DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 218

[190826–0018]

RIN 0648–BJ06

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to the U.S. Navy Training and Testing Activities in the Hawaii-Southern California 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 December 2023 to December 2025 for Marine Mammal Protection Act (MMPA) regulations authorizing the take of marine mammals incidental to Navy training and testing activities conducted in the Hawaii-Southern California Training and Testing (HSTT) 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 7-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 HSTT 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 HSTT 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 October 15, 2019.

ADDRESSES: You may submit comments on this document, identified by NOAA–NMFS–2019–0103, 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-2019-0103,* 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 HSTT Study Area. The HSTT Study Area is comprised of established operating and warning areas across the north-central Pacific Ocean, from the mean high tide line in Southern California west to Hawaii and the International Date Line. The Study Area includes the at-sea areas of three existing range complexes (the Hawaii Range Complex, the Southern California (SOCAL) Range Complex, and the Silver Strand Training Complex), and overlaps a portion of the Point Mugu Sea Range (PMSR). Also included in the Study Area are Navy pierside locations in Hawaii and Southern California, Pearl Harbor, San Diego Bay, and the transit corridor on the high seas where sonar training and testing may occur.

NMFS received an application from the Navy requesting to extend NMFS' existing MMPA regulations (50 CFR part 218, subpart H; hereafter ''2018 HSTT regulations'') that authorize the take of marine mammals incidental to Navy training and testing activities conducted in the HSTT 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, the public is provided with notice of the proposed incidental take authorization the opportunity to review and 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 December 27, 2018, NMFS issued a five-year final rule governing the taking of marine mammals incidental to Navy training and testing activities conducted in the HSTT Study Area (83 FR 66846; hereafter ''2018 HSTT 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 HSTT Study Area qualify as military readiness activities pursuant to the MMPA, as amended by the 2004 NDAA. On March 11, 2019 the Navy submitted an application requesting that NMFS extend the 2018 HSTT 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 December 20, 2023 to December 20, 2025.

In its 2019 application, the Navy proposes no changes to the nature of the specified activities covered by the 2018 HSTT final rule, the level of activity within and between years would be consistent with that previously analyzed in the 2018 HSTT final rule, and all activities would be conducted within the same boundaries of the HSTT Study Area identified in the 2018 HSTT final rule. Therefore, the training and testing activities (*e.g.,* equipment and sources used, exercises conducted) and the mitigation, monitoring, and nearly all reporting measures are identical to those described and analyzed in the 2018 HSTT 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 HSTT Study Area. The Navy's March 11, 2019, rulemaking and LOA extension application (hereafter ''2019 Navy application'') reflects the same compilation of training and testing activities presented in the Navy's October 13, 2017, initial rulemaking and LOA application (hereafter ''2017 Navy application'') and the 2018 HSTT 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 HSTT regulations, with the regulations valid from the publication date of the final rule (if issued) through December 20, 2025.

Summary of the Proposed Regulations

NMFS is proposing to extend the incidental take regulations and associated LOAs through December 20, 2025, to cover the same Navy activities covered by the 2018 HSTT regulations. The 2018 HSTT 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 HSTT Study Area. The mitigation, monitoring, and nearly all reporting measures (described below) would be identical to those described and analyzed in the 2018 HSTT final rule. The proposed regulatory language included at the end of this proposed rule, which would be published at 50 CFR part 218, subpart H, also is the same as that under the HSTT 2018 regulations, except for a small number of technical changes. No new information has been received from the Navy, or otherwise become available to NMFS, since publication of the 2018 HSTT 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 HSTT 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.hstteis.com/*.

- NMFS June 26, 2018, Hawaii-Southern California Training and Testing (HSTT) proposed rule (83 FR 29872; hereafter ''2018 HSTT proposed rule'');
- NMFS December 27, 2018, Hawaii-Southern California Training and Testing (HSTT) final rule (83 FR 66846; hereafter ''2018 HSTT final rule'');
- Navy October 13, 2017, MMPA rulemaking and LOA application (hereafter ''2017 Navy application'');
- Navy March 11, 2019, MMPA rulemaking and LOA extension application (hereafter ''2019 Navy application''); and
- October 26, 2018, Hawaii-Southern California Training and Testing (HSTT) Final Environmental Impact Statement/Overseas Environmental Impact Statement (FEIS/OEIS) (hereafter ''2018 HSTT 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 HSTT FEIS/OEIS and in the 2017 and 2019 Navy applications.

Overview of Training and Testing Activities

The Navy routinely trains in the HSTT 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 HSTT proposed rule, the 2018 HSTT final rule, and Chapter 2 (*Description of Proposed Action and Alternatives*) of the 2018 HSTT FEIS/OEIS (*http://www.hstteis.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 HSTT final rule. The boundaries of the HSTT Study Area (see Figure 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 HSTT 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 9).

Specified Geographical Region

The Navy proposes no changes to the geographic extent of the HSTT Study Area as described in the 2018 HSTT final rule. The HSTT Study Area (see Figure 2–1 of the 2019 Navy application) is comprised of established operating and warning areas across the north-central Pacific Ocean, from the mean high tide line in Southern California west to Hawaii and the International Date Line. The Study Area includes the at-sea areas of three existing range complexes (the Hawaii Range Complex, the Southern California (SOCAL) Range Complex, and the Silver Strand Training Complex), and overlaps a portion of the Point Mugu Sea Range (PMSR). Also included in the Study Area are Navy pierside locations in Hawaii and Southern California, Pearl Harbor, San Diego Bay, and the transit corridor [1] on the high seas where sonar training and testing may occur.

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 HSTT proposed rule; please see the 2018 HSTT proposed rule or the 2017 Navy application for more information and maps.

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 HSTT final rule and Chapter 2 (*Description of Proposed Action and Alternatives*) of the 2018 HSTT 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 HSTT 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 HSTT 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, or standard operating procedures described in the 2018 HSTT final rule. 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 HSTT proposed rule and 2018 HSTT final rule.

[1] Vessel transit corridors are the routes typically used by Navy assets to traverse from one area to another. The route depicted in Figure 2–1 of the 2019 Navy application is the shortest route between Hawaii and Southern California, making it the quickest and most fuel efficient. The depicted vessel transit corridor is notional and may not represent the actual routes used by ships and submarines transiting from Southern California to Hawaii and back. Actual routes navigated are based on a number of factors including, but not limited to, weather, training, and operational requirements.

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 HSTT final rule, NMFS analyzed the potential impacts of these activities (*i.e.,* incidental take of marine mammals) 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 and analyzing potential impacts to marine mammals, 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 HSTT final rule, the 2018 HSTT 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 HSTT 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 HSTT 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 HSTT FEIS/OEIS.

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
Major Training Events—Large Integrated Anti-Submarine Warfare					
Acoustic	Composite Training Unit Exercise [1].	Aircraft carrier and carrier air wing integrates with surface and submarine units in a challenging multi-threat operational environment that certifies them ready to deploy.	ASW1, ASW2, ASW3, ASW4, ASW5, HF1, LF6, MF1, MF3, MF4, MF5, MF11, MF12.	SOCAL	18
Acoustic	Rim of the Pacific Exercise [1]	A biennial multinational training exercise in which navies from Pacific Rim nations and the United Kingdom assemble in Pearl Harbor, Hawaii, to conduct training throughout the Hawaiian Islands in a number of warfare areas. Marine mammal systems may be used during a Rim of the Pacific exercise. Components of a Rim of the Pacific exercise, such as certain mine warfare and amphibious training, may be conducted in the Southern California Range Complex.	ASW2, ASW3, ASW4, HF1, HF3, HF4, M3, MF1, MF3, MF4, MF5, MF11.	HRC SOCAL	4 4
Major Training Events—Medium Integrated Anti-Submarine Warfare					
Acoustic	Fleet Exercise/Sustainment Exercise [1].	Aircraft carrier and carrier air wing integrates with surface and submarine units in a challenging multi-threat operational environment to maintain ability to deploy.	ASW1, ASW2, ASW3, ASW4, HF1, LF6, MF1, MF3, MF4, MF5, MF11, MF12.	HRC SOCAL	7 35
Acoustic	Undersea Warfare Exercise ...	Elements of the anti-submarine warfare tracking exercise combine in this exercise of multiple air, surface, and subsurface units, over a period of several days. Sonobuoys are released from aircraft. Active and passive sonar used.	ASW3, ASW4, HF1, LF6, MF1, MF3, MF4, MF5, MF11, MF12.	HRC	17
Integrated/Coordinated Training—Small Integrated Anti-Submarine Warfare Training					
Acoustic	Navy Undersea Warfare Training and Assessment Course Surface Warfare Advanced Tactical Training.	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.	ASW3, ASW4, HF1, MF1, MF3, MF4, MF5.	HRC SOCAL	7 18
Integrated/Coordinated Training—Medium Coordinated Anti-Submarine Warfare Training					
Acoustic	Submarine Commanders Course.	Train prospective submarine Commanding Officers to operate against surface, air, and subsurface threats.	ASW3, ASW4, HF1, MF1, MF3, MF4, MF5, TORP1, TORP2.	HRC SOCAL	12 12
Integrated/Coordinated Training—Small Coordinated Anti-Submarine Warfare Training					
Acoustic	Amphibious Ready Group/Marine Expeditionary Unit Exercise Group Sail Independent Deployer Certification Exercise/Tailored Anti-Submarine Warfare Training.	Small-scale, short duration, coordinated anti-submarine warfare exercises.	ASW2, ASW3, ASW4, HF1, MF1, MF3, MF4, MF5, MF11.	HRC SOCAL	14 86
Amphibious Warfare					
Explosive	Naval Surface Fire Support Exercise—at Sea.	Surface ship uses large-caliber gun to support forces ashore; however, land target simulated at sea. Rounds impact water and are scored by passive acoustic hydrophones located at or near target area.	Large-caliber HE rounds (E5)	HRC (W188)	105
Acoustic	Amphibious Marine Expeditionary Unit Exercise.	Navy and Marine Corps forces conduct advanced integration training in preparation for deployment certification.	ASW2, ASW3, ASW4, HF1, MF1, MF3, MF4, MF5, MF11.	SOCAL	18
Acoustic	Amphibious Marine Expeditionary Unit Integration Exercise.	Navy and Marine Corps forces conduct integration training at sea in preparation for deployment certification.	ASW2, ASW3, ASW4, HF1, MF1, MF3, MF4, MF5, MF11.	SOCAL	18
Acoustic	Marine Expeditionary Unit Composite Training Unit Exercise.	Amphibious Ready Group exercises are conducted to validate the Marine Expeditionary Unit's readiness for deployment and includes small boat raids; visit, board, search, and seizure training; helicopter and mechanized amphibious raids; and a non-combatant evacuation operation.	ASW2, ASW3, ASW4, HF1, MF1, MF3, MF4, MF5, MF11.	SOCAL	18

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
		Anti-Submarine Warfare			
Acoustic	Anti-Submarine Warfare Torpedo Exercise—Helicopter.	Helicopter crews search for, track, and detect submarines. Recoverable air launched torpedoes are employed against submarine targets.	MF4, MF5, TORP1	HRC SOCAL	42 728
Acoustic	Anti-Submarine Warfare Torpedo Exercise—Maritime Patrol Aircraft.	Maritime patrol aircraft crews search for, track, and detect submarines. Recoverable air launched torpedoes are employed against submarine targets.	MF5, TORP1	HRC SOCAL	70 175
Acoustic	Anti-Submarine Warfare Torpedo Exercise—Ship.	Surface ship crews search for, track, and detect submarines. Exercise torpedoes are used during this event.	ASW3, MF1, TORP1	HRC SOCAL	350 819
Acoustic	Anti-Submarine Warfare Torpedo Exercise—Submarine.	Submarine crews search for, track, and detect submarines. Exercise torpedoes are used during this event.	ASW4, HF1, MF3, TORP2	HRC SOCAL	336 91
Acoustic	Anti-Submarine Warfare Tracking Exercise—Helicopter.	Helicopter crews search for, track, and detect submarines	MF4, MF5	HRC SOCAL, PMSR HSTT Transit Corridor	1,113 3,668 42
Acoustic	Anti-Submarine Warfare Tracking Exercise—Maritime Patrol Aircraft.	Maritime patrol aircraft aircrews search for, track, and detect submarines. Recoverable air launched torpedoes are employed against submarine targets.	MF5	HRC SOCAL, PMSR	182 350
Acoustic	Anti-Submarine Warfare Tracking Exercise—Ship.	Surface ship crews search for, track, and detect submarines	ASW3, MF1, MF11, MF12	HRC SOCAL, PMSR	1,568 2,961
Acoustic	Anti-Submarine Warfare Tracking Exercise—Submarine.	Submarine crews search for, track, and detect submarines	ASW4, HF1, HF3, MF3	HRC SOCAL, PMSR HSTT Transit Corridor	1,400 350 49
Explosive, Acoustic	Service Weapons Test	Air, surface, or submarine crews employ explosive torpedoes against virtual targets.	HF1, MF3, MF6, TORP2, Explosive torpedoes (E11).	HRC SOCAL	14 7
		Mine Warfare			
Acoustic	Airborne Mine Countermeasure—Mine Detection.	Helicopter aircrews detect mines using towed or laser mine detection systems.	HF4	SOCAL	70
Explosive, Acoustic	Civilian Port Defense—Homeland Security Anti-Terrorism/Force Protection Exercises.	Maritime security personnel train to protect civilian ports against enemy efforts to interfere with access to those ports.	HF4, SAS2, E2, E4	Pearl Harbor, HI San Diego, CA	7 21
Explosive	Marine Mammal Systems	The Navy deploys trained bottlenose dolphins (*Tursiops truncatus*) and California sea lions (*Zalophus californianus*) as part of the marine mammal mine-hunting and object-recovery system.	E7	HRC SOCAL	70 1,225
Acoustic	Mine Countermeasure Exercise—Ship Sonar.	Ship crews detect and avoid mines while navigating restricted areas or channels using active sonar.	HF4, HF8, MF1K	HRC SOCAL	210 664
Acoustic	Mine Countermeasure Exercise—Surface.	Mine countermeasure ship crews detect, locate, identify, and avoid mines while navigating restricted areas or channels, such as while entering or leaving port.	HF4	SOCAL	1,862
Explosive, Acoustic	Mine Countermeasures Mine Neutralization Remotely Operated Vehicle.	Ship, small boat, and helicopter crews locate and disable mines using remotely operated underwater vehicles.	HF4, E4	HRC SOCAL	42 2,604
Explosive	Mine Neutralization Explosive Ordnance Disposal.	Personnel disable threat mines using explosive charges	E4, E5, E6, E7	HRC (Puuloa) SOCAL (IB, TAR 2, TAR 3, TAR 21, SWAT 3, SOAR).	140 1,358
Acoustic	Submarine Mine Exercise	Submarine crews practice detecting mines in a designated area.	HF1	HRC SOCAL	280 84
Acoustic	Surface Ship Object Detection	Ship crews detect and avoid mines while navigating restricted areas or channels using active sonar.	MF1K, HF8	HRC SOCAL	287 1,134
Explosive	Underwater Demolitions Multiple Charge—Mat Weave and Obstacle Loading.	Military personnel use explosive charges to destroy barriers or obstacles to amphibious vehicle access to beach areas.	E10, E13	SOCAL (TAR 2, TAR 3)	126
Explosive	Underwater Demolition Qualification and Certification.	Navy divers conduct various levels of training and certification in placing underwater demolition charges.	E6, E7	HRC (Puuloa) SOCAL (TAR 2)	203 700
		Surface Warfare			
Explosive	Bombing Exercise Air-to-Surface.	Fixed-wing aircrews deliver bombs against surface targets	E12 [2]	HRC SOCAL HSTT Transit Corridor	1309 4480 35
Explosive	Gunnery Exercise Surface-to-Surface Boat Medium-Caliber.	Small boat crews fire medium-caliber guns at surface targets.	E1, E2	HRC SOCAL	70 98
Explosive	Gunnery Exercise Surface-to-Surface Ship Large-caliber.	Surface ship crews fire large-caliber guns at surface targets	E5	HRC SOCAL HSTT Transit Corridor	210 1,302 91
Explosive	Gunnery Exercise Surface-to-Surface Ship Medium-Caliber.	Surface ship crews fire medium-caliber guns at surface targets.	E1, E2	HRC SOCAL HSTT Transit Corridor	350 1,260 280
Explosive, Acoustic	Independent Deployer Certification Exercise/Tailored Surface Warfare Training.	Multiple ships, aircraft and submarines conduct integrated multi-warfare training with a surface warfare emphasis. Serves as a ready-to-deploy certification for individual surface ships tasked with surface warfare missions.	E1, E3, E6, E10	SOCAL	7
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	HRC (W188A) SOCAL (SOAR)	7 7
Explosive	Missile Exercise Air-to-Surface.	Fixed-wing and helicopter aircrews fire air-to-surface missiles at surface targets.	E6, E8, E10	HRC SOCAL	70 1,498
Explosive	Missile Exercise Air-to-Surface Rocket.	Helicopter aircrews fire both precision-guided and unguided rockets at surface targets.	E3	HRC SOCAL	1,598 1,722
Explosive	Missile Exercise Surface-to-Surface.	Surface ship crews defend against surface threats (ships or small boats) and engage them with missiles.	E6, E10	HRC (W188) SOCAL (W291)	140 70
Explosive, Acoustic	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, E10, E12	HRC SOCAL	21 4

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
Pile driving	Elevated Causeway System	A pier is constructed off of the beach. Piles are driven into the bottom with an impact hammer. Piles are removed from seabed via vibratory extractor. Only in-water impacts are analyzed.	Impact hammer or vibratory extractor.	SOCAL	14
Other Training Exercises					
Acoustic	Kilo Dip	Functional check of the dipping sonar prior to conducting a full test or training event on the dipping sonar.	MF4	HRC	420
				SOCAL	16,800
Acoustic	Submarine Navigation Exercise.	Submarine crews operate sonar for navigation and object detection while transiting into and out of port during reduced visibility.	HF1, MF3	Pearl Harbor, HI	1,540
				San Diego Bay, CA	560
Acoustic	Submarine Sonar Maintenance and Systems Checks.	Maintenance of submarine sonar systems is conducted pierside or at sea.	MF3	HRC	1,820
				Pearl Harbor, HI	1,820
				SOCAL	651
				San Diego Bay, CA	644
				HSTT Transit Corridor	70
Acoustic	Submarine Under-Ice Certification.	Submarine crews train to operate under ice. Ice conditions are simulated during training and certification events.	HF1	HRC	84
				SOCAL	42
Acoustic	Surface Ship Sonar Maintenance and Systems Checks.	Maintenance of surface ship sonar systems is conducted pierside or at sea.	HF8, MF1	HRC	525
				Pearl Harbor, HI	560
				SOCAL	1,750
				San Diego, CA	1,750
				HSTT Transit Corridor	56
Acoustic	Unmanned Underwater Vehicle Training—Certification and Development.	Unmanned underwater vehicle certification involves training with unmanned platforms to ensure submarine crew proficiency. Tactical development involves training with various payloads for multiple purposes to ensure that the systems can be employed effectively in an operational environment.	FLS2, M3, SAS2	HRC	175
				SOCAL	70

Notes: HRC = Hawaii Range Complex, SOCAL = Southern California Range Complex, HSTT = Hawaii-Southern California Training and Testing, PMSR = Point Mugu Sea Range Overlap, TAR = Training Area and Range, SOAR = Southern California Anti-Submarine Warfare Range, IB = Imperial Beach Minefield.

[1] Any non-antisubmarine warfare activity that could occur is captured in the individual activities.

[2] For the Bombing Exercise Air-to-Surface, all activities were analyzed using E12 explosive bin, but smaller explosives are frequently used.

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 8 of the 2018 HSTT 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 5.

Naval Air Systems Command

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

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
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 and fixed-wing aircraft and the ability to search for, detect, classify, localize, track, and attack a submarine or similar target.	MF5, TORP1	HRC	134
				SOCAL	353
Explosive, Acoustic	Anti-Submarine Warfare Tracking Test—Helicopter.	This event is similar to the training event anti-submarine tracking exercise—helicopter. The test evaluates the sensors and systems used to detect and track submarines and to ensure that helicopter systems used to deploy the tracking systems perform to specifications.	MF4, MF5, E3	SOCAL	414
Explosive, Acoustic	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, MF5, MF6, E1, E3.	HRC	399
				SOCAL	436
Explosive, Acoustic	Sonobuoy Lot Acceptance Test.	Sonobuoys are deployed from surface vessels and aircraft to verify the integrity and performance of a lot or group of sonobuoys in advance of delivery to the fleet for operational use.	ASW2, ASW5, HF5, HF6, LF4, MF5, MF6, E1, E3, E4.	SOCAL	1,120
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	SOCAL	24

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
Explosive	Airborne Mine Neutralization System Test.	A test of the airborne mine neutralization system that evaluates the system's ability to detect and destroy mines from an airborne mine countermeasures capable helicopter (*e.g.,* MH–60). 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	SOCAL	117
Acoustic	Airborne Sonobuoy Minehunting Test.	A mine-hunting system made up of sonobuoys deployed from a helicopter. A field of sonobuoys, using high-frequency sonar, is used for detection and classification of bottom and moored mines.	HF6	SOCAL	33
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	HRC SOCAL	56 98
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 gun, gun ammunition, or associated systems meet required specifications or to train aircrew in the operation of a new or enhanced weapons system.	E1	HRC SOCAL	35 330
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 weapons system or as part of another systems integration test.	E6, E9, E10	HRC SOCAL	126 384
Explosive	Rocket Test	Rocket tests are conducted to evaluate the integration, accuracy, performance, and safe separation of guided and unguided 2.75-inch rockets fired from a hovering or forward flying helicopter or tilt rotor aircraft.	E3	HRC SOCAL	14 142
Other Testing Activities					
Acoustic	Kilo Dip	Functional check of a helicopter deployed dipping sonar system (*e.g.,* AN/AQS–22) prior to conducting a testing or training event using the dipping sonar system.	MF4	SOCAL	12
Acoustic	Undersea Range System Test	Post installation node survey and test and periodic testing of range node transmit functionality.	MF9	HRC	129

Notes: HRC = Hawaii Range Complex, SOCAL = Southern California Range Complex.

Naval Sea Systems Command

The proposed Naval Sea Systems Command testing activities that could occur over the seven-year period within the HSTT Study Area are presented in Table 3.

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
Anti-Submarine Warfare					
Acoustic	Anti-Submarine Warfare Mission Package Testing.	Ships and their supporting platforms (*e.g.,* rotary-wing aircraft and unmanned aerial systems) detect, localize, and prosecute submarines.	ASW1, ASW2, ASW3, ASW5, MF1, MF4, MF5, MF12, TORP1.	HRC SOCAL	154 161
Acoustic	At-Sea Sonar Testing	At-sea testing to ensure systems are fully functional in an open ocean environment.	ASW3, ASW4, HF1, LF4, LF5, M3, MF1, MF1K, MF2, MF3, MF5, MF9, MF10, MF11.	HRC HRC–SOCAL SOCAL	109 7 138
Acoustic	Countermeasure Testing	Countermeasure testing involves the testing of systems that will detect, localize, and track incoming weapons, including marine vessel targets. Testing includes surface ship torpedo defense systems and marine vessel stopping payloads.	ASW3, ASW4, HF5, TORP1, TORP2.	HRC HRC–SOCAL SOCAL HSTT Transit Corridor	56 28 77 14
Acoustic	Pierside Sonar Testing	Pierside testing to ensure systems are fully functional in a controlled pierside environment prior to at-sea test activities.	HF1, HF3, HF8, M3, MF1, MF3, MF9.	Pearl Harbor, HI San Diego, CA	49 49
Acoustic	Submarine Sonar Testing/ Maintenance.	Pierside and at-sea testing of submarine systems occurs periodically following major maintenance periods and for routine maintenance.	HF1, HF3, M3, MF3	HRC Pearl Harbor, HI San Diego, CA	28 119 168
Acoustic	Surface Ship Sonar Testing/ Maintenance.	Pierside and at-sea testing of ship systems occurs periodically following major maintenance periods and for routine maintenance.	ASW3, MF1, MF1K, MF9, MF10.	HRC Pearl Harbor, HI San Diego, CA SOCAL	21 21 21 21
Explosive, Acoustic	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.	HRC (W188) HRC (W188) SOCAL SOCAL	56 21 56

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
Acoustic	Torpedo (Non-Explosive) Testing.	Air, surface, or submarine crews employ non-explosive torpedoes against submarines or surface vessels.	ASW3, ASW4, HF1, HF6, M3, MF1, MF3, MF4, MF5, MF6, TORP1, TORP2, TORP3.	HRC HRC SOCAL SOCAL	56 63 56
Mine Warfare					
Explosive, Acoustic	Mine Countermeasure and Neutralization Testing.	Air, surface, and subsurface vessels neutralize threat mines and mine-like objects.	HF4, E4	SOCAL	70
Explosive, Acoustic	Mine Countermeasure Mission Package Testing.	Vessels and associated aircraft conduct mine countermeasure operations.	HF4, SAS2, E4	HRC SOCAL	118 406
Acoustic	Mine Detection and Classification Testing.	Air, surface, and subsurface vessels detect and classify mines and mine-like objects. Vessels also assess their potential susceptibility to mines and mine-like objects.	HF1, HF8, MF1, MF5	HRC HRC SOCAL SOCAL	14 10 77
Surface Warfare					
Explosive	Gun Testing—Large-Caliber	Surface crews defend against surface targets with large-caliber guns.	E3	HRC HRC–SOCAL SOCAL	49 504 49
Explosive	Gun Testing—Medium-Caliber	Surface crews defend against surface targets with medium-caliber guns.	E1	HRC HRC–SOCAL SOCAL	28 336 28
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	HRC HRC–SOCAL SOCAL	91 168 140
Unmanned Systems					
Acoustic	Unmanned Surface Vehicle System Testing.	Testing involves the production or upgrade of unmanned surface vehicles. This may include tests of mine detection capabilities, evaluations of the basic functions of individual platforms, or complex events with multiple vehicles.	HF4, SAS2	HRC SOCAL	21 28
Acoustic	Unmanned Underwater Vehicle Testing.	Testing involves the production or upgrade of unmanned underwater vehicles. This may include tests of mine detection capabilities, evaluations of the basic functions of individual platforms, or complex events with multiple vehicles.	HF4, MF9	HRC SOCAL	21 2,037
Vessel Evaluation					
Acoustic	Submarine Sea Trials–Weapons System Testing.	Submarine weapons and sonar systems are tested at-sea to meet the integrated combat system certification requirements.	HF1, M3, MF3, MF9, MF10, TORP2.	HRC SOCAL	7 7
Explosive	Surface Warfare Testing	Tests the capabilities 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	HRC HRC–SOCAL SOCAL	63 441 102
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 undersea targets.	ASW4, HF4, HF8, MF1, MF4, MF5, MF6, TORP1, TORP2.	HRC HRC SOCAL SOCAL	49 60 69
Acoustic	Vessel Signature Evaluation	Surface ship, submarine and auxiliary system signature assessments. This may include electronic, radar, acoustic, infrared and magnetic signatures.	ASW3	HRC HRC SOCAL SOCAL	28 252 168
Other Testing Activities					
Acoustic	Insertion/Extraction	Testing of submersibles capable of inserting and extracting personnel and payloads into denied areas from strategic distances.	M3, MF9	HRC SOCAL	7 7
Acoustic	Signature Analysis Operations	Surface ship and submarine testing of electromagnetic, acoustic, optical, and radar signature measurements.	HF1, M3, MF9	HRC SOCAL	14 7

Notes: HRC = Hawaii Range Complex, SOCAL = Southern California Range Complex, HSTT = Hawaii-Southern California Training and Testing, CA = California, HI = Hawaii.

