticipated adverse impacts to annual rates of recruitment or survival. As we have described above, none of the factors upon which the annually-based conclusions in the 2018 AFTT final rule were based have changed in a manner that would change our determinations. Therefore, even though this proposed rule includes two additional years, because our findings are based on annual rates of recruitment and survival, and nothing has changed in a manner that would change our 2018 AFTT rule annual analyses, it is appropriate to rely on those analyses, as well as the information and analysis discussed above, for this proposed rule.

Based on the applicable information and analysis from the 2018 AFTT final rule as updated with the information and analysis contained herein on the potential and likely effects of the specified activities on the affected marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS preliminarily finds that the incidental take from the specified activities will have a negligible impact on all affected marine mammal species and stocks.

Subsistence Harvest of Marine Mammals

There are no subsistence uses or harvest of marine mammals in the geographic area affected by the specified activities. Therefore, NMFS has determined that the total taking affecting species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

ESA

There are six marine mammal species under NMFS jurisdiction that are listed as endangered or threatened under the ESA with confirmed or possible occurrence in the AFTT Study Area: Blue whale (Western North Atlantic stock), fin whale (Western North Atlantic stock), sei whale (Nova Scotia stock), sperm whale (Gulf of Mexico Oceanic stock and North Atlantic stock), North Atlantic right whale (Western North Atlantic stock), and Bryde's whale (Northern Gulf of Mexico stock). The Navy consulted with NMFS pursuant to section 7 of the ESA for AFTT activities. NMFS also consulted internally on the issuance of the 2018 AFTT regulations and LOAs under section 101(a)(5)(A) of the MMPA. NMFS issued a Biological and Conference Opinion on October 22, 2018 concluding that the issuance of the 2018 AFTT final rule and subsequent LOAs are not likely to jeopardize the continued existence of the threatened and endangered species under NMFS' jurisdiction and are not likely to result in the destruction or adverse modification of critical habitat in the AFTT Study Area. The Biological and Conference Opinion for this action is available at <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities>. NMFS' Permits and Conservation Division is currently discussing the 2019 Navy application with NMFS' ESA Interagency Cooperation Division.

National Marine Sanctuaries Act

Federal agency actions that are likely to injure national marine sanctuary resources are subject to consultation with the Office of National Marine Sanctuaries (ONMS) under section 304(d) of the National Marine Sanctuaries Act (NMSA).

On December 15, 2017, the Navy initiated consultation with ONMS and submitted a Sanctuary Resource Statement (SRS) that discussed the effects of the Navy's AFTT activities in the vicinity of Stellwagen Bank, Gray's

Reef, and Florida Keys National Marine Sanctuaries on sanctuary resources. NMFS worked with the Navy in the development of the SRS to ensure that it could serve jointly as an SRS for NMFS' action under the MMPA as well.

On December 20, 2017, NMFS initiated consultation with ONMS on MMPA incidental take regulations for the Navy's AFTT activities. NMFS requested that ONMS consider the description and assessment of the effects of the Navy's activities, which included an assessment of the effects on marine mammals, included in the joint SRS submitted by the Navy as satisfying NMFS' need to provide an SRS.

ONMS reviewed the SRS, as well as an addendum the Navy provided on April 3, 2018. On April 12, 2018, ONMS found the SRS addendum sufficient for the purposes of making an injury determination to develop recommended alternatives as required by the NMSA. On May 15, 2018, ONMS recommended two reasonable and prudent measures to Navy and NMFS (one of which applied to NMFS) to minimize injury and to protect sanctuary resources. ONMS subsequently provided a slight modification of those recommendations to the Navy and NMFS on August 1, 2018. On August 17, 2018, the Navy agreed to implement both ONMS recommendations and on October 30, 2018, NMFS agreed to implement the recommendation that applied to NMFS. NMFS' Permits and Conservation Division is currently discussing the 2019 Navy application with ONMS.

NEPA

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216-6A, NMFS must evaluate our proposed actions and alternatives with respect to potential impacts on the human environment. NMFS participated as a cooperating agency on the 2018 AFTT FEIS/OEIS (published on September 14, 2018, <http://www.aftteis.com>) which evaluated impacts from Navy training and testing activities in the AFTT Study Area for the reasonably foreseeable future. In accordance with 40 CFR 1506.3, NMFS independently reviewed and evaluated the 2018 AFTT FEIS/OEIS and determined that it was adequate and sufficient to meet our responsibilities under NEPA for the issuance of the 2018 AFTT final rule and associated LOAs. NOAA therefore adopted the 2018 AFTT FEIS/OEIS. In accordance with 40 CFR 1502.9 and the information and analysis contained in this proposed rule, the Navy and NMFS as a

cooperating agency have made a preliminary determination that this proposed rule and any subsequent LOAs would not result in impacts that were not fully considered in the 2018 AFTT FEIS/OEIS. As indicated in this proposed rule, the Navy has made no substantial changes to the proposed action nor are there significant new circumstances or information relevant to environmental concerns or its impacts. NMFS will make a final NEPA determination prior to a decision whether to issue a final rule.

Classification

The Office of Management and Budget has determined that this proposed 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 proposed 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, NMFS concludes the action would not result in a significant economic impact on a substantial number of small entities.

List of Subjects in 50 CFR Part 218

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

Dated: May 6, 2019.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

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

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.*, unless otherwise noted.

■ 2. Revise subpart I of 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.

218.82 Permissible methods of taking.

218.83 Prohibitions.

218.84 Mitigation requirements.

218.85 Requirements for monitoring and reporting.

218.86 Letters of Authorization.

218.87 Renewals and modifications of Letters of Authorization.

218.88–218.89 [Reserved]

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

§ 218.80 Specified activity and 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 described in paragraph (b) of this section and that occurs incidental to the activities listed in paragraph (c) of this section.

(b) The taking of marine mammals by the Navy under this subpart may be authorized in Letters of Authorization (LOAs) only if it occurs within the Atlantic Fleet Training and Testing

(AFTT) Study Area, which includes areas of the western Atlantic Ocean along the East Coast of North America, portions of the Caribbean Sea, and the Gulf of Mexico. The AFTT Study Area begins at the mean high tide line along the U.S. East Coast and extends east to the 45-degree west longitude line, north to the 65-degree north latitude line, and south to approximately the 20-degree north latitude line. The AFTT Study Area also includes Navy pierside locations, bays, harbors, and inland waterways, and civilian ports where training and testing occurs.

(c) The taking of marine mammals by the Navy is only authorized if it occurs incidental to the Navy conducting training and testing activities, including:

- (1) *Training.* (i) Amphibious warfare;
- (ii) Anti-submarine warfare;
- (iii) Electronic warfare;
- (iv) Expeditionary warfare;
- (v) Mine warfare;
- (vi) Surface warfare, and
- (vii) Pile driving.

(2) *Testing.* (i) Naval Air Systems Command Testing Activities;

(ii) Naval Sea System Command Testing Activities; and

(iii) Office of Naval Research Testing Activities.

§ 218.81 Effective dates.

Regulations in this subpart are effective from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] through November 13, 2025.

§ 218.82 Permissible methods of taking.