Office of Naval Research

The proposed Office of Naval Research testing activities that could occur over the seven-year period within the HSTT Study Area are presented in Table 4.

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
Acoustic and Oceanographic Science and Technology					
Explosive, Acoustic	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, BB9, LF3, LF4, LF5, MF8, MF9, MF9, MF9, E3.	HRC SOCAL	14 28

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

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
Acoustic	Long Range Acoustic Communications.	Bottom mounted acoustic source off of the Hawaiian Island of Kauai will transmit a variety of acoustic communications sequences.	LF4	HRC	21

Notes: HRC = Hawaii Range Complex, SOCAL = Southern California Range Complex.

Naval Information Warfare Systems Command

The proposed Naval Information Warfare Systems Command testing activities that could occur over the seven-year period within the HSTT Study Area are presented in Table 5.

TABLE 5—PROPOSED NAVAL INFORMATION WARFARE SYSTEMS COMMAND TESTING ACTIVITIES ANALYZED FOR SEVEN-YEAR PERIOD IN THE HSTT STUDY AREA

Stressor category	Activity name	Description	Source bin	Location	7-Year number of events
Acoustic	Anti-Terrorism/Force Protection.	Testing sensor systems that can detect threats to naval piers, ships, and shore infrastructure.	SD1	San Diego, CA	98
				SOCAL	112
Acoustic	Communications	Testing of underwater communications and networks to extend the principles of FORCEnet below the ocean surface.	ASW2, ASW5, HF6, LF4	HRC	5
				SOCAL	70
Acoustic	Energy and Intelligence, Surveillance, and Reconnaissance Sensor Systems.	Develop, integrate, and demonstrate Intelligence, Surveillance, and Reconnaissance systems and in-situ energy systems to support deployed systems.	AG, HF2, HF7, LF4, LF5, LF6, MF10.	HRC	87
				SOCAL	357
				HSTT Transit Corridor	56
Acoustic	Vehicle Testing	Testing of surface and subsurface vehicles and sensor systems that may involve Unmanned Underwater Vehicles, gliders, and Unmanned Surface Vehicles.	BB4, FLS2, FLS3, HF6, LF3, M3, MF9, MF13, SAS1, SAS2, SAS3.	HRC	8
				SOCAL	1,141
				HSTT Transit Corridor	14

Notes: HRC = Hawaii Range Complex, SOCAL = Southern California Range Complex, HSTT = Hawaii-Southern California Training and Testing, CA = California.

Summary of Acoustic and Explosive Sources Analyzed for Training and Testing

Tables 6 through 9 show the acoustic and explosive source classes, bins, and numbers used, airgun sources and numbers used, and numbers of pile driving and removal activities associated with the Navy's proposed training and testing activities over a seven-year period in the HSTT 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 HSTT Study Area are identical to those presented in Tables 9 through 12 of the 2018 HSTT final rule, and are not repeated here. Consistent with the periodicity in the 2018 HSTT final rule, the Navy proposes the addition of two pile driving/extraction activities for each of the two additional years.

Table 6 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 6—ACOUSTIC SOURCE CLASSES ANALYZED AND NUMBER USED FOR SEVEN-YEAR PERIOD FOR TRAINING AND TESTING ACTIVITIES IN THE HSTT STUDY AREA

Source class category	Bin	Description	Unit [1]	Training	Testing
				7-year total	7-year total
Low-Frequency (LF): Sources that produce signals less than 1 kHz.	LF3	LF sources greater than 200 dB	H	0	1,365
	LF4	LF sources equal to 180 dB and up to 200 dB.	H	0	4,496
			C	0	140
	LF5	LF sources less than 180 dB	H	65	14,458
	LF6	LF sources greater than 200 dB with long pulse lengths.	H	956	360
Mid-Frequency (MF): Tactical and non-tactical sources that produce signals between 1 and 10 kHz.	MF1	Hull-mounted surface ship sonars (*e.g.,* AN/SQS–53C and AN/SQS–61).	H	38,489	8,692
	MF1K	Kingfisher mode associated with MF1 sonars.	H	700	98
	MF2 [2]	Hull-mounted surface ship sonars (*e.g.,* AN/SQS–56).	H	0	378
	MF3	Hull-mounted submarine sonars (*e.g.,* AN/BQQ–10).	H	14,700	9,177
	MF4	Helicopter-deployed dipping sonars (*e.g.,* AN/AQS–22 and AN/AQS–13).	H	2,719	2,502
	MF5	Active acoustic sonobuoys (*e.g.,* DICASS).	C	40,128	38,233

TABLE 6—ACOUSTIC SOURCE CLASSES ANALYZED AND NUMBER USED FOR SEVEN-YEAR PERIOD FOR TRAINING AND TESTING ACTIVITIES IN THE HSTT STUDY AREA—Continued

Source class category	Bin	Description	Unit [1]	Training	Testing
				7-year total	7-year total
	MF6	Active underwater sound signal devices (*e.g.,* MK 84).	C	63	8,202
	MF8	Active sources (greater than 200 dB) not otherwise binned.	H	0	490
	MF9	Active sources (equal to 180 dB and up to 200 dB) not otherwise binned.	H	0	36,056
	MF10	Active sources (greater than 160 dB, but less than 180 dB) not otherwise binned.	H	0	13,104
	MF11	Hull-mounted surface ship sonars with an active duty cycle greater than 80%.	H	5,205	392
	MF12	Towed array surface ship sonars with an active duty cycle greater than 80%.	H	1,260	4,620
	MF13	MF sonar source	H	0	2,100
High-Frequency (HF): Tactical and non-tactical sources that produce signals between 10 and 100 kHz.	HF1	Hull-mounted submarine sonars (*e.g.,* AN/BQQ–10).	H	12,550	5,403
	HF2	HF Marine Mammal Monitoring System	H	0	840
	HF3	Other hull-mounted submarine sonars (classified).	H	1,919	769
	HF4	Mine detection, classification, and neutralization sonar (*e.g.,* AN/SQS–20).	H	15,012	114,069
	HF5	Active sources (greater than 200 dB) not otherwise binned.	H	0	6,720
			C	0	280
	HF6	Active sources (equal to 180 dB and up to 200 dB) not otherwise binned.	H	0	7,015
	HF7	Active sources (greater than 160 dB, but less than 180 dB) not otherwise binned.	H	0	9,660
	HF8	Hull-mounted surface ship sonars (*e.g.,* AN/SQS–61).	H	711	5,136
Anti-Submarine Warfare (ASW): Tactical sources (*e.g.,* active sonobuoys and acoustic countermeasures systems) used during ASW training and testing activities.	ASW1	MF systems operating above 200 dB	H	1,503	3,290
	ASW2	MF Multistatic Active Coherent sonobuoy (*e.g.,* AN/SSQ–125).	C	4,824	32,900
	ASW3	MF towed active acoustic countermeasure systems (*e.g.,* AN/SLQ–25).	H	37,385	19,187
	ASW4	MF expendable active acoustic device countermeasures (*e.g..,* MK 3).	C	9,023	15,398
	ASW5 [3]	MF sonobuoys with high duty cycles	H	1,780	3,854
Torpedoes (TORP): Source classes associated with the active acoustic signals produced by torpedoes.	TORP1	Lightweight torpedo (*e.g.,* MK 46, MK 54, or Anti-Torpedo Torpedo).	C	1,605	6,454
	TORP2	Heavyweight torpedo (*e.g.,* MK 48)	C	3,515	2,756
	TORP3		C	0	315
Forward Looking Sonar (FLS): Forward or upward looking object avoidance sonars used for ship navigation and safety.	FLS2	HF sources with short pulse lengths, narrow beam widths, and focused beam patterns.	H	196	3,424
	FLS3	VHF sources with short pulse lengths, narrow beam widths, and focused beam patterns.	H	0	18,480
Acoustic Modems (M): Systems used to transmit data through the water.	M3	MF acoustic modems (greater than 190 dB).	H	274	3,623
Swimmer Detection Sonars (SD): 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	70
Synthetic Aperture Sonars (SAS): Sonars in which active acoustic signals are post-processed to form high-resolution images of the seafloor.	SAS1	MF SAS systems	H	0	13,720
	SAS2	HF SAS systems	H	6,297	60,088
	SAS3	VHF SAS systems	H	0	32,200
	SAS4	MF to HF broadband mine countermeasure sonar.	H	294	0
Broadband Sound Sources (BB): Sonar systems with large frequency spectra, used for various purposes.	BB4	LF to MF oceanographic source	H	0	6,414
	BB7	LF oceanographic source	C	0	196
	BB9	MF optoacoustic source	H	0	3,360

[1] H = hours; C = count (*e.g.,* number of individual pings or individual sonobuoys).
[2] MF2/MF2K are sources on frigate class ships, which were decommissioned during Phase II.
[3] Formerly ASW2 (H) in Phase II.
Notes: dB = decibel(s), kHz = kilohertz, VHF = very high frequency.

Table 7 describes the number of air gun shots that could occur over seven years under the proposed training and testing activities.

TABLE 7—TRAINING AND TESTING AIR GUN SOURCES QUANTITATIVELY ANALYZED IN THE HSTT STUDY AREA

Source class category	Bin	Unit [1]	Training	Testing
			7-year total	7-year total
Air Guns (AG): small underwater air guns	AG	C	0	5,908

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

Table 8 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 will drive 119 piles, two times a year for a total of 238 piles. Over the seven-year period of the rule, the Navy will drive a total of 1,666 piles by impact pile driving. Annually, for vibratory pile extraction, the Navy will extract 119 piles, two times a year for a total of 238 piles. Over the seven-year period of the rule, the Navy will extract a total of 1,666 piles by vibratory pile extraction.

TABLE 8—SUMMARY OF PILE DRIVING AND REMOVAL ACTIVITIES PER 24-HOUR PERIOD IN THE HSTT 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 9 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 9—EXPLOSIVE SOURCE BINS ANALYZED AND NUMBER USED FOR SEVEN-YEAR PERIOD FOR TRAINING AND TESTING ACTIVITIES WITHIN THE HSTT STUDY AREA

Bin	Net explosive weight (lb.) [1]	Example explosive source	Modeled underwater detonation depths (ft.)	Training	Testing
				7-year total	7-year total
E1	0.1–0.25	Medium-caliber projectiles	0.3, 60	20,580	87,012
E2	>0.25–0.5	Medium-caliber projectiles	0.3, 50	12,222	0
E3	>0.5–2.5	Large-caliber projectiles	0.3, 60	19,579	20,848
E4	>2.5–5	Mine neutralization charge	10, 16, 33, 50, 61, 65, 650.	266	4,372
E5	>5–10	5 in. projectiles	0.3, 10, 50	33,310	9,800
E6	>10–20	Hellfire missile	0.3, 10, 50, 60	4,056	230
E7	>20–60	Demo block/shaped charge	10, 50, 60	91	0
E8	>60–100	Lightweight torpedo	0.3, 150	241	399
E9	>100–250	500 lb. bomb	0.3	2,950	28
E10	>250–500	Harpoon missile	0.3	1,543	210
E11	>500–650	650 lb. mine	61, 150	69	84
E12	>650–1,000	2,000 lb. bomb	0.3	114	0
E13	>1,000–1,740	Multiple Mat Weave charges	NA [2]	63	0

[1] Net Explosive Weight refers to the amount of explosives; the actual weight of a munition may be larger due to other components.
[2] Not modeled because charge is detonated in surf zone; not a single E13 charge, but multiple smaller charges detonated in quick succession.
Notes: in. = inch(es), lb. = pound(s), ft. = feet.

Vessel Movement

Vessels used as part of the Planned Activities include ships, submarines, unmanned vessels, and boats ranging in size from small, 22 ft (7 m) rigid hull inflatable boats to aircraft carriers with lengths up to 1,092 ft (333 m). 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 (kn), while a few specialized vessels can travel at faster speeds. Small craft (for purposes of this analysis, less than 18 m in length) have much more variable speeds (0–50+ kn, dependent on the activity), but generally range from 10 to 14 kn. From unpublished Navy data, average median speed for large Navy ships in the HSTT Study Area from 2011–2015 varied from 5–10 kn with variations by ship class and location (*i.e.,* slower speeds close to the coast). While these speeds for large and small craft 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 (*Description of Proposed Action and Alternatives*) of the 2018 HSTT FEIS/OEIS.

The number of Navy vessels used in the HSTT Study Area varies based on military training and testing requirements, deployment schedules, annual budgets, and other dynamic factors. Most training and testing activities involve the use of vessels. These activities could be widely dispersed throughout the HSTT Study Area, but would typically be conducted near naval ports, piers, and range areas. Navy vessel traffic would be especially concentrated near San Diego, California and Pearl Harbor, Hawaii. There is no seasonal differentiation in Navy vessel use because of continual operational requirements from Combatant Commanders. The majority of large vessel traffic occurs between the installations and the OPAREAs. Support craft would be more concentrated in the coastal waters in the areas of naval installations, ports, and ranges. Activities involving vessel movements occur intermittently and are variable in duration, ranging from a few hours up to weeks.

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 HSTT Study Area from those analyzed in the 2018 HSTT 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 included them in the environmental analysis. Details on standard operating procedures were provided in the 2018 HSTT proposed rule; please see the 2018 HSTT proposed rule, the 2017 Navy application, and Chapter 2 (*Description of Proposed Action and Alternatives*) of the 2018 HSTT FEIS/OEIS for more information. The Navy proposes no changes to the Standard Operating Procedures from those included in the 2018 HSTT 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 HSTT Study Area are presented in Table 10 along with the best/minimum abundance estimate and associated coefficient of variation value. Consistent with the 2018 HSTT final rule, the Navy still anticipates the take of individuals from 38 marine mammal species by Level A harassment and Level 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 13 serious injuries or mortalities combined of two marine mammal stocks from explosives, and three takes of large whales by serious injury or mortality from vessel strikes over the seven-year period. Two marine mammal species, the Hawaiian monk seal and the Main Hawaiian Islands Insular Distinct Population Segment (DPS) of false killer whale, have critical habitat designated under the Endangered Species Act (ESA) in the HSTT Study Area.

We presented a detailed discussion of marine mammals and their occurrence in the HSTT Study Area, inclusive of important marine mammal habitat (*e.g.,* ESA-designated critical habitat), biologically important areas (BIAs), national marine sanctuaries (NMSs), and unusual mortality events (UMEs) in the 2018 HSTT proposed rule and 2018 HSTT 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 ESA designated critical habitat since the issuance of the 2018 HSTT final rule; therefore the information that supports our determinations here can be found in the 2018 HSTT proposed and final rules. NMFS has reviewed the most recent 2018 final Stock Assessment Reports (SARs); 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 Marine Mammals and Their Habitat in the Area of the Specified Activities* section in the 2018 HSTT proposed and final rules. Therefore the information presented in those sections of the 2018 HSTT proposed and final rules remains current and valid.

The species considered but not carried forward for analysis are two American Samoa stocks of spinner dolphins—(1) the Kure and Midway stock and (2) the Pearl and Hermes stock. There is no potential for overlap with any stressors from Navy activities and therefore there would be no incidental takes, in which case, these stocks are not considered further.

TABLE 10—MARINE MAMMAL OCCURRENCE WITHIN THE HSTT STUDY AREA

Common name	Scientific name	Stock	Status		Occurrence	Seasonal absence	Stock abundance (CV)/minimum population
			MMPA	ESA			
Blue whale	Balaenoptera musculus	Eastern North Pacific	Strategic, Depleted	Endangered	Southern California		1,647 (0.07)/1,551.
		Central North Pacific	Strategic, Depleted	Endangered	Hawaii	Summer	133 (1.09)/63.
Bryde's whale	Balaenoptera brydei/ edeni.	Eastern Tropical Pacific			Southern California		unknown.
		Hawaii			Hawaii		1,751 (0.29)/1,378.
Fin whale	Balaenoptera physalus	CA/OR/WA	Strategic, Depleted	Endangered	Southern California		9,029 (0.12)/8,127.
		Hawaii	Strategic, Depleted	Endangered	Hawaii	Summer	154 (1.05)/75.
Gray whale	Eschrichtius robustus	Eastern North Pacific			Southern California		26,960 (0.05)/25,849.
		Western North Pacific	Strategic, Depleted	Endangered	Southern California		290 (NA)/271.
Humpback whale	Megaptera novaeangliae	CA/OR/WA	Strategic, Depleted	Threatened/ Endangered [1]	Southern California		2,900 (0.05)/2,784.
		Central North Pacific	Strategic		Hawaii	Summer	10,103 (0.30)/7,891.
Minke whale	Balaenoptera acutorostrata.	CA/OR/WA			Southern California		636 (0.72)/369.
		Hawaii			Hawaii	Summer	unknown.
Sei whale	Balaenoptera borealis	Eastern North Pacific	Strategic, Depleted	Endangered	Southern California		519 (0.40)/374.
		Hawaii	Strategic, Depleted	Endangered	Hawaii	Summer	391 (0.90)/204.
Sperm whale	Physeter macrocephalus	CA/OR/WA	Strategic, Depleted	Endangered	Southern California		1,997 (0.57)/1,270.
		Hawaii	Strategic, Depleted	Endangered	Hawaii		4,559 (0.33)/3,478.
Pygmy sperm whale	Kogia breviceps	CA/OR/WA			Southern California	Winter and Fall	4,111 (1.12)/1,924.
		Hawaii			Hawaii		unknown.
Dwarf sperm whale	Kogia sima	CA/OR/WA			Southern California		unknown.
		Hawaii			Hawaii		unknown.
Baird's beaked whale	Berardius bairdii	CA/OR/WA			Southern California		2,697 (0.60)/1,633.
Blainville's beaked whale.	Mesoplodon densirostris	Hawaii			Hawaii		2,105 (1.13)/980.
Cuvier's beaked whale	Ziphius cavirostris	CA/OR/WA			Southern California		3,274 (0.67)/2,059.
		Hawaii			Hawaii		723 0.69/428.
Longman's beaked whale.	Indopacetus pacificus	Hawaii			Hawaii		7,619 (0.66)/4,592.
Mesoplodon beaked whales.	Mesoplodon spp.	CA/OR/WA			Southern California		3,044 (0.54)/1,967.
Common Bottlenose dolphin.	Tursiops truncatus	California Coastal			Southern California		453 (0.06)/346.
		CA/OR/WA Offshore			Southern California		1,924 (0.54)/1,255.
		Hawaii Pelagic			Hawaii		21,815 (0.57)/13,957.
		Kauai and Niihau			Hawaii		NA NA/97.
		Oahu			Hawaii		NA.
		4-Islands			Hawaii		NA.
		Hawaii Island			Hawaii		NA NA/91.
False killer whale	Pseudorca crassidens	Main Hawaiian Islands Insular.	Strategic, Depleted	Endangered	Hawaii		167 (0.14)/149.
		Hawaii Pelagic			Hawaii		1,540 (0.66)/928.
		Northwestern Hawaiian Islands.			Hawaii		617 (1.11)/290.
Fraser's dolphin	Lagenodelphis hosei	Hawaii			Hawaii		51,491 (0.66)/31,034.
Killer whale	Orcinus orca	Eastern North Pacific Offshore.			Southern California		300 (0.1)/276.
		Eastern North Pacific Transient/West Coast Transient[2].			Southern California		243 unknown/243.
		Hawaii			Hawaii		146 (0.96)/74.
Long-beaked common dolphin.	Delphinus capensis	California			Southern California		101,305 (0.49)/68,432.
Melon-headed whale	Peponocephala electra	Hawaiian Islands			Hawaii		8,666 (1.00)/4,299.
		Kohala Resident			Hawaii		447 (0.12)/404.
Northern right whale dolphin.	Lissodelphis borealis	CA/OR/WA			Southern California		26,556 (0.44)/18,608.
Pacific white-sided dolphin.	Lagenorhynchus obliquidens.	CA/OR/WA			Southern California		26,814 (0.28)/21,195.
Pantropical spotted dolphin.	Stenella attenuata	Oahu			Hawaii		unknown.
		4-Islands			Hawaii		unknown.
		Hawaii Island			Hawaii		unknown.
		Hawaii Pelagic			Hawaii		55,795 (0.40)/40,338.
Pygmy killer whale	Feresa attenuata	Tropical			Southern California	Winter & Spring	unknown.
		Hawaii			Hawaii		10,640 (0.53)/6,998.
Risso's dolphins	Grampus griseus	CA/OR/WA			Southern California		6,336 (0.32)/4,817.
		Hawaii			Hawaii		11,613 (0.43)/8,210.

Rough-toothed dolphin ..	Steno bredanensis	NSD[3]	.....	.....	Southern California	.....	unknown.
		Hawaii	.....	.....	Hawaii	.....	72,528 (0.39)/52,833.
Short-beaked common dolphin.	Delphinus delphis	CA/OR/WA	.....	.....	Southern California	.....	969,861 (0.17)/839,325.
Short-finned pilot whale	Globicephala macrorhynchus.	CA/OR/WA	.....	.....	Southern California	.....	836 (0.79)/466.
		Hawaii	.....	.....	Hawaii	.....	19,503 (0.49)/13,197.
Spinner dolphin	Stenella longirostris	Hawaii Pelagic	.....	.....	Hawaii	.....	unknown.
		Hawaii Island	.....	.....	Hawaii	.....	665 (0.09)/617.
		Oahu and 4-Islands	.....	.....	Hawaii	.....	NA.
		Kauai and Niihau	.....	.....	Hawaii	.....	NA.
		Kure and Midway	.....	.....	Hawaii	.....	unknown.
		Pearl and Hermes	.....	.....	Hawaii	.....	unknown.
Striped dolphin	Stenella coeruleoalba ...	CA/OR/WA	.....	.....	Southern California	.....	29,211 (0.20)/24,782.
		Hawaii	.....	.....	Hawaii	.....	61,021 (0.38)/44,922.
Dall's porpoise	Phocoenoides dalli	CA/OR/WA	.....	.....	Southern California	.....	25,750 (0.45)/17,954
Harbor seal	Phoca vitulina	California	.....	.....	Southern California	.....	30,968 (NA)/27,348.
Hawaiian monk seal	Neomonachus schauinslandi.	Hawaii	Strategic, Depleted	Endangered	Hawaii	.....	1,415 (0.03)/1,384.
Northern elephant seal ..	Mirounga angustirostris	California	.....	.....	Southern California	.....	179,000 (NA)/81,368.
California sea lion	Zalophus californianus ..	U.S. Stock	.....	.....	Southern California	.....	257,606 (NA)/233,515.
Guadalupe fur seal	Arctocephalus townsendi.	Mexico to California	Strategic, Depleted	Threatened	Southern California	.....	20,000 (NA)/15,830.
Northern fur seal	Callorhinus ursinus	California	.....	.....	Southern California	.....	14,050 (NA)/7,524.

[1] The two humpback whale Distinct Population Segments (DPSs) making up the California, Oregon, and Washington (CA/OR/WA) stock present in Southern California are the Mexico DPS, listed under the ESA as Threatened, and the Central America DPS, which is listed under the ESA as Endangered.

[2] This stock is mentioned briefly in the Pacific Stock Assessment Report (Carretta *et al.,* 2017) and referred to as the ''Eastern North Pacific Transient'' stock; however, the Alaska Stock Assessment Report contains assessments of all transient killer whale stocks in the Pacific and the Alaska Stock Assessment Report refers to this same stock as the ''West Coast Transient'' stock (Muto *et al.,* 2017).

[3] NSD—No stock designation. Rough-toothed dolphin has a range known to include the waters off Southern California, but there is no recognized stock or data available for the U.S West Coast.

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 HSTT proposed rule and 2018 HSTT final rule. In the *Potential Effects of Specified Activities on Marine Mammals and Their Habitat* section of the 2018 HSTT 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 HSTT FEIS/OEIS (Chapter 3, Section 3.7 *Marine Mammals*), which NMFS participated in the development of via our cooperating agency status and adopted to meet our NEPA requirements.

In addition, NMFS has reviewed new information in relevant SARs, any new information on active UMEs or new UMEs, and new scientific literature. Summaries of current UMEs and new scientific literature since publication of the 2018 HSTT final rule are presented below.

Unusual Mortality Events (UME)

An 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. From 1991 to the present, there have been 17 formally recognized UMEs affecting marine mammals in California and Hawaii and involving species under NMFS' jurisdiction. Three UMEs that could be relevant to informing the current analysis are discussed below. Specifically, the California sea lion UME in California is still open, but will be closed soon. The Guadalupe fur seal UME in California and the gray whale UME along the west coast of North America are active and involve ongoing investigations.