(a) Under LOAs issued pursuant to §§ 216.106 of this chapter and 218.86, the Holder of the LOAs (hereinafter "Navy") may incidentally, but not intentionally, take marine mammals within the area described in § 218.80(b) by Level A harassment and Level B harassment associated with the use of active sonar and other acoustic sources and explosives as well as serious injury or mortality associated with ship shock trials and vessel strikes, provided the activity is in compliance with all terms, conditions, and requirements of these regulations in this subpart and the applicable LOAs.

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

TABLE 1 TO § 218.82

| Species | Stock |
|---|----------|
| Suborder Mysticeti (baleen whales) | |
| <i>Family Balaenidae (right whales):</i> | |
| North Atlantic right whale* | Western. |

TABLE 1 TO §218.82—Continued

| Species | Stock |
|--|--|
| <i>Family Balaenopteridae (roquals):</i> | |
| Blue whale * | Western North Atlantic (Gulf of St. Lawrence). |
| Bryde's whale * | Northern Gulf of Mexico. NSD. |
| Minke whale | Canadian East Coast. |
| Fin whale * | Western North Atlantic. |
| Humpback whale | Gulf of Maine. |
| Sei whale * | Nova Scotia. |
| Suborder Odontoceti (toothed whales). | |
| <i>Family Physeteridae (sperm whale):</i> | |
| Sperm whale * | Gulf of Mexico Oceanic. North Atlantic. |
| <i>Family Kogiidae (sperm whales):</i> | |
| Dwarf sperm whale. | Gulf of Mexico Oceanic. Western North Atlantic. |
| Pygmy sperm whale | Northern Gulf of Mexico. Western North Atlantic. |
| <i>Family Ziphiidae (beaked whales):</i> | |
| Blainville's beaked whale | Northern Gulf of Mexico. Western North Atlantic. |
| Cuvier's beaked whale | Northern Gulf of Mexico. Western North Atlantic. |
| Gervais' beaked whale | Northern Gulf of Mexico. Western North Atlantic. |
| Northern bottlenose whale | Western North Atlantic. |
| Sowersby's beaked whale | Western North Atlantic. |
| True's beaked whale | Western North Atlantic. |
| <i>Family Delphinidae (dolphins)</i> | |
| Atlantic spotted dolphin | Northern Gulf of Mexico. Western North Atlantic. |
| Atlantic white-sided dolphin | Western North Atlantic. |
| Bottlenose dolphin | Choctawhatchee Bay. Gulf of Mexico Eastern Coastal. Gulf of Mexico Northern Coastal. Gulf of Mexico Western Coastal. Indian River Lagoon Estuarine System. Jacksonville Estuarine System. Mississippi Sound, Lake Borgne, Bay Boudreau. Northern Gulf of Mexico Continental Shelf. Northern Gulf of Mexico Oceanic. Northern North Carolina Estuarine System. Southern North Carolina Estuarine System. Western North Atlantic Northern Florida Coastal. Western North Atlantic Central Florida Coastal. Western North Atlantic Northern Migratory Coastal. Western North Atlantic Offshore. Western North Atlantic South Carolina/Georgia Coastal. Western North Atlantic Southern Migratory Coastal. |
| Clymene dolphin | Northern Gulf of Mexico. Western North Atlantic. |
| False killer whale | Northern Gulf of Mexico. Western North Atlantic. |
| Fraser's dolphin | Northern Gulf of Mexico. Western North Atlantic. |
| Killer whale | Northern Gulf of Mexico. Western North Atlantic. |
| Long-finned pilot whale | Western North Atlantic. |
| Melon-headed whale | Northern Gulf of Mexico. Western North Atlantic. |
| Pantropical spotted dolphin | Northern Gulf of Mexico. Western North Atlantic. |
| Pygmy killer whale | Northern Gulf of Mexico. Western North Atlantic. |
| Risso's dolphin | Northern Gulf of Mexico. Western North Atlantic. |
| Rough-toothed dolphin | Northern Gulf of Mexico. Western North Atlantic. |
| Short-beaked common dolphin | Western North Atlantic. |
| Short-finned pilot whale | Northern Gulf of Mexico. Western North Atlantic. |

TABLE 1 TO § 218.82—Continued

| Species | Stock |
|---------------------------------|-----------------------------|
| Spinner dolphin | Northern Gulf of Mexico. |
| Striped dolphin | Western North Atlantic. |
| White-beaked dolphin | Northern Gulf of Mexico. |
| Family Phocoenidae (porpoises): | Western North Atlantic. |
| Harbor porpoise | Western North Atlantic. |
| | Gulf of Maine/Bay of Fundy. |
| Suborder Pinnipedia | |
| Family Phocidae (true seals): | |
| Gray seal | Western North Atlantic. |
| Harbor seal | Western North Atlantic. |
| Harp seal | Western North Atlantic. |
| Hooded seal | Western North Atlantic. |

§ 218.83 Prohibitions.

Notwithstanding incidental takings contemplated in § 218.82(a) and authorized by LOAs issued under §§ 216.106 of this chapter and 218.86, no person in connection with the activities listed in § 218.80(c) may:

(a) Violate, or fail to comply with the terms, conditions, and requirements of this subpart or an LOA issued under § 216.106 of this chapter and § 218.86;

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

(c) Take any marine mammal specified § 218.82(b) in any manner other than as specified in the LOAs; or

(d) Take a marine mammal specified § 218.82(b) if NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal.

§ 218.84 Mitigation requirements.

When conducting the activities identified in § 218.80(c), the mitigation measures contained in any LOAs issued under §§ 216.106 of this chapter and 218.86 must be implemented. These mitigation measures include, but are not limited to:

(a) *Procedural mitigation.* Procedural mitigation is mitigation that the Navy must implement whenever and wherever an applicable training or testing activity takes place within the AFTT Study Area for each applicable activity category or stressor category and includes acoustic stressors (*i.e.*, active sonar, air guns, pile driving, weapons firing noise), explosive stressors (*i.e.*, sonobuoys, torpedoes, medium-caliber and large-caliber projectiles, missiles and rockets, bombs, sinking exercises, mines, anti-swimmer grenades, line charge testing and ship shock trials), and physical disturbance and strike stressors (*i.e.*, vessel movement; towed in-water devices; small-, medium-, and large-caliber non-explosive practice

munitions; non-explosive missiles and rockets; non-explosive bombs and mine shapes).

(1) *Environmental awareness and education.* Appropriate personnel (including civilian personnel) involved in mitigation and training or testing activity reporting under the specified activities must complete one or more modules of the U.S. Navy Afloat Environmental Compliance Training Series, as identified in their career path training plan. Modules include: Introduction to the U.S. Navy Afloat Environmental Compliance Training Series, Marine Species Awareness Training, U.S. Navy Protective Measures Assessment Protocol, and U.S. Navy Sonar Positional Reporting System and Marine Mammal Incident Reporting.