California Sea Lion UME

From January 2013 through September 2016, a greater than expected number of young malnourished California sea lions (*Zalophus californianus*) stranded along the coast of California. Sea lions stranding from an early age (6–8 months old) through two years of age (hereafter referred to as juveniles) were consistently underweight without other disease processes detected. Of the 8,122 stranded juveniles attributed to the UME, 93 percent stranded alive (n=7,587, with 3,418 of these released after rehabilitation) and 7 percent (n=531) stranded dead. Several factors are hypothesized to have impacted the ability of nursing females and young sea lions to acquire adequate nutrition for successful pup rearing and juvenile growth. In late 2012, decreased anchovy and sardine recruitment (CalCOFI data, July 2013) may have led to nutritionally stressed adult females. Biotoxins were present at various times throughout the UME, and while they were not detected in the stranded juvenile sea lions (whose stomachs were empty at the time of stranding), biotoxins may have impacted the adult females' ability to support their dependent pups by affecting their cognitive function (*e.g.* navigation, behavior towards their offspring). Therefore, the role of biotoxins in this UME, via its possible impact on adult females' ability to support their pups, is unclear. The proposed primary cause of the UME was malnutrition of sea lion pups and yearlings due to ecological factors. These factors included shifts in distribution, abundance and/or quality of sea lion prey items around the Channel Island rookeries during critical sea lion life history events (nursing by adult females, and transitioning from milk to prey by young sea lions). These prey shifts were most likely driven by unusual oceanographic conditions at the time due to the ''Warm Water Blob'' and El Niño. This investigation will soon be closed. Please refer to: *https://www.fisheries.noaa.gov/national/marine-life-distress/2013-2017-california-sea-lion-unusual-mortality-event-california* for more information on this UME.

Guadalupe Fur Seal UME

Increased strandings of Guadalupe fur seals began along the entire coast of California in January 2015 and were eight times higher than the historical average (approximately 10 seals/yr). Strandings have continued since 2015 and have remained well above average through 2017. Strandings have continued since 2015 and remained well above average through 2019. Numbers by year are as follows: 2015 (98), 2016 (76), 2017 (61), 2018 (45), 2019 (104, as of June 28, 2019). The total number of Guadalupe fur seals from January 1, 2015, through June 28, 2019, in the UME is 438. Additionally, strandings of Guadalupe fur seals became elevated in the spring of 2019 in Washington and Oregon, subsequently strandings for seals in these two states have been added to the UME starting from January 1, 2019. The current total number of strandings for 2019 in Washington and Oregon is 55 seals as of June 28, 2019. Strandings are seasonal and generally peak in April through June of each year. The Guadalupe fur seal strandings have been mostly weaned pups and juveniles (1–2 years old) with both live and dead strandings occurring. Current findings from the majority of stranded animals include primary malnutrition with secondary bacterial and parasitic infections. This California portion of this UME is occurring in the same area as the 2013–2016 California sea lion UME. This investigation is ongoing. Please refer to: *https://www.fisheries.noaa.gov/national/marine-life-distress/2015-2019-guadalupe-fur-seal-unusual-mortality-event-california* for more information on this UME.

Gray Whale UME

Since January 1, 2019, elevated gray whale strandings have occurred along the west coast of North America, from Mexico to Canada. As of June 28, 2019, there have been a total of 170 strandings along the coasts of the U.S., Canada, and Mexico, with 84 of those strandings occurring along the U.S. coast. Partial necropsy examinations conducted on a subset of stranded whales have shown evidence of emaciation. As part of the UME investigation process, NOAA is assembling an independent team of scientists to coordinate with the Working Group on Marine Mammal Unusual Mortality Events to review the data collected, sample stranded whales, and determine the next steps for the investigation. Please refer to: *https://www.fisheries.noaa.gov/national/marine-life-distress/2019-gray-whale-unusual-mortality-event-along-west-coast* for more information on this UME.

New Pertinent Science Since Publication of the 2018 HSTT 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.* (2019a) 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 only those under NMFS jurisdiction) for all noise exposures (both in air and underwater for amphibious species) and, 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 μPa). 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 μPa, and moved away from the transducer at a received SPL of 143 dB re: 1 μPa. 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 μPa. 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 HSTT 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 HSTT 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 HSTT 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, no more than three serious injuries or mortalities total (over the seven-year period) of mysticetes (except for sei whales, minke whales, Bryde's whales, Central North Pacific stock of blue whales, Hawaii stock of fin whales, and Western North Pacific stock of gray whales) and the Hawaii stock of sperm whales have the potential 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) and 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 take by 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 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 and the methods used to determine thresholds, none of which have changed, in detail in the *Acoustic Thresholds* section of the 2018 HSTT final rule; please see the 2018 HSTT 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 HSTT final rule and there is no new information that would affect the applicability or validity of the model. Please see the 2018 HSTT final and proposed rules and Appendix E of the 2018 HSTT FEIS/OEIS for detailed information.

Range to Effects

The Navy proposes no changes from the 2018 HSTT 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 HSTT 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 24 through 40 of the 2018 HSTT 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 HSTT final rule and there is no new information that would affect the applicability or validity of these methods. Please see the 2018 HSTT final rule for detailed information.

Take Requests

As in the 2018 HSTT 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 HSTT 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 Navy application, the 2018 HSTT FEIS/OEIS, and the 2018 HSTT 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 HSTT final rule, the Navy proposes to use the maximum annual level to calculate annual takes (which would remain identical to what was determined in the 2018 HSTT final rule), and the sum of all years (four representative and three maximum) to calculate the seven-year totals for this rule.

The quantitative analysis process used for the 2018 HSTT 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 the risk for model-estimated PTS for exposures to sonars and for model-estimated mortality for exposures to explosives, based on species sightability, observation area, visibility, and the ability to exercise positive control over the sound source. Where the analysis indicates mitigation would effectively reduce risk, the model-estimated PTS are considered reduced to TTS and the model-estimated mortalities are considered reduced to injury. For a complete explanation of the process for assessing the effects of mitigation, see the 2017 Navy application and the *Take Requests* section of the 2018 HSTT 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 HSTT proposed rule, and the 2018 HSTT 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) from the use of acoustic and explosive sources are identical to those presented in Tables 41 and 42 and in the *Explosives* subsection of the *Take Requests* section of the 2018 HSTT final rule. The 2019 Navy application also includes the Navy's take estimate and request for vessel strikes due to vessel movement in the HSTT Study Area. 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 the maximum number of instances in which marine mammals are reasonably expected to be taken. NMFS also agrees that the takes by serious injury or mortality as a result of vessel strikes could occur. Note that the total amount of estimated incidental take from acoustic and explosive sources over the total seven-year period covered by the 2019 Navy application is less than the annual total multiplied by seven because although the annual estimates are based on the maximum number of activities per year and therefore the maximum possible estimated takes, the seven-year total take estimates are based on the sum of three maximum years and four representative years. Not all activities occur every year. Some activities would occur multiple times within a year, and some activities would occur only a few times over the course of the seven-year period. Using seven years of the maximum number of activities each year would vastly overestimate the amount of incidental take that would occur over the seven-year period where the Navy knows that it will not conduct the maximum number of activities each and every year for the seven years.

Estimated Harassment Take From Training Activities

For training activities, 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 41 in the 2018 HSTT final rule. Note that take by Level B harassment includes both behavioral disruption and TTS. Navy Figures 6–12 through 6–50 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 11—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	
		Level B	Level A
Blue whale *	Central North Pacific	205	0
	Eastern North Pacific	7,116	6
Bryde's whale †	Eastern Tropical Pacific	167	0
	Hawaiian †	631	0
Fin whale *	California, Oregon, & Washington	7,731	0
	Hawaiian	197	0
Humpback whale †	California, Oregon, & Washington †	7,962	7
	Central North Pacific	34,437	12
Minke whale	California, Oregon, & Washington	4,119	7
	Hawaiian	20,237	6
Sei whale *	Eastern North Pacific	333	0
	Hawaiian	677	0
Gray whale †	Eastern North Pacific	16,703	27
	Western North Pacific †	19	0

TABLE 11—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	
		Level B	Level A
Sperm whale *	California, Oregon, & Washington	8,834	0
	Hawaiian	10,341	0
Dwarf sperm whale	Hawaiian	84,232	215
Pygmy sperm whale	Hawaiian	33,431	94
Kogia whales	California, Oregon, & Washington	38,609	149
Baird's beaked whale	California, Oregon, & Washington	8,524	0
Blainville's beaked whale	Hawaiian	23,491	0
Cuvier's beaked whale	California, Oregon, & Washington	47,178	0
	Hawaiian	7,898	0
Longman's beaked whale	Hawaiian	82,293	0
Mesoplodon spp (beaked whale guild)	California, Oregon, & Washington	25,404	0
Bottlenose dolphin	California Coastal	1,295	0
	California, Oregon, & Washington Offshore	201,619	13
	Hawaiian Pelagic	13,080	0
	Kauai & Niihau	500	0
	Oahu	57,288	10
	4-Island	1,052	0
	Hawaii	291	0
False killer whale †	Hawaii Pelagic	4,353	0
	Main Hawaiian Islands Insular †	2,710	0
	Northwestern Hawaiian Islands	1,585	0
Fraser's dolphin	Hawaiian	177,198	4
Killer whale	Eastern North Pacific Offshore	460	0
	Eastern North Pacific Transient/West Coast Transient	855	0
	Hawaiian	513	0
Long-beaked common dolphin	California	784,965	99
Melon-headed whale	Hawaiian Islands	14,137	0
	Kohala Resident	1,278	0
Northern right whale dolphin	California, Oregon, & Washington	357,001	57
Pacific white-sided dolphin	California, Oregon, & Washington	274,892	19
Pantropical spotted dolphin	Hawaii Island	17,739	0
	Hawaii Pelagic	42,318	0
	Oahu	28,860	0
	4-Island	1,816	0
Pygmy killer whale	Hawaiian	35,531	0
	Tropical	2,977	0
Risso's dolphin	California, Oregon, & Washington	477,389	45
	Hawaiian	40,800	0
Rough-toothed dolphin	Hawaiian	26,769	0
	NSD [1]	0	0
Short-beaked common dolphin	California, Oregon, & Washington	5,875,431	307
Short-finned pilot whale	California, Oregon, & Washington	6,341	6
	Hawaiian	53,627	0
Spinner dolphin	Hawaii Island	609	0
	Hawaii Pelagic	18,870	0
	Kauai & Niihau	1,961	0
	Oahu & 4-Island	10,424	8
Striped dolphin	California, Oregon, & Washington	777,001	5
	Hawaiian	32,806	0
Dall's porpoise	California, Oregon, & Washington	171,250	894
California sea lion	U.S.	460,145	629
Guadalupe fur seal *	Mexico	3,342	0
Northern fur seal	California	62,138	0
Harbor seal	California	19,214	48
Hawaiian monk seal *	Hawaiian	938	5
Northern elephant seal	California	241,277	490

* ESA-listed species (all stocks) within the HSTT Study Area.
† Only designated stocks are ESA-listed.
[1] NSD: No stock designation.

Estimated Harassment Take From Testing Activities

For testing activities, Table 12 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 42 in the 2018 HSTT final rule. Note that take by Level B harassment includes both behavioral disruption and TTS. Navy Figures 6–12 through 6–50 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 12—SEVEN-YEAR TOTAL SPECIES AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM ACOUSTIC AND EXPLOSIVE SOUND SOURCE EFFECTS FOR ALL TESTING ACTIVITIES

Species	Stock	7-Year total	
		Level B	Level A
Blue whale *	Central North Pacific	93	0
	Eastern North Pacific	5,679	0
Bryde's whale †	Eastern Tropical Pacific	97	0
	Hawaiian †	278	0
Fin whale *	California, Oregon, & Washington	6,662	7
	Hawaiian	108	0
Humpback whale †	California, Oregon, & Washington †	4,961	0
	Central North Pacific	23,750	19
Minke whale	California, Oregon, & Washington	1,855	0
	Hawaiian	9,822	7
Sei whale *	Eastern North Pacific	178	0
	Hawaiian	329	0
Gray whale †	Eastern North Pacific	13,077	9
	Western North Pacific †	15	0
Sperm whale *	California, Oregon, & Washington	7,409	0
	Hawaiian	5,269	0
Dwarf sperm whale	Hawaiian	43,374	197
Pygmy sperm whale	Hawaiian	17,396	83
Kogia whales	California, Oregon, & Washington	20,766	94
Baird's beaked whale	California, Oregon, & Washington	4,841	0
Blainville's beaked whale	Hawaiian	11,455	0
Cuvier's beaked whale	California, Oregon, & Washington	30,180	28
	Hawaiian	3,784	0
Longman's beaked whale	Hawaiian	41,965	0
Mesoplodon spp (beaked whale guild)	California, Oregon, & Washington	16,383	15
Bottlenose dolphin	California Coastal	11,158	0
	California, Oregon, & Washington Offshore	158,700	8
	Hawaiian Pelagic	8,469	0
	Kauai & Niihau	3,091	0
	Oahu	3,230	0
	4-Island	1,129	0
	Hawaii	260	0
False killer whale †	Hawaii Pelagic	2,287	0
	Main Hawaiian Islands Insular †	1,256	0
	Northwestern Hawaiian Islands	837	0
Fraser's dolphin	Hawaiian	85,193	9
Killer whale	Eastern North Pacific Offshore	236	0
	Eastern North Pacific Transient/West Coast Transient	438	0
	Hawaiian	279	0
Long-beaked common dolphin	California	805,063	34
Melon-headed whale	Hawaiian Islands	7,678	0
	Kohala Resident	1,119	0
Northern right whale dolphin	California, Oregon, & Washington	280,066	22
Pacific white-sided dolphin	California, Oregon, & Washington	213,380	14
Pantropical spotted dolphin	Hawaii Island	9,568	0
	Hawaii Pelagic	24,805	0
	Oahu	1,349	0
	4-Island	2,513	0
Pygmy killer whale	Hawaiian	18,347	0
	Tropical	1,928	0
Risso's dolphin	California, Oregon, & Washington	339,334	24
	Hawaiian	19,027	0
Rough-toothed dolphin	Hawaiian	14,851	0
	NSD [1]	0	0
Short-beaked common dolphin	California, Oregon, & Washington	3,795,732	304
Short-finned pilot whale	California, Oregon, & Washington	6,253	0
	Hawaiian	29,269	0
Spinner dolphin	Hawaii Island	1,394	0
	Hawaii Pelagic	9,534	0
	Kauai & Niihau	9,277	0
	Oahu & 4-Island	1,987	0
Striped dolphin	California, Oregon, & Washington	371,328	20
	Hawaiian	16,270	0
Dall's porpoise	California, Oregon, & Washington	115,353	478
California sea lion	U.S.	334,332	36

TABLE 12—SEVEN-YEAR TOTAL SPECIES AND STOCK-SPECIFIC TAKE ESTIMATES PROPOSED FOR AUTHORIZATION FROM ACOUSTIC AND EXPLOSIVE SOUND SOURCE EFFECTS FOR ALL TESTING ACTIVITIES—Continued

Species	Stock	7-Year total	
		Level B	Level A
Guadalupe fur seal *	Mexico	6,167	0
Northern fur seal	California	36,921	7
Harbor seal	California	15,898	12
Hawaiian monk seal *	Hawaiian	372	0
Northern elephant seal	California	151,754	187

* ESA-listed species (all stocks) within the HSTT Study Area.
† Only designated stocks are ESA-listed.
[1] NSD: No stock designation.

Estimated Take From Vessel Strikes and Explosives by Serious Injury or Mortality

Vessel Strike

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 during which the Navy is conducting training or testing activities using active sonar or explosives.

The most vulnerable marine mammals 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.,* sperm whales). In addition, some baleen whales seem generally unresponsive to vessel sound, making them more susceptible to vessel collisions (Nowacek *et al.,* 2004). These species are primarily large, slow 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.,* Fonnesbeck *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 ability and number of personnel observing, 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 training events.
- 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 HSTT Study Area or while in transit.

There have been two recorded Navy vessel strikes of large whales in the HSTT Study Area from 2009 through 2018, the period in which the Navy

began implementing effective mitigation measures to reduce the likelihood of vessel strikes. Both strikes occured in 2009 and both were to fin whales. 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 HSTT Study Area within the seven-year period in particular, the Navy requested incidental takes based on probabilities derived from a Poisson distribution using ship strike data between 2009–2018 in the HSTT Study Area (the time period from when current mitigations were instituted until the Navy conducted the analysis for the 2019 Navy application), as well as historical at-sea days in the HSTT 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 for the period of 2018 to 2023 is described in detail in Chapter 6 of the 2017 Navy application and has been updated for this seven-year proposed rulemaking.

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 those two fin whale strikes 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 sources, was used to inform the species that may be struck) and 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 probability analysis concluded that there was a 22 percent chance that zero whales would be struck by Navy vessels over the seven-year period, and a 33, 25, 13, and 5 percent chance that one, two, three, or four whales, respectively, would be struck over the seven-year period (with a 78 percent chance that greater than one whale would be struck over the seven-year period). Therefore, the Navy estimates, and NMFS agrees, that there is some probability that the Navy could strike, and take by serious injury or mortality, up to three large whales incidental to training and testing activities within the HSTT Study Area over the course of the seven years.

The probability of the Navy striking up to three large whales over the seven-year period (which is a 13 percent chance) as analyzed for this proposed rule using updated Navy vessel strike data and at-sea days is very close to the probability of the Navy striking up to three large whales over five years (which was a 10 percent chance). As the probability of striking three large whales does not differ significantly from the 2018 HSTT final rule, and the probability of striking four large whales over seven years remains very low to the point of being unlikely (less than 5 percent), the Navy has requested, and we are proposing, no change in the number of takes by serious injury or mortality due to vessel strikes.

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.), following are the additional reasons that vessel strike of dolphins, small whales, porpoises, and pinnipeds is considered 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 (and is proposing for authorization) 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 regulations from training and testing activities as discussed below.

As noted in the 2018 HSTT proposed and final rules, in the 2017 Navy application the Navy initially considered a weight of evidence approach that considered relative abundance, historical strike data over many years, and the overlap of Navy activities with the stock distribution in their request. NMFS and the Navy further discussed the available information and considered two factors in addition to those considered in the Navy's additional 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. For this seven-year rule, we have reconsidered these two factors and updated the analysis with the Navy's seven-year ship strike probability analysis and any new/updated ship strike data from the SARs.

To address number (1) above, NMFS compiled information from NMFS' SARs on detected annual rates of large whale serious injury or mortality from vessel collisions. The annual rates of large whale serious injury or mortality from vessel collisions from the SARs help inform the relative susceptibility of large whale species to vessel strike in SOCAL and Hawaii as recorded systematically over the last five years (the period used for the SARs). We summed the annual rates of serious injury or mortality 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.,* 78 percent, as described by the Navy's probability analysis above). 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 in the SAR changes (and we

include the annual averages from 2017 and 2018 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 probabilities calculated as described above are then considered in combination with the information indicating the species that the Navy has definitively hit in the HSTT Study Area since 1991 (since they started tracking consistently), as well as the information originally considered by the Navy in their 2017 application, which includes relative abundance, total recorded strikes, and the overlay of all of this information with the Navy's action area. We note that for all of the mortal take of species specifically denoted in Table 13 below, 19 percent of the individuals struck overall by any vessel type remained unidentified and 36 percent of those struck by the Navy (5 of 14 in the Pacific) remained unidentified. However, given the information on known stocks struck, the analysis below remains appropriate. We also note that Rockwood *et al.* (2017) modeled the likely vessel strike of blue whales, fin whales, and humpback whales on the U.S. West Coast (discussed in more detail in the *Serious Injury or Mortality* subsection of the *Preliminary Analysis and Negligible Impact Determination* section), and those numbers help inform the relative likelihood that the Navy will hit those stocks.

For each indicated stock, Table 13 includes the percent likelihood of hitting an individual whale once based on SAR data, total strikes from Navy vessels and from all other vessels, relative abundance, and modeled vessel strikes from Rockwood *et al.* (2017). The last column indicates the annual mortality proposed to be authorized: those stocks with one serious injury or mortality (M/SI) take proposed to be authorized over the seven-year period of the rule are shaded lightly, while those with two M/SI takes proposed to be authorized over the seven-year period of the rule are shaded more darkly.

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Table 13. Summary of factors considered in determining the number of individuals in each stock potentially struck by a vessel.

ESA status	Species	Stock	Percent likelihood of hitting individual from stock once		Total Known *Navy* Strikes in HSTT Study Area	Summarized from compilation in Navy application[3]		Rockwood *et al.*, 2017 modeled vessel strikes[4]	Annual Authorized Take
			2017 SAR[1]	2018 SAR		Review of all NMFS' strike data - # of total strikes[3]	Relative Abundance		
Listed	Blue whale	Central North Pacific	0	0	No	0	0.016	-	-
		Eastern North Pacific	6.5	2.3	1 in SOCAL	14	0.103	18	0.14
	Fin whale	CA/OR/WA	18.1	18.4	2 in SOCAL	21	0.46	43	0.29
		Hawaii	0	0	No	0	0.027	-	-
	Humpback whale[2]	CA/OR/WA stock, Mexico	11.1[2]	24.1[2]	No	15[2]	0.041	22	0.14
	Sei whale	Eastern North Pacific	0	2.3	No	1	0.007	-	-
		Hawaii	0	0	No	0	0.041	-	-
	Gray whale	Western North Pacific	0	0	No	0	0	-	-
	Sperm whale	CA/OR/WA	2	2.3	No	1	0.107	-	-
		Hawaii	0	0	1 in HRC	2	0.487	-	0.14
Not listed	Gray whale	Eastern North Pacific	20.1	9.2	3 in SOCAL	35	0.25	-	0.29
	Bryde's whale	Eastern Tropical Pacific	2[5]	2.3	No	0	0	-	-
		Hawaii	0	0	No	0	0.048	-	-
	Minke whale	CA/OR/WA	0	0	No	0	0.032	-	-
		Hawaii	0	0	No	0	0.027	-	-
	Humpback whale	Central North Pacific[6]	18.1	17.2	2 in HRC	58	0.245	-	0.29

[1] Percent likelihood of Central North Pacific stock of humpback whales for the 2017 SAR was unintentionally presented incorrectly in Table 43 of the 2018 HSTT final rule. As the percent likelihood for all stocks are calculated together, correcting the Central North Pacific stock of humpback whale also corrects the values for other stocks for which ship strikes were reported in the SARs. Correct values are provided here. These transcription errors do not affect the analysis or conclusions in the 2018 HSTT final rule.

[2] Humpback information applies to CA/OR/WA stock, Mexico DPS only. Text explains why takes in SOCAL come from Mexico DPS.

[3] The Navy compiled information related to vessel strike in Section 5.2 of the 2017 Navy application, this column sums information presented on pg 5-11.

[4] Rockwood *et al.* modeled likely annual vessel strikes off the West Coast for these three species only.

[5] The percent likelihood of hitting an individual Bryde's whale from the Eastern North Pacific Stock in 2017 was unintentionally presented incorrectly presented as 0.2 in the 2018 HSTT final rule and is corrected here. This transcription error does not affect the analysis or conclusions reached in the 2018 HSTT final rule.

[6] The 2018 final SAR reports ship strike data for the Central North Pacific stock of humpback whales in Alaska and Hawaii. Only ship strike data from Hawaii was incorporated into our analysis as Alaska is outside of the HSTT Study Area.

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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. We note that while vessel strike records have not differentiated between Eastern North Pacific and Western North Pacific gray whales, given their small population size and the comparative rarity with which individuals from the Western North Pacific stock are detected off the U.S. West Coast, it is highly unlikely that they would be encountered, much less struck. This rules out all but six stocks.

Three of the six stocks (CA/OR/WA stock of fin whale, Eastern North Pacific stock of gray whale, and Central North Pacific stock of humpback whale) are the only stocks to have been hit more than one time each by the Navy in the HSTT Study Area, have the three highest total strike records (21, 35, and 58 respectively), have three of the four highest percent likelihoods based on the SAR records, have three of the four significantly higher relative abundances, and have up to a 3.4 percent likelihood of being struck twice based on NMFS' SAR calculation (not shown in Table 13, but proportional to percent likelihood of being struck once). Based on all of these factors, it is considered reasonably likely that these stocks could be struck twice during the seven-year rule.

Based on the information summarized in Table 13, and the fact that there is the potential for up to three large whales to be struck, it is considered reasonably likely that one individual from the

remaining three stocks could be one of the three whales struck. Sperm whales have only been struck a total of two times by any vessel type in the whole HSTT Study Area, however, the Navy struck a sperm whale once in Hawaii prior to 2009 and the relative abundance of sperm whales in Hawaii is the highest of any of the stocks present. Therefore, we consider it reasonably likely that the Hawaii stock of sperm whales could be struck once during the seven-year rule. The total strikes of Eastern North Pacific blue whales, the percent likelihood of striking one based on the SAR calculation, and their relative abundance can all be considered moderate compared to other stocks, and the Navy has struck one in the past prior to 2009 (with the likelihood of striking two based on the SAR calculation being below one percent). Therefore, we consider it reasonably likely that the Navy could strike one individual over the course of the seven-year rule. The Navy has not hit a humpback whale in the HSTT Study Area and the relative abundance of the CA/OR/WA stock is very low. However, the Navy has struck a humpback whale in the Northwest and as a species, humpbacks have a moderate to high number of total strikes and percent likelihood of being struck. Although the likelihood of CA/OR/WA humpback whales being struck overall is moderate to high relative to other stocks, the distribution of the Mexico DPS versus the Central America DPS, as well as the distribution of overall vessel strikes inside versus outside of the SOCAL area (the majority are outside), supports the reasonable likelihood that the Navy could strike one individual humpback whale from the CA/OR/WA stock (not two), and that that individual would be highly likely to be from the Mexico DPS, as described below.

Specifically, regarding the likelihood of striking a humpback whale from a particular DPS, as suggested in Wade *et al.* (2016), the probability of encountering (which is thereby applied to striking) humpback whales from each DPS in the CA/OR area is 89.6 percent and 19.7 percent for the Mexico and Central America DPSs, respectively (note that these percentages reflect the upper limit of the 95 percent confidence interval to reduce the likelihood of underestimating take, and thereby do not total to 100). This suggests that the chance of striking a humpback whale from the Central America DPS is one tenth to one fifth of the overall chance of hitting a CA/OR/WA humpback whale in general in the SOCAL part of the HSTT Study Area, which in combination with the fact that no humpback whale has been struck in SOCAL makes it highly unlikely, and thereby no strikes of whales from the Central America DPS are anticipated or authorized. If a humpback whale were struck in SOCAL, it is likely it would be of the Mexico DPS. However, regarding the overall likelihood of striking a humpback whale at all and the likely number of times, we note that the majority of strikes of the CA/OR/WA humpback whale (*i.e.,* the numbers reflected in Table 13) take place outside of SOCAL and, whereas the comparative DPS numbers cited above apply in the California and Oregon feeding area, in the Washington and Southern British Columbia feeding area, Wade *et al.* (2016) suggest that 52.9, 41.9, and 14.7 percent of humpback whales encountered will come from the Hawaii, Mexico, and Central America DPSs, respectively. This means that the numbers in Table 13 indicating the overall strikes of CA/OR/WA humpback whales and SAR calculations based on average annual mortality over the last five years are actually lower than indicated for the Mexico DPS, which would only be a subset of those mortalities. Last, the Rockwood *et al.* paper supports a relative likelihood of 1:1:2 for striking blue whales, humpback whales, and fin whales off the U.S. West Coast, which supports the proposed authorized take included in this rule, which is 1, 1, and 2, respectively over the seven-year period. For these reasons, one mortal take of CA/OR/WA humpback whales, which would be expected to be of the Mexico DPS, could reasonably likely occur and is proposed for authorization.