(2) *Active sonar.* Active sonar includes low-frequency active sonar, mid-frequency active sonar, and high-frequency active sonar. For vessel-based active sonar activities, mitigation applies only to sources that are positively controlled and deployed from manned surface vessels (*e.g.*, sonar sources towed from manned surface platforms). For aircraft-based active sonar activities, mitigation applies only to sources that are positively controlled and deployed from manned aircraft that do not operate at high altitudes (*e.g.*, rotary-wing aircraft). Mitigation does not apply to active sonar sources deployed from unmanned aircraft or aircraft operating at high altitudes (*e.g.*, maritime patrol aircraft).

(i) *Number of Lookouts and observation platform.* (A) *Hull-mounted sources.* One Lookout for platforms with space or manning restrictions while underway (at the forward part of a small boat or ship) and platforms using active sonar while moored or at anchor (including pierside); two Lookouts for platforms without space or manning restrictions while underway (at the

forward part of the ship); and four Lookouts for pierside sonar testing activities at Port Canaveral, Florida and Kings Bay, Georgia.

(B) *Sources that are not hull-mounted sources.* One Lookout on the ship or aircraft conducting the activity.

(ii) *Mitigation zones and requirements.* During the activity, at 1,000 yard (yd) Navy personnel must power down 6 decibels (dB), at 500 yd Navy personnel must power down an additional 4 dB (for a total of 10 dB), and at 200 yd Navy personnel must shut down for low-frequency active sonar ≥ 200 dB and hull-mounted mid-frequency active sonar; or at 200 yd Navy personnel must shut down for low-frequency active sonar < 200 dB, mid-frequency active sonar sources that are not hull-mounted, and high-frequency active sonar.

(A) Prior to the initial start of the activity (*e.g.*, when maneuvering on station), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of active sonar transmission.

(B) During low-frequency active sonar at or above 200 dB and hull-mounted mid-frequency active sonar, Navy personnel must observe the mitigation zone for marine mammals and power down active sonar transmission by 6 dB if marine mammals are observed within 1,000 yd of the sonar source; power down by an additional 4 dB (10 dB total) if marine mammals are observed within 500 yd of the sonar source; and cease transmission if marine mammals are observed within 200 yd of the sonar source.

(C) During low-frequency active sonar below 200 dB, mid-frequency active sonar sources that are not hull mounted, and high-frequency active sonar, Navy personnel must observe the mitigation zone for marine mammals and cease active sonar transmission if marine mammals are observed within 200 yd of the sonar source.

(D) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing or powering up active sonar transmission) until one of the following conditions has been 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, speed, and movement relative to the sonar source; the mitigation zone has been clear from any additional sightings for 10 minutes (min) for aircraft-deployed sonar sources or 30 min for vessel-deployed sonar sources; for mobile activities, the active sonar source has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting; or for activities using hull-mounted sonar where a dolphin(s) is observed in the mitigation zone, the Lookout concludes that the dolphin(s) is deliberately closing in on the ship to ride the ship's bow wave, and is therefore out of the main transmission axis of the sonar (and there are no other marine mammal sightings within the mitigation zone).

(3) *Air guns.* (i) *Number of Lookouts and observation platform.* One Lookout must be positioned on a ship or pier side.

(ii) *Mitigation zone and requirements.* 150 yd around the air gun.

(A) Prior to the initial start of the activity (e.g., when maneuvering on station), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of air gun use.

(B) During the activity, Navy personnel must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must cease use of air guns.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity:

Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing air gun use) until one of the following conditions has been 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, speed, and movement relative to the air gun; the mitigation zone has been clear from any additional sightings for 30 min; or for mobile activities, the air gun has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting.

(4) *Pile driving.* Pile driving and pile extraction sound during Elevated Causeway System training.

(i) *Number of Lookouts and observation platform.* One Lookout must be positioned on the shore, the elevated causeway, or a small boat.

(ii) *Mitigation zone and requirements.* 100 yd around the pile driver.

(A) Prior to the initial start of the activity (for 30 min), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must delay the start of pile driving or vibratory pile extraction.

(B) During the activity, Navy personnel must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must cease impact pile driving or vibratory pile extraction.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing pile driving or pile extraction) until one of the following conditions has been 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, speed, and movement relative to the pile driving location; or the mitigation zone has been clear from any additional sightings for 30 min.

(5) *Weapons firing noise.* Weapons firing noise associated with large-caliber gunnery activities.

(i) *Number of Lookouts and observation platform.* One Lookout must be positioned on the ship conducting

the firing. Depending on the activity, the Lookout could be the same as the one provided for under Explosive medium-caliber and large-caliber projectiles or under Small-, medium-, and large-caliber non-explosive practice munitions in paragraph (a)(8)(i) and (a)(19)(i) of this section.

(ii) *Mitigation zone and requirements.* Thirty degrees on either side of the firing line out to 70 yd from the muzzle of the weapon being fired.

(A) Prior to the initial start of the activity, Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of weapons firing.

(B) During the activity, Navy personnel must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must cease weapons firing.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing weapons firing) until one of the following conditions has been 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, speed, and movement relative to the firing ship; the mitigation zone has been clear from any additional sightings for 30 min; or for mobile activities, the firing ship has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting.

(6) *Explosive Sonobuoys.* (i) *Number of Lookouts and observation platform.* One Lookout must be positioned in an aircraft or on small boat. If additional platforms are participating in the activity, personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* 600 yd around an explosive sonobuoy.

(A) Prior to the initial start of the activity (e.g., during deployment of a sonobuoy field, which typically lasts 20–30 min), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate

or delay the start until the mitigation zone is clear. Navy personnel must conduct passive acoustic monitoring for marine mammals and use information from detections to assist visual observations. Navy personnel also must visually observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of sonobuoy or source/receiver pair detonations.

(B) During the activity, Navy personnel must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must cease sonobuoy or source/receiver pair detonations.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing detonations) until one of the following conditions has been 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, speed, and movement relative to the sonobuoy; or the mitigation zone has been clear from any additional sightings for 10 min when the activity involves aircraft that have fuel constraints (e.g., helicopter), or 30 min when the activity involves aircraft that are not typically fuel constrained.

(D) After completion of the activity (e.g., prior to maneuvering off station)—when practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(7) *Explosive torpedoes.* (i) *Number of Lookouts and observation platform.* One Lookout positioned in an aircraft. If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* 2,100 yd around the intended impact location.

(A) Prior to the initial start of the activity (e.g., during deployment of the target), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, relocate or delay the start until the mitigation zone is clear. Navy personnel also must conduct passive acoustic monitoring for marine mammals and use the information from detections to assist visual observations. Navy personnel must visually observe the mitigation zone for marine mammals and jellyfish aggregations; if marine mammals or jellyfish aggregations are observed, Navy personnel must relocate or delay the start of firing.

(B) During the activity, Navy personnel must observe for marine mammals and jellyfish aggregations; if marine mammals or jellyfish aggregations are observed, Navy personnel must cease firing.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing firing) until one of the following conditions has been 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, speed, and movement relative to the intended impact location; or the mitigation zone has been clear from any additional sightings for 10 min when the activity involves aircraft that have fuel constraints, or 30 min when the activity involves aircraft that are not typically fuel constrained.

(D) After completion of the activity (e.g., prior to maneuvering off station)—when practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(8) *Explosive medium-caliber and large-caliber projectiles.* Gunnery activities using explosive medium-caliber and large-caliber projectiles. Mitigation applies to activities using a surface target.

(i) *Number of Lookouts and observation platform.* One Lookout must

be on the vessel or aircraft conducting the activity. For activities using explosive large-caliber projectiles, depending on the activity, the Lookout could be the same as the one described in Weapons Firing Noise in paragraph (a)(5)(i) of this section. If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.*

(A) 200 yd around the intended impact location for air-to-surface activities using explosive medium-caliber projectiles.

(B) 600 yd around the intended impact location for surface-to-surface activities using explosive medium-caliber projectiles.

(C) 1,000 yd around the intended impact location for surface-to-surface activities using explosive large-caliber projectiles.

(D) Prior to the initial start of the activity (e.g., when maneuvering on station), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of firing.

(E) During the activity, Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must cease firing.

(F) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing firing) until one of the following conditions has been 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, speed, and movement relative to the intended impact location; the mitigation zone has been clear from any additional sightings for 10 min for aircraft-based firing or 30 min for vessel-based firing; or for activities using mobile targets, the intended impact location has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting.

(G) After completion of the activity (e.g., prior to maneuvering off station)—when practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(9) *Explosive missiles and rockets.* Aircraft-deployed explosive missiles and rockets. Mitigation applies to activities using a surface target.

(i) *Number of Lookouts and observation platform.* One Lookout must be positioned in an aircraft. If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* (A) 900 yd around the intended impact location for missiles or rockets with 0.6–20 lb net explosive weight.

(B) 2,000 yd around the intended impact location for missiles with 21–500 lb net explosive weight.

(C) Prior to the initial start of the activity (e.g., during a fly-over of the mitigation zone), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of firing.

(D) During the activity, Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must cease firing.

(E) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing firing) until one of the following conditions has been 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, speed, and

movement relative to the intended impact location; or the mitigation zone has been clear from any additional sightings for 10 min when the activity involves aircraft that have fuel constraints, or 30 min when the activity involves aircraft that are not typically fuel constrained.

(F) After completion of the activity (e.g., prior to maneuvering off station)—when practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(10) *Explosive bombs.* (i) *Number of Lookouts and observation platform.* One Lookout must be positioned in an aircraft conducting the activity. If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* 2,500 yd around the intended target.

(A) Prior to the initial start of the activity (e.g., when arriving on station), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of bomb deployment.

(B) During the activity (e.g., during target approach), Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must cease bomb deployment.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing bomb deployment) until one of the following conditions has been 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, speed, and

movement relative to the intended target; the mitigation zone has been clear from any additional sightings for 10 min; or for activities using mobile targets, the intended target has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting.

(D) After completion of the activity (e.g., prior to maneuvering off station)—when practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(11) *Sinking exercises.* (i) *Number of Lookouts and observation platform.* Two Lookouts (one must be positioned in an aircraft and one must be positioned on a vessel). If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* 2.5 nautical miles (nmi) around the target ship hulk.

(A) Prior to the initial start of the activity (90 min prior to the first firing), Navy personnel must conduct aerial observations of the mitigation zone for floating vegetation; if floating vegetation is observed Navy personnel must delay the start until the mitigation zone is clear. Navy personnel also must conduct aerial observations of the mitigation zone for marine mammals and jellyfish aggregations; if marine mammals or jellyfish aggregations are observed, Navy personnel must delay the start of firing.

(B) During the activity, Navy personnel must conduct passive acoustic monitoring for marine mammals and use information from detections to assist visual observations. Navy personnel must visually observe the mitigation zone for marine mammals from the vessel; if marine mammals are observed, Navy personnel must cease firing. Immediately after any planned or unplanned breaks in weapons firing of longer than two hours, Navy personnel must observe the mitigation zone for marine mammals from the aircraft and vessel; if marine mammals are observed,

Navy personnel must delay commencement of firing.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing firing) until one of the following conditions has been 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, speed, and movement relative to the target ship hull; or the mitigation zone has been clear from any additional sightings for 30 min.

(D) After completion of the activity (for two hours after sinking the vessel or until sunset, whichever comes first), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(12) *Explosive mine countermeasure and neutralization activities.* (i) Number of Lookouts and observation platform.

(A) One Lookout must be positioned on a vessel or in an aircraft when implementing the smaller mitigation zone defined at paragraph (a)(12)(ii)(A) of this section (using 0.1–5 lb net explosive weight charges).

(B) Two Lookouts (one must be in an aircraft and one must be on a small boat) when implementing the larger mitigation zone defined at paragraph (a)(12)(ii)(B) of this section (using 6–650 lb net explosive weight charges).

(C) If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* (A) 600 yd around the detonation site for activities using 0.1–5 lb net explosive weight.

(B) 2,100 yd around the detonation site for activities using 6–650 lb net explosive weight (including high explosive target mines).

(C) Prior to the initial start of the activity (e.g., when maneuvering on station; typically, 10 min when the activity involves aircraft that have fuel

constraints, or 30 min when the activity involves aircraft that are not typically fuel constrained), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of detonations.

(D) During the activity, Navy personnel must observe the mitigation zone for marine mammals; if marine mammals are observed, the Navy must cease detonations.

(E) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing detonations) until one of the following conditions has been 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, speed, and movement relative to detonation site; or the mitigation zone has been clear from any additional sightings for 10 min when the activity involves aircraft that have fuel constraints, or 30 min when the activity involves aircraft that are not typically fuel constrained.

(F) After completion of the activity (typically 10 min when the activity involves aircraft that have fuel constraints, or 30 min when the activity involves aircraft that are not typically fuel constrained), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(13) *Explosive mine neutralization activities involving navy divers*—(i) *Number of Lookouts and observation platform.* (A) Two Lookouts must be positioned (two small boats with one Lookout each, or one Lookout must be on a small boat and one must be in a rotary-wing aircraft) when implementing the smaller mitigation zone defined at paragraph (a)(13)(ii)(A) of this section.

(B) Four Lookouts must be positioned (two small boats with two Lookouts each), and a pilot or member of an aircrew must serve as an additional

Lookout if aircraft are used during the activity, when implementing the larger mitigation zone defined at paragraph (a)(13)(ii)(B) of this section.

(C) All divers placing the charges on mines must support the Lookouts while performing their regular duties and must report applicable sightings to their supporting small boat or Range Safety Officer.

(D) If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.*

(A) 500 yd around the detonation site during activities under positive control using 0.1–20 lb net explosive weight.

(B) 1,000 yd around the detonation site during all activities using time-delay fuses (0.1–20 lb net explosive weight) and during activities under positive control using 21–60 lb net explosive weight charges.

(C) Prior to the initial start of the activity (e.g., when maneuvering on station for activities under positive control; 30 min for activities using time-delay firing devices), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of detonation or fuse initiation.