Accordingly, the Navy has requested take by M/SI from vessel strike of up to two of any of the following species/stocks in the seven-year period: gray whale (Eastern North Pacific stock), fin whale (CA/OR/WA stock), humpback whale (Central North Pacific stock); and one of any of the following species/stocks in the seven-year period: Blue whale (Eastern North Pacific stock), humpback whale (CA/OR/WA stock, Mexico DPS), or sperm whale (Hawaii stock).

As described above, the Navy analysis suggests, and NMFS analysis concurs, that vessel strikes to the stocks below are very unlikely to occur due to the stocks' relatively low occurrence in the HSTT Study Area, particularly in core HSTT training and testing subareas, and the fact that the stocks have not been struck by the Navy and are rarely, if ever, recorded struck by other vessels. Therefore the Navy is not requesting lethal take authorization, and NMFS is not proposing to authorize lethal take, for the following stocks: Bryde's whale (Eastern Tropical Pacific stock), Bryde's whale (Hawaii stock), humpback whale (CA/OR/WA stock, Central America DPS), minke whale (CA/OR/WA stock), minke whale (Hawaii stock), sei whale (Hawaii stock), sei whale (Eastern North Pacific stock), and sperm whale (CA/OR/WA stock).

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 there is the potential of no more than three whales taken by M/SI over the seven-year period of the rule, and that those three whales may include no more than two of any of the following stocks: Gray whale (Eastern North Pacific stock), fin whale (CA/OR/WA stock), and humpback whale (Central North Pacific stock); and no more than one of any of the following stocks: Blue whale (Eastern North Pacific stock), humpback whale (CA/OR/WA, Mexico DPS), and sperm whale (Hawaii stock). Accordingly, NMFS has evaluated under the negligible impact standard the M/SI of 0.14 or 0.29 whales annually from each of these species or stocks (*i.e.,* 1 or 2 takes, respectively, divided by seven years to get the annual number), along with the expected incidental takes by harassment.

Explosives

The Navy's model and quantitative analysis process used for the 2018 HSTT FEIS/OEIS and in the Navy's 2017 and 2019 applications to estimate potential exposures of marine mammals to 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 Report* (U.S. Department of the Navy, 2018). Specifically, over the course of a modelled maximum year of training and testing, the Navy's model and quantitative analysis process estimates M/SI of two short-beaked common dolphin and one California sea lion as a result of exposure to explosive training and testing activities (please see Section 6 of the 2017 Navy application where it is explained how maximum annual estimates are calculated). Over the five-year period of the 2018 HSTT regulations, mortality of 6 short-beaked common dolphins and 4 California sea lions was estimated and authorized (10 marine mammals in total) as a result of exposure to explosive training and testing activities. In extending the same training and testing activities for an additional two years, over the seven-year period of the proposed

regulations M/SI of 8 short-beaked common dolphins and 5 California sea lions (13 marine mammals in total) is estimated as a result of exposure to explosive training and testing activities. As explained in the aforementioned Analytical Approach technical report, expected impacts were calculated considering spatial and seasonal differences in model inputs, as well as the expected variation in the number of training and testing events from year to year, described as representative and maximum levels of activity. The summed impacts over any multi-year period, therefore, are the expected value for impacts over that time period rather than a multiple of a single maximum year's impacts. Therefore, calculating the seven-year total is not a matter of simply multiplying the annual estimate by seven, as the total amount of estimated mortalities over the seven years covered by the 2019 Navy application is less than the sum total of each year. As explained earlier, although the annual estimates are based on the maximum number of activities per year and therefore the maximum estimated takes, the seven-year total take estimates are based on the sum of three maximum years and four representative years. NMFS coordinated with the Navy in the development of their take estimates and concurs with the Navy's approach for estimating the number of animals from each species or stock that could be taken by M/SI from explosives.

Proposed Mitigation Measures

Under section 101(a)(5)(A) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable adverse impact on the species or stock(s) and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock(s) 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 HSTT 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, 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.[2] 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 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.

[2] 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).

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 its 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 HSTT final rule.

NMFS fully reviewed the Navy's specified activities and the mitigation measures for the 2018 HSTT 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 HSTT 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 HSTT FEIS/OEIS. The process described in Chapter 5 (*Mitigation*) of the 2018 HSTT 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 HSTT 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 HSTT 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 HSTT proposed rule and the 2018 HSTT 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 M/SI 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 will also implement multiple time/area restrictions (several of which were added in the 2018 HSTT final rule since the previous HSTT 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 HSTT Study Area are provided in Tables 14 and 15.

TABLE 14—SUMMARY OF PROCEDURAL MITIGATION

Stressor or activity	Mitigation zone 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.
Air Guns	• 150 yd.
Pile Driving	• 100 yd.
Weapons Firing Noise	• 30 degrees on either side of the firing line out to 70 yd.
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 nmi.
Explosive Mine Countermeasure and Neutralization Activities.	• 2,100 yd (6–650 lb net explosive weight). • 600 yd (0.1–5 lb net explosive weight).
Explosive Mine Neutralization Activities Involving Navy Divers.	• 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).
Underwater Demolition Multiple Charge—Mat Weave and Obstacle Loading.	• 700 yd.

TABLE 14—SUMMARY OF PROCEDURAL MITIGATION—Continued

Stressor or activity	Mitigation zone sizes and other requirements
Maritime Security Operations—Anti-Swimmer Grenades.	• 200 yd.
Vessel Movement	• 500 yd (whales). • 200 yd (other marine mammals).
Towed In-Water Devices	• 250 yd (marine mammals).
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
Hawaii Island Mitigation Area (year-round): • Navy personnel must not conduct more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar or 20 hours of MF4 dipping sonar, or use explosives that could potentially result in takes of marine mammals during training and testing.[1]
4-Islands Region Mitigation Area (November 15–April 15 for active sonar; year-round for explosives): • Navy personnel must not use MF1 surface ship hull-mounted mid-frequency active sonar or explosives that could potentially result in takes of marine mammals during training and testing.[1]
Humpback Whale Special Reporting Areas (December 15–April 15): • Navy personnel must report the total hours of surface ship hull-mounted mid-frequency active sonar used in in the special reporting areas in its annual training and testing activity reports submitted to NMFS.
San Diego Arc, San Nicolas Island, and Santa Monica/Long Beach Mitigation Areas (June 1–October 31): • Navy personnel must not conduct more than a total of 200 hours of MF1 surface ship hull-mounted mid-frequency active sonar in the combined areas, excluding normal maintenance and systems checks, during training and testing.[1] • Within the San Diego Arc Mitigation Area, Navy personnel must not use explosives that could potentially result in the take of marine mammals during large-caliber gunnery, torpedo, bombing, and missile (including 2.75″ rockets) activities during training and testing.[1] • Within the San Nicolas Island Mitigation Area, Navy personnel must not use explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75″ rockets) activities during training.[1] • Within the Santa Monica/Long Beach Mitigation Area, Navy personnel must not use explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75″ rockets) activities during training and testing.[1]
Santa Barbara Island Mitigation Area (year-round): • Navy personnel must not use MF1 surface ship hull-mounted mid-frequency active sonar during training and testing, or explosives that could potentially result in the take of marine mammals during medium-caliber or large-caliber gunnery, torpedo, bombing, and missile (including 2.75″ rockets) activities during training.[1]
Awareness Notification Message Areas (seasonal according to species): • Navy personnel must issue awareness notification messages to alert ships and aircraft to the possible presence of humpback whales (November–April), blue whales (June–October), gray whales (November–March), or fin whales (November–May).

[1] If Naval units need to conduct more than the specified amount of training or testing, they will obtain permission from the appropriate designated Command authority prior to commencement of the activity. The Navy will provide NMFS with advance notification and include the information in its annual activity reports submitted to NMFS.

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 HSTT rulemaking—and considered a broad range of other measures (*i.e.,* the measures considered but eliminated in the 2018 HSTT 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 HSTT 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 HSTT 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 HSTT final rule) are appropriate means of effecting the least practicable adverse impact 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 HSTT 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 HSTT final rule. They would continue implementation of the robust Integrated Comprehensive Monitoring Program and Strategic Planning Process described in the 2018 HSTT final rule. The Navy's monitoring strategy, currently required by the 2018 HSTT 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 HSTT regulations. There is no new information that would indicate that the monitoring measures put in place under the 2018 HSTT final rule would not remain applicable and appropriate for the seven-year period of this proposed rule. See the *Monitoring* section of the 2018 HSTT 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 HSTT regulations governing the take of marine mammals incidental to Navy training and testing activities in the HSTT 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 HSTT 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 R&D studies; (3) results from specific stranding investigations; (4) results from general marine mammal and sound research; and (5) any information which reveals that marine mammals may have been taken in a manner, extent, or number not authorized by these regulations or subsequent LOAs. The results from monitoring reports and other studies may be viewed at *https://www.navymarinespeciesmonitoring.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.navymarinespeciesmonitoring.us.* The 2019 Navy application proposes no changes to the reporting requirements. Except as discussed below, reporting requirements would remain identical to those described in the 2018 HSTT final rule, and there is no new information that would indicate that the reporting requirements put in place under the 2018 HSTT final rule would not remain applicable and appropriate for the seven-year period of this proposed rule. See the *Reporting* section of the 2018 HSTT final rule for more details on the reporting that would be required under this rule.

In addition, the 2018 HSTT proposed and final rules unintentionally failed to include the requirement for the Navy to submit a final activity ''close out'' report at the end of the regulatory period. That oversight is being corrected through this rulemaking. This comprehensive training and testing activity report would 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 would include a discussion of why the change was made and include analysis to support how the change did or did not result in a change in the 2018 HSTT FEIS/OEIS and final rule determinations.

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 11 and 12), 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 HSTT 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 HSTT 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 HSTT final rule. In addition, the mitigation, monitoring, and nearly all reporting measures are identical to those described and analyzed in the 2018 HSTT final rule. As described above, there is no new information since the publication of the 2018 HSTT 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, except for one species. For that one species—gray whales—we have considered the effects of the new UME on the west coast of North America along with the effects of the Navy's activities in the negligible impact analysis.

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 41 through 42 in the *Take Requests* section of the 2018 HSTT 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 nearly identical to and substantively unchanged from those presented in the 2018 HSTT final rule. The primary 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 HSTT final rule, which would make no difference in effects on annual rates of recruitment or survival. The other differences in the analyses include our consideration of the newly-declared gray whale UME and slightly modified explosive take estimates, neither of which, as described below, affect the results of the analyses or our determinations. 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 disruption, 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 HSTT final rule (83 FR 66977–67018).

Serious Injury or Mortality

Based on the information and methods discussed in the *Estimated Take of Marine Mammals* section (which are identical to those used in the 2018 HSTT final rule), the number of potential mortalities due to ship strike proposed to be authorized over the seven year period of this rule is the same as those authorized in the 2018 HSTT final rule. As the potential mortalities are now spread over seven years rather than five, an annual average of 0.29 gray whales (Eastern North Pacific stock), fin whales (CA/OR/WA stock), and humpback whales (Central North Pacific stock) and an annual average of 0.14 blue whales (Eastern North Pacific stock), humpback whales (CA/OR/WA stock, Mexico DPS), and sperm whales (Hawaii stock) as described in Table 16 (*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 HSTT final rule, which was an annual average of 0.4 whales or 0.2 whales respectively for the same species and stocks, and with the exception of the new gray whale UME on the U.S. west coast no other relevant information about the status, abundance, or effects of M/SI on each species or stock has changed, the analysis of the effects of vessel strike mirrors that presented in the 2018 HSTT final rule.

TABLE 16—SUMMARY INFORMATION RELATED TO MORTALITIES REQUESTED FOR SHIP STRIKE, 2018–2025

Species (stock)	Stock abundance (Nbest) *	Annual authorized take by serious injury or mortality [1]	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 *	Residual PBR–PBR minus annual M/SI [3]	Stock trend * [4]	Recent UME (Y/N); number and year (since 2007)
Fin whale (CA/OR/WA stock)	9,029	0.29	≥43.5	Y; ≥0.5	Y, 1.6	81	37.5	↑	N.
Gray whale (Eastern North Pacific stock).	26,960	0.29	139	Y, 9.6	Y, 0.8	801	662	stable since 2003.	Y, 170, 2019.
Humpback whale (CA/OR/WA stock, Mexico DPS).	2,900	0.14	≥40.2	Y; ≥15.7	Y, 22	16.7	−23.5	↑	N.
Humpback whale (Central North Pacific stock) [5].	10,103	0.29	26	Y; 9.9	Y, 1.5	83	57	↑	N.
Sperm whale (Hawaii stock) ..	4,559 [6]	0.14	0.7	Y, 0.7	N	13.9	13.2	?	N.
Blue whale (Eastern North Pacific Stock).	1,647	0.14	≥19	≥0.96	Y, 18	2.3	−16.7	stable	Y; 3, 2007.

* Presented in the 2018 final SARs.

[1] This column represents the annual take by serious injury or mortality (M/SI) by vessel collision and was calculated by the number of mortalities 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 NMFS' Southwest Fisheries Science Center (SWFSC) takes in the SARs to ensure not double-counted against PBR. However, for these species, there were no takes from either other Navy activities or SWFSC 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 SARs).

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

[5] Some values for the Central North Pacific stock of humpback whales were unintentionally presented incorrectly in Table 69 of the 2018 HSTT final rule. The correct values are provided here. These transcription errors do not affect the analysis or conclusions in the 2018 HSTT final rule, as the correct values were used in the analysis presented in the *Analysis and Negligible Impact Determination* section.

[6] The stock abundance for the Hawaii stock of sperm whales was unintentionally presented incorrectly as 5,559 in the 2018 HSTT final rule and has been corrected here. This transcription error does not affect the analysis or conclusions reached in the 2018 HSTT final rule.

The Navy has also requested a small number of takes by M/SI from explosives. To calculate the annual average of mortalities for explosives in Table 17 we used the same method as described for vessel strikes. The annual average is the total number of takes over seven years divided by seven. Specifically, NMFS is proposing to authorize the following M/SI takes from explosives: 5 California sea lions and 8 short-beaked common dolphins over the seven-year period (therefore 0.71 mortalities annually for California sea lions and 1.14 mortalities annually for short-beaked common dolphin), as described in Table 17. As this annual number is less than that analyzed and authorized in the 2018 HSTT final rule, which was an annual average of 0.8 California sea lions and 1.2 short-beaked common dolphins, 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 explosives mirrors that presented in the 2018 HSTT final rule.

TABLE 17—SUMMARY INFORMATION RELATED TO MORTALITIES FROM EXPLOSIVES, 2018–2025

Species (stock)	Stock abundance (Nbest) *	Annual authorized take by serious injury or mortality [1]	Total annual M/SI * [2]	Fisheries interactions (Y/N); annual rate of M/SI from fisheries interactions *	PBR *	SWFSC authorized take (annual) [3]	Residual PBR—PBR minus annual M/SI and SWFSC [4]	Stock trend * [5]	UME (Y/N); number and year
California sea lion (U.S. stock).	257,606	0.71	319.4	Y;197	14,011	6.6	13,685	↑	Y; 2013.
Short-beaked common dolphin (CA/OR/WA stock).	969,861	1.14	≥40	Y; ≥40	8,393	2.8	8,350.2	?	N.

* Presented in the 2018 final SARs.

[1] This column represents the annual take by serious injury or mortality (M/SI) during explosive detonations 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 activities or NMFS' SWFSC takes in the SARs to ensure not double-counted against PBR. In this case, for California sea lion 0.8 annual M/SI from the U.S. West Coast during scientific trawl and longline operations conducted by NMFS and 1.8 annual M/SI from marine mammal research related mortalities authorized by NMFS was deducted from total annual M/SI (322).

[3] This column represents annual take authorized through NMFS' SWFSC rulemaking/LOAs (80 FR 58982).

[4] This value represents the calculated PBR less the average annual estimate of ongoing anthropogenic mortalities (*i.e.,* total annual human-caused M/SI column and the annual authorized take from the SWFSC column. In the case of California sea lion the M/SI column (319.4) and the annual authorized take from the SWFSC (6.6) were subtracted from the calculated PBR of 14,011. In the case of Short-beaked common dolphin the M/SI column (40) and the annual authorized take from the SWFSC (2.8) were subtracted from the calculated PBR of 8,393.

[5] See relevant SARs for more information regarding stock status and trends.

See the *Serious Injury or Mortality* subsection in the *Analysis and Negligible Impact Determination* section of the 2018 HSTT final rule (83 FR 66985–66993) 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 M/SI is proposed for authorization, including the relationship of potential mortality for each species to the insignificance threshold and residual PBR.

Stocks With M/SI Below the Insignificance Threshold

As noted in the *Serious Injury or Mortality* subsection of the *Negligible*

Impact Analysis and Determination section in the 2018 HSTT final rule, for a species or stock with incidental M/SI less than 10 percent of residual PBR, we consider M/SI from the specified activities to represent an insignificant incremental increase in ongoing anthropogenic M/SI that alone (*i.e.,* in the absence of any other take and barring any other unusual circumstances) will clearly not adversely affect annual rates of recruitment and survival. In this case, as shown in Tables 16 and 17, the following species or stocks have potential or estimated M/SI from ship strike and explosive takes, respectively, and proposed for authorization below their insignificance threshold: Fin whale (CA/OR/WA stock), gray whale (Eastern North Pacific stock), humpback whale (Central North Pacific stock), sperm whale (Hawaii stock), California sea lion (U.S stock), and short-beaked common dolphin (CA/OR/WA stock). While the proposed authorized M/SI of California sea lions (U.S. stock) and gray whales (Eastern North Pacific stock) are below the insignificance threshold, because of the recent UMEs, we further address how the proposed authorized M/SI and the UME inform the negligible impact determination immediately below. For the other four stocks with proposed authorized M/SI below the insignificance threshold, there are no other known factors, information, or unusual circumstances that indicate anticipated M/SI below the insignificance threshold could have adverse effects on annual rates of recruitment or survival and they are not discussed further. For the remaining two stocks with anticipated potential M/SI above the insignificance threshold, how that M/SI compares to residual PBR, as well as additional factors, as appropriate, are discussed below as well.

California Sea Lion (U.S. Stock)

The estimated (and proposed for authorization) lethal take of California sea lions is well below the insignificance threshold (0.71 as compared to a residual PBR of 13,686) and NMFS classifies the stock as ''increasing'' in the 2018 Final SARs. Nonetheless, we consider here how the 2013-present California Sea Lion UME informs our negligible impact determination. This UME was confined to pup and yearling sea lions and many were emaciated, dehydrated, and underweight. Although this UME has not been closed, NMFS staff confirmed that the mortality of pups and yearlings returned to normal in 2017 and 2018 and we plan to present it to the UME Working Group to discuss closure by the summer of 2019 (Deb Fauquier, pers. comm.). NMFS' findings to date indicate that a change in the availability of sea lion prey, especially anchovy and sardines, a high value food source for nursing mothers, was a likely contributor to the large number of strandings. Sardine spawning grounds shifted further offshore in 2012 and 2013, and while other prey were available (market squid and rockfish), these may not have provided adequate nutrition in the milk of sea lion mothers supporting pups, or for newly-weaned pups foraging on their own. Although the pups showed signs of some viruses and infections, findings indicate that this event was not caused by disease, but rather by the lack of high quality, close-by food sources for nursing mothers. Average mortalities from 2013–2017 were 1,000–3,000 more annually than they were in the previous 10 years. However, even if these unusual mortalities were still occurring (with current data suggesting they are not), combined with other annual human-caused mortalities, and viewed through the PBR lens (for human-caused mortalities), total human-caused mortality (inclusive of the potential for additional UME deaths) would still fall well below residual PBR. Further, the loss of pups and yearlings would not be expected to have as much of an effect on annual population rates as the death of adult females. In conclusion, because of the abundance, population trend, and residual PBR of this stock, as well as the fact that the increased mortality stopped two years ago and the UME is expected to be closed soon, this UME is not expected to have any impacts on individuals during the period of this proposed rule, nor is it thought to have had impacts on the population rate when it was occurring that would influence our evaluation of the effects of the mortality proposed for authorization on the stock.

Gray Whales (Eastern North Pacific Stock)

Since January 2019, gray whale strandings along the west coast of North America have been significantly higher than the previous 18-year averages. Preliminary findings from necropsies have shown evidence of emaciation. The seasonal pattern of elevated strandings in the spring and summer months is similar to that of the previous gray whale UME in 1999–2000. Current total monthly strandings are slightly higher than 1999 and lower than 2000. If strandings continue to follow a similar pattern, we would anticipate a decrease in strandings in late summer and fall. However, combined with other annual human-caused mortalities, and viewed through the PBR lens (for human-caused mortalities), total human-caused mortality (inclusive of the potential for additional UME deaths) would still fall well below residual PBR and the insignificance threshold. Because of the abundance, population trend (increasing, despite the UME in 1999–2000), and residual PBR (662) of this stock, this UME is not expected to have impacts on the population rate that, in combination with the effects of mortality proposed for authorization, would affect annual rates of recruitment or survival.

Stocks With M/SI Above the Insignificance Threshold

Humpback Whale (CA/OR/WA Stock, Mexico DPS)

For this stock, PBR is currently set at 16.7 and the total annual M/SI is estimated at greater than or equal to 40.2, yielding a residual PBR of −23.5. NMFS proposes to authorize one M/SI over the seven-year duration of the rule (which is 0.14 annually for the purposes of comparing to PBR and considering other effects on annual rates of recruitment and survival), which means that residual PBR is exceeded by 23.64. In the 2018 HSTT final rule the PBR was incorrectly reported as 33.4 and the total annual M/SI was incorrectly reported as greater than or equal to 40.76 (yielding a residual PBR of −7.36). These transcription errors do not affect the fundamental analysis or conclusion reached in the 2018 HSTT final rule, however, and we have corrected these values here using data from the 2018 Final SARs.

In the commercial fisheries setting for ESA-listed marine mammals (which is similar to the non-fisheries incidental take setting, in that a negligible impact determination is required that is based on the assessment of take caused by the activity being analyzed) NMFS may find the impact of the authorized take from a specified activity to be negligible even if total human-caused mortality exceeds PBR, if the authorized mortality is less than 10 percent of PBR and management measures are being taken to address serious injuries and mortalities from the other activities causing mortality (*i.e.,* other than the specified activities covered by the incidental take authorization in consideration). When those considerations are applied in the section 101(a)(5)(A) context here, the proposed authorized lethal take (0.14 annually) of humpback whales from the CA/OR/WA stock is significantly less than 10 percent of PBR (in fact less than

1 percent of 16.7) and there are management measures in place to address M/SI from activities other than those the Navy is conducting (as discussed below).

Based on identical simulations as those conducted to identify Recovery Factors for PBR in Wade *et al.* (1998), but where values less than 0.1 were investigated (P. Wade, pers. comm.), we predict that where the mortality from a specified activity does not exceed Nmin * 1/2 Rmax * 0.013, the contemplated mortality for the specific activity will not delay the time to recovery by more than 1 percent. For this stock of humpback whales, Nmin * 1/2 Rmax * 0.013 = 1.45 and the annual mortality proposed for authorization is 0.14 (*i.e.,* less than 1.45), which means that the mortality proposed to be authorized in this rule for HSTT activities would not delay the time to recovery by more than 1 percent.

As described in the 2018 HSTT final rule, NMFS must also ensure that impacts by the applicant on the species or stock from other types of take (*i.e.,* harassment) do not combine with the impacts from M/SI to adversely affect the species or stock via impacts on annual rates of recruitment or survival, which is discussed further below in the species- and stock-specific section.

In June 2019, NMFS published 2018 final SARs in which PBR is reported as 16.7 with the predicted average annual mortality greater than or equal to 38.6 (including 22 estimated from vessel collisions and greater than 14.1 observed fisheries interactions). While the observed M/SI from vessel strikes remains low at 2.1, the 2018 draft and final SARs rely on a new method to estimate annual deaths by ship strike utilizing an encounter theory model that combined species distribution models of whale density, vessel traffic characteristics, and whale movement patterns obtained from satellite-tagged animals in the region to estimate encounters that would result in mortality (Rockwood *et al.,* 2017). The model predicts 22 annual mortalities of humpback whales from this stock from vessel strikes. The authors (Rockwood *et al.,* 2017) do not suggest that ship strike suddenly increased to 22. In fact, the model is not specific to a year, but rather offers a generalized prediction of ship strike off the U.S. West Coast. Therefore, if the Rockwood *et al.* (2017) model is an accurate representation of vessel strike, then similar levels of ship strike have been occurring in past years as well. Put another way, if the model is correct, for some number of years total human-caused mortality has been significantly underestimated, and PBR has been similarly exceeded by a notable amount, and yet the CA/OR/WA stock of humpback whales is considered stable nevertheless.

The CA/OR/WA stock of humpback whales experienced a steady increase from the 1990s through approximately 2008, and more recent estimates through 2014 indicate a leveling off of the population size. This stock is comprised of the feeding groups of three DPSs. Two DPSs associated with this stock are listed under the ESA as either endangered (Central America DPS) or threatened (Mexico DPS), while the third is not listed. The mortality authorized by this rule is for an individual from the Mexico DPS only. As described in the Final Rule Identifying 14 DPSs of the Humpback Whale and Revision of Species-Wide Listing (81 FR 62260, September 8, 2016), the Mexico DPS was initially proposed not to be listed as threatened or endangered, but the final decision was changed in consideration of a new abundance estimate using a new methodology that was more accurate (less bias from capture heterogeneity and lower coefficient of variation) and resulted in a lower abundance than was previously estimated. To be clear, the new abundance estimate did not indicate that the numbers had decreased, but rather, the more accurate new abundance estimate (3,264), derived from the same data but based on an integrated spatial multi-strata mark recapture model (Wade *et al.,* 2016) was simply notably lower than earlier estimates, which were 6,000–7,000 from the SPLASH project (Calambokidis *et al.,* 2008) or higher (Barlow *et al.,* 20111). The updated abundance was still higher than 2,000, which is the Biological Review Team's (BRT) threshold between ''not likely to be at risk of extinction due to low abundance alone'' and ''increasing risk from factors associated with low abundance.'' Further, the BRT concluded that the DPS was unlikely to be declining because of the population growth throughout most of its feeding areas, in California/Oregon and the Gulf of Alaska, but they did not have evidence that the Mexico DPS was actually increasing in overall population size.