(D) During the activity, Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must cease detonation or fuse initiation. To the maximum extent practicable depending on mission requirements, safety, and environmental conditions, boats must position themselves near the mid-point of the mitigation zone radius (but outside of the detonation plume and human safety zone), must position themselves on opposite sides of the detonation location (when two boats are used), and must travel in a circular pattern around the detonation location with one Lookout observing inward toward the detonation site and the other observing outward toward the perimeter of the mitigation zone. If used, aircraft must travel in a circular pattern around the detonation location to the maximum extent practicable. Navy personnel must not set time-delay firing devices (0.1–20 lb. net explosive weight) to exceed 10 min.

(E) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing detonations) until one of the following conditions has been 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, speed, and movement relative to the detonation site; or the mitigation zone has been clear from any additional sightings for 10 min during activities under positive control with aircraft that have fuel constraints, or 30 min during activities under positive control with aircraft that are not typically fuel constrained and during activities using time-delay firing devices.

(F) After completion of an activity (for 30 min), Navy personnel must observe for marine mammals in the vicinity of where any detonations have occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(14) *Maritime security operations—anti-swimmer grenades*—(i) *Number of Lookouts and observation platform.* One Lookout must be positioned on the small boat conducting the activity. If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* 200 yd around the intended detonation location.

(A) Prior to the initial start of the activity (e.g., when maneuvering on station), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of detonation.

(B) During the activity, Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must cease detonation.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing detonations) until one of the following conditions has been 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, speed, and movement relative to the intended detonation location; the mitigation zone has been clear from any additional sightings for 30 min; or the intended detonation location has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting.

(D) After completion of the activity (e.g., prior to maneuvering off station), when practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(15) *Line charge testing*—(i) *Number of Lookouts and observation platform.* One Lookout must be positioned on a vessel. If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* 900 yd around the intended detonation location.

(A) Prior to the initial start of the activity (e.g., when maneuvering on station), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must delay the start of detonations.

(B) During the activity, Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must cease detonations.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing detonations) until one of the following conditions has been 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, speed, and movement relative to the intended detonation location; or the mitigation zone has been clear from any additional sightings for 30 min.

(D) After completion of the activity (e.g., prior to maneuvering off station), when practical (e.g., when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(16) *Ship shock trials*—(i) *Number of Lookouts and observation platform.* (A) A minimum of ten Lookouts or trained marine species observers (or a combination thereof) must be positioned either in an aircraft or on multiple vessels (i.e., a Marine Animal Response Team boat and the test ship).

(1) If aircraft are used, Lookouts or trained marine species observers must be in an aircraft and on multiple vessels.

(2) If aircraft are not used, a sufficient number of additional Lookouts or trained marine species observers must be used to provide vessel-based visual observation comparable to that achieved by aerial surveys.

(B) If additional platforms are participating in the activity, Navy personnel positioned in those assets (e.g., safety observers, evaluators) must support observing the mitigation zone for marine mammals and other applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* 3.5 nmi around the ship hull.

(A) The Navy must not conduct ship shock trials in the Jacksonville Operating Area during North Atlantic right whale calving season from November 15 through April 15.

(B) The Navy must develop detailed ship shock trial monitoring and mitigation plans approximately one-year

prior to an event and must continue to provide these to NMFS for review and approval.

(C) Pre-activity planning must include selection of one primary and two secondary areas where marine mammal populations are expected to be the lowest during the event, with the primary and secondary locations located more than 2 nmi from the western boundary of the Gulf Stream for events in the Virginia Capes Range Complex or Jacksonville Range Complex.

(D) If it is determined during pre-activity surveys that the primary area is environmentally unsuitable (e.g., observations of marine mammals or presence of concentrations of floating vegetation), the shock trial can be moved to a secondary site in accordance with the detailed mitigation and monitoring plan provided to NMFS.

(E) Prior to the initial start of the activity at the shock trial location (in intervals of 5 hrs, 3 hrs, 40 min, and immediately before the detonation), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must delay triggering the detonation.

(F) During the activity, Navy personnel must observe for marine mammals, large schools of fish, jellyfish aggregations, and flocks of seabirds; if marine mammals, large schools of fish, jellyfish aggregations, and flocks of seabirds are observed, Navy personnel must cease triggering the detonation. After completion of each detonation, Navy personnel must observe the mitigation zone for marine mammals; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures and halt any remaining detonations until Navy personnel can consult with NMFS and review or adapt the mitigation, if necessary.

(G) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing detonations) until one of the following conditions has been 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, speed, and movement relative to the ship hull; or

the mitigation zone has been clear from any additional sightings for 30 min.

(H) After completion of the activity (during the following two days at a minimum, and up to seven days at a maximum), Navy personnel must observe for marine mammals in the vicinity of where detonations occurred; if any injured or dead marine mammals are observed, Navy personnel must follow established incident reporting procedures. If additional platforms are supporting this activity (e.g., providing range clearance), these Navy assets must assist in the visual observation of the area where detonations occurred.

(17) *Vessel movement.* The mitigation must not be applied if: The vessel's safety is threatened; the vessel is restricted in its ability to maneuver (e.g., during launching and recovery of aircraft or landing craft, during towing activities, when mooring, etc.); or the vessel is operated autonomously.

(i) *Number of Lookouts and observation platform.* One Lookout must be on the vessel that is underway.

(ii) *Mitigation zone and requirements.* (A) 500 yd around whales.

(B) 200 yd around all other marine mammals (except bow-riding dolphins and pinnipeds hauled out on man-made navigational structures, port structures, and vessels).

(C) During the activity, when underway, Navy personnel must observe the mitigation zone for marine mammals; if any marine mammals are observed, Navy personnel must maneuver to maintain distance.

(D) Additionally, Navy personnel must broadcast awareness notification messages with North Atlantic right whale Dynamic Management Area information (e.g., location and dates) to applicable Navy assets operating in the vicinity of the Dynamic Management Area. The information will alert assets to the possible presence of a North Atlantic right whale to maintain safety of navigation and further reduce the potential for a vessel strike. Platforms must use the information to assist their visual observation of applicable mitigation zones during training and testing activities and to aid in the implementation of procedural mitigation, including but not limited to, mitigation for vessel movement. If a marine mammal vessel strike occurs, Navy personnel must follow the established incident reporting procedures.

(18) *Towed in-water devices.* Mitigation applies to devices that are towed from a manned surface platform or manned aircraft. The mitigation will not be applied if the safety of the towing

platform or in-water device is threatened.

(i) *Number of Lookouts and observation platform.* One Lookout must be positioned on a manned towing platform.

(ii) *Mitigation zone and requirements.* 250 yd around marine mammals. During the activity, when towing an in-water device, Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must maneuver to maintain distance.

(19) *Small-, medium-, and large-caliber non-explosive practice munitions.* Mitigation applies to activities using a surface target.

(i) *Number of Lookouts and observation platform.* One Lookout must be positioned on the platform conducting the activity. Depending on the activity, the Lookout could be the same as the one described for Weapons Firing Noise in paragraph (a)(5)(i) of this section.

(ii) *Mitigation zone and requirements.* 200 yd around the intended impact location.

(A) Prior to the initial start of the activity (e.g., when maneuvering on station), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of firing.

(B) During the activity, Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must cease firing.