As discussed earlier, we also take into consideration management measures in place to address M/SI caused by other activities. The California swordfish and thresher shark drift gillnet fishery is one of the primary causes of M/SI take from fisheries interactions for humpback whales on the West Coast. NMFS established the Pacific Offshore Cetacean Take Reduction Team in 1996 and prepared an associated Plan (PCTRP) to reduce the risk of M/SI via fisheries interactions. In 1997, NMFS published final regulations formalizing the requirements of the PCTRP, including the use of pingers following several specific provisions and the employment of Skipper education workshops.

Crab pot fisheries are also a significant source of mortality for humpback whales and, unfortunately, have increased mortalities over recent years. However, the 2018 SAR notes that a recent increase in disentanglement efforts has resulted in an increase in the fraction of cases that are reported as non-serious injuries as a result of successful disentanglement. More importantly, since 2015, NMFS has engaged in a multi-stakeholder process in California (including California State resource managers, fishermen, NGOs, and scientists) to identify and develop solutions and make recommendations to regulators and the fishing industry for reducing whale entanglements (see *http://www.opc.ca.gov/whale-entanglement-working-group/*), referred to as the Whale Entanglement Working Group. More recently, similar efforts to address the entanglement issue have also been initiated in Oregon and Washington. The Whale Entanglement Working Group has made significant progress since 2015 and is tackling the problem from multiple angles, including:

- Development of Fact Sheets and Best Practices for specific Fisheries issues (*e.g.,* California Dungeness Crab Fishing BMPs and the 2018–2019 Best Fishing Practices Guide);
- 2018–2019 Risk Assessment and Mitigation Program (RAMP) to support the state of California in working collaboratively with experts (fishermen, researchers, NGOs, etc.) to identify and assess elevated levels of entanglement risk and determine the need for management options to reduce risk of entanglement; and
- Support of pilot studies to test new fisheries technologies to reduce take (*e.g.,* Exploring Ropeless Fishing Technologies for the California Dungeness Crab Fishery).

The Working Group meets regularly, posts reports and annual recommendations, and makes all of their products and guidance documents readily accessible for the public. The March 2019 Working Group Report reports on the status of the fishery closure, progress and continued development of the RAMP (though there is a separate RAMP report), discussed the role of the Working Group (development of a new Charter) and indicated next steps.

Importantly, in early 2019, as a result of a litigation settlement agreement, the California Department of Fish and Wildlife (CDFW) closed the Dungeness crab fishery three months early for the year, which is expected to reduce the number of likely entanglements. The agreement also limits the fishery duration over the next couple of years and has different triggers to reduce or close it further. Further, pursuant to the settlement, CDFW is required to apply for a Section 10 Incidental Take Permit under the ESA to address protected species interactions with fishing gear and crab fishing gear (pots), and they have agreed to do so by May 2020. Any request for such a permit must include a Habitat Conservation Plan that specifies, among other things, what steps the applicant will take to minimize and mitigate the impacts, and the funding that will be available to implement such steps.

Regarding measures in place to reduce mortality from sources other than the Navy, the Channel Islands NMS staff coordinates, collects, and monitors whale sightings in and around the Whale Advisory Zone and the Channel Islands NMS region, which is within the area of highest strike mortality (90th percentile) for humpback whales on the U.S. West coast (Rockwood *et al.,* 2017). The seasonally established Whale Advisory Zone spans from Point Arguello to Dana Point, including the Traffic Separation Schemes in the Santa Barbara Channel and San Pedro Channel. Vessels transiting the area from June through November are recommended to exercise caution and voluntarily reduce speed to 10 kn or less for blue, humpback, and fin whales. Channel Island NMS observers collect information from aerial surveys conducted by NOAA, the U.S. Coast Guard, California Department of Fish and Game, and Navy chartered aircraft. Information on seasonal presence, movement, and general distribution patterns of large whales is shared with mariners, NMFS' Office of Protected Resources, the U.S. Coast Guard, the California Department of Fish and Game, the Santa Barbara Museum of Natural History, the Marine Exchange of Southern California, and whale scientists. Real time and historical whale observation data collected from multiple sources can be viewed on the Point Blue Whale Database.

In this case, 0.14 M/SI annually means the potential for one mortality in one of the seven years and zero mortalities in six of those seven years. Therefore, the Navy would not be contributing to the total human-caused mortality at all in six of the seven, or 85.7 percent, of the years covered by this rule. That means that even if a humpback whale from the CA/OR/WA stock were to be struck, in six of the seven years there could be no effect on annual rates of recruitment or survival from Navy-caused M/SI. Additionally, as noted previously, the loss of a male would have far less, if any, of an effect on population rates and absent any information suggesting that one sex is more likely to be struck than another, we can reasonably assume that there is a 50 percent chance that the single strike authorized by this rule would be a male, thereby further decreasing the likelihood of impacts on the population rate. In situations like this where potential M/SI is fractional, consideration must be given to the lessened impacts anticipated due to the absence of M/SI in six of the years and due to the fact that a single strike could be of a male. Lastly, we reiterate that PBR is a conservative metric and also not sufficiently precise to serve as an absolute predictor of population effects upon which mortality caps would appropriately be based. This is especially important given the minor difference between zero and one across the seven-year period covered by this rule, which is the smallest distinction possible when considering mortality. Wade *et al.* (1998), authors of the paper from which the current PBR equation is derived, note that ''Estimating incidental mortality in one year to be greater than the PBR calculated from a single abundance survey does not prove the mortality will lead to depletion; it identifies a population worthy of careful future monitoring and possibly indicates that mortality-mitigation efforts should be initiated.''

The information included here illustrates that this humpback whale stock is stable, the potential (and proposed) mortality is well below 10 percent (0.8 percent) of PBR, and management actions are in place to minimize both fisheries interactions and ship strike from other vessel activity in one of the highest-risk areas for strikes. More specifically, although the total human-mortality exceeds PBR, the authorized mortality for the Navy's specified activities would incrementally contribute less than 1 percent of that and, further, given the fact that it would occur in only one of seven years and could be comprised of a male (far less impactful to the population), the potential impacts on population rates are even less. Based on the presence of the factors described above, including consideration of the fact that the proposed mortality of 0.14 would not delay the time to recovery by more than 1 percent, we do not expect the potential lethal take from Navy activities, alone, to adversely affect the CA/OR/WA stock of humpback whales through effects on annual rates of recruitment or survival. Nonetheless, the fact that total human-caused mortality exceeds PBR necessitates close attention to the remainder of the impacts (*i.e.,* harassment) on the CA/OR/WA stock of humpback whales from the Navy's activities to ensure that the total proposed authorized takes would have a negligible impact on the species and stock. Therefore this information will be considered in combination with our assessment of the impacts of harassment takes later in the *Group and Species-Specific Analyses* section.

Blue Whale (Eastern North Pacific Stock)

For blue whales (Eastern North Pacific stock), PBR is currently set at 2.3 and the total annual M/SI is estimated at greater than or equal to 19, yielding a residual PBR of −16.7. This is unchanged since the 2018 HSTT final rule. NMFS proposes to authorize one M/SI for the Navy over the seven-year duration of the rule (indicated as 0.14 annually for the purposes of comparing to PBR and evaluating overall effects on annual rates of recruitment and survival), which means that residual PBR is exceeded by 16.84. However, as described previously, in the commercial fisheries setting for ESA-listed marine mammals (which is similar to the incidental take setting, in that the negligible impact determination is based on the assessment of take of the activity being analyzed) NMFS may find the impact of the proposed authorized take from a specified activity to be negligible even if total human-caused mortality exceeds PBR, if the proposed authorized mortality is less than 10 percent of PBR and management measures are being taken to address serious injuries and mortalities from the other activities causing mortality (*i.e.,* other than the specified activities covered by the incidental take authorization in consideration). When those considerations are applied in the section 101(a)(5)(A) context, the authorized lethal take (0.14 annually) of blue whales from the Eastern North Pacific stock is less than 10 percent of PBR (which is 2.3) and there are management measures in place to address M/SI from activities other than those the Navy is conducting (as discussed below). Perhaps more importantly, the population is considered ''stable'' and, specifically, the available data suggests that the current number of ship strikes

is not likely to have an adverse impact on the population, despite the fact that it exceeds PBR, with the Navy's minimal additional mortality of one whale in the seven years not creating the likelihood of adverse impact. Immediately below, we explain the information that supports our finding that the Navy's proposed authorized M/SI is not expected to result in more than a negligible impact on this stock. As described previously, NMFS must also ensure that impacts by the applicant on the species or stock from other types of take (*i.e.,* harassment) do not combine with the impacts from mortality to adversely affect the species or stock via impacts on annual rates of recruitment or survival, which occurs further below in the stock-specific conclusion sections.

As discussed in the 2018 HSTT final rule, the 2018 draft SAR and the recently published 2018 final SAR rely on a new method to estimate annual deaths by ship strike utilizing an encounter theory model that combined species distribution models of whale density, vessel traffic characteristics, and whale movement patterns obtained from satellite-tagged animals in the region to estimate encounters that would result in mortality (Rockwood *et al.,* 2017). The model predicts 18 annual mortalities of blue whales from vessel strikes, which, with the additional M/SI of 0.96 from fisheries interactions, results in the current estimate of residual PBR being −16.7. Although NMFS' Permits and Conservation Division in the Office of Protected Resources has independently reviewed the new ship strike model and its results and agrees that it is appropriate for estimating blue whale mortality by ship strike on the U.S. West Coast, for analytical purposes we also note that if the historical method were used to predict vessel strike (*i.e.,* using observed mortality by vessel strike, or 0.2, instead of 18), then total human-caused mortality including the Navy's potential take would not exceed PBR. We further note that the authors (Rockwood *et al.,* 2017) do not suggest that ship strike suddenly increased to 18 recently. In fact, the model is not specific to a year, but rather offers a generalized prediction of ship strike off the U.S. West Coast. Therefore, if the Rockwood *et al.* (2017) model is an accurate representation of vessel strike, then similar levels of ship strike have been occurring in past years as well. Put another way, if the model is correct, for some number of years total-human-caused mortality has been significantly underestimated and PBR has been similarly exceeded by a notable amount, and yet the Eastern North Pacific stock of blue whales remains stable nevertheless.

NMFS' 2018 final SAR states that the stock is ''stable'' and there is no indication of a population size increase in this blue whale population since the early 1990s. The lack of a species' or stock's population increase can have several causes, some of which are positive. The SAR further cites to Monnahan *et al.* (2015), which used a population dynamics model to estimate that the Eastern North Pacific blue whale population was at 97 percent of carrying capacity in 2013 and to suggest that the observed lack of a population increase since the early 1990s was explained by density dependence, not impacts from ship strike. This would mean that this stock of blue whales shows signs of stability and is not increasing in population size because the population size is at or nearing carrying capacity for its available habitat. In fact, we note that this population has maintained this status throughout the years that the Navy has consistently tested and trained at similar levels (with similar vessel traffic) in areas that overlap with blue whale occurrence, which would be another indicator of population stability.

Monnahan *et al.* (2015) modeled vessel numbers, ship strikes, and the population of the Eastern North Pacific blue whale population from 1905 out to 2050 using a Bayesian framework to incorporate informative biological information and assign probability distributions to parameters and derived quantities of interest. The authors tested multiple scenarios with differing assumptions, incorporated uncertainty, and further tested the sensitivity of multiple variables. Their results indicated that there is no immediate threat (*i.e.,* through 2050) to the population from any of the scenarios tested, which included models with 10 and 35 strike mortalities per year. Broadly, the authors concluded that, unlike other blue whale stocks, the Eastern North Pacific blue whales have recovered from 70 years of whaling and are in no immediate threat from ship strikes. They further noted that their conclusion conflicts with the depleted and strategic designation under the MMPA, as well as PBR specifically.

As discussed, we also take into consideration management measures in place to address M/SI caused by other activities. The Channel Islands NMS staff coordinates, collects, and monitors whale sightings in and around the Whale Advisory Zone and the Channel Islands NMS region. Redfern *et al.* (2013) note that the most risky area for blue whales is the Santa Barbara Channel, where shipping lanes intersect with common feeding areas. The seasonally established Whale Advisory Zone spans from Point Arguello to Dana Point, including the Traffic Separation Schemes in the Santa Barbara Channel and San Pedro Channel. Vessels transiting the area from June through November are recommended to exercise caution and voluntarily reduce speed to 10 kn or less for blue, humpback, and fin whales. Channel Island NMS observers collect information from aerial surveys conducted by NOAA, the U.S. Coast Guard, California Department of Fish and Game, and U.S. Navy chartered aircraft. Information on seasonal presence, movement, and general distribution patterns of large whales is shared with mariners, NMFS Office of Protected Resources, U.S. Coast Guard, California Department of Fish and Game, the Santa Barbara Museum of Natural History, the Marine Exchange of Southern California, and whale scientists. Real time and historical whale observation data collected from multiple sources can be viewed on the Point Blue Whale Database.

In this case, 0.14 M/SI means one mortality in one of the seven years and zero mortalities in six of those seven years. Therefore, the Navy would not be contributing to the total human-caused mortality at all in six of the seven, or 85.7 percent, of the years covered by this rule. That means that even if a blue whale were to be struck, in six of the seven years there could be no effect on annual rates of recruitment or survival from Navy-caused M/SI. Additionally, as with humpback whales discussed previously, the loss of a male would have far less, if any, effect on population rates and absent any information suggesting that one sex is more likely to be struck than another, we can reasonably assume that there is a 50 percent chance that the single strike authorized by this rule would be a male, thereby further decreasing the likelihood of impacts on the population rate. In situations like this where potential M/SI is fractional, consideration must be given to the lessened impacts anticipated due to the absence of M/SI in six of the seven years and the fact that the single strike could be a male. Lastly, as with the CA/OR/WA stock of humpback whales above, we reiterate that PBR is a conservative metric and also not sufficiently precise to serve as an absolute predictor of population effects upon which mortality caps would appropriately be based. This

is especially important given the minor difference between zero and one across the seven-year period covered by this rule, which is the smallest distinction possible when considering mortality. As noted above, Wade *et al.* (1998), authors of the paper from which the current PBR equation is derived, note that ''Estimating incidental mortality in one year to be greater than the PBR calculated from a single abundance survey does not prove the mortality will lead to depletion; it identifies a population worthy of careful future monitoring and possibly indicates that mortality-mitigation efforts should be initiated.'' The information included here indicates that this blue whale stock is stable, approaching carrying capacity, and has leveled off because of density-dependence, not human-caused mortality, in spite of what might be otherwise indicated from the calculated PBR. Further, potential (and proposed for authorization) M/SI is below 10 percent of PBR and management actions are in place to minimize ship strike from other vessel activity in one of the highest-risk areas for strikes. Based on the presence of the factors described above, we do not expect lethal take from Navy activities, alone, to adversely affect Eastern North Pacific blue whales through effects on annual rates of recruitment or survival. Nonetheless, the fact that total human-caused mortality exceeds PBR necessitates close attention to the remainder of the impacts (*i.e.,* harassment) on the Eastern North Pacific stock of blue whales from the Navy's activities to ensure that the total authorized takes have a negligible impact on the species or stock. Therefore, this information will be considered in combination with our assessment of the impacts of proposed harassment takes in the *Group and Species-Specific Analyses* section that follows.

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 HSTT final rule contained detailed analyses of the effects of the Navy's activities in the HSTT 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 HSTT final rule (83 FR 66993–67018). In addition, no new information has been received since the publication of the 2018 HSTT final rule that significantly changes the analyses on the effects of the Navy's activities on each species and stock presented in the 2018 HSTT final rule (the potential impact of the new gray whale UME and the corrected numbers from the humpback whale SARs were discussed earlier in the 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 species or stocks to their associated abundance estimates to evaluate the magnitude of impacts across the species or 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 times 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 subject to behavioral disturbance at the same time. As described in the *Harassment* subsection of the *Analysis and Negligible Impact Determination* section of the 2018 HSTT 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 subject to behavioral disturbance would result in impacts to reproduction or survival. Alternately, we recognize that if an individual is subjected to behavioral disturbance 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 Level B harassment takes by behavioral disrupion, 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 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 HSTT final rule, including 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 explosion and vessel strike calculations. We then summarize the information for each species or stock, considering the analysis from the 2018 HSTT 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 Tables 18 and 19 below for mysticetes, we indicate the total annual mortality, Level A harassment, and Level B harassment, and a number indicating the instances of total take as a percentage of abundance. Tables 18 and 19 have been updated from Tables 71 and 72 in the 2018 HSTT final rule as appropriate with the 2018 final SARs and 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 HSTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

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

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes		Abundance		Instance of total take as percent of abundance	
		Level B Harassment		Level A Harassment								
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	Takes (within NAVY EEZ)	Total Navy abundance inside and outside of EEZ (HRC)	Within EEZ Navy abundance (HRC)	Total take as percentage of total Navy abundance (HRC)	EEZ take as percentage of Navy EEZ abundance (HRC)
Blue whale	Central North Pacific	15	33	0	0	0	48	40	43	33	112	121
Bryde's whale	Hawaii	40	106	0	0	0	146	123	108	89	135	138
Fin whale	Hawaii	21	27	0	0	0	48	41	52	40	92	103
Humpback whale	Central North Pacific	2,837	6,289	3	0	0.29	9,129	7,389	5,078	4,595	180	161
Minke whale	Hawaii	1,233	3,697	2	0	0	4,932	4,030	3,652	2,835	135	142
Sei whale	Hawaii	46	121	0	0	0	167	135	138	107	121	126

Note: For the HI take estimates, we compare predicted takes to abundance estimates generated from the same underlying density estimates (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule), both in and outside of the U.S. EEZ. Because the portion of the Navy's study area inside the U.S. EEZ is generally concomitant with the area used to generate the abundance estimates in the SARs, and the abundance predicted by the same underlying density estimates is the preferred abundance to use, there is no need to separately compare the take to the SARs abundance estimate.

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

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 *Estimated Take of Marine Mammals* section.

Table 19. Annual estimated takes by Level B harassment, Level A harassment, and mortality for mysticetes in the SOCAL portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes	Abundance		Instance of total take as percent of abundance	
		Level B Harassment		Level A Harassment							
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	NAVY abundance in Action Area (SOCAL)	NMFS SARS abundance	Total take as percentage of total Navy abundance in Action Area	Total take as percentage of total SAR abundance
Blue whale	Eastern North Pacific	792	1,196	1	0	0.14	1,989	785	1,647	253	121
Bryde's whale	Eastern Tropical Pacific	14	27	0	0	0	41	1	unknown	3,154	unknown
Fin whale	CA/OR/WA	835	1,390	1	0	0.29	2,226	363	9,029	613	25
Humpback whale	CA/OR/WA	480	1,514	1	0	0.14	1,995	247	2,900	808	69
Minke whale	CA/OR/WA	259	666	1	0	0	926	163	636	568	146
Sei whale	Eastern North Pacific	27	52	0	0	0	79	3	519	2,633	15
Gray whale	Eastern North Pacific	1,316	3,355	7	0	0.29	4,678	193	26,960	2,424	17
Gray whale	Western North Pacific	2	4	0	0	0	6	0	290	0	2

Note: For the SOCAL take estimates, because of the manner in which the Navy study area overlaps the ranges of many MMPA stocks (*i.e.*, a stock may range far north to Washington state and beyond and abundance may only be predicted within the U.S. EEZ, while the Navy study area is limited to Southern California and northern Mexico, but extends beyond the U.S. EEZ), we compare predicted takes to both the abundance estimates for the study area, as well as the SARs (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

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.

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Below we compile and summarize the information that supports our preliminary 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.

Blue Whale (Eastern North Pacific Stock)

The SAR identifies this stock as ''stable'' even though the larger species is listed as endangered under the ESA. We further note that this stock was originally listed under the ESA as a result of the impacts from commercial whaling, which is no longer affecting the species. NMFS proposes to authorize one mortality over the seven years covered by this rule, or 0.14 mortality annually. With the addition of this 0.14 annual mortality, residual PBR is exceeded, resulting in the total human-caused mortality exceeding PBR by 16.84. However, as described in more detail in the *Serious Injury or Mortality* section above, when total human-caused mortality exceeds PBR, we consider whether the incremental addition of a small amount of authorized mortality from the specified activity may still result in a negligible impact, in part by identifying whether it is less than 10 percent of PBR. In this case, the authorized mortality is well below 10 percent of PBR, management measures are in place to reduce mortality from other sources, and the incremental addition of a single mortality over the course of the seven-year Navy rule is not expected to, alone, lead to adverse impacts on the stock through effects on annual rates of recruitment or survival. In addition, even with the additional two years of activities under this rule, no additional M/SI is estimated for this stock, leading to a slight decrease (from 0.2 to 0.14 annually) in annual mortality from the 2018 HSTT final rule.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is 253 and 121 percent, respectively (Table 19). Given the range of blue whales, this information suggests that only some portion of individuals in the stock are likely impacted, but that there will likely be some repeat exposure (maybe 5 or 6 days within a year) of some subset of individuals that spend extended time within the SOCAL Range. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Additionally,

the Navy implements time/area mitigation in SOCAL in the majority of the BIAs, which will reduce the severity of impacts to blue 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, we have explained in the 2018 HSTT final rule that they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with blue whale communication or other important low-frequency cues—and that the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival. For similar reasons (as described in the 2018 HSTT final rule) the single estimated Level A harassment take by PTS for this stock is unlikely to have any effect on the reproduction or survival of that one individual, even if it were to be experienced by an animal that also experiences one or more Level B harassment takes by behavioral disruption.

Altogether, only a small portion of the stock is anticipated to be impacted and any individual blue whale is likely to be disturbed at a low-moderate level, with likely many animals exposed only once or twice and a subset potentially disturbed across five or six days, but minimized in biologically important areas. This low magnitude and severity of harassment effects is not expected to result in impacts on the reproduction or survival of any individuals and, therefore, when combined with the authorized mortality (which our earlier analysis indicated would not, alone, have more than a negligible impact on this stock of blue whales), the total take is not 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 authorized take proposed would have a negligible impact on the Eastern North Pacific stock of blue whales.

Bryde's Whale (Eastern Tropical Pacific Stock)

Little is known about this stock, or its status, and it is not listed under the ESA. No mortality or Level A harassment is anticipated or proposed to be authorized. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance is 3,154 percent, however, the abundance upon which this percentage is based (1.3 whales from the Navy estimate, which is extrapolated from density estimates based on very few sightings) is clearly erroneous and the SAR does not include an abundance estimate because all of the survey data is outdated (Table 19). However, the abundance in the early 1980s was estimated as 22,000 to 24,000, a portion of the stock was estimated at 13,000 in 1993, and the minimum number in the Gulf of California was estimated at 160 in 1990. Given this information and the fact that 41 total takes of Bryde's whales were estimated, this information suggests that only a small portion of the individuals in the stock are likely impacted, and few, if any, are likely taken over more than one day. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with Bryde's whale communication or other important low-frequency cues. Any associated lost opportunities and capabilities are not at a level that would impact reproduction or survival.

Altogether, only a small portion of the stock is anticipated to be impacted and any individual Bryde's whale is likely to be disturbed at a low-moderate level, with few, if any, individuals exposed over more than one day in the year. This low magnitude and severity of harassment effects is not expected to result in impacts on individual reproduction or survival, much less 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 authorized take proposed would have a negligible impact on the Eastern Tropical Pacific stock of Bryde's whales.

Fin Whale (CA/OR/WA Stock)

The SAR identifies this stock as ''increasing,'' even though the larger species is listed as endangered under the ESA. NMFS proposes to authorize two mortalities over the seven years covered by this rule, or 0.29 mortality annually. The addition of this 0.29 annual mortality still leaves the total human-caused mortality well under residual PBR.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is 613 and 25 percent, respectively (Table 19). This information suggests that only some portion (less than 25 percent) of individuals in the stock are likely impacted, but that there is likely some repeat exposure (perhaps up to 12 days within a year) of some subset of individuals that spend extended time within the SOCAL complex. Some of these takes could occur on a few sequential days for some small number of individuals, for example, if they resulted from a multi-day exercise on a range while individuals were in the area for multiple days feeding. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Additionally, while there are no BIAs for fin whales in the SOCAL range, the Navy implements time/area mitigation in SOCAL in blue whale BIAs, and fin whales are known to sometimes feed in some of the same areas, which means they could potentially accrue some benefits from the mitigation. Regarding the severity of TTS takes, 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 that the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival. For similar reasons (as described in the 2018 HSTT final rule) the single estimated Level A harassment take by PTS for this stock is unlikely to have any effects on the reproduction or survival of that one individual.

Altogether, this population is increasing, only a small portion of the stock is anticipated to be impacted, and any individual fin whale is likely to be disturbed at a low-moderate level, with the taken individuals likely exposed between one and twelve days, with a few individuals potentially taken on a few sequential days. 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 proposed authorized 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 authorized take proposed would have a negligible impact on the CA/OR/WA stock of fin whales.

Humpback Whale (CA/OR/WA Stock)

The SAR identifies this stock as stable (having shown a long-term increase from 1990 and then leveling off between 2008 and 2014) and the individuals in this stock are associated with three DPSs, one of which is not listed under the ESA (Hawaii), one of which is designated as threatened (Mexico), and one of which is designated as endangered (Central America) (individuals encountered in the SOCAL portion of the HSTT Study Area are likely to come from the latter two DPSs). NMFS proposes to authorize one mortality over the seven years covered by this rule, or 0.14 mortality annually (Mexico DPS only). With the addition of this 0.14 annual mortality, the total human-caused mortality exceeds PBR by 23.64. However, as described in more detail in the *Serious Injury or Mortality* section, when total human-caused mortality exceeds PBR, we consider whether the incremental addition of a small amount of authorized mortality from the specified activity may still result in a negligible impact, in part by identifying whether it is less than 10 percent of PBR, which is 16.7. In this case, the authorized mortality is well below 10 percent of PBR (less than one percent, in fact) and management measures are in place to reduce mortality from other sources. More importantly, as described above in the *Serious Injury or Mortality* section, the authorized mortality of 0.14 will not delay the time to recovery by more than 1 percent. Given these factors, the incremental addition of a single mortality over the course of the seven-year Navy rule is not expected to, alone, lead to adverse impacts on the stock through effects on annual rates of recruitment or survival.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is 808 and 69 percent, respectively (Table 19). Given the range of humpback whales, this information suggests that only some portion of individuals in the stock are likely impacted, but that there is likely some repeat exposure (perhaps up to 16 days within a year) of some subset of individuals that spend extended time within the SOCAL complex. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Some of these takes could occur on several sequential days for some small number of individuals, for example, if they resulted from a multi-day exercise on a range while individuals were in the area for multiple days feeding. However, in these amounts it would still not be expected to adversely impact reproduction or survival of any individuals.

Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with humpback whale communication or other important low-frequency cues—and that the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival. For similar reasons (as described in the 2018 HSTT final rule) the single estimated Level A harassment take by PTS for this stock is unlikely to have any effects on the reproduction or survival of that one individual.

Altogether, only a small portion of the stock is anticipated to be impacted and any individual humpback whale is likely to be disturbed at a low-moderate level, with likely many animals exposed only once or twice and a subset potentially disturbed up to 16 days, but with no reason to think that more than a few of those days would be sequential. This low magnitude and severity of harassment effects is not expected to result in impacts on the reproduction or survival of any individuals and, therefore, when combined with the proposed authorized mortality (which our earlier analysis indicated would not, alone, have more than a negligible impact on this stock of humpback whales), the total take is not 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 authorized take proposed would have a negligible impact on the CA/OR/WA stock of humpback whales.

Minke Whale (CA/OR/WA Stock)

The status of this stock is unknown and it is not listed under the ESA. No mortality from vessel strike or tissue damage from explosive exposure is anticipated or proposed for authorization for this species. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is 568 and 146 percent, respectively (Table 19). Based on the behaviors of minke whales, which often occur along continental shelves and sometimes establish home ranges along the West Coast, this information suggests that only a portion of individuals in the stock are likely impacted, but that there is likely some repeat exposure (perhaps up to 11 days within a year) of some subset of individuals that spend extended time within the SOCAL complex. Some of these takes could occur on a few sequential days for some small number of individuals, for example, if they resulted from a multi-day exercise on a range while individuals were in the area for multiple days feeding. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with minke whale communication or other important low-frequency cues—and that the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival. For similar reasons (as described in the 2018 HSTT final rule) the single estimated Level A harassment take by PTS for this stock is unlikely to have any effects on the reproduction or survival of that individual.

Altogether, only a portion of the stock is anticipated to be impacted and any individual minke whale is likely to be disturbed at a low-moderate level, with the taken individuals likely exposed between one and eleven days, with a few individuals potentially taken on a few sequential days. This low magnitude and severity of harassment effects is not expected to result in impacts on individual reproduction or survival, much less 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 authorized take proposed would have a negligible impact on the CA/OR/WA stock of minke whales.

Sei Whale (Eastern North Pacific Stock)

The status of this stock is unknown and it is listed under the ESA. 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 total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is 2,633 and 15 percent, respectively (Table 19), however, the abundance upon which the Navy percentage is based (3 from the Navy estimate, which is extrapolated from density estimates based on very few sightings) is likely an underestimate of the number of individuals in the HSTT study Area, resulting in an overestimated percentage. Given this information and the large range of sei whales, and the fact that only 79 total Level B harassment takes of sei whales were estimated, it is likely that some very small number of sei whales would be taken repeatedly, potentially up to 15 days in a year (typically 2,633 percent would lead to the estimate of 52 days/year, however, given that there are only 79 sei whale total takes, we used the conservative assumption that five individuals might be taken up to 15 times, with the few remaining takes distributed among other individuals). Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Some of these takes could occur on a few sequential days for some small number of individuals, for example, if they resulted from a multi-day exercise on a range while individuals were in the area for multiple days feeding, however, in these amounts it would still not be expected to adversely impact reproduction or survival of any individuals. Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with sei whale communication or other important low-frequency cues—and that the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival.

Altogether, only a small portion of the stock is anticipated to be impacted and any individual sei whale is likely to be disturbed at a low-moderate level, with only a few individuals exposed over one to 15 days in a year, with no more than a few sequential days. This low magnitude and severity of harassment effects is not expected to result in impacts on individual reproduction or survival, much less 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 authorized take proposed would have a negligible impact on the Eastern North Pacific stock of sei whales.

Gray Whale (Eastern North Pacific Stock)

The SAR identifies this stock as ''increasing'' and the species is not listed under the ESA. NMFS is proposing to authorize two mortalities over the seven years covered by this rule, or 0.29 mortality annually. The addition of this 0.29 annual mortality still leaves the total human-caused mortality well under the insignificance threshold of residual PBR (663). On May 31, 2019, NMFS declared the unusual spike in strandings of gray whales along the west coast of North America since January 1, 2019 an UME. As of June 13, 2019, 155 gray whales have stranded along the west coast of North America (in the U.S., Canada, and Mexico). Including these mortalities in the calculated residual PBR still leaves the addition of 0.29 annual mortality well under the insignificance threshold of residual PBR (508 including known deaths due to the UME).

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is 2,424 and 17 percent, respectively (Table 19). This information suggests that only some small portion of individuals in the stock are likely impacted (less than 17 percent), but that there is likely some level of repeat exposure of some subset of individuals that spend extended time within the SOCAL complex. Typically 2,424 percent would lead to the estimate of 48 days/year, however, given that a large number of gray whales are known to migrate through the SOCAL complex and the fact that there are 4,678 total takes, we believe that it is more likely that a larger number of individuals would be taken one to a few times, while a small number staying in an area to feed for several days may be taken on 5–10 days. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Some of these takes could occur on a couple of sequential days for some small number of individuals, however, in these amounts it would still not be expected to adversely impact reproduction or survival of any individuals.

Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with gray whale communication or other important low-frequency cues and that 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 7 estimated Level A harassment takes by PTS for gray 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.

Altogether, while we have considered the impacts of the gray whale UME, gray whales are not endangered or threatened under the ESA and the Eastern North Pacific stock is increasing. Only a small portion of the stock is anticipated to be impacted and any individual gray whale is likely to be disturbed at a low-moderate level, with likely many animals exposed only once or twice and a subset potentially disturbed across five to ten days. This low magnitude and severity of harassment effects is not expected to result in impacts to reproduction or survival for any individuals and nor are these harassment takes combined with the proposed authorized mortality of two whales over the seven year period 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 authorized take proposed would have a negligible impact on the Eastern North Pacific stock of gray whales.

Gray Whale (Western North Pacific Stock)

The Western North Pacific stock of gray whales is reported as increasing in the 2018 final SAR, but is listed as endangered under the ESA. No mortality or Level A harassment is anticipated or proposed for authorization. This stock is expected to incur the very small number of 6 Level B harassment takes (2 behavioral disruption and 4 TTS) to a stock with a SAR-estimated abundance of 290 (Table 19). These takes will likely accrue to different individuals, the behavioral disturbances will be of a low-moderate level, and the TTS instances will be at a low level and short duration. This low magnitude and severity of harassment effects is not expected to result in impacts on individual reproduction or survival, much less 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 authorized take proposed would have a negligible impact on the Western North Pacific stock of gray whales.

Humpback Whale (Central North Pacific Stock)

The 2018 final SAR identifies this stock as ''increasing'' and the DPS is not listed under the ESA. No Level A harassment by tissue damage is proposed for authorization. NMFS proposes to authorize two mortalities over the seven years covered by this rule, or 0.29 mortalities annually. The addition of this 0.29 annual mortality still leaves the total human-caused mortality well under the insignificance threshold for residual PBR.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of take compared to the abundance, both throughout the HSTT Study Area and within the U.S. EEZ, respectively, is 180 and 161 percent (Table 18). This information and the complicated far-ranging nature of the stock structure suggests that some portion of the stock (but not all) are likely impacted, over one to several days per year, with little likelihood of take across sequential days. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Additionally, as noted above, there are two mitigation areas implemented by the Navy that span a large area of the important humpback reproductive area (BIA) and minimize impacts by limiting the use of MF1 active sonar and explosives, thereby reducing both the number and severity of takes of humpback whales. Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with humpback whale communication or other important low-frequency cues, and that 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 3 estimated Level A harassment takes by PTS for humpback 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.

Altogether, this stock is increasing and the DPS is not listed as endangered or threatened under the ESA. Only a small portion of the stock is anticipated to be impacted and any individual humpback whale is likely to be disturbed at a low-moderate level, with the taken individuals likely exposed between one to several days per year, with little likelihood of take across sequential days. 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 authorized mortality expected to adversely affect this stock through effects 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 authorized take proposed would have a negligible impact on the Central North Pacific stock of humpback whales.

Blue Whale (Central North Pacific Stock) and the Hawaii Stocks of Bryde's Whale, Fin Whale, Minke Whale, and Sei Whale

The status of these stocks are not identified in the SARs. Blue whale (Central North Pacific stock) and the Hawaii stocks of fin whale and sei whale are listed as endangered under the ESA; the Hawaii stocks of minke whales and Bryde's whales are not listed under the ESA. No mortality or Level A harassment by tissue damage 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 take compared to the abundance, both throughout the HSTT Study Area and within the U.S. EEZ, respectively, is 92–135 and 103–142 percent (Table 18). This information suggests that some portion of the stocks (but not all) are likely impacted, over one to several days per year, with little likelihood of take across sequential days. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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). Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with mysticete communication or other important low-frequency cues—and that the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival. For similar reasons (as described in the 2018 HSTT final rule) the two estimated Level A harassment takes by PTS for the Hawaii stock of minke whales are unlikely to have any effects on the reproduction or survival of any individuals.

Altogether, only a portion of these stocks are anticipated to be impacted and any individuals of these stocks are likely to be disturbed at a low-moderate level, with the taken individuals likely exposed between one and several days, with little chance that any are taken across sequential days. This low magnitude and severity of harassment effects is not expected to result in impacts on individual reproduction or survival, much less have 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 authorized take proposed would have a negligible impact on these stocks.

Odontocetes

Sperm Whales, Dwarf Sperm Whales, and Pygmy Sperm Whales

In Tables 20 and 21 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. Tables 20 and 21 are unchanged from Tables 73 and 74 in the 2018 HSTT final rule, except for updated information on mortality for the Hawaii stock of sperm whales, 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 HSTT 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 sperm whales, dwarf sperm whales, and pygmy sperm whales in the HRC portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes		Abundance		Instances of total take as percent of abundance	
		Level B Harassment		Level A Harassment								
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	Takes (within NAVY EEZ)	Total Navy abundance inside and outside EEZ (HRC)	Within EEZ Navy abundance (HRC)	Total take as percentage of total Navy abundance (HRC)	EEZ take as percentage of EEZ abundance (HRC)
Dwarf sperm whale	Hawaii	5,870	14,550	64	0	0	20,484	15,310	8,218	6,379	249	240
Pygmy sperm whale	Hawaii	2,329	5,822	29	0	0	8,180	6,098	3,349	2,600	244	235
Sperm whale	Hawaii	2,466	30	0	0	0.14	2,496	1,317	1,656	1,317	151	147

Note: For the HI take estimates, we compare predicted takes to abundance estimates generated from the same underlying density estimates (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule), both in and outside of the U.S. EEZ. Because the portion of the Navy's study area inside the U.S. EEZ is generally concomitant with the area used to generate the abundance estimates in the SARs, and the abundance predicted by the same underlying density estimates is the preferred abundance to use, there is no need to separately compare the take to the SARs abundance estimate.

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

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.

Table 21. Annual estimated takes by Level B harassment, Level A harassment, and mortality for sperm whales, dwarf sperm whales, and pygmy sperm whales in the SOCAL portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes	Abundance		Instances of total take as percent of abundance	
		Level B Harassment		Level A Harassment							
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	NAVY abundance in Action Area	NMFS SARS abundance	Total take as percentage of total Navy abundance in Action Area	Total take as percentage of total SAR abundance
Kogia whales	CA/OR/WA	2,779	6,353	38	0	0	9,170	757	4,111	1,211	223
Sperm whale	CA/OR/WA	2,437	56	0	0	0	2,493	273	1,997	913	125

Note: For the SOCAL take estimates, because of the manner in which the Navy study area overlaps the ranges of many MMPA stocks (*i.e.*, a stock may range far north to Washington state and beyond and abundance may only be predicted within the U.S. EEZ, while the Navy study area is limited to Southern California and northern Mexico, but extends beyond the U.S. EEZ), we compare predicted takes to both the abundance estimates for the study area, as well as the SARs (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

Below we compile and summarize the information that supports our preliminary 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 Whales, Dwarf Sperm Whales, and Pygmy Sperm Whales (CA/OR/WA Stocks)

The SAR identifies the CA/OR/WA stock of sperm whales as ''stable'' and the species is listed as endangered under the ESA. The status of the CA/OR/WA stocks of pygmy and dwarf sperm whales is unknown and neither are listed under the ESA. Neither mortality nor Level A harassment by tissue damage from exposure to explosives is expected or proposed for authorization for any of these three stocks.

Due to their pelagic distribution, small size, and cryptic behavior, pygmy sperm whales and dwarf sperm whales are rarely sighted during at-sea surveys and are difficult to distinguish between when visually observed in the field. Many of the relatively few observations of *Kogia* spp. off the U.S. West Coast were not identified to species. All at-sea sightings of *Kogia* spp. have been identified as pygmy sperm whales or *Kogia* spp. Stranded dwarf sperm and pygmy sperm whales have been found on the U.S. West Coast, however dwarf sperm whale strandings are rare. NMFS SARs suggest that the majority of *Kogia* sighted off the U.S. West Coast were likely pygmy sperm whales. As such, the stock estimate in the NMFS SAR for pygmy sperm whales is the estimate derived for all *Kogia* spp. in the region (Barlow, 2016), and no separate abundance estimate can be determined for dwarf sperm whales, though some low number likely reside in the U.S. EEZ. Due to the lack of abundance estimate it is not possible to predict the take of dwarf sperm whales and take estimates are identified as *Kogia* spp. (including both pygmy and dwarf sperm whales). We assume only a small portion of those takes are likely to be dwarf sperm whales as the density and abundance in the U.S. EEZ is thought to be low.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is, respectively, 913 and 125 for sperm whales and 1,211 and 223 for *Kogia* spp., with a large proportion of these anticipated to be pygmy sperm whales due to the low abundance and density of dwarf sperm whales in the HSTT Study Area. (Table 21). Given the range of these stocks (which extends the entire length of the West Coast, as well as beyond the U.S. EEZ boundary), this information suggests that some portion of the individuals in these stocks will not be impacted, but that there is likely some repeat exposure (perhaps up to 24 days within a year for *Kogia* spp. and 18 days a year for sperm whales) of some small subset of individuals that spend extended time within the SOCAL Range. 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 those individual Level B harassment takes by behavioral disruption, 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 lower, to occasionally moderate, level and less likely to evoke a severe response). However, some of these takes could occur on a fair number of sequential days for some number on individuals.

Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with sperm whale communication or other important low-frequency cues, and that 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 (PTS) 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 estimated Level A harassment takes by PTS for the dwarf and pygmy sperm whale stocks would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individuals. Thus the 38 total Level A harassment takes by PTS for these two stocks would be unlikely to affect rates of recruitment and survival for the stocks.

Altogether, most members of the stocks will likely be taken by Level B harassment (at a low to occasionally moderate level) over several days a year, and some smaller portion of the stocks are expected to be taken on a relatively moderate to high number of days (up to 18 or 24) 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 for a subset of individuals makes it more likely 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 are generally meaningless to 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 discussed in the 2018 HSTT final rule, however, foregone reproduction (especially for one year, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven years very low) 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 affect these stocks through effects on annual rates of recruitment or survival. We also note that residual PBR is 19 for pygmy dwarf sperm whales and 1.6 for sperm whales. Both the abundance and PBR are unknown for dwarf sperm whales, however, we know that take of this stock is likely significantly lower in magnitude and severity (*i.e.,* lower number of total takes and repeated takes any individual) than pygmy sperm whales. For these reasons, in consideration of all of the effects of the Navy's activities combined, we have preliminarily determined that the authorized take proposed would have a negligible impact on the CA/OR/WA stocks of sperm whales and pygmy and dwarf sperm whales.

Sperm Whale (Hawaii Stock)

The SAR does not identify a trend for this stock and the species is listed as endangered under the ESA. No Level A harassment by PTS or tissue damage is expected or proposed authorization. NMFS proposes to authorize one mortality over the seven years covered by this rule, which is 0.14 mortalities annually. The addition of this 0.14 annual mortality still leaves the total human-caused mortality well under the insignificance threshold for residual PBR.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of take compared to the abundance, both throughout the HSTT Study Area and within the U.S. EEZ, respectively, is 151 and 147 percent (Table 20). This information and the sperm whale stock range suggest that likely only a smaller portion of the stock would be impacted, over one to several days per year, with little likelihood of take across sequential days. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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 lower, to occasionally moderate, level and less likely to evoke a severe response). Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with sperm whale communication or other important low-frequency cues, and that

the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival.

Altogether, a relatively small portion of this stock is anticipated to be impacted and any individuals are likely to be disturbed at a low-moderate level, with the taken individuals likely exposed between one and several days, with little chance that any are taken across sequential days. 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 authorized mortality 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 authorized take proposed would have a negligible impact on the Hawaii stock of sperm whales.

Pygmy and Dwarf Sperm Whales (Hawaii Stocks)

The SAR does not identify a trend for these stocks and the species are not listed under the ESA. No Level A harassment by tissue damage is anticipated or proposed for authorization. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of take compared to the abundance, both throughout the HSTT Study Area and within the U.S. EEZ, respectively, is 244–249 and 235–240 percent (Table 20). This information and the pygmy and dwarf sperm whale stock ranges (at least throughout the U.S. EEZ around the entire Hawaiian Islands) suggest that likely a fair portion of each stock is not impacted, but that a subset of individuals may be taken over one to perhaps five days per year, with little likelihood of take across sequential days. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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 lower, to occasionally moderate, level and less likely to evoke a severe response). Additionally, as discussed earlier, within the Hawaii Island Mitigation Area, explosives are not used and the use of MF1 and MF4 active sonar is limited, greatly reducing the severity of impacts within the small resident population BIA for dwarf sperm whales, which is entirely contained within this mitigation area.

Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with sperm whale communication or other important low-frequency cues—and that 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, estimated Level A harassment takes by PTS for dwarf and pygmy sperm 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 it were to be experienced by an animal that also experiences one or more instances of Level B harassment by behavioral disruption. Thus the 29 and 64 total Level A harassment takes by PTS for dwarf and pygmy sperm whales, respectively, would be unlikely to affect rates of recruitment and survival for these stocks.

Altogether, a portion of these stocks are likely to be impacted and any individuals are likely to be disturbed at a low-moderate level, with the taken individuals likely exposed between one and five days, with little chance that any are taken across sequential days. This low magnitude and severity of Level A and Level B harassment effects is not expected to result in impacts on individual reproduction or survival, much less 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 expected and authorized take proposed would have a negligible impact on the Hawaii stocks of pygmy and dwarf sperm whales.

Beaked Whales

In Tables 22 and 23 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. Tables 22 and 23 are unchanged from Tables 75 and 76 in the 2018 HSTT 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 HSTT 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 HRC portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes		Abundance		Instances of total take as percent of abundance	
		Level B Harassment		Level A Harassment								
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	Takes (within NAVY EEZ)	Total Navy abundance inside and outside EEZ (HRC)	Within EEZ Navy abundance (HRC)	Total take as percentage of total Navy abundance (HRC)	EEZ take as percentage of EEZ abundance (HRC)
Blainville's beaked whale	Hawaii	5,369	16	0	0	0	5,385	4,140	989	768	545	539
Cuvier's beaked whale	Hawaii	1,792	4	0	0	0	1,796	1,377	345	268	521	514
Longman's beaked whale	Hawaii	19,152	81	0	0	0	19,233	14,585	3,568	2,770	539	527

Note: For the HI take estimates, we compare predicted takes to abundance estimates generated from the same underlying density estimates (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule), both in and outside of the U.S. EEZ. Because the portion of the Navy's study area inside the U.S. EEZ is generally concomitant with the area used to generate the abundance estimates in the SARs, and the abundance predicted by the same underlying density estimates is the preferred abundance to use, there is no need to separately compare the take to the SARs abundance estimate.

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

Table 23. Annual estimated takes by Level B harassment, Level A harassment, and mortality for beaked whales in the SOCAL portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes	Abundance		Instances of total take as percent of abundance	
		Level B Harassment		Level A Harassment							
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	NAVY abundance in Action Area	NMFS SARS abundance	Total take as percentage of total Navy abundance in Action Area	Total take as percentage of total SAR abundance
Baird's beaked whale	CA/OR/WA	2,030	14	0	0	0	2,044	74	2,697	2,762	76
Cuvier's beaked whale	CA/OR/WA	11,373	127	1	0	0	11,501	520	3,274	2,212	351
Mesoplodon spp.	CA/OR/WA	6,125	68	1	0	0	6,194	89	3,044	6,960	203

Note: For the SOCAL take estimates, because of the manner in which the Navy study area overlaps the ranges of many MMPA stocks (*i.e.*, a stock may range far north to Washington state and beyond and abundance may only be predicted within the U.S. EEZ, while the Navy study area is limited to Southern California and northern Mexico, but extends beyond the U.S. EEZ), we compare predicted takes to both the abundance estimates for the study area, as well as the SARs (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

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.

Blainville's, Cuvier's, and Longman's Beaked Whales (Hawaii Stocks)

The SAR does not identify a trend for these stocks and the species are not listed under the ESA. No mortality or Level A harassment are expected or proposed for authorization for any of these three stocks. Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated instances of take compared to the abundance, both throughout the HSTT Study Area and within the U.S. EEZ, respectively, is 521–545 and 514–539 percent (Table 22). This information and the stock ranges (at least of the small, resident Island associated stocks around Hawaii) suggest that likely a fair portion of the stocks (but not all) will be impacted, over one to perhaps eleven days per year, with little likelihood of much take across sequential days. Regarding the severity of those individual Level B harassment takes by behavioral disruption, the duration of any exposure is expected to be between minutes and hours (*i.e.,* relatively short) and the received sound levels largely below 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 (*i.e.,* moderate level takes). However, while interrupted feeding bouts are a known response and

concern for odontocetes, we also know that there are often viable alternative habitat options nearby. Additionally, as noted earlier, within the Hawaii Island mitigation area (which entirely contains the BIAs for Cuvier's and Blainville's beaked whales), explosives are not used and the use of MF1 and MF4 active sonar is limited, greatly reducing the severity of impacts within these two small resident populations.

Regarding the severity of TTS takes, they are expected to be low-level, of short duration, and mostly not in a frequency band that would be expected to interfere with beaked whale communication or other important low-frequency cues, and that the associated lost opportunities and capabilities are not at a level that would impact reproduction or survival.

Altogether, a fair portion of these stocks are anticipated to be impacted and any individuals are likely to be disturbed at a moderate level, with the taken individuals likely exposed between one and eleven days, with little chance that individuals are taken across more than a few sequential days. This low, to occasionally moderate, magnitude and severity of harassment effects is not expected to result in impacts on individual reproduction or survival, much less have 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 authorized take proposed would have a negligible impact on the Hawaii stocks of beaked whales.

Baird's and Cuvier's Beaked Whales and *Mesoplodon* Species (all CA/OR/WA Stocks)

The species are not listed under the ESA and their populations have been identified as ''stable,'' ''decreasing,'' and ''increasing,'' respectively. No mortality is expected or proposed for authorization for any of these three stocks and only two takes by Level A harassment (PTS) are proposed for authorization.

No methods are available to distinguish between the six species of *Mesoplodon* beaked whale CA/OR/WA stocks (Blainville's beaked whale (*M. densirostris*), Perrin's beaked whale (*M. perrini*), Lesser beaked whale (*M. peruvianus*), Stejneger's beaked whale (*M. stejnegeri*), Gingko-toothed beaked whale (*M. gingkodens*), and Hubbs' beaked whale (*M. carlhubbsi*)) when observed during at-sea surveys (Carretta *et al.,* 2018). Bycatch and stranding records from the region indicate that the Hubbs' beaked whale is most commonly encountered (Carretta *et al.,* 2008, Moore and Barlow, 2013). As indicated in the SAR, no species-specific abundance estimates are available, the abundance estimate includes all CA/OR/WA *Mesoplodon* spp, and the six species are managed as one unit. Due to the lack of species-specific abundance estimates it is not possible to predict the take of individual species and take estimates are identified as *Mesoplodon* spp.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance for these stocks is 2,762, 2,212, and 6,960 percent (measured against Navy-estimated abundance) and 76, 351, and 203 percent (measured against the SAR) for Baird's beaked whales, Cuvier's beaked whales, and *Mesoplodon* spp., respectively (Table 23). Given the ranges of these stocks, this information suggests that some smaller portion of the individuals of these stocks will be taken, and that some subset of individuals within the stock will be taken repeatedly within the year (perhaps up to 20–25 days, and potentially more for Cuvier's)—potentially over a fair number of sequential days, especially where individuals spend extensive time in the SOCAL Range. Note that we predict lower days of repeated exposure for these stocks than their percentages might have suggested because of the number of overall takes—*i.e.,* using the higher percentage would suggest that an unlikely portion of the takes are taken up by a small portion of the stock incurring a very large number of repeat takes, with little room for take resulting from few or moderate numbers of repeats, which is unlikely. 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 those individual Level B harassment takes by behavioral disruption, we have explained that the duration of any exposure is expected to be between minutes and hours (*i.e.,* relatively short) and the received sound levels largely below 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 (*i.e.,* of a moderate level). In addition, as noted, some of these takes could occur on a fair number of sequential days for these stocks.

The severity of TTS takes is 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. Therefore, the associated lost opportunities and capabilities would not be expected to impact reproduction or survival. For similar reasons (as described in the 2018 HSTT final rule) the single estimated Level A harassment take by PTS for this stock is unlikely to have any effects on the reproduction or survival of any individuals.

Altogether, a portion of these stocks will likely be taken (at a moderate or sometimes low level) over several days a year, and some smaller portion of the stock is expected to 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 moderate severity, the repeated takes over a potentially fair number of sequential days for some individuals makes it more likely 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 are generally meaningless to 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, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven years very low) 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 affect these stocks through effects on annual rates of recruitment or survival, especially given the residual PBR of these three beaked whale stocks (16, 21, and 20, respectively).