(C) Commencement/recommencement conditions after a marine mammal sighting before or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing firing) until one of the following conditions has been 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, speed, and movement relative to the intended impact location; the mitigation zone has been clear from any additional sightings for 10 min for aircraft-based firing or 30 min for vessel-based firing; or for activities using a mobile target, the intended impact location has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting.

(20) *Non-explosive missiles and rockets.* Aircraft-deployed non-explosive missiles and rockets. Mitigation applies to activities using a surface target.

(i) *Number of Lookouts and observation platform.* One Lookout must be positioned in an aircraft.

(ii) *Mitigation zone and requirements.* 900 yd around the intended impact location.

(A) Prior to the initial start of the activity (e.g., during a fly-over of the mitigation zone), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must relocate or delay the start of firing.

(B) During the activity, Navy personnel must observe for marine mammals; if marine mammals are observed, Navy personnel must cease firing.

(C) Commencement/recommencement conditions after a marine mammal sighting prior to or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing firing) until one of the following conditions has been 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, speed, and movement relative to the intended impact location; or the mitigation zone has been clear from any additional sightings for 10 min when the activity involves aircraft that have fuel constraints, or 30 min when the activity involves aircraft that are not typically fuel constrained.

(21) *Non-explosive bombs and mine shapes.* Non-explosive bombs and non-explosive mine shapes during mine laying activities.

(i) *Number of Lookouts and observation platform.* One Lookout must be positioned in an aircraft.

(ii) *Mitigation zone and requirements.* 1,000 yd around the intended target.

(A) Prior to the initial start of the activity (e.g., when arriving on station), Navy personnel must observe the mitigation zone for floating vegetation; if floating vegetation is observed, Navy personnel must relocate or delay the start until the mitigation zone is clear. Navy personnel also must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy

personnel must relocate or delay the start of bomb deployment or mine laying.

(B) During the activity (e.g., during approach of the target or intended minefield location), Navy personnel must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must cease bomb deployment or mine laying.

(C) Commencement/recommencement conditions after a marine mammal sighting prior to or during the activity: Navy personnel must allow a sighted marine mammal to leave the mitigation zone prior to the initial start of the activity (by delaying the start) or during the activity (by not recommencing bomb deployment or mine laying) until one of the following conditions has been 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, speed, and movement relative to the intended target or minefield location; the mitigation zone has been clear from any additional sightings for 10 min; or for activities using mobile targets, the intended target has transited a distance equal to double that of the mitigation zone size beyond the location of the last sighting.

(b) *Mitigation areas.* In addition to procedural mitigation, the Navy must implement mitigation measures within mitigation areas to avoid potential impacts on marine mammals.

(1) *Mitigation areas off the Northeastern United States for sonar, explosives, and physical disturbance and strikes.* (i) *Mitigation area requirements.* (A) *Northeast North Atlantic Right Whale Mitigation Area (year-round):*

(1) Navy personnel must report the total hours and counts of active sonar and in-water explosives used in the mitigation area (which includes North Atlantic right whale ESA-designated critical habitat) in its annual training and testing activity reports submitted to NMFS.

(2) Navy personnel must minimize the use of low-frequency active sonar, mid-frequency active sonar, and high-frequency active sonar to the maximum extent practicable within the mitigation area.

(3) Navy personnel must not use Improved Extended Echo Ranging sonobuoys in or within 3 nmi of the mitigation area or use explosive and non-explosive bombs, in-water detonations, and explosive torpedoes within the mitigation area.

(4) For activities using non-explosive torpedoes within the mitigation area, Navy personnel must conduct activities

during daylight hours in Beaufort sea state 3 or less. The Navy must use three Lookouts (one positioned on a vessel and two positioned in an aircraft during dedicated aerial surveys) to observe the vicinity of the activity. An additional Lookout must be positioned on the submarine, when surfaced. Immediately prior to the start of the activity, Navy personnel must observe for floating vegetation and marine mammals; if floating vegetation or marine mammals are observed, Navy personnel must not commence the activity until the vicinity is clear or the activity is relocated to an area where the vicinity is clear. During the activity, Navy personnel must observe for marine mammals; if observed, Navy personnel must cease the activity. To allow a sighted marine mammal to leave the area, Navy personnel must not recommence the activity until one of the following conditions has been met: The animal is observed exiting the vicinity of the activity; the animal is thought to have exited the vicinity of the activity based on a determination of its course, speed, and movement relative to the activity location; or the area has been clear from any additional sightings for 30 min. During transits and normal firing, ships must maintain a speed of no more than 10 knots (kn). During submarine target firing, ships must maintain speeds of no more than 18 kn. During vessel target firing, vessel speeds may exceed 18 kn for brief periods of time (e.g., 10–15 min).

(5) For all activities, before a vessel transits within the mitigation area, Navy personnel must conduct a web query or email inquiry to the National Oceanographic and Atmospheric Administration Northeast Fisheries Science Center's North Atlantic Right Whale Sighting Advisory System to obtain the latest North Atlantic right whale sightings information. Navy personnel on vessels must use the sightings information to reduce potential interactions with North Atlantic right whales during transits. Navy personnel on vessels must implement speed reductions within the mitigation area after observing a North Atlantic right whale, if transiting within 5 nmi of a sighting reported to the North Atlantic Right Whale Sighting Advisory System within the past week, and if transiting at night or during periods of reduced visibility.

(B) *Gulf of Maine Planning Awareness Mitigation Area (year-round):*

(1) Navy personnel must report the total hours and counts of active sonar and in-water explosives used in the mitigation area in its annual training

and testing activity reports submitted to NMFS.

(2) Navy personnel must not conduct greater than 200 hrs of hull-mounted mid-frequency active sonar per year within the mitigation area.

(3) Navy personnel must not conduct major training exercises (Composite Training Unit Exercises or Fleet Exercises/Sustainment Exercises) within the mitigation area. If the Navy needs to conduct a major training exercise within the mitigation area in support of training requirements driven by national security concerns, Navy personnel must confer with NMFS to verify that potential impacts are adequately addressed.

(C) *Northeast Planning Awareness Mitigation Areas (year-round)*: (1) Navy personnel will avoid planning major training exercises (Composite Training Unit Exercises or Fleet Exercises/Sustainment Exercises) within the mitigation area to the maximum extent practicable.

(2) Navy personnel must not conduct more than four major training exercises per year (all or a portion of the exercise) within the mitigation area.

(3) If the Navy needs to conduct additional major training exercises in the mitigation area in support of training requirements driven by national security concerns, Navy personnel must provide NMFS with advance notification and include the information in its annual training and testing activity reports submitted to NMFS.

(ii) [Reserved]

(2) *Mitigation areas off the Mid-Atlantic and Southeastern United States for sonar, explosives, and physical disturbance and strikes.*

(i) *Mitigation area requirements. (A) Southeast North Atlantic Right Whale Mitigation Area (November 15 through April 15)*:

(1) Navy personnel must report the total hours and counts of active sonar and in-water explosives used in the mitigation area in its annual training and testing activity reports submitted to NMFS.