Further, Navy activities have been conducted in SOCAL for many years at similar levels and the SAR considers *Mesoplodon* spp. as increasing and Baird's beaked whales as stable. While NMFS' SAR indicates that Cuvier's beaked whales on the U.S. West Coast are declining based on a Bayesian trend analysis of NMFS' survey data collected from 1991 through 2014, results from passive acoustic monitoring and other research have estimated regional Cuvier's beaked whale densities that

were higher than indicated by NMFS' broad-scale visual surveys for the U.S. West Coast (Debich *et al.,* 2015a; Debich *et al.,* 2015b; Falcone and Schorr, 2012, 2014; Hildebrand *et al.,* 2009; Moretti, 2016; Širović *et al.,* 2016; Smultea and Jefferson, 2014). Research also indicates higher than expected residency in the Navy's instrumented Southern California Anti-Submarine Warfare Range in particular (Falcone and Schorr, 2012) and photo identification studies in the SOCAL have identified approximately 100 individual Cuvier's beaked whale individuals with 40 percent having been seen in one or more prior years, with re-sightings up to seven years apart (Falcone and Schorr, 2014). The documented residency by many Cuvier's beaked whales over multiple years suggest that a stable population may exist in that small portion of the stock's overall range (Falcone *et al.,* 2009; Falcone and Schorr, 2014; Schorr *et al.,* 2017).

For these reasons, in consideration of all of the effects of the Navy's activities combined, we have preliminarily determined that the authorized take proposed would have a negligible impact on the CA/OR/WA stocks of Baird's and Cuvier's beaked whales, as well as all six species included within the *Mesoplodon* spp.

Small Whales and Dolphins

In Tables 24 and 25 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. Tables 24 and 25 are updated from Tables 77 and 78 in the 2018 HSTT final rule as appropriate with the 2018 final SARs and with 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 *Small Whales and Dolphins* discussion in the *Group and Species-Specific Analyses* section of the 2018 HSTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

Table 24. Annual estimated takes by Level B harassment, Level A harassment, and mortality for dolphins and small whales in the HRC portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes		Abundance		Instance of total take as percent of abundance	
		Level B Harassment		Level A Harassment								
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	Takes (within NAVY EEZ)	Total Navy abundance inside and outside of EEZ (HRC)	Within EEZ Navy abundance (HRC)	Total take as percentage of total Navy abundance (HRC)	EEZ take as percentage of Navy EEZ abundance (HRC)
Bottlenose dolphin	Hawaii Pelagic	3,196	132	0	0	0	3,328	2,481	1,528	1,442	218	172
Bottlenose dolphin	Kauai & Niihau	534	31	0	0	0	565	264	184	184	307	143
Bottlenose dolphin	Oahu	8,600	61	1	0	0	8,662	8,376	743	743	1,169	1,130
Bottlenose dolphin	4-Island	349	10	0	0	0	359	316	189	189	190	167
Bottlenose dolphin	Hawaii	74	6	0	0	0	80	42	131	131	61	32
False killer whale	Hawaii Pelagic	999	42	0	0	0	1,041	766	645	507	161	151
False killer whale	Main Hawaiian Islands Insular	572	17	0	0	0	589	476	147	147	400	324
False killer whale	Northwestern Hawaiian Islands	365	16	0	0	0	381	280	215	169	177	166
Fraser's dolphin	Hawaii	39,784	1,289	2	0	0	41,075	31,120	5,408	18,763	760	166
Killer whale	Hawaii	118	6	0	0	0	124	93	69	54	180	172
Melon-headed whale	Hawaii Islands	3,261	231	0	0	0	3,492	2,557	1,782	1,782	196	143
Melon-headed whale	Kohala Resident	341	9	0	0	0	350	182	447	447	78	41
Pantropical spotted dolphin	Hawaii Island	3,767	227	0	0	0	3,994	2,576	2,405	2,405	166	107
Pantropical spotted dolphin	Hawaii Pelagic	9,973	476	0	0	0	10,449	7,600	5,462	4,637	191	164
Pantropical spotted dolphin	Oahu	4,284	45	0	0	0	4,329	4,194	372	372	1,164	1,127
Pantropical spotted dolphin	4-Island	701	17	0	0	0	718	634	657	657	109	96
Pygmy killer whale	Hawaii	8,122	402	0	0	0	8,524	6,538	4,928	3,931	173	166
Pygmy killer whale	Tropical	710	50	0	0	0	760	490	159	23	478	2,130
Risso's dolphin	Hawaii	8,950	448	0	0	0	9,398	7,318	1,210	4,199	777	174
Rough-toothed dolphin	Hawaii	6,112	373	0	0	0	6,485	4,859	3,054	2,808	212	173
Short-finned pilot whale	Hawaii	12,499	433	0	0	0	12,932	9,946	6,433	5,784	201	172
Spinner dolphin	Hawaii Island	279	12	0	0	0	291	89	629	629	46	14
Spinner dolphin	Hawaii Pelagic	4,332	202	0	0	0	4,534	3,491	2,885	2,229	157	157
Spinner dolphin	Kauai & Niihau	1,683	63	0	0	0	1,746	812	604	604	289	134
Spinner dolphin	Oahu & 4-Island	1,790	34	1	0	0	1,825	1,708	354	354	516	482
Striped dolphin	Hawaii	7,379	405	0	0	0	7,784	6,034	4,779	3,646	163	165

Note: For the HI take estimates, we compare predicted takes to abundance estimates generated from the same underlying density estimates (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule), both in and outside of the U.S. EEZ. Because the portion of the Navy's study area inside the U.S. EEZ is generally concomitant with the area used to generate the abundance estimates in the SARs, and the abundance predicted by the same underlying density estimates is the preferred abundance to use, there is no need to separately compare the take to the SARs abundance estimate.

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

Table 25. Annual estimated takes by Level B harassment, Level A harassment, and mortality for dolphins and small whales in the SOCAL portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes	Abundance		Instance of total take as percent of abundance	
		Level B Harassment		Level A Harassment							
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	NAVY abundance in Action Area (SOCAL)	NMFS SARS abundance	Total take as percentage of total Navy abundance in Action Area	Total take as percentage of total SAR abundance
Bottlenose dolphin	California Coastal	1,771	38	0	0	0	1,809	238	453	760	399
Bottlenose dolphin	CA/OR/WA Offshore	51,727	3,695	3	0	0	55,425	5,946	1,924	932	2,881
Killer whale	Eastern North Pacific (ENP) Offshore	96	11	0	0	0	107	4	300	2,675	36
Killer whale	ENP Transient/ West Coast Transient	179	20	0	0	0	199	30	243	663	82
Long-beaked common dolphin	California	233,485	13,787	18	2	0	247,292	10,258	101,305	2,411	244
Northern right whale dolphin	CA/OR/WA	90,052	8,047	10	1	0	98,110	7,705	26,556	1,273	369
Pacific white-sided dolphin	CA/OR/WA	69,245	6,093	5	0	0	75,343	6,626	26,814	1,137	281
Risso's dolphin	CA/OR/WA	116,143	10,118	9	0	0	126,270	7,784	6,336	1,622	1,993
Short-beaked common dolphin	CA/OR/WA	1,374,048	118,525	79	10	1.14	1,492,664	261,438	969,861	571	154
Short-finned pilot whale	CA/OR/WA	1,789	124	1	0	0	1,914	208	836	920	229
Striped dolphin	CA/OR/WA	163,640	11,614	3	0	0	175,257	39,862	29,211	440	600

Note: For the SOCAL take estimates, because of the manner in which the Navy study area overlaps the ranges of many MMPA stocks (*i.e.*, a stock may range far north to Washington state and beyond and abundance may only be predicted within the U.S. EEZ, while the Navy study area is limited to Southern California and northern Mexico, but extends beyond the U.S. EEZ), we compare predicted takes to both the abundance estimates for the study area, as well as the SARs (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

For mortality takes there is an annual average of 1.14 short-beaked common dolphins (*i.e.*, where eight takes could potentially occur divided by seven years to get the annual number of mortalities/serious injuries).

Mortality for the CA/OR/WA stock of short-beaked common dolphins was unintentionally presented incorrectly as 2 in Table 78 of the 2018 HSTT final rule. The correct value (updated for seven years of activity) is provided here. This transcription errors do not affect the analysis or conclusions in the 2018 HSTT final rule, as the correct values were used in the analysis presented in the *Analysis and Negligible Impact Determination* 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 or stocks addressed in this section.

Long-Beaked Common Dolphin (California Stock), Northern Right Whale Dolphin (CA/OR/WA Stock), and Short-Beaked Common Dolphin (CA/OR/WA Stock)

None of these stocks is listed under the ESA and their stock statuses are considered ''increasing,'' ''unknown,'' and ''stable,'' respectively. Eight mortalities or serious injuries of short-beaked common dolphins are proposed for authorization over the seven-year rule, or 1.14 M/SI annually. The addition of this 1.14 annual mortality still leaves the total human-caused mortality well under the insignificance threshold for residual PBR. The three stocks are expected to accrue 2, 1, and 10 Level A harassment takes from tissue damage resulting from exposure to explosives, respectively. As described in detail in the 2018 HSTT final rule, the impacts of a Level A harassment take by tissue damage could range in impact from minor to something just less than M/SI that could seriously impact fitness. However, given the Navy's procedural mitigation, 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 these takes that could lower the affected individual's fitness within the year such that a female (assuming a 50 percent chance of it 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 only one year in seven, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven five years very low), and 1 to 10 instances would not be expected to impact annual rates of recruitment or survival for these stocks.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is 2,411, 1,273, and 571 percent (respective to the stocks listed in the heading) and 244, 369, and 154 percent (respective to the stocks listed in the heading) (Table 25). Given the range of these stocks, this information suggests

that likely some portion (but not all or even the majority) of the individuals in the Northern right whale dolphin and short-beaked common dolphin stocks are likely impacted, while it is entirely possible that most or all of the range-limited long-beaked common dolphin is taken. All three stocks likely will experience some repeat Level B harassment exposure (perhaps up to 48, 25, or 11 days within a year, respective to the stocks listed in the heading) of some subset of individuals that spend extended time within the SOCAL range complex. 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 those individual Level B harassment takes by behavioral disruption, 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). However, some of these takes could occur on a fair number of sequential days for long-beaked common dolphins or northern right whale dolphins, or even some number of short-beaked common dolphins, given the high number of total takes (*i.e.,* the probability that some number of individuals get taken on a higher number of sequential days is higher, because the total take number is relatively high, even though the percentage is not that high).

The severity of TTS takes is 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, 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, as discussed in the 2018 HSTT final rule, it 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 and as described in more detail above, 1.14 annual lethal takes of short-beaked common dolphins are proposed for authorization, all three stocks may experience a very small number of takes by tissue damage or PTS (relative to the stock abundance and PBR), and a moderate to large portion of all three stocks will likely be taken (at a low to occasionally moderate level) over several days a year, and some smaller portion of these stocks is expected to 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 are generally meaningless to 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 only one year out of seven, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven years very low) has far less of an impact on population rates than mortality and a small number of instances of foregone reproduction (including in combination with that which might result from the small number of tissue damage takes) would not be expected to adversely affect the stocks through effects on annual rates of recruitment or survival, especially given the very high residual PBRs of these stocks (621, 175, and 8,353, respectively). For these reasons, in consideration of all of the effects of the Navy's activities combined (mortality, Level A harassment, and Level B harassment), we have preliminarily determined that the authorized take proposed would have a negligible impact on these three stocks of dolphins.

All Other SOCAL Dolphin Stocks (Except Long-Beaked Common Dolphin, Northern Right Whale Dolphin, and Short-Beaked Common Dolphin)

None of these stocks is listed under the ESA and their stock statuses are considered ''unknown,'' except for the bottlenose dolphin (California coastal stock) and killer whale (Eastern North Pacific stock), which are considered ''stable.'' No M/SI or Level A harassment via tissue damage from exposure to explosives is expected or proposed for authorization for these stocks.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is from 440 to 2,675 percent and 36 to 2,881 percent, respectively (Table 25). Given the range of these stocks (along the entire U.S. West Coast, or even beyond, with some also extending seaward of the HSTT Study Area boundaries), this information suggests that some portion (but not all or even the majority) of the individuals of any of these stocks will be taken, with the exception that most or all of the individuals of the more range-limited California coastal stock of bottlenose dolphin may be taken. It is also likely that some subset of individuals within most of these stocks will be taken repeatedly within the year (perhaps up to 10–15 days within a year), but with no more than several potentially sequential days, although the CA/OR/WA stocks of bottlenose dolphins, Pacific white-sided dolphins, and Risso's dolphins may include individuals that are taken repeatedly within the year over a higher number of days (up to 57, 22, and 40 days, respectively) and potentially over a fair number of sequential days, especially where individuals spend extensive time in the SOCAL range complex. Note that though percentages are high for the Eastern North Pacific stock of killer whales and short-finned pilot whales, given the low overall number of takes, it is highly unlikely that any individuals would be taken across the number of days their percentages would suggest. 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 those individual Level B harassment takes by behavioral disruption, we have explained that 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 lower, or sometimes moderate level, less likely to evoke a severe response). However, as noted, some of these takes could occur on a fair number of sequential days for the three stocks listed earlier.

The severity of TTS takes is 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. 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, it 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, a portion of all of these stocks will likely be taken (at a low to occasionally moderate level) over several days a year, and some smaller portion of CA/OR/WA stocks of bottlenose dolphins, Pacific white-sided dolphins, and Risso's dolphins, specifically, are expected to 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) for the CA/OR/WA stocks of bottlenose dolphins, Pacific white-sided dolphins, and Risso's dolphins 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 are generally meaningless to 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 only one year in seven, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven five years very low) 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 affect the stocks through effects on annual rates of recruitment or survival, especially given the residual PBRs of the CA/OR/WA stocks of bottlenose dolphins, Pacific white-sided dolphins, and Risso's dolphins (9.4, 183, and 84, respectively). For these reasons, in consideration of all of the effects of the Navy's activities combined, we have preliminarily determined that the authorized take proposed would have a negligible impact on these stocks of dolphins.

All HRC Dolphin Stocks

With the exception of the Main Hawaiian Island stock of false killer whales (listed as endangered under the ESA, with the MMPA stock identified as ''decreasing''), none of these stocks are listed under the ESA and their stock statuses are considered ''unknown.'' No M/SI or Level A harassment via tissue damage from exposure to explosives is expected or proposed for authorization for these stocks.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is from 46 to 1,169 percent and 41 to 2,130 percent, respectively (Table 24). Given the ranges of these stocks (many of them are small, resident, island-associated stocks), this information suggests that a fairly large portion of the individuals of many of these stocks will be taken, but that most individuals will only be impacted across a smaller to moderate number of days within the year (1–15), and with no more than several potentially sequential days, although two stocks (the Oahu stocks of bottlenose dolphin and pantropical spotted dolphin) have a slightly higher percentage, suggesting they could be taken up to 23 days within a year, with perhaps a few more of those days being sequential. We note that although the percentage is higher for the tropical stock of pygmy killer whale within the U.S. EEZ (2,130), given (1) the low overall number of takes (760) and (2) the fact that the small within-U.S. EEZ abundance is not a static set of individuals, but rather individuals moving in and out of the U.S. EEZ making it more appropriate to use the percentage comparison for the total takes versus total abundance—it is highly unlikely that any individuals would be taken across the number of days the within-U.S. EEZ percentage suggests (42). 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 those individual Level B harassment takes by behavioral disruption, 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 lower, or sometimes moderate level, less likely to evoke a severe response). However, as noted, some of these takes could occur on a fair number of sequential days for the Oahu stocks of bottlenose dolphin and pantropical spotted dolphins.

Regarding the severity of TTS takes, 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. 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, they 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 accrued to individuals that are also taken by behavioral harassment at the same time.

Altogether, most of these stocks (all but the Oahu stocks of bottlenose dolphin and pantropical spotted dolphins) will likely be taken (at a low to occasionally moderate level) over several days a year, with some smaller portion of the stock potentially taken on a more moderate number of days across the year (perhaps up to 15 days for Fraser's dolphin, though others notably less), some of which could be across a few sequential days, which is not expected to affect the reproductive success or survival of individuals. For the Oahu stocks of bottlenose dolphin and pantropical spotted dolphins, some subset of individuals could be taken up to 23 days in a year, with some small number being taken across several sequential days, such 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 are generally meaningless to 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, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven years very low) 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 affect these two stocks through effects on annual rates of recruitment or survival. For these reasons, in consideration of all of the effects of the Navy's activities combined, we have preliminarily determined that the authorized take proposed would have a negligible impact on all of the stocks of dolphins found in the vicinity of the HRC.

Dall's Porpoise

In Table 26 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 26 is unchanged from Table 79 in the 2018 HSTT final rule. For additional information and analysis supporting the negligible-impact analysis, see the *Odontocetes* discussion as well as the *Dall's Porpoise* discussion in the *Group and Species-Specific Analyses* section of the 2018 HTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

Table 26. Annual estimated takes by Level B harassment, Level A harassment, and mortality for porpoises in the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes	Abundance		Instances of total take as percent of abundance	
		Level B Harassment		Level A Harassment							
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	NAVY abundance in Action Area	NMFS SARS abundance	Total take as percentage of total Navy abundance in Action Area	Total take as percentage of total SAR abundance
Dall's porpoise	CA/OR/WA	14,482	29,891	209	0	0	44,582	2,054	25,750	2,170	173

Note: For the SOCAL take estimates, because of the manner in which the Navy study area overlaps the ranges of many MMPA stocks (*i.e.*, a stock may range far north to Washington state and beyond and abundance may only be predicted within the U.S. EEZ, while the Navy study area is limited to Southern California and northern Mexico, but extends beyond the U.S. EEZ), we compare predicted takes to both the abundance estimates for the study area, as well as the SARs (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule).

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

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

Dall's porpoise is not listed under the ESA and the stock status is considered ''unknown.'' No M/SI or Level A harassment via tissue damage from exposure to explosives is expected or proposed for authorization for this stock.

Most Level B harassments to Dall's porpoise from hull-mounted sonar (MF1) in the HSTT Study Area would result from received levels between 154 and 166 dB SPL (85 percent). While harbor porpoises have been observed to be especially sensitive to human activity, the same types of responses have not been observed in Dall's porpoises. Dall's porpoises are typically notably longer than, and weigh more than twice as much as, harbor porpoises, making them generally less likely to be preyed upon and likely differentiating their behavioral repertoire somewhat from harbor porpoises. Further, they are typically seen in large groups and feeding aggregations, or exhibiting bow-riding behaviors, which is very different from the group dynamics observed in the more typically solitary, cryptic harbor porpoises, which are not often seen bow-riding. For these reasons, Dall's porpoises are not treated as especially sensitive species (as compared to harbor porpoises which have a lower threshold for Level B harassment by behavioral disruption and more distant cutoff) but, rather, are analyzed similarly to other odontocetes. Therefore, the majority of Level B harassment takes are expected to be in the form of milder responses compared to higher level exposures. As discussed more fully in the 2018 HSTT final rule, we anticipate more severe effects from takes when animals are exposed to higher received levels.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) is 2,170 and 173 percent, respectively (Table 26). Given the range of this stock (up the U.S. West Coast through Washington and sometimes beyond the U.S. EEZ), this information suggests that some smaller portion of the individuals of this stock will be taken, and that some subset of individuals within the stock will be taken repeatedly within the year (perhaps up to 42 days)—potentially over a fair number of sequential days, especially where individuals spend extensive time in the SOCAL range complex. 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 those individual Level B harassment takes by behavioral disruption, 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 lower, or sometimes moderate level, less likely to evoke a severe response). However, as noted, some of these takes could occur on a fair number of sequential days for this stock.

The severity of TTS takes is 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. 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 209 Level A harassment takes by PTS for Dall's 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. Because of the high number of PTS takes, however, 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. Given the status of the stock, even if this occurred, it would not adversely impact rates of recruitment or survival.

Altogether, a portion of this stock will likely be taken (at a low to occasionally moderate level) over several days a year, and some smaller portion of the stock is expected to 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) for the Dall's porpoise 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 are generally meaningless to 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. Similarly, we acknowledge the potential for this to occur to a few individuals out of the 209 total that might incur a higher degree of PTS. As noted previously, however, foregone reproduction (especially for only one year in seven, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven five years very low) has far less of an impact on population rates than mortality. Further, the small number of instances of foregone reproduction that could potentially result from PTS and/or the few repeated, more severe Level B harassment takes by behavioral disruption would not be expected to adversely affect the stock through effects on annual rates of recruitment or survival, especially given the status of the species (not endangered or threatened; minimum population of 25,170 just within the U.S. EEZ) and residual PBR of Dall's porpoise (171.4). For these reasons, in consideration of all of the effects of the Navy's activities combined, we have preliminarily determined that the authorized take proposed would have a negligible impact on Dall's porpoise.

Pinnipeds

In Tables 27 and 28 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. Tables 27 and 28 have been updated from Tables 80 and 81 in the 2018 HSTT final rule, as appropriate, with the 2018 final SARs and updated information on mortality, as discussed above. 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 HSTT final rule, all of which remains applicable to this proposed rule unless specifically noted.

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Table 27: Annual estimated takes by Level B harassment, Level A harassment, and mortality for pinnipeds in the HRC portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

	Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes		Abundance		Instance of total take as percent of abundance	
	Level B Harassment		Level A Harassment								
Species	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	Takes (within NAVY EEZ)	Total Navy abundance inside and outside of EEZ (HRC)	Within EEZ Navy abundance (HRC)	Total take as percentage of total Navy abundance (HRC)	EEZ take as percentage of Navy EEZ abundance (HRC)
Hawaiian monk seal	143	62	1	0	0	206	195	169	169	122	115

Note: For the HI take estimates, we compare predicted takes to abundance estimates generated from the same underlying density estimates (as described in the *Estimated Take of Marine Mammals* section of the 2018 HSTT final rule), both in and outside of the U.S. EEZ. Because the portion of the Navy's study area inside the U.S. EEZ is generally concomitant with the area used to generate the abundance estimates in the SARs, and the abundance predicted by the same underlying density estimates is the preferred abundance to use, there is no need to separately compare the take to the SARs abundance estimate.

Total takes inside and outside U.S. EEZ represent the sum of annual Level A and Level B harassment from training and testing activities.

Table 28: Annual estimated takes by Level B harassment, Level A harassment, and mortality for pinnipeds in the SOCAL portion of the HSTT Study Area and number indicating the instances of total take as a percentage of stock abundance.

		Instances of indicated types of incidental take (not all takes represent separate individuals, especially for disturbance)					Total Takes	Abundance		Instance of total take as percent of abundance	
		Level B Harassment		Level A Harassment							
Species	Stock	Behavioral Disturbance	TTS (may also include disturbance)	PTS	Tissue Damage	Mortality	Total Takes (entire Study Area)	NAVY abundance in Action Area (SOCAL)	NMFS SARS abundance	Total take as percentage of total Navy abundance in Action Area	Total take as percentage of total SAR abundance
California sea lion	U.S.	113,419	4,789	87	9	0.71	118,305	4,085	257,606	2,896	46
Guadalupe fur seal	Mexico	1,442	15	0	0	0	1,457	1,171	20,000	124	7
Northern fur seal	California	15,167	124	1	0	0	15,292	886	14,050	1,726	109
Harbor seal	California	2,450	2,994	8	0	0	5,452	321	30,968	1,698	18
Northern elephant seal	California	42,916	17,955	97	2	0	60,970	4,108	179,000	1,484	34

Note: For the SOCAL take estimates, because of the manner in which the Navy action area overlaps the ranges of many MMPA stocks (*i.e.*, a stock may range far north to Washington state and beyond and abundance may only be predicted within the U.S. EEZ, while the Navy action area is limited to Southern California and northern Mexico, but extends beyond the U.S. EEZ), we compare predicted takes to both the abundance estimates for the action area, as well as the SARs.

For mortality takes there is an annual average of 0.71 California sea lions (*i.e.*, where five takes could potentially occur divided by seven years to get the annual number of mortalities/serious injuries).

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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.

Five M/SI takes of California sea lions are proposed for authorization and when this mortality is combined with the other human-caused mortality from other sources, it still falls well below the insignificance threshold for residual PBR (13, 685). A small number of Level A harassment takes by tissue damage are also proposed for authorization (9 and 2 for California sea lions and northern elephant seals, respectively), which, as discussed in the 2018 HSTT 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, exposure at the closer to the source and more severe end of the spectrum is less likely. Nevertheless, we cautiously assume some moderate impact on the individuals that experience these small numbers of take that could lower the individual's fitness within the year such that a female (assuming a 50 percent chance of it 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 only one within seven years, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven years very low) and these low numbers of instances (especially assuming the likelihood that only 50 percent of the takes would affect females) would not be expected to impact annual rates of recruitment or survival, especially given the population sizes of these species.

Regarding the magnitude of Level B harassment takes (TTS and behavioral disruption), for Hawaiian monk seals and Guadalupe fur seals, the two species listed under the ESA, the estimated instances of takes as compared to the stock abundance does not exceed 124 percent, which suggests that some portion of these two stocks would be taken on one to a few days per year. For the remaining stocks, the number of estimated total instances of take compared to the abundance (measured against both the Navy-estimated abundance and the SAR) for these stocks is 1,484 to 2,896 percent and 18 to 40 percent, respectively (Table 27). Given the ranges of these stocks (*i.e.,* very large ranges, but with individuals often staying in the vicinity of haulouts), this information suggests that some very small portion of the individuals of these stocks will be taken, but that some subset of individuals within the stock will be taken repeatedly within the year (perhaps up to 58 days)—potentially over a fair number of sequential days. Regarding the severity of those individual Level B harassment takes by behavioral disruption, 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, which is considered a relatively low to occasionally moderate level for pinnipeds. However, as noted, some of these takes could occur on a fair number of sequential days for this stock.

As described in the 2018 HSTT final rule, the Hawaii and 4-Islands mitigation areas protect (by not using explosives and limiting MFAS within) a significant portion of the designated critical habitat for Hawaiian monk seals in the Main Hawaiian Islands, including all of it around the islands of Hawaii and Lanai, most around Maui, and good portions around Molokai and Kaho'olawe. As discussed, this protection reduces the overall number of takes, and further reduces the severity of effects by minimizing impacts near pupping beaches and in important foraging habitat.

The severity of TTS takes 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 that

would affect the individual's 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, the one to eight estimated Level A harassment takes by PTS for monk seals, northern fur seals, and harbor seals would be unlikely to impact behaviors, opportunities, or detection capabilities to a degree that would interfere with reproductive success or survival of any individuals. Because of the high number of PTS takes for California sea lions and northern elephant seals (87 and 97, respectively); however, 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. Given the status of the stocks, even if this occurred, it would not adversely impact rates of recruitment or survival (residual PBR of 13,686 and 4,873, respectively).

Altogether, an individual Hawaiian monk seal and Guadalupe fur seal would be taken no more than a few days in any year, with none of the expected take anticipated to affect individual reproduction or survival, let alone annual rates of recruitment and survival. With all other stocks, only a very small portion of the stock will be taken in any manner. Of those taken, some individuals will be taken by Level B harassment (at a moderate or sometimes low level) over several days a year, and some smaller portion of those taken will be on a relatively moderate to high number of days across the year (up to 58), a fair number of which would likely be sequential days. Though the majority of impacts are expected to be of a lower to sometimes moderate severity, the repeated takes over a potentially fair number of sequential days for some individuals makes it more likely that some 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 are generally meaningless to 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 only one year within seven, which is the maximum predicted because the small number anticipated in any one year makes the probability that any individual would be impacted in this way twice in seven five years very low) has far less of an impact on population rates than mortality and a relatively small number of instances of foregone reproduction (as compared to the stock abundance and residual PBR) would not be expected to adversely affect the stock through effects on annual rates of recruitment or survival, especially given the status of these stocks. Accordingly, we do not anticipate the relatively small number of individual Northern fur seals or harbor seals that might be taken over repeated days within the year in a manner that results in one year of foregone reproduction to adversely affect the stocks through effects on rates of recruitment or survival, given the status of the stocks, which are respectively increasing and stable with abundances and residual PBRs of 14,050/30,968 and 449/1,598.

For California sea lions, given the very high abundance and residual PBR (257,606 and 13,685, respectively), as well as the increasing status of the stock in the presence of similar levels of Navy activities over past years—the impacts of 0.71 annual mortalities, potential foregone reproduction for up to nine individuals in a year taken by tissue damage, and some relatively small number of individuals taken as a result of repeated behavioral harassment over a fair number of sequential days are not expected to adversely affect the stock through effects on annual rates of recruitment or survival. Similarly, for Northern elephant seals, given the very high abundance and residual PBR (179,000 and 4,873, respectively), as well as the increasing status of the stock in the presence of similar levels of Navy activities over past years, the impacts of potential foregone reproduction for up to two individuals in a year taken by tissue damage and some relatively small number of individuals taken as a result of repeated behavioral harassment over a fair number of sequential days are not expected to adversely affect the stock through effects on annual rates of recruitment or survival. For these reasons, in consideration of all of the effects of the Navy's activities combined (M/SI, Level A harassment, and Level B harassment), we have preliminarily determined that the authorized take proposed would have a negligible impact on all pinniped species and stocks.

Determination

The 2018 HSTT final rule included a detailed discussion of all of the anticipated impacts on the affected species and stocks from serious injury or mortality, Level A harassment, and Level B harassment; impacts on habitat; and how the Navy's mitigation and monitoring measures reduce the number and/or severity of adverse effects. We have evaluated how these impacts and mitigation measures are expected to combine, annually, to affect individuals of each species and 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 HSTT 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 conclusions in the 2018 HSTT final rule were based have changed. Therefore, even though this proposed rule includes two additional years, because our findings are based on annual rates of recruitment and survival, and little has changed that would change our 2018 HSTT final rule annual analyses, it is appropriate to rely on those analyses, as well as the new information and analysis discussed above, for this proposed rule.

Based on the applicable information and analysis from the 2018 HSTT 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 preliminarily 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 nine marine mammal species under NMFS jurisdiction that are listed as endangered or threatened under the ESA with confirmed or possible occurrence in the HSTT Study Area: Blue whale (Eastern and Central North Pacific stocks), fin whale (CA/OR/WA and Hawaii stocks), gray whale (Western North Pacific stock), humpback whale (Mexico and Central America DPSs), sei whale (Eastern North Pacific and Hawaii stocks), sperm whale (CA/OR/WA and Hawaii stocks), false killer whale (Main Hawaiian Islands Insular), Hawaiian monk seal (Hawaii stock), and Guadalupe fur seal (Mexico to California). There is also ESA-designated critical habitat for Hawaiian monk seals and Main Hawaiian Islands Insular false killer whales. The Navy consulted with NMFS pursuant to section 7 of the ESA for HSTT activities. NMFS also consulted internally on the issuance of the 2018 HSTT regulations and LOAs under section 101(a)(5)(A) of the MMPA. NMFS issued a Biological Opinion on December 10, 2018 concluding that the issuance of the 2018 HSTT 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 HSTT Study Area. The Biological 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). There are two national marine sanctuaries in the HSTT Study Area, the Hawaiian Islands Humpback Whale National Marine Sanctuary and the Channel Islands National Marine Sanctuary. NMFS will work with NOAA's Office of National Marine Sanctuaries to fulfill our responsibilities under the NMSA as warranted and will complete any NMSA requirements prior to a determination on the issuance of the final rule and LOAs.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216–6A, NMFS must evaluate our proposed actions and alternatives with respect to potential impacts on the human environment. NMFS participated as a cooperating agency on the 2018 HSTT FEIS/OEIS (published on October 26, 2018, *http://www.hstteis.com*) which evaluated impacts from Navy training and testing activities in the HSTT Study Area for the reasonably foreseeable future (including through 2025). In accordance with 40 CFR 1506.3, NMFS independently reviewed and evaluated the 2018 HSTT FEIS/OEIS and determined that it was adequate and sufficient to meet our responsibilities under NEPA for the issuance of the 2018 HSTT final rule and associated LOAs. NOAA therefore adopted the 2018 HSTT 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 HSTT FEIS/OEIS. As indicated in this proposed rule, the Navy has made no substantial changes to the activities nor are there significant new circumstances or information relevant to environmental concerns or their 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: August 26, 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 H to part 218 to read as follows:

Subpart H—Taking and Importing Marine Mammals; U.S. Navy's Hawaii-Southern California Training and Testing (HSTT)

Sec.

218.70 Specified activity and geographical region.
218.71 Effective dates.
218.72 Permissible methods of taking.
218.73 Prohibitions.
218.74 Mitigation requirements.

218.75 Requirements for monitoring and reporting.
218.76 Letters of Authorization.
218.77 Renewals and modifications of Letters of Authorization.
218.78 and 218.79 [Reserved]

Subpart H—Taking and Importing Marine Mammals; U.S. Navy's Hawaii-Southern California Training and Testing (HSTT)

§ 218.70 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 Hawaii-Southern California Training and Testing (HSTT) Study Area, which includes established operating and warning areas across the north-central Pacific Ocean, from the mean high tide line in Southern California west to Hawaii and the International Date Line. The Study Area includes the at-sea areas of three existing range complexes, the Hawaii Range Complex (HRC), the Southern California Range Complex (SOCAL), and the Silver Strand Training Complex, and overlaps a portion of the Point Mugu Sea Range (PMSR). Also included in the Study Area are Navy pierside locations in Hawaii and Southern California, Pearl Harbor, San Diego Bay, and the transit corridor on the high seas where sonar training and testing may occur.

(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;

(iii) Office of Naval Research Testing Activities; and

(iv) Naval Information Warfare Systems Command.

§ 218.71 Effective dates.

Regulations in this subpart are effective from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] through December 20, 2025.

§ 218.72 Permissible methods of taking.

(a) Under LOAs issued pursuant to §§ 216.106 of this chapter and 218.76, the Holder of the LOAs (hereinafter ''Navy'') may incidentally, but not intentionally, take marine mammals within the area described in § 218.70(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 vessel strikes and explosives, 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 § 218.70(c) is limited to the following species:

TABLE 1 TO § 218.72

Species	Stock
Blue whale	Central North Pacific.
Blue whale	Eastern North Pacific.
Bryde's whale	Eastern Tropical Pacific.
Bryde's whale	Hawaii.
Fin whale	CA/OR/WA.
Fin whale	Hawaiian.
Humpback whale	CA/OR/WA.
Humpback whale	Central North Pacific.
Minke whale	CA/OR/WA.
Minke whale	Hawaii.
Sei whale	Eastern North Pacific.
Sei whale	Hawaii.
Gray whale	Eastern North Pacific.
Gray whale	Western North Pacific.
Sperm whale	CA/OR/WA.
Sperm whale	Hawaii.
Dwarf sperm whale	Hawaii.
Pygmy sperm whale	Hawaii.
Kogia whales	CA/OR/WA.
Baird's beaked whale	CA/OR/WA.
Blainville's beaked whale	Hawaii.
Cuvier's beaked whale	CA/OR/WA.
Cuvier's beaked whale	Hawaii.
Longman's beaked whale	Hawaii.
Mesoplodon spp	CA/OR/WA.
Bottlenose dolphin	California Coastal.
Bottlenose dolphin	CA/OR/WA Offshore.
Bottlenose dolphin	Hawaii Pelagic.
Bottlenose dolphin	Kauai & Niihau.
Bottlenose dolphin	Oahu.
Bottlenose dolphin	4-Island.
Bottlenose dolphin	Hawaii.
False killer whale	Hawaii Pelagic.
False killer whale	Main Hawaiian Islands Insular.
False killer whale	Northwestern Hawaiian Islands.
Fraser's dolphin	Hawaii.
Killer whale	Eastern North Pacific (ENP) Offshore.
Killer whale	ENP Transient/West Coast Transient.
Killer whale	Hawaii.
Long-beaked common dolphin.	California.
Melon-headed whale	Hawaiian Islands.
Melon-headed whale	Kohala Resident.
Northern right whale dolphin	CA/OR/WA.
Pacific white-sided dolphin	CA/OR/WA.
Pantropical spotted dolphin	Hawaii Island.
Pantropical spotted dolphin	Hawaii Pelagic.
Pantropical spotted dolphin	Oahu.
Pantropical spotted dolphin	4-Island.
Pygmy killer whale	Hawaii.
Pygmy killer whale	Tropical.
Risso's dolphin	CA/OR/WA.
Risso's dolphin	Hawaii.
Rough-toothed dolphin	Hawaii.
Short-beaked common dolphin.	CA/OR/WA.
Short-finned pilot whale	CA/OR/WA.
Short-finned pilot whale	Hawaii.
Spinner dolphin	Hawaii Island.
Spinner dolphin	Hawaii Pelagic.
Spinner dolphin	Kauai & Niihau.
Spinner dolphin	Oahu & 4-Island.
Striped dolphin	CA/OR/WA.
Striped dolphin	Hawaii.
Dall's porpoise	CA/OR/WA.
California sea lion	U.S.
Guadalupe fur seal	Mexico.
Northern fur seal	California.
Harbor seal	California.
Hawaiian monk seal	Hawaii.
Northern elephant seal	California.

Note to Table 1: CA/OR/WA = California/Oregon/Washington.

§ 218.73 Prohibitions.

Notwithstanding incidental takings contemplated in § 218.72(a) and authorized by LOAs issued under §§ 216.106 of this chapter and 218.76, no person in connection with the activities listed in § 218.70(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 218.76;

(b) Take any marine mammal not specified in § 218.72(b);

(c) Take any marine mammal specified in § 218.72(b) in any manner other than as specified in the LOAs; or

(d) Take a marine mammal specified in § 218.72(b) if NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal.

§ 218.74 Mitigation requirements.

When conducting the activities identified in § 218.70(c), the mitigation measures contained in any LOAs issued under §§ 216.106 of this chapter and 218.76 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 HSTT 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, and mat weave and obstacle loading), 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; and non-explosive bombs and mine shapes).

(1) *Environmental awareness and education.* Appropriate Navy personnel (including civilian personnel) involved in mitigation and training or testing activity reporting under the specified activities will 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 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 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); and two Lookouts for platforms without space or manning restrictions while underway (at the forward part of the ship).

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

(ii) *Mitigation zone and requirements.* During the activity, at 1,000 yards (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 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 of active sonar transmission until the mitigation zone is clear. Navy personnel must also 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 the activity for 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 (for a total of 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 the activity for 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) are deliberately closing in on the ship to ride the ship's bow wave, and are therefore out of the main transmission axis of the sonar (and there are no other marine mammal sightings within the mitigation zone).

(ii) [RESERVED]

(3) *Air guns*—(i) *Number of Lookouts and observation platform.* One Lookout positioned on a ship or pierside.

(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 must also 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 air gun use.

(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. The 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 paragraphs (a)(8)(i) and (a)(18)(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 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 of weapons firing until the mitigation zone is clear. Navy personnel must also 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, Navy personnel positioned in those assets (*e.g.,* safety observers, evaluators) must support observing the mitigation zone for 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 of sonobuoy or source/receiver pair detonations 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 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 and jellyfish aggregations; if floating vegetation or jellyfish aggregations are observed, Navy personnel must relocate or delay the start of firing until the mitigation zone is clear. Navy personnel must conduct passive acoustic monitoring for marine mammals and use the 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 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), Navy personnel must when practical (*e.g.,* when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), 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 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 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 of firing 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), Navy personnel must, when practical (*e.g.,* when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), 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 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 of firing 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), Navy personnel must, when practical (*e.g.,* when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), 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 will 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 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 of bomb deployment 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 the mitigation zone 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), Navy personnel must, when practical (*e.g.,* when platforms are not constrained by fuel restrictions or mission-essential follow-on commitments), 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 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 and jellyfish aggregations; if floating vegetation or jellyfish aggregations are observed, Navy personnel must delay the start of firing until the mitigation zone is clear. Navy personnel also must conduct aerial observations of the mitigation zone for marine mammals; if marine mammals 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 the 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 recommencement 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 hulk; 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 will 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.

(B) Two Lookouts (one must be positioned in an aircraft and one must be on a small boat) when implementing the larger mitigation zone.

(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 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 of detonations 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, concentrations of seabirds, and individual foraging seabirds; if marine mammals, concentrations of seabirds, or individual foraging seabirds are observed, Navy personnel must cease detonations.

(E) Commencement/recommencement conditions after a marine mammal sighting before or during the activity or a sighting of seabird concentrations or individual foraging seabirds during the activity. Navy personnel must allow a sighted animal 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 (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.

(B) Four Lookouts (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.

(C) All divers placing the charges on mines will support the Lookouts while performing their regular duties and will 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 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 (0.1–29 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 of detonations or fuse initiation 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 or fuse initiation.

(D) During the activity, Navy personnel must observe the mitigation zone for marine mammals, concentrations of seabirds, and individual foraging seabirds (in the water and not on shore); if marine mammals, concentrations of seabirds, or individual foraging seabirds are observed, Navy personnel must cease detonations or fuse initiation. To the maximum extent practicable depending on mission requirements, safety, and environmental conditions, Navy personnel must position boats 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, Navy 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 (0.1–29 lb. net explosive weight) to exceed 10 min.

(E) Commencement/recommencement conditions after a marine mammal sighting before or during the activity or a sighting of seabird concentrations or individual foraging seabirds during the activity. Navy personnel must allow a sighted animal 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), the Navy must observe for marine mammals for 30 min. 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.

(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 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 of detonations 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.

(B) During the activity, Navy personnel must observe the mitigation zone 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; 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), Navy personnel must, when practical (*e.g.,* when platforms are not constrained by fuel restrictions or

mission-essential follow-on commitments), 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 will assist in the visual observation of the area where detonations occurred.

(15) *Underwater demolition multiple charge—mat weave and obstacle loading exercises*—(i) *Number of Lookouts and observation platform.* Two Lookouts (one must be positioned on a small boat and one must be positioned on shore from an elevated platform). 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 applicable biological resources while performing their regular duties.

(ii) *Mitigation zone and requirements.* 700 yd around the intended detonation location.

(A) Prior to the initial start of the activity, or 30 min prior to the first detonation, the Lookout positioned on a small boat must observe the mitigation zone for floating vegetation and marine mammals; if floating vegetation or marine mammals are observed, Navy personnel must delay the start of detonations until the mitigation zone is clear. For 10 min prior to the first detonation, the Lookout positioned on shore must use binoculars to 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 the mitigation zone 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 detonation location; or the mitigation zone has been clear from any additional sightings for 10 min (as determined by the Navy shore observer).

(D) After completion of the activity (for 30 min), the Lookout positioned on a small boat 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) *Vessel movement.* The mitigation will 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); the vessel is operated autonomously; or when impracticable based on mission requirements (*e.g.,* during Amphibious Assault—Battalion Landing exercise).

(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).

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

(iv) *Incident reporting procedures.* If a marine mammal vessel strike occurs, Navy personnel must follow the established incident reporting procedures.

(17) *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.

(iii) *During the activity.* During the activity (*i.e.,* when towing an in-water device), Navy personnel must observe the mitigation zone for marine mammals; if marine mammals are observed, Navy personnel must maneuver to maintain distance.

(18) *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 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 of firing 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 the mitigation zone 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.

(19) *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 of firing 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 the mitigation zone 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.

(20) *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 of bomb deployment or mine laying 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 and, 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, Navy personnel must implement mitigation measures within mitigation areas to avoid or reduce potential impacts on marine mammals.

(1) *Mitigation areas for marine mammals in the Hawaii Range Complex for sonar, explosives, and vessel strikes*—(i) *Mitigation area requirements*—(A) *Hawaii Island Mitigation Area (year-round).* (*1*) Except as provided in paragraph (b)(1)(i)(A)(*2*) of this section, Navy personnel must not conduct more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar or 20 hours of MF4 dipping sonar annually, or use explosives that could potentially result in takes of marine mammals during training and testing.

(*2*) Should national security require conduct of more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar or 20 hours of MF4 dipping sonar, or use of explosives that could potentially result in the take of marine mammals during training or testing, Naval units must obtain permission from the appropriate designated Command authority prior to commencement of the activity. Navy personnel must provide NMFS with advance notification and include the information (*e.g.,* sonar hours or explosives usage) in its annual activity reports submitted to NMFS.

(B) *4-Islands Region Mitigation Area (November 15–April 15 for active sonar; year-round for explosives).* (*1*) Except as provided in paragraph (b)(1)(i)(B)(*2*) of this section, Navy personnel must not use MF1 surface ship hull-mounted mid-frequency active sonar or explosives that could potentially result in takes of marine mammals during training and testing.

(*2*) Should national security require use of MF1 surface ship hull-mounted mid-frequency active sonar or explosives that could potentially result in the take of marine mammals during training or testing, Naval units must obtain permission from the appropriate designated Command authority prior to commencement of the activity. Navy personnel must provide NMFS with advance notification and include the information (*e.g.,* sonar hours or explosives usage) in its annual activity reports submitted to NMFS.

(C) *Humpback Whale Special Reporting Areas (December 15–April 15).* Navy personnel must report the total hours of surface ship hull-mounted mid-frequency active sonar used in the special reporting areas in its annual training and testing activity reports submitted to NMFS.

(D) *Humpback Whale Awareness Notification Message Area (November–April).* (*1*) Navy personnel must issue a seasonal awareness notification message to alert ships and aircraft operating in the area to the possible presence of concentrations of large whales, including humpback whales.

(*2*) To maintain safety of navigation and to avoid interactions with large whales during transits, Navy personnel must instruct vessels to remain vigilant to the presence of large whale species (including humpback whales).

(*3*) Platforms must use the information from the awareness notification message to assist their visual observation of applicable mitigation zones during training and testing activities and to aid in the implementation of procedural mitigation.

(ii) [Reserved]

(2) *Mitigation areas for marine mammals in the Southern California portion of the study area for sonar, explosives, and vessel strikes*—(i) *Mitigation area requirements*—(A) *San Diego Arc, San Nicolas Island, and Santa Monica/Long Beach Mitigation Areas (June 1–October 31).* (*1*) Except as provided in paragraph (b)(2)(i)(A)(*2*) of this section, Navy personnel must not conduct more than a total of 200 hours of MF1 surface ship hull-mounted mid-frequency active sonar in the combined areas, excluding normal maintenance and systems checks, during training and testing.

(*2*) Should national security require conduct of more than 200 hours of MF1 surface ship hull-mounted mid-frequency active sonar in the combined areas during training and testing (excluding normal maintenance and systems checks), Naval units must obtain permission from the appropriate designated Command authority prior to commencement of the activity. Navy personnel must provide NMFS with

advance notification and include the information (*e.g.,* sonar hours) in its annual activity reports submitted to NMFS.

(*3*) Except as provided in paragraph (b)(2)(i)(A)(*4*) of this section, within the San Diego Arc Mitigation Area, Navy personnel must not use explosives that could potentially result in the take of marine mammals during large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) activities during training and testing.

(*4*) Should national security require use of explosives that could potentially result in the take of marine mammals during large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) activities during training or testing within the San Diego Arc Mitigation Area, Naval units must obtain permission from the appropriate designated Command authority prior to commencement of the activity. Navy personnel must provide NMFS with advance notification and include the information (*e.g.,* explosives usage) in its annual activity reports submitted to NMFS.

(*5*) Except as provided in paragraph (b)(2)(i)(A)(*6*) of this section, within the San Nicolas Island Mitigation Area, Navy personnel must not use explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) activities during training.

(*6*) Should national security require use of explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) activities during training in the San Nicolas Island Mitigation Area, Naval units must obtain permission from the appropriate designated Command authority prior to commencement of the activity. Navy personnel must provide NMFS with advance notification and include the information (*e.g.,* explosives usage) in its annual activity reports submitted to NMFS.

(*7*) Except as provided in paragraph (b)(2)(i)(A)(*8*) of this section, within the Santa Monica/Long Beach Mitigation Area, Navy personnel must not use explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) activities during training and testing.

(*8*) Should national security require use of explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) activities during training or testing in the Santa Monica/Long Beach Mitigation Area, Naval units must obtain permission from the appropriate designated Command authority prior to commencement of the activity. Navy personnel must provide NMFS with advance notification and include the information (*e.g.,* explosives usage) in its annual activity reports submitted to NMFS.

(B) *Santa Barbara Island Mitigation Area (year-round).* (*1*) Except as provided in paragraph (b)(2)(i)(B)(*2*) of this section, Navy personnel must not use MF1 surface ship hull-mounted mid-frequency active sonar during training or testing, or explosives that could potentially result in the take of marine mammals during medium-caliber or large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) activities during training.

(*2*) Should national security require use of MF1 surface ship hull-mounted mid-frequency active sonar during training or testing, or explosives that could potentially result in the take of marine mammals during medium-caliber or large-caliber gunnery, torpedo, bombing, and missile (including 2.75-inch rockets) activities during training, Naval units must obtain permission from the appropriate designated Command authority prior to commencement of the activity. Navy personnel must provide NMFS with advance notification and include the information (*e.g.,* sonar hours or explosives usage) in its annual activity reports submitted to NMFS.

(C) *Blue Whale (June–October), Gray Whale (November–March), and Fin Whale (November–May) Awareness Notification Message Areas.* (*1*) Navy personnel must issue a seasonal awareness notification message to alert ships and aircraft operating in the area to the possible presence of concentrations of large whales, including blue whales, gray whales, and fin whales.

(*2*) To maintain safety of navigation and to avoid interactions with large whales during transits, Navy personnel must instruct vessels to remain vigilant to the presence of large whale species.

(*3*) Platforms must use the information from the awareness notification messages to assist their visual observation of applicable mitigation zones during training and testing activities and to aid in the implementation of procedural mitigation.

(ii) [Reserved]

§ 218.75 Requirements for monitoring and reporting.

(a) *Unauthorized take.* Navy personnel must notify NMFS immediately (or as soon as operational security considerations allow) if the specified activity identified in § 218.70 is thought to have resulted in the mortality or serious injury of any marine mammals, or in any Level A harassment 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 reporting required under the LOAs, including abiding by the HSTT 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/incidentaltake-authorizations-military-readinessactivities.*

(d) *Annual HSTT Study Area marine species monitoring report.* The Navy must submit an annual report of the HSTT 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, NMFS, either within three months after the end of the calendar year, or within three months 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 intermediate scientific objectives within the HSTT Study Area associated with the Integrated Comprehensive Monitoring Program (ICMP). 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. As an alternative, the Navy may submit a multi-Range Complex annual Monitoring Plan report to fulfill this requirement. Such a report will describe progress of knowledge made with respect to monitoring study

questions across multiple Navy ranges associated with the ICMP. Similar study questions must be treated together so that progress on each topic can be summarized across multiple Navy ranges. The report need not include analyses and content that does not provide direct assessment of cumulative progress on the monitoring study question. This will continue to allow the Navy to provide a cohesive monitoring report covering multiple ranges (as per ICMP goals), rather than entirely separate reports for the HSTT, Gulf of Alaska, Mariana Islands, and Northwest Study Areas.

(e) *Annual HSTT Study Area training exercise report and testing activity report.* Each year, the Navy must submit two preliminary reports (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 detailed reports to the Director, Office of Protected Resources, NMFS, within 3 months after the one-year anniversary of the date of issuance of the LOA. The HSTT annual Training Exercise Report and Testing Activity Report can be consolidated with other exercise reports from other range complexes in the Pacific Ocean for a single Pacific Exercise Report, if desired. 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 specific mitigation reporting areas as described in paragraph (e)(3) of this section. The analysis in the detailed reports must be based on the accumulation of data from the current year's report and data collected from previous reports. The detailed reports must contain information identified in paragraphs (e)(1) through (7) of this section.

(1) *MTEs.* This section of the report must contain the following information for MTEs conducted in the HSTT 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.

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

(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).

(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) *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.

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

(ii) Individual marine mammal observation (by Navy Lookouts) information 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.

(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 (or target spot if not yet detonated): 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.

(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) 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 of the report 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 (*e.g.,* pile driving and air gun activities); and

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

(4) *Humpback Whale Special Reporting Area (December 15–April 15).* The Navy must report the total hours of operation of surface ship hull-mounted

mid-frequency active sonar used in the special reporting area.

(5) *HSTT Study Area Mitigation Areas.* The Navy must report any use that occurred as specifically described in these areas. Information included in the classified annual reports may be used to inform future adaptive management of activities within the HSTT Study Area.

(6) *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 HSTT Study Area.

(7) *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 activity 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 2018 HSTT FEIS/OEIS 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.

§ 218.76 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to the regulations in this subpart, the Navy must apply for and obtain 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 December 20, 2025.

(c) If an LOA expires prior to December 20, 2025, 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 § 218.77(c)(1)) required by an LOA issued under this subpart, the Navy must apply for and obtain a modification of the LOA as described in § 218.77.

(e) Each LOA must set forth:

(1) Permissible methods of incidental taking;

(2) 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) must be based on a determination that the level of taking is 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) must be published in the **Federal Register** within 30 days of a determination.

§ 218.77 Renewals and modifications of Letters of Authorization.

(a) An LOA issued under §§ 216.106 of this chapter and 218.76 for the activity identified in § 218.70(c) 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) 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 chapter and 218.76 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 218.76, 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.

§§ 218.78–218.79 [Reserved]

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