(2) The Navy must not conduct: Low-frequency active sonar (except as noted in paragraph (b)(2)(i)(A)(3) of this section), mid-frequency active sonar (except as noted in paragraph (b)(2)(i)(A)(3) of this section), high-frequency active sonar, missile and rocket activities (explosive and non-explosive), small-, medium-, and large-caliber gunnery activities, Improved Extended Echo Ranging sonobuoy activities, explosive and non-explosive bombing activities, in-water detonations, and explosive torpedo activities within the mitigation area.

(3) To the maximum extent practicable, Navy personnel must minimize the use of: helicopter dipping sonar, low-frequency active sonar and hull-mounted mid-frequency active sonar used for navigation training, and low-frequency active sonar and hull-mounted mid-frequency active sonar used for object detection exercises within the mitigation area.

(4) Before transiting or conducting training or testing activities within the mitigation area, Navy personnel must initiate communication with the Fleet Area Control and Surveillance Facility, Jacksonville to obtain Early Warning System North Atlantic right whale sightings data. The Fleet Area Control and Surveillance Facility, Jacksonville must advise Navy personnel on vessels of all reported whale sightings in the vicinity to help Navy personnel on vessels and aircraft reduce potential interactions with North Atlantic right whales. Commander Submarine Force U.S. Atlantic Fleet must coordinate any submarine activities that may require approval from the Fleet Area Control and Surveillance Facility, Jacksonville. Navy personnel on vessels must use the sightings information to reduce potential interactions with North Atlantic right whales during transits.

(5) Navy personnel on vessels must implement speed reductions after they observe a North Atlantic right whale, if they are within 5 nmi of a sighting reported within the past 12 hrs, or when operating in the mitigation area at night or during periods of poor visibility.

(6) To the maximum extent practicable, Navy personnel on vessels must minimize north-south transits in the mitigation area.

(B) *Southeast North Atlantic Right Whale Critical Habitat Special Reporting Area (November 15 through April 15)*:

(1) Navy personnel must report the total hours and counts of active sonar and in-water explosives used in the Special Reporting Area (which includes southeast North Atlantic right whale ESA-designated critical habitat) in its annual training and testing activity reports submitted to NMFS.

(2) [Reserved]

(C) *Jacksonville Operating Area (November 15 through April 15)*:

(1) Navy units conducting training or testing activities in the Jacksonville Operating Area must initiate communication with the Fleet Area Control and Surveillance Facility, Jacksonville to obtain Early Warning System North Atlantic right whale sightings data. The Fleet Area Control and Surveillance Facility, Jacksonville must advise Navy personnel on vessels

of all reported whale sightings in the vicinity to help Navy personnel on vessels and aircraft reduce potential interactions with North Atlantic right whales. Commander Submarine Force U.S. Atlantic Fleet must coordinate any submarine activities that may require approval from the Fleet Area Control and Surveillance Facility, Jacksonville. Navy personnel must use the reported sightings information as they plan specific details of events (e.g., timing, location, duration) to minimize potential interactions with North Atlantic right whales to the maximum extent practicable. Navy personnel must use the reported sightings information to assist visual observations of applicable mitigation zones and to aid in the implementation of procedural mitigation.

(2) [Reserved]

(D) *Navy Cherry Point Range Complex Nearshore Mitigation Area (March through September)*:

(1) Navy personnel must not conduct explosive mine neutralization activities involving Navy divers in the mitigation area.

(2) To the maximum extent practicable, Navy personnel must not use explosive sonobuoys, explosive torpedoes, explosive medium-caliber and large-caliber projectiles, explosive missiles and rockets, explosive bombs, explosive mines during mine countermeasure and neutralization activities, and anti-swimmer grenades in the mitigation area.

(E) *Mid-Atlantic Planning Awareness Mitigation Areas (year-round)*:

(1) Navy personnel will avoid planning major training exercises (Composite Training Unit Exercises or Fleet Exercises/Sustainment Exercises) to the maximum extent practicable.

(2) Navy personnel must not conduct more than four major training exercises per year (all or a portion of the exercise) within the mitigation area.

(3) If the Navy needs to conduct additional major training exercises in the mitigation area in support of training requirements driven by national security concerns, Navy personnel must provide NMFS with advance notification and include the information in its annual training and testing activity reports submitted to NMFS.

(ii) [Reserved]

(3) *Mitigation areas in the Gulf of Mexico for sonar and explosives. (i) Mitigation area requirements. (A) Gulf of Mexico Planning Awareness Mitigation Areas (year-round)*:

(1) Navy personnel must not conduct major training exercises within the mitigation area (all or a portion of the exercise).

(2) If the Navy needs to conduct a major training exercise within the mitigation areas in support of training requirements driven by national security concerns, Navy personnel must confer with NMFS to verify that potential impacts are adequately addressed.

(B) *Bryde's Whale Mitigation Area (year-round)*:

(1) Navy personnel must report the total hours and counts of active sonar and in-water explosives used in the mitigation area in its annual training and testing activity reports submitted to NMFS.

(2) Navy personnel must not conduct greater than 200 hrs of hull-mounted mid-frequency active sonar per year within the mitigation area.

(3) Navy personnel must not use explosives (except during mine warfare activities) within the mitigation area.

(ii) [Reserved]

§ 218.85 Requirements for monitoring and reporting.

(a) *Unauthorized take*. The Navy must notify NMFS immediately (or as soon as operational security considerations allow) if the specified activity identified in § 218.80 is thought to have resulted in the mortality or serious injury of any marine mammals, or in any Level A or Level B harassment take of marine mammals not identified in this subpart.

(b) *Monitoring and reporting under the LOAs*. The Navy must conduct all monitoring and required reporting under the LOAs, including abiding by the AFTT Study Area monitoring program. Details on program goals, objectives, project selection process, and current projects are available at www.navymarinespeciesmonitoring.us.

(c) *Notification of injured, live stranded, or dead marine mammals*. The Navy must consult the Notification and Reporting Plan, which sets out notification, reporting, and other requirements when dead, injured, or live stranded marine mammals are detected. The Notification and Reporting Plan is available at www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities.

(d) *Annual AFTT Study Area marine species monitoring report*. The Navy must submit an annual report of the AFTT Study Area monitoring describing the implementation and results from the previous calendar year. Data collection methods must be standardized across range complexes and study areas to allow for comparison in different geographic locations. The report must be submitted to the Director, Office of

Protected Resources of NMFS either within 90 days after the calendar year, or within 90 days after the conclusion of the monitoring year to be determined by the Adaptive Management process. This report will describe progress of knowledge made with respect to monitoring plan study questions across all Navy ranges associated with the Integrated Comprehensive Monitoring Program. Similar study questions must be treated together so that progress on each topic can be summarized across all Navy ranges. The report need not include analyses and content that does not provide direct assessment of cumulative progress on the monitoring plan study questions.

(e) *Annual AFTT Study Area training and testing reports*. Each year, the Navy must submit a preliminary report (Quick Look Report) detailing the status of authorized sound sources within 21 days after the anniversary of the date of issuance of each LOA to the Director, Office of Protected Resources, NMFS. Each year, the Navy must submit a detailed report within 3 months after the anniversary of the date of issuance of each LOA to the Director, Office of Protected Resources, NMFS. The annual reports must contain information on Major Training Exercises (MTEs), Sinking Exercise (SINKEX) events, and a summary of all sound sources used, including within specified mitigation reporting areas, as described in paragraph (e)(3) of this section. The analysis in the detailed report must be based on the accumulation of data from the current year's report and data collected from the previous report. The detailed reports must contain information identified in paragraphs (e)(1) through (5) of this section.

(1) *Major Training Exercises (MTEs)*. This section of the report must contain the following information for MTEs conducted in the AFTT Study Area:

(i) Exercise information (for each MTE):

- (A) Exercise designator;
- (B) Date that exercise began and ended;
- (C) Location;
- (D) Number and types of active sonar sources used in the exercise;
- (E) Number and types of passive acoustic sources used in exercise;
- (F) Number and types of vessels, aircraft, and other platforms participating in exercise;
- (G) Total hours of all active sonar source operation;
- (H) Total hours of each active sonar source bin; and
- (I) Wave height (high, low, and average) during exercise.

(ii) Individual marine mammal sighting information for each sighting in each exercise where mitigation was implemented:

- (A) Date/time/location of sighting;
 - (B) Species (if not possible, indication of whale/dolphin/pinniped);
 - (C) Number of individuals;
 - (D) Initial detection sensor (e.g., sonar, Lookout);
 - (E) Indication of specific type of platform observation made from (including, for example, what type of surface vessel or testing platform);
 - (F) Length of time observers maintained visual contact with marine mammal;
 - (G) Sea state;
 - (H) Visibility;
 - (I) Sound source in use at the time of sighting;
 - (J) Indication of whether animal was less than 200 yd, 200 to 500 yd, 500 to 1,000 yd, 1,000 to 2,000 yd, or greater than 2,000 yd from sonar source;
 - (K) Mitigation implementation (e.g., whether operation of sonar sensor was delayed, or sonar was powered or shut down, and how long the delay was);
 - (L) If source in use was hull-mounted, true bearing of animal from the vessel, true direction of vessel's travel, and estimation of animal's motion relative to vessel (opening, closing, parallel); and
 - (M) Lookouts must report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s) (such as animal closing to bow ride, paralleling course/speed, floating on surface and not swimming, etc.) and if any calves were present.
- (iii) 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 must identify the specific observations that support any conclusions the Navy reaches about the effectiveness of the mitigation.
- (2) *Sinking exercises (SINKEXs)*. This section of the report must include the following information for each SINKEX completed that year:
- (i) Exercise information (gathered for each SINKEX):
 - (A) Location;
 - (B) Date and time exercise began and ended;
 - (C) Total hours of observation by Lookouts before, during, and after exercise;
 - (D) Total number and types of explosive source bins detonated;
 - (E) Number and types of passive acoustic sources used in exercise;
 - (F) Total hours of passive acoustic search time;

(G) Number and types of vessels, aircraft, and other platforms participating in exercise;

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

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

(ii) Individual marine mammal sighting information for each sighting where mitigation was implemented:

(A) Date/time/location of sighting;

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

(C) Number of individuals;

(D) Initial detection sensor (*e.g.*, sonar or Lookout);

(E) Length of time observers maintained visual contact with marine mammal;

(F) Sea state;

(G) Visibility; and

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

(I) Distance of marine mammal from actual detonations (*e.g.* less than 200 yd, 200 to 500 yd, 500 to 1,000 yd, 1,000 to 2,000 yd, or greater than 2,000 yd, or target spot if not yet detonated).

(J) Lookouts must report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s) (such as animal closing to bow ride, paralleling course/speed, floating on surface and not swimming etc.), including speed and direction and if any calves were present.

(K) Resulting mitigation implementation: The report must indicate whether explosive detonations were delayed, ceased, modified, or not modified due to marine mammal presence and for how long.

(L) If observation occurred while explosives were detonating in the water, indicate munition type in use at time of marine mammal detection.

(3) *Summary of sources used.* This section must include the following information summarized from the authorized sound sources used in all training and testing events:

(i) Total annual hours or quantity (per the LOA) of each bin of sonar or other acoustic sources (pile driving and air gun activities); and

(ii) Total annual expended/detonated ordnance (missiles, bombs, sonobuoys, etc.) for each explosive bin.

(4) *Geographic information presentation.* The reports must present an annual (and seasonal, where practical) depiction of training and testing bin usage (as well as pile driving activities) geographically across the AFTT Study Area.

(5) *Sonar exercise notification.* The Navy must submit to NMFS (contact as specified in the LOA) an electronic report within fifteen calendar days after the completion of any MTE indicating:

(i) Location of the exercise;

(ii) Beginning and end dates of the exercise; and

(iii) Type of exercise.

(f) *Seven-year close-out comprehensive training and testing report.* This report must be included as part of the 2025 annual training and testing report. This report must provide the annual totals for each sound source bin with a comparison to the annual allowance and the seven-year total for each sound source bin with a comparison to the seven-year allowance. Additionally, if there were any changes to the sound source allowance, this report must 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 EIS and final rule determinations. The draft report must be submitted within three months after the expiration of this subpart to the Director, Office of Protected Resources, NMFS. NMFS must submit comments on the draft close-out report, if any, within three 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.

§ 218.86 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to the regulations in this subpart, the Navy must apply for and obtain Letters of Authorization (LOAs) in accordance with § 216.106 of this chapter.

(b) LOAs, unless suspended or revoked, may be effective for a period of time not to exceed the expiration date of the regulations in this subpart.

(c) If an LOA expires prior to the expiration date of the regulations in this subpart, the Navy may apply for and obtain a renewal of the LOA.

(d) In the event of projected changes to the activity or to mitigation, monitoring, or reporting (excluding changes made pursuant to the adaptive management provision of § 218.87(c)(1) as required by an LOA issued under this subpart, the Navy must apply for and obtain a modification of the LOA as described in § 218.87.

(e) Each LOA will set forth:

(1) Permissible methods of incidental taking;

(2) Specified geographic areas for incidental taking;

(3) Means of effecting the least practicable adverse impact (*i.e.*,

mitigation) on the species or stocks of marine mammals and their habitat; and

(4) Requirements for monitoring and reporting.

(f) Issuance of the LOA(s) will be based on a determination that the level of taking must be consistent with the findings made for the total taking allowable under the regulations in this subpart.

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

§ 218.87 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 of this subchapter and 218.86 may be renewed or modified upon request by the applicant, provided that:

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

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

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

(c) An LOA issued under §§ 216.106 of this subchapter and 218.86 may be modified by NMFS under the following circumstances:

(1) *Adaptive management.* After consulting with the Navy regarding the practicability of the modifications, NMFS may modify (including adding or removing measures) the existing mitigation, monitoring, or reporting measures if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring.

(i) Possible sources of data that could contribute to the decision to modify the

mitigation, monitoring, or reporting measures in an LOA include:

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

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

(C) Any information that reveals marine mammals may have been taken in a manner, extent, or number not authorized by the regulations in this subpart 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 planned 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 LOAs issued pursuant to

§§ 216.106 of this chapter and 218.86, an LOA may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within thirty days of the action.

§§ 218.88–218.89 [Reserved]

